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Reducing postconflict coup risk: The low windfall coup-proofing hypothesis

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Abstract

Reducing coup risk is imperative and expensive for postconflict leaders. A theoretical framework is therefore needed to explain the subset of leaders who spend on development following civil war. The low-windfall coup-proofing hypothesis proposed here suggests that only postconflict leaders who lack natural resources and offer no strategic importance to donors choose to reduce coup risk by using nonstrategic aid for development. A nested research design with data on post-conflict coups (1970–2009) and a case study based on fieldwork are used to test the hypothesis. The hypothesis is supported across robustness checks, indicating that development from aid reduces coup risk for postconflict leaders with low windfall.

Keywords

Coup risk, development, foreign aid, natural resources, postconflict

Following civil war, countries are likely to experience to coups because they are unstable and have a history of coups (Belkin and Schofer, 2003; Powell, 2012). Coups are twice as likely in countries that experienced civil war in the last 40 years compared with countries that were peaceful during the same period.[1] The immediate threat of overthrow requires leaders to prioritize spending on their own protection.

A potential source of income for postconflict leaders is foreign aid. Because foreign aid is fungible (Feyzioglu et al., 1998; Pack and Pack, 1993), postconflict leaders can redirect aid to serve their own private goals (i.e. pay off rivals or increase security). It is therefore reasonable to expect that postconflict regimes will take "coup-proofing" steps to foster their own immediate protection with foreign aid, and forgo investing in development, which may take years to benefit the regime (Licht, 2010; Powell, 2012; Wright, 2008).

However, aid can have positive effects on development after civil war (Collier and Hoeffler, 2004a; Flores and Nooruddin, 2009; Kang and Meernik, 2005), suggesting that

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some leaders use aid for development. Indeed, positive effects of aid on development are only evident when recipients lack windfall income from strategic aid and natural resources (Girod, 2012). A systematic exploration of recipient incentives may therefore help to explain why low-windfall leaders use aid for development following civil war. In this article, I develop a theoretical framework supporting an incentives-based mechanism to explain why, for only low-windfall postconflict leaders, spending aid on development can reduce coup risk.

I argue that postconflict leaders allocate spending to ensure their own survival. Accordingly, postconflict leaders will spend on development only if such spending reduces their coup risk. When leaders lack windfall income, their easiest source of financing is aid from donors who are mainly interested in development (nonstrategic aid). To foster stability, nonstrategic donors pay for regime security and offer payoffs to encourage rival participation in the political system.[2] Nonstrategic donors lack strategic interest in the recipient, so aid flows may be terminated if the recipient fails to comply with donor prescriptions (Bearce and Tirone, 2010; Dunning, 2004). To continue nonstrategic aid flows, low-windfall leaders develop. In this way, nonstrategic aid and development combine to reduce coup risk for postconflict leaders with low windfall.

For leaders rich in windfall income, the calculus is different. Donors may demand that these leaders spend existing wealth to reduce poverty. Postconflict leaders with windfall income are not desperate for money, so they can forego nonstrategic-donor assistance and use their windfall income toward coup-proofing.

If this low-windfall coup-proofing hypothesis is valid, the interaction of low windfall, nonstrategic aid and development should reduce coup risk following civil war. This hypothesis is supported by data from 1260 postconflict years following civil wars ending between 1970 and 2009. As nonstrategic aid increases from US$10 per capita to US$25 per capita in low-windfall countries with high development, yearly coup risk declines by 75%. The same increase in nonstrategic aid to countries with high development but high windfall does not reduce coup risk.

These results are robust across a variety of model specifications, including different definitions of windfall income; controls for socioeconomic conditions; institutional strength, region and decade fixed effects; and after removing potential outliers or any country from the sample. Results also do not appear to be an artifact of the endogeneity of aid. Finally, the results from the statistical analysis are validated by a case study of postconflict Mozambique (based on fieldwork).

The findings contribute to the literature on postconflict political dynamics by offering a model of postconflict coup risk. To date, much of the peace-building literature focuses on resumption of war (Doyle and Sambanis, 2006; Fortna, 2008; Hartzell et al., 2001; Howard, 2008; Paris, 2004; Toft, 2010; Walter, 1997). However, resumption of war may not threaten a leader's political survival as much as the risk of coup (Roessler, 2011). By analyzing the influence of government income and development on postconflict coup risk, this study opens up a new area of investigation for scholars interested in civil war.

The findings also contribute to the literature on windfall income and regime survival (e.g. Ahmed, 2012; Bueno de Mesquita and Smith, 2010; Morrison, 2009; Smith, 2008). The extant literature gives an answer to why countries in general (not just *postconflict* countries) manage to bring about broad-based development when they lack windfall income. Under these circumstances, leaders depend on taxes and must therefore spend on development to increase tax revenues via improved economic opportunities for citizens (Bueno de Mesquita

and Smith, 2010). However, tax collection institutions are generally fragile postconflict, making the argument for the general case less applicable. Institutional fragility often plagues postconflict states because states with fragile institutions are more likely to experience civil war in the first place (Fearon and Laitin, 2003). Civil war exacerbates fragility because civil war destroys the already sparse infrastructure, formal economy, and any government capacity present prior to the conflict (Ghobarah et al., 2003; Iqbal, 2010). Generating meaningful sums of revenue is quite difficult for low windfall leaders in a weak institutional context, so the question remains: why do low-windfall leaders invest in broad-based development after civil war?

In what follows, I offer a theoretical framework to explain the link between low windfall, development and coup risk following civil war. From this framework, I derive the low-windfall coup-proofing hypothesis and test it using nested analysis (Lieberman, 2005): I test the hypothesis quantitatively using regression analyses and qualitatively with a case study of a low-windfall case, Mozambique. The final section concludes with implications for theory and policy.

Coup and coup-proofing

"Coup" is defined in this article as the capture of the executive by elites within the government using force, and "coup-proofing" refers to steps a leader takes to consolidate power within the government.[3] This definition of coup includes more than merely threats from military and security elites, but does not include threats from rebellion. This "middle ground" definition[4] was chosen because it is consistent with the latest work on coups, and because it allows for coup-proofing to encompass strategies of power consolidation against any state apparatus elite, not just military. My definition of coup is thus broader than the definition used in much extant research on coup-proofing focused on threats from security forces.[5] However, my definition is not so broad as to include seizures of power by actors outside the state structure.[6] By defining coup as a threat from within the government and not including rebellions from outside the government, coup is not conflated with resumption of civil war, which has a different incentive structure than coup and coup-proofing.[7]

Coup-proofing to consolidate postconflict power may include strengthening leader security by creating paramilitary infrastructures and duplicating intelligence structures, giving officer positions to favor important ethnoreligious loyalties, and professionalizing the military (Quinlivan, 1999). Improved security forces can detect a potential coup more rapidly and respond more quickly and effectively, reducing the chances that a coup attempt succeeds.

Cash handouts are also important for power consolidation. Leaders can induce cooperation by paying supporters and rewarding rivals for switching sides (Bueno de Mesquita et al., 2003). Additionally, the net reward for a successful coup is smaller for a rival who is actively receiving payoffs from the leader. Handouts can alleviate grievances of potential rivals and allow them to benefit from the status quo, thereby reducing their incentive to initiate a coup.

Coup-proofing via security and handouts is expensive, immediate and ongoing, and therefore requires steady revenue (Quinlivan, 1999). Crucial to understanding the theory presented here is appreciating how income sources drive leader development incentives toward

reducing coup risk following civil war. In particular, it is important to distinguish between windfall and nonwindfall income.

Windfall income: natural resource rents and strategic aid

Windfall income following civil war may come from natural resource rents or from strategic aid.[8] Natural resource rents constitute immediate windfall, especially if the rents come from natural resources that can be extracted with little labor or technology.[9] Windfall from natural resource rents can be used to coup-proof via security and handouts. While categorizing natural resource rents as windfall is intuitive, categorizing strategic aid as windfall may require explanation.

Strategic aid represents potential windfall income for postconflict leaders from donors who seek influence to advance political or military purposes. To obtain strategic aid, a recipient can (for example) sell air space rights; rights to land at military bases; rights to conduct military operations; or explicit support for donor foreign policy priorities in the region. A recipient can also "sell" the state's ideology—something valued especially highly during the Cold War.

Strategic aid is less attractive than resource rents because this aid is contingent on meeting donor security goals, and leaders probably prefer to have free reign over the money they receive. However, donor security goals in postconflict countries generally involve helping the leader stay in power (Carter, 2009).

Further, recipient leaders may siphon aid from development projects to coup-proofing with impunity—if the donors are more interested in achieving strategic objectives than in fostering development. Because the recipient is important to the donor's strategic interests, the strategic aid recipient can "do no wrong" when it comes to implementing other donor demands. As put by a former senior US official in the 1980s, in strategically important countries, "we had multiple tracks … What was important to the economic folks, and what was important to the diplomatic folks were two different things sometimes. And this got triaged."[10] Strategic donors value strategic interests over development interests, and as a result, these donors have little leverage over a recipient who chooses to not implement donor development goals.[11] Strategic aid is therefore very similar to natural resource rents as a ready source of windfall income for coup-proofing.

Nonstrategic aid

Following civil war, leaders may receive nonstrategic aid from donors who are primarily interested in development. After windfall, nonstrategic aid is the next easiest-to-acquire source of income following civil war.[12] While nonstrategic donors are less interested in protecting specific leaders than in development, nonstrategic donors are keenly interested in maintaining sufficient stability to promote development.[13]

From a nonstrategic donor's perspective, development is more likely with a secure government. The World Bank's operational manual, for example, states that "economic and social stability and human security are pre-conditions for sustainable development" (World Bank, 2001: 1). Similarly, the 2001 guidelines for official bilateral development assistance indicate that "helping developing countries build legitimate and accountable systems of security—in defence, police, judicial and penal systems—has become a high priority" (OECD, 2001: 19). These guidelines codify developmental donor behavior. The USA, for example, directly

funded the training, equipment, and deployment of the national police after El Salvador's post-Cold War ceasefire, when the country was no longer strategically important to the USA (US General Accounting Office, 1994). Thus, nonstrategic aid provides some security and can thereby reduce the chance of coup.[14]

Nonstrategic aid can also help postconflict leaders offer payoffs to elites. For example, in the lead-up to the Solomon Islands elections in 2001, the country's leaders (with support from Australia) paid US$5.4 million to politicians, rebels and police that had organized a coup attempt the previous year (O'Callaghan, 2001). Nonstrategic donors in general invest large sums in war-torn countries to incorporate opposition parties into a democratic political system that can potentially mediate future conflict peacefully (Doyle and Sambanis, 2006; Fortna, 2008). In some cases, nonstrategic donors also compensate elites who would lose standing when the leader implements aid agreements that restructure the government or the economy (Devarajan et al., 2001). Specific development initiatives might also benefit some sectors privately. For example, police and lawyers privately benefit from policies that invest in the rule of law (Bueno de Mesquita et al., 2003: 31). Nonstrategic aid can thus be used to coup-proof, but nonstrategic aid is not windfall.

Unlike strategic aid, nonstrategic aid comes with strings attached. To maintain nonstrategic aid, leaders must meet donor objectives, which entail implementing donor guidelines on development aid agreements. Nonstrategic donors generally call for reform of public finances and wider allocation of wealth to the poor (Devarajan et al., 2001).[15]

The role of development in nonstrategic aid

Development is important for continued nonstrategic aid. Development here refers to a broad-based (i.e. inclusive) improvement in living conditions for the majority of citizens. As put by the United Nations Development Program, "Human development is a process of enlarging people's choices. The most critical ones are to lead a long and healthy life, to be educated and to enjoy a decent standard of living" (United Nations, 2010: 12). Importantly, development can respond quickly to aid (Clemens et al., 2012; Lake and Baum, 2001).

A credible threat exists that nonstrategic aid can be withdrawn if the recipient fails to meet basic development objectives because nonstrategic donors lack other motives (Bearce and Tirone, 2010; Dunning, 2004; Girod, 2012; Stone, 2010). While development is evident in some postconflict cases, Powell (2012) finds that economic development is not, in general, associated with reducing coup risk. Thus, postconflict leaders are likely to foster development only to the extent that it helps them obtain aid funds, some of which can be used toward consolidating power within the state apparatus and thereby reducing the risk of coup. Nonstrategic aid is less optimal than windfall income because some nonstrategic aid must be used toward development. However, for low-windfall leaders, development represents the best mechanism to ensure continued nonstrategic aid to fund coup-proofing.

The hypothesis

Incentives suggest that postconflict leaders will seek to secure the easiest income options to reduce coup risk and that postconflict leaders will only develop if development reduces their risk of coup. Indeed, existing research on postconflict dynamics indicates that the easiest sources of significant postconflict income are natural resource rents and strategic aid, which represent windfall income with essentially no strings attached (Girod, 2012). Because leaders

with windfall genuinely do not need nonstrategic aid money, there is no incentive to use nonstrategic aid for development. For postconflict leaders with high windfall, coup risk is therefore unrelated to an interaction of high aid and high development. In contrast, low-windfall leaders are likely to use nonstrategic aid for development because nonstrategic aid includes income earmarked for coup-proofing.

Postconflict leaders who lack windfall have little choice but to embark on development programs in exchange for nonstrategic aid. In fact, only low-windfall leaders appear to develop using nonstrategic aid post conflict (Girod, 2012).[16] Development ensures continued nonstrategic aid, demonstrating the incentive-based mechanism predicting that high nonstrategic aid and high development should reduce the risk of coup only in low-windfall countries postconflict. The theory implies an empirically testable hypothesis:

> **Low-Windfall Coup-Proofing Hypothesis:** Following civil war, the interaction of low-windfall, nonstrategic aid and development should reduce coup risk.

By interacting nonstrategic with development in addition to windfall, we can directly assess whether low-windfall leaders who spend aid on donor goals are more likely to reduce coup risk than low-windfall leaders who steal the aid.

The theory makes no specific predictions about the direct influence of windfall on coup risk. While windfall could reduce coup risk as an immediate source of income against potential rivals (Smith, 2008), windfall could increase coup risk by sufficiently increasing the size of the prize for successful coup plotters (Collier and Hoeffler, 2004b), so the theory is mute regarding the unconditional influence of windfall on coup risk.

Quantitative analysis can test the low-windfall coup-proofing hypothesis. In addition, a case study of a low-windfall country emerging from civil war should reveal that actors are aware of these variables and relationships. The case study should demonstrate that leaders with low windfall give nonstrategic donors leverage over their postconflict budgets and follow through with agreements. Moreover, security spending and elite payoffs cannot be considered with a regression analysis because complete cross-national datasets are not available, but a case study of a low-windfall country should indicate that security spending and elite payoffs increased with nonstrategic aid.

Data analysis

The hypothesis can be tested using data on 1260 postconflict years following 89 civil wars that ended between 1970 and 2009.[17] The data on civil war come from the Armed Conflicts Database (Gleditsch et al., 2002; Themnér and Wallensteen, 2011). A civil war is defined as an armed conflict where combatants fought against the government and at least 500 died annually on average. Following Fearon (2010) and Walter (2011), a war is coded as ending when violence declines to 25 battle deaths or less for at least two consecutive years. The results are consistent if this threshold is changed to three consecutive years (Supplementary Materials, Table A.4). A postconflict period ends if civil war resumes in the country or in 2009, the final year of the sample.

Dependent variable

The dependent variable is *Coup Risk*, operationally defined as the probability of a coup following a civil war.[18] Each postconflict year is coded as "1" if the leader experiences a coup

and "0" otherwise, using coup data from Powell and Thyne (2011). These data build upon other widely used sources, such as the Cross National Time Series Data Archive, the Center for Systemic Peace dataset on coups and Archigos (Banks, 2011; Goemans et al., 2009; Marshall and Marshall, 2010).

Coup occurrence was chosen over resumption of war. Resumption of war may not directly threaten the leader's survival, and may therefore concern the development calculus of leaders less than the risk of coup (Roessler, 2011). For example, postconflict, Ugandan president Yoweri Museveni was criticized for not ending a new war against the Lord's Resistance Army that the government was equipped to finish decisively (Barkan et al., 2004). According to the latest scholarship on the case, the new war allowed Museveni, a low-windfall leader, to convince nonstrategic donors to permit (or fund) greater security expenditures than he would otherwise be able to allocate (Barkan et al., 2004; Tripp, 2010). The resumption of civil war may paradoxically help a low-windfall leader obtain resources to stay in power. Indeed, the interaction of windfall income, nonstrategic aid and development does not explain the resumption of war (Supplementary Materials, Table A.5).

Independent variables

The first independent variable of interest is *Nonstrategic Aid*. Aid refers to net official development assistance per capita from OECD donors in constant 2005 US dollars, using data from OECD (2012). Nonstrategic aid is calculated as total aid minus strategic aid. Strategic aid is the sum of aid from donors with a strategic interest in the recipient. Strategic importance of recipients to donors is measured using three attributes of strategic importance identified by Girod (2012): aid agreements with non-neutral donors during the Cold War using 1989 as the end of the Cold War; military allegiance between donor and recipient using data from Leeds (2005); and history of colonialism using data from Rose (2005). Recipients with any one of these attributes are considered to be of strategic interest to the donor. Aid from a donor with strategic interest in the recipient is considered strategic aid. Results are consistent when measuring strategic importance following Dunning (2004) and Bearce and Tirone (2010) using only Cold War aid agreements (Supplementary Materials, Table A.6, model 1).

Windfall is the logarithm of the sum of strategic aid and resource rents. The resource rents variable reflects rents per capita in constant 2005 US dollars.[19] Increases in windfall thus represent increases in the sum of strategic aid and resource rents. To facilitate interpretation of results involving interaction terms, I multiply windfall by "−1" and refer to the inverted windfall variable as *Inverted Windfall*, where increases represent reductions in windfall. The inverted windfall variable is only included in models where windfall interacts with other variables.

Finally, *development* must be interacted with windfall and nonstrategic aid to directly test the hypothesis that development moderates the effect of nonstrategic aid on coup risk in low-windfall countries. Percentage change in infant mortality was chosen as the metric for development because infant mortality reflects broad-based development better than other metrics.[20] Development is measured as percentage change in infant mortality from the previous year, using annual infant mortality data from the World Bank (2012). Infant mortality is multiplied by "−1" so that positive values indicate development.

Baseline model

Because coups are binary events, the probability of a coup is modeled using logistic regression with standard errors clustered by country to adjust for more than one civil war within

the same country.[21] The probability of coup in each postceasefire (*i*) year (*t*) depends on the interaction of inverted windfall income, nonstrategic aid and development:

$$Inverted\ Windfall \times Nonstrategic\ Aid \times Development$$

Windfall is expected to combine with nonstrategic aid and development to reduce coup risk. Windfall is therefore lagged by three years ($t - 3$), nonstrategic aid is lagged by one year ($t - 1$), and development measures the change in infant mortality (inverted) from $t - 1$ to t. Results are not an artifact of the specific lag structure. They are consistent, for example, if all independent variables are lagged by one year (Supplementary Materials, Table A.6, model 3). The baseline model controls for changes in global health, *Global Development Average*, and initial development levels, *Baseline Development*, either of which could confound the influence of development on coup risk. To account for temporal dependence, the model includes a cubic polynomial approximation of time, *T* (Carter and Signorino, 2010). The model also includes an error term (ε). Equation (1) presents the model:

$$
\begin{aligned}
\Pr(Y = 1) = \Phi[&\alpha_{i,t} + \beta_1 InvertedWindfall_{i,t-3} * NonstrategicAid_{i,t-1} * Development_{i,t} \\
&+ \beta_2 InvertedWindfall_{i,t-3} * NonstrategicAid_{i,t-1} + \beta_3 NonstrategicAid_{i,t-1} \\
&* Development_{i,t} + \beta_4 InvertedWindfall_{i,t-3} * Development_{i,t} + \beta_5 InvertedWindfall_{i,t-3} \\
&+ \beta_6 NonstrategicAid_{i,t-1} + \beta_7 Development_{i,t} + \beta_8 GlobalDevAve_{i,t} \\
&+ \beta_9 BaselineDev_{i,t-1} + \beta_{10} T_{i,t} + \beta_{11} T^2{}_{i,t} + \beta_{12} T^3{}_{i,t} + \beta * Controls_{i,t-1} + \varepsilon_{i,t}]
\end{aligned}
$$

$$(1)$$

The baseline model includes 12 independent variables before accounting for additional control variables. By virtue of including the three-way interaction, the baseline model automatically includes an additional six independent variables, representing the two-way and single component terms of the interaction. None of these component terms provides useful insight on the hypothesis because simple coefficients that form interactions express effects when the other term(s) in the interaction is set at zero (Brambor et al., 2006). In addition to these seven variables, the model includes three time dummy variables, the global development average and baseline development, totaling 12 independent variables.

Given the number of independent variables already included in the baseline model, adding a large set of controls could result in overfitting and missing data. Nevertheless, control variables could confound the effects of windfall, nonstrategic aid or development on coup risk. I therefore add one or two control variables at a time to the baseline specification to ensure that results are robust to the inclusion of these variables. I also test the hypothesis with a model that includes all control variables by imputing missing data using Amelia (Honaker et al., 2011).

Controls

While postconflict governmental institutions appear to be more fragile than governmental institutions in other developing countries, the quality of postconflict institutions varies. Because this variation could account for differences in coup risk (Belkin and Schofer, 2003; Powell, 2012), the analysis controls for factors associated with the quality of postconflict institutions. Per capita income is associated with increasing state capacity for tax collection,

an important attribute of institutional quality (Fearon and Laitin, 2003).[22] The analysis therefore controls for per capita *Income* with data from Heston et al. (2009). In addition, the analysis controls for war destruction that might have weakened state capacity: the number of people killed during the civil war (logarithm of *War Deaths*) and the duration of the civil war (the logarithm of *War Duration* in months). The data on war deaths come from Lacina and Gleditsch (2005) and the data on war duration come from the Armed Conflicts Database (Gleditsch et al., 2002; Themnér and Wallensteen, 2011).

To account for the quality of democratic governance, another institutional factor related to coup risk after civil war, the analysis controls for *Democracy* (Belkin and Schofer, 2003; Powell, 2012). The democracy variable is scaled from −6 to 7 using the X-Polity variable coded by James Vreeland (2008), who eliminated political violence from the Polity measure of democracy developed by Monty Marshall, Keith Jaggers and Ted Robert Gurr (2009). Higher values reflect increases on the democracy scale.

Challenges to power consolidation may also account for differences in postconflict coup risk. To account for challenges to power consolidation following the war, I control for the nature of the leader's entry into office and the leader's time in office. The extant literature on leader survival across all countries indicates that leaders who enter office through irregular means (i.e. coups or revolutions) are more likely to be overthrown than leaders who enter office through regular means, but that the effect decreases the longer a leader is in office (Goemans et al., 2009). Thus, I control for *Incumbent Tenure, Irregular Entry* and the interaction between them.[23] Incumbent tenure measures the number of years the incumbent is in power, and the data come from Cheibub et al. (2010). Data on irregular entry come from Goemans et al. (2009), and the variable is coded as "1" if the leader's entry was irregular and "0" otherwise.

The analysis also controls demographic factors associated with coup risk. I control for *Population Density* (in thousands) because the cost of carrying out a coup increases with population density (Kimenyi and Mbaku, 1993). Also, *Ethnic Fractionalization* is included because higher ethnic diversity may threaten leader survival in office (Morrison, 2009).[24]

Results

According to the low-windfall coup-proofing hypothesis, windfall income should significantly moderate the relationship between nonstrategic aid, development, and coup risk. To test the hypothesis directly, model 1 in Table 1 introduces the three-way interaction of *Inverted Windfall × Nonstrategic Aid × Development*. If the probability of a coup declines as windfall declines with increases in nonstrategic aid and development, a negative, statistically significant three-way interaction would be expected. Consistent with the hypothesis, the three-way interaction is negative and statistically significant. This result demonstrates that increases in aid and development are only likely to decrease coup risk when windfall is low.

Figure 1 demonstrates the three-way interaction using a binary measure of windfall, where low windfall is less than the 33rd percentile (see Table 1, model 2). Based on model 2 in Table 1, the left-hand panel of Figure 1 shows that the marginal effect of development on coup risk is negative and statistically significant as nonstrategic aid increases in countries with low windfall income (i.e. the confidence interval does not overlap with zero).[25] The right-hand panel shows a positive marginal effect, indicating increased coup risk. However,

Table 1. Logit analysis of coup risk

	(1) Windfall: Continuous	(2) Windfall: Binary
Inverted Windfall × Nonstrategic Aid × Development	−0.095***	−0.428**
	(0.033)	(0.209)
Inverted Windfall × Nonstrategic Aid	0.330**	1.041
	(0.151)	(0.666)
Nonstrategic Aid × Development	−0.400**	0.157
	(0.160)	(0.162)
Inverted Windfall × Development	0.194**	0.521
	(0.099)	(0.581)
Inverted Windfall	−0.767**	−1.698
	(0.375)	(1.379)
Nonstrategic Aid	1.299**	−0.470
	(0.604)	(0.583)
Development	0.794	−0.283
	(0.496)	(0.242)
Global Development Average	0.521	0.537
	(0.613)	(0.620)
Baseline Development	−0.985**	−1.023***
	(0.458)	(0.352)
Constant	−13.039***	−9.356***
	(3.460)	(2.179)
Time dummies	Yes	Yes
Observations	1057	1057

Note: Negative coefficients indicate lower coup risk. Robust standard errors in parentheses. *Significant at 10%; **significant at 5%; ***significant at 1%. The independent variables are lagged. Windfall is inverted to facilitate interpretation of the interaction term. Model 1 includes the continuous measure of windfall and model 2 includes the binary measure of windfall, where country-years below 33rd percentile in windfall have low windfall. The significant negative coefficient for the three-way interaction supports the low-windfall coup-proofing hypothesis.

the effect is statistically insignificant (i.e. the confidence interval overlaps with zero throughout the range of nonstrategic aid). Thus, nonstrategic aid amplifies the negative marginal effect of development on coup risk only when windfall income is low, consistent with the hypothesis. For countries with low windfall and high development (90th percentile), increasing nonstrategic aid from US$10 per capita to US$25 per capita cuts coup risk by 75% from 0.4 to 0.1%. The same increase in nonstrategic aid in countries with the same level of development and high windfall more than triples coup risk from 1.3 to 5.0%, although the effect is statistically insignificant.[26]

The low-windfall coup-proofing hypothesis might only explain coup risk in postconflict countries. The hypothesis is not supported in data from countries that have no civil war history (Supplementary Materials, Table A.8, model 1) or from countries that are at war (Supplementary Materials, Table A.8, model 2). These findings suggest that postconflict leaders may operate under different pressures than leaders of other countries.

The hypothesis remains supported when including control variables (Table 2).[27] Results also remain consistent when the findings are replicated with removal of observations greater than the 95th percentile in development, nonstrategic aid, or inverted windfall (Table 3, model 1).[28] However, it is still possible that the results are an artifact of unique attributes of
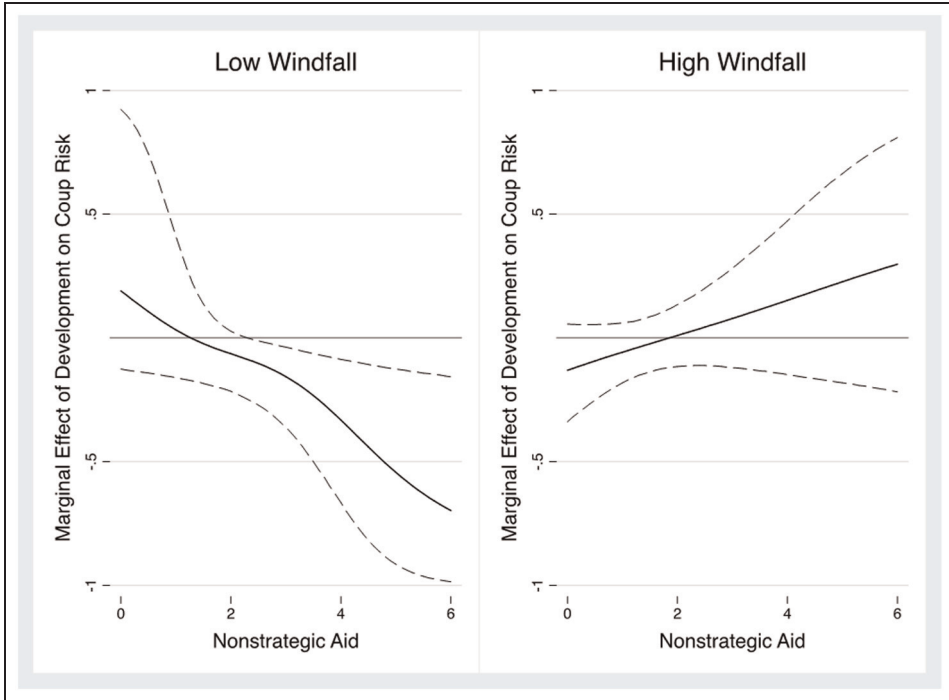
Figure 1. Marginal effect of development on coup risk as windfall income and nonstrategic aid change.
Note: The figure is based on Table 1, model 2. The code used to generate the figure was adapted from Brambor et al. (2006). The dashed lines represent the 90% confidence interval. Development measures the inverted percentage annual change in infant mortality. Nonstrategic aid (log) is lagged by one year. Windfall income (not inverted here) is lagged by 3 years. The marginal effect of development on coup risk is negative and significant only when windfall income is low, supporting the low-windfall coup-proofing hypothesis.

time periods, regions or endogeneity of aid to coups. I perform robustness checks to address these additional potential threats.

First, it is possible that the findings are biased owing to unobserved attributes of particular regions that are correlated with changes in coup risk, or unobserved attributes of the decade of observation. For example, perhaps African governments face unique challenges in preventing coups after civil war, or perhaps coups were particularly unlikely during the 1990s, after the end of the Cold War (Goemans and Marinov, 2011). It is therefore important to assess whether the hypothesis is supported when including region and decade fixed effects. The results including region and decade fixed effects support the hypothesis (Table 3, models 2 and 3).

It is also possible that the results are an artifact of the endogeneity of aid, reversing the causal arrows. Anticipating a coup, strategic and nonstrategic donors may respond to high coup prospects with increases or decreases in aid. Donors may flee at the prospect of instability, or give more money to shore up a destabilizing regime.[29] To account for this potential threat to the validity of results, the regressions presented here measure strategic and nonstrategic aid lagged to be prior to the assessment of whether a coup occurred. Because both aid variables are measured prior to coup assessment, the coup is less likely to have caused the aid

Table 2. Logit analysis of coup risk: including control variables

	(1) Institutions	(2) Entry—tenure	(3) Interaction	(4) Demography	(5) Imputation
Inverted Windfall × −Nonstrategic Aid × Development	0.137***	0.161***	0.161***	−0.095***	−0.129***
	(0.038)	(0.047)	(0.048)	(0.031)	(0.047)
Inverted Windfall × Nonstrategic Aid	0.630***	0.625***	0.627***	0.301**	0.428***
	(0.169)	(0.213)	(0.217)	(0.150)	(0.164)
Nonstrategic Aid × Development	−0.533*	−0.506***	−0.496***	−0.409**	−0.540**
	(0.278)	(0.192)	(0.181)	(0.169)	(0.270)
Inverted Windfall × Development	0.202	0.104	0.106	0.205**	0.289*
	(0.133)	(0.121)	(0.116)	(0.105)	(0.162)
Inverted Windfall	−1.188***	−0.659	−0.667	−0.767*	−1.194**
	(0.455)	(0.488)	(0.467)	(0.398)	(0.502)
Nonstrategic Aid	2.271**	1.953**	1.933**	1.216*	1.694**
	(0.924)	(0.797)	(0.788)	(0.639)	(0.800)
Development	0.715	0.329	0.316	0.877*	1.285
	(0.793)	(0.706)	(0.692)	(0.524)	(0.923)
Global Development Average	0.433	−0.587	−0.608	0.495	0.308
	(0.644)	(0.564)	(0.606)	(0.603)	(0.581)
Baseline Development	−1.283*	−1.641***	−1.610***	−1.061*	−1.071
	(0.676)	(0.374)	(0.396)	(0.558)	(0.657)
Per Capita Income	−0.342				−0.374
	(0.465)				(0.365)
Democracy	0.056				0.001
	(0.096)				(0.078)
War Deaths	−0.298*				−0.259*
	(0.172)				(0.134)
War Duration	0.410*				0.303
	(0.237)				(0.200)
Incumbent Tenure		−0.026	−0.034		−0.020
		(0.032)	(0.032)		(0.029)
Irregular Entry		−0.821	−1.189		0.114
		(0.836)	(1.616)		(0.888)
Irregular Entry × Incumbent Tenure			0.030		−0.033
			(0.100)		(0.072)
Population Density				−0.869	−0.276
				(3.610)	(2.911)
Ethnic Fractionalization				−0.000	0.027
				(1.033)	(0.934)
Time dummies	Yes	Yes	Yes	Yes	Yes
Observations	779	752	752	1008	1260

Note: Negative coefficients indicate lower coup risk. Robust standard errors in parentheses. *Significant at 10%; **significant at 5%; ***significant at 1%. The independent variables are lagged. Windfall is inverted to facilitate interpretation of the interaction term. Model 1 controls for postconflict institutions, model 2 controls for the nature of leader entry and for leader tenure, model 3 interacts leader entry and tenure, model 4 controls for demographic factors, and model 5 includes all controls by imputing missing data using Amelia (Honaker et al., 2011). The significant negative coefficient for the three-way interaction across models 1–5 supports the low-windfall coup-proofing hypothesis.

Table 3. Logit analysis of coup risk: excluding outliers and including fixed effects

	(1) Excluding outliers	(2) Region fixed effects	(3) Decade fixed effects
Inverted Windfall × Nonstrategic Aid × Development	−0.121**	−0.100***	−0.097***
	(0.056)	(0.033)	(0.037)
Inverted Windfall × Nonstrategic Aid	0.474**	0.375**	0.344*
	(0.221)	(0.159)	(0.179)
Nonstrategic Aid × Development	−0.603***	−0.418**	−0.402***
	(0.220)	(0.178)	(0.155)
Inverted Windfall × Development	0.228**	0.202**	0.198*
	(0.116)	(0.098)	(0.102)
Inverted Windfall	−0.965**	−0.894**	−0.803**
	(0.415)	(0.383)	(0.382)
Nonstrategic Aid	2.139**	1.437**	1.330**
	(0.902)	(0.669)	(0.629)
Development	1.002*	0.856	0.797
	(0.583)	(0.526)	(0.494)
Global Development Average	0.729	0.488	0.496
	(0.633)	(0.580)	(0.578)
Baseline development	−0.964*	−0.023	−0.995**
	(0.550)	(0.441)	(0.453)
Time dummies	Yes	Yes	Yes
Observations	909	863	1057

Note: Negative coefficients indicate lower coup risk. Robust standard errors in parentheses. *Significant at 10%; **significant at 5%; ***significant at 1%. The independent variables are lagged. Windfall is inverted to facilitate interpretation of the interaction term. Model 1 excludes outliers (observations greater than the 95th percentile in nonstrategic aid, development or inverted windfall), model 2 includes region fixed effects and model 3 includes decade fixed effects. The significant negative coefficient for the three-way interaction across models 1–3 supports the low-windfall coup-proofing hypothesis.

disbursement. Additionally, I assess the influence of aid on coup risk with an instrumental variable. A viable instrumental variable is correlated with the independent variable, but not plausibly linked to the dependent variable. This way, one can estimate the causal effect of the independent variable without influence from the dependent variable. Savun and Tirone (2011) argue that donor gross domestic product (GDP) is correlated with aid because donors with a stronger economy should be more willing to offer foreign aid than donors with weaker economies. Also, donor GDP should not correlate with political instability in the recipient country except through its effect on aid. I therefore include donor GDP as an instrument for aid in a two-stage least-squares regression. The effect of the three-way interaction on coup risk supports the hypothesis (Supplementary Materials, Tables A.10 and A.11).[30] Thus, the results supporting the hypothesis remain consistent after accounting for potential endogeneity. To supplement empirical testing with and without instrumental variables, the case study of Mozambique will further suggest that the results in the empirical analyses are not an artifact of endogeneity.

In summary, the low-windfall coup-proofing hypothesis is supported after accounting for potential challenges to validity. While consistent with the hypothesis, these regressions cannot reveal whether postconflict leaders are aware of the incentives and disincentives within

these relationships, or how postconflict leaders, in practice, spend to reduce coup risk and consolidate power following civil war. To address these questions, the case study of Mozambique follows.

Postconflict Mozambique: an "ideal" low-windfall case

Mozambique was chosen because the case is "*well predicted* by the best-fitting statistical model" (i.e. the case is "on-the-line") and therefore allows further tests of the model's validity (Lieberman, 2005: 444).

Mozambique's civil war ended in 1992. At the end of its civil war, the development picture was catastrophic. The country faced among the highest infant mortality rates in the world (World Bank, 2012). Nearly 172,000 had died in battle, 6 million were displaced and over 1 million had died violently or through war-related disease (Lacina and Gleditsch, 2005). Much of the infrastructure was destroyed, and public services were in total disrepair.

For Mozambique, the only source of income available following civil war was aid from donors interested only in promoting development. Desperate for income, Mozambique's President Chissano and his political party, Front for the Liberation of Mozambique (Frelimo), turned the budget over to donors and let them implement development projects. The government had to accept aid with conditions in order to secure income.

The government of Mozambique adopted policies that were heavily influenced by donors. The International Monetary Fund and the World Bank drafted most of the new economic policies in Washington (Arndt et al., 2000: 303). Analysts point out that "behind the scenes and not easily documented", the international financial institutions engaged in "massive interference at a detailed level, up to and including the forced redeployment of named officials" (Hall and Young, 1997: 227). The government of Mozambique embraced donor activities with minimal resistance. As Chissano explained: "We don't see [any] other way. We are totally dependent on inputs from outside" (quoted in Saul, 1991: 106).

Donors supplied half of Mozambique's recurring budget expenses and 80% of the development budget within two years of the ceasefire and ongoing through the 1990s (Hodges and Tibana, 2005). The development budget consisted mainly of aid projects and thousands of aid agencies descended upon Mozambique to implement them. Many of these projects appeared word for word as lines in Mozambique's own annual budgets (e.g. República de Moçambique, 1994).[31]

Postconflict Mozambique developed rapidly with this influx of aid. Within three years of the civil war, distribution of vaccines to prevent measles, diphtheria, tetanus and pertussis among children significantly increased (Arndt et al., 2000: 315). As one example of donor activity, Africare noted in its evaluation of the clinics it build in the Mozambican town of Chibabava that many of the patients in the new clinics were mothers with infants who had come for postnatal care (Tarragó and Martinelli, 1996: 26). These sorts of interventions contributed to the reduction of Mozambique's infant mortality from 148.1 per 1000 births at the ceasefire in 1992 to 137.5 in 1995, a 7.2% drop (World Bank, 2012).[32] In Mozambique, postconflict services that appear to be associated with increasing development generally and reducing infant mortality in particular depended on foreign aid.

While the actions of donors and Chissano brought about broad improvements in living standards in Mozambique, Chissano did not suffer from any known coup attempts. Did nonstrategic aid fund increased spending on security and payoffs to co-opt rivals and prevent coups, as predicted by the theory?

Opposition forces shared authority with the Frelimo-dominated government over the military after the end of civil war. Fearing that the military would not remain loyal, Frelimo officials did not allocate aid income toward the military. However, these officials did use donor support to strengthen Mozambique's internal police force—or, more accurately, a paramilitary force—with training from Spain's own militarized police, the *Guardia Civil*. Even though the force was ostensibly there to provide crowd control, the unit received "heavy weapons" and was given "military training" (Lalá and Francisco, 2006: 165; US State Department, 1995). During the 1990s, Frelimo's paramilitary unit continued to grow and receive new equipment (República de Moçambique, 1999).

In Mozambique, nonstrategic donors also directly bought out the opposition to the government. The payoffs were mainly directed at the former rebel group Mozambican National Resistance (Renamo). Although Renamo leaders had formally agreed to end all hostilities against Frelimo at the ceasefire, in practice, Renamo still constituted the main threat to Frelimo's ability to consolidate power following the war. Renamo leaders also refused to participate in the new power-sharing government unless they received funds. As it was put by a chief Renamo negotiator, "no democracy without money" (quoted in Vines, 1998). Donors offered Chissano an opportunity to secure his grip on power by enticing Renamo leaders with financial incentives in exchange for cooperation. The United Nations decided to coordinate a trust fund to pay off Renamo with aid from European countries and the USA. The payoffs included monthly stipends for the group's leader and his top commanders (Synge, 1997). Both donors and the Mozambican government continued to offer handouts to Renamo into the 1990s (Manning, 2002).

Nonstrategic aid supported power consolidation in Mozambique via security improvements and elite payoffs. Consistent with the hypothesis presented here, and consistent with the general findings from the regression analyses, Mozambique's president was forced to undertake development initiatives to obtain and sustain desperately needed aid from nonstrategic donors.

Conclusion

Why do countries ever develop following civil war, when institutions are weak, and when the risk of coup is significant and immediate? The explanation developed here begins with the assumption that postconflict leaders spend on development only if development reduces their risk of coup. Because income structures constrain choices, the effects of development vary according to income source. Income source, and the incentives it creates, is therefore critical in explaining why only a subset of leaders spend on development following civil war. The low-windfall coup-proofing hypothesis presented here suggests that development, paid for with nonstrategic aid, reduces coup risk following civil war only for postconflict states with low windfall. Tested on a sample of all civil wars from 1970 to 2009, the hypothesis is supported across robustness checks.

The existing literature on regime survival suggests that broad-based institutions are required in low-windfall countries where development spending is used to ensure regime survival (Bueno de Mesquita and Smith, 2010; Smith, 2008). However, following civil war, institutions are weak and therefore a theoretical model is needed to explain why development occurs in some of these cases. Postconflict leaders with windfall income have little incentive to focus on development because they lack incentive to comply with donor development objectives, and because development does not reduce their risk of coup.

Leaders with low windfall choose to spend on development following civil war because they desperately need continued income from nonstrategic aid to sustain the government. Nonstrategic donors are willing to support security improvements and payoffs to patrons, thereby making low-windfall leaders accept donor demands that some funds be spent on development. This mechanism explains development in low-windfall countries following civil war: they need sustained flows of money to coup-proof the regime, so low-windfall leaders choose to meet donor guidelines, and this interaction of nonstrategic aid and development reduces their coup risk. The case study of Mozambique suggests that leaders are sufficiently aware of these relationships to directly structure their decision-making and actions.

The theory presented here has important policy implications. First, donors should consider recipient incentives. In particular, donors should appreciate how recipient income sources constrain choices following civil war, including the choice to spend on development. When incentives are not favorable, as in cases of countries that are coming out of civil war and supported by windfall income, donors should consider alternate modalities for aid delivery.

Policy thinking among development-oriented donors is that countries should renegotiate their budgets with the international financial institutions before receiving large amounts of aid. However, the evidence here suggests that donors cannot expect this request to be honored in countries that are rich in unearned income because of disincentives faced by these governments. Donors might help such countries if they can successfully take executive control over ministries or bypass the government, and instead target communities directly (World Bank, 2011). Evidence from the Commander's Emergency Response Program in Iraq, where Coalition and Iraqi commanders directly funded the small-scale projects, suggests that such aid improved basic services (Berman et al., 2011). However, when post civil war leaders have no windfall income, incentives are favorable and nonstrategic donors should expect measurable development from aid because, for these low-windfall leaders, implementing aid agreements reduces their risk of coup.

Acknowledgements

Notes

1. Coup data (described below) come from Powell and Thyne (2011).
2. Foreign aid in general appears to stabilize countries in distress (Nielsen et al., 2011; Savun and Tirone n.d.).

3. Powell and Thyne (2011: 252) define coup attempts as "illegal and overt attempts by the military or other elites within the state apparatus to unseat the sitting executive".

4. Powell and Thyne (2011: 250).

5. See, for example, Biddle and Zirkle (1996), Pilster and Böhmelt (2011) and Quinlivan (1999).

6. See Smith (2008) and Banks (2011).

7. See Roessler (2011).

8. Taxing citizens does not represent easy income, because following civil war, institutions are weak and taxation is unlikely to provide sufficient funds to protect the leader. Therefore, taxation need not be considered further.

9. See Ross (1999) for a review.

10. Author interview, July 2012, Washington, DC.

11. Studies find this problem across developing countries (Bearce and Tirone, 2010; Stone, 2010). For a similar conclusion regarding foreign aid's influence on democratization in Africa, see Dunning (2004). Wright and Winters (2010) offer a review.

12. See Girod (2012). The regime survival literature lumps strategic and nonstrategic aid together, but disaggregation is important because strategic aid is free from credible threat of withdrawal, while nonstrategic aid is not (e.g. Ahmed, 2012; Bueno de Mesquita and Smith, 2010; Morrison, 2009; Smith, 2008).

13. Donors also promote democratic reform (Widner, 1994). To ensure the effect of nonstrategic aid on coup risk is not confounded by democracy, the empirical model is tested below both including and excluding democracy.

14. Nonstrategic donors also support postconflict security through peacekeeping operations. As with nonstrategic aid, the goal of these operations is stability, not power consolidation by one side. Peacekeeping operations generally aim to achieve stability by offering security guarantees in addition to aid to combatants (Doyle and Sambanis, 2006; Fortna, 2008; Hartzell and Hoddie, 2003; Walter, 1997; Wantchekon, 2004).

15. Nonstrategic donors seek budgetary control over the internal spending of the recipient (World Bank, 2006). Leaders stand to lose some budget autonomy by complying with nonstrategic aid agreements, but putting the national budget in the hands of donors may make a low-windfall leader less susceptible to a coup because fewer rewards are readily available to successful coup plotters. See Grossman (1992).

16. See Supplementary Materials, Table A.1. The present study uses a different sample and different data on nonstrategic aid, windfall and development than Girod (2012) and similarly finds support for the link between nonstrategic aid and development only in low windfall countries.

17. A list of countries in the sample appears in Supplementary Materials, Table A.2. Descriptive statistics appear in Supplementary Materials, Table A.3.

18. Technically, the dependent variable is coup occurrence because coup risk is unobserved.

19. Data on rents come from the World Bank's Genuine Savings Project (Hamilton and Clemens, 1999).

20. While there is little data on education, water quality, air quality and other indicators of poverty across postconflict countries, infant mortality is correlated with these variables (Gerring et al., 2012; Moser et al., 2005; Ross, 2006; Victora et al., 2003). Infant mortality is also a better metric for development than per capita income, which can grow when only elites fare better (Gerring et al., 2012).

21. The results remain consistent when using rare events logistic regression (Tomz et al., 2003) (Supplementary Materials, Table A.6, model 2).

22. Tax data are missing for most postconflict years.

23. UN security guarantees cannot be included as a control because no coups occur in the data after the UN offered security guarantees.

24. Powell (2012) and Belkin and Schofer (2003) incorporate additional variables (change in military expenditures, expenditures per soldier, military personnel, effective ground-combat organizations,

paramilitaries and counterbalancing) that could not be included here because of missing values that led to the exclusion of 88% of the cases.

25. A concern with split-panel data is that the split data do not share a common intercept. Dawson and Richter (2006) developed a technique for calculating the common intercept that allows a direct comparison of slopes in three-way interactions. Using this technique, in countries with high levels of nonstrategic aid and increasing development, there is a statistically significant difference between high and low windfall slopes, supporting Figure 1.

26. Calculated using Clarify (King et al. 2000; Tomz et al., 2003). While windfall moderates the relationship between nonstrategic aid, development and coup risk, having windfall is not sufficient to prevent coups (Supplementary Materials, Table A.7). As windfall increases, leaders have more money to buy out rivals and strengthen security. However, leaders with greater windfall also face rivals with more to gain from a successful coup. As the prize of a successful coup increases, so does the incentive to launch a coup for both the coup leader and the followers (Arriola, 2009; Collier and Hoeffler, 2004b; Grossman, 1992). There appears to be no relationship between windfall and coup risk, possibly because the "pull" effects of windfall that increase coup risk may wash out the "push" effects of windfall that reduce coup risk.

27. The hypothesis is also supported when using multiple imputation to address missing data in the baseline regression model and in regressions that include control variables (Supplementary Materials, Table A.9). I imputed missing data using Amelia (Honaker et al., 2011).

28. Results also remain unchanged after removing any country from the sample.

29. Donors disburse aid for a variety of motivations beyond stability and development. For example, donors may face domestic pressure to disburse (van der Veen, 2011).

30. The instrument is relevant to aid (statistically significant at the 99% level with an F-statistic of 82.70).

31. Author interview, September 2005, Maputo.

32. Infant mortality continued to drop (by 3.6% per annum between 1992 and 2006).

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