Replenishing Hope: Political and Economic Drivers of Public Sector Contributions to The Global Fund

Bruno Alves de Carvalho

2025-03-23

Summary

This research aims to identify and assess the influence of political and economic factors on the financial contributions of public donors to the replenishment of The Global Fund to Fight AIDS, Tuberculosis, and Malaria (TGF) from 2001 to 2022. The study draws on publicly available data from reputable sources, including the International Monetary Fund (IMF), the Organisation for Economic Co-operation and Development (OECD), the Center for Global Development (CGD), the Chapel Hill Expert Survey (CHES), and others. It explores the relationship between the financial contributions of key government donors to TGF and their political and economic characteristics, such as political orientation, fiscal and economic outlook, official development assistance (ODA) disbursements, and contributions to other humanitarian organizations. The primary donors analyzed include the United States, Western European countries, and other OECD members, which collectively represent the vast majority of TGF contributions since 2001. This study aims to provide a predictive framework for estimating future replenishment outcomes based on prevailing political and economic conditions, offering TGF a valuable tool to support planning for its eighth grant cycle.

Research Question

How have political and economic factors influenced the financial contributions of public donors to the replenishment of The Global Fund to Fight AIDS, Tuberculosis, and Malaria (TGF) from 2001 to 2022?

Introduction

The Global Fund to Fight AIDS, Tuberculosis, and Malaria (TGF) is an international financing organization established in 2002 to combat three of the world's deadliest epidemics. It operates as a financing mechanism rather than an implementing agency, mobilizing funds from public and private donors and awarding grants to organizations working in low- and middle-income countries. These grants support country-led health programs, developed in collaboration with a broad range of stakeholders, including governments, civil society, affected communities, the private sector, and global health experts.

The Global Fund's reliance on external organizations to implement its grants is known as a partnership model. This model allows TGF to leverage the expertise and capacity of its partners, though it makes grant implementation dependent on the viability of these partners. For example, the recent axing of the United States Agency for International Development (USAID) by the Trump administration has created financial uncertainty in the humanitarian sector that could potentially threaten the execution of some TGF grants[1].

[1]Following the termination of their USAID contracts, many organizations that TGF partners with have had to reduce their scope of work and workforce. For example, UNAIDS is planning to cut 40% of its secretariat staff, including positions in local and regional offices (Ravelo, 2025b). Similarly, The Stop TB Partnership, headquartered in the same building as The Global Fund in Geneva, has also announced an upcoming downsizing (Ravelo, 2025a). Beyond The Global Fund's partnership, other international organizations are facing similar cuts. The International Organization for Migration (IOM) is set to reduce its workforce by 20%, amounting to 250 job losses at its Geneva headquarters, in addition to laying off 3'000 employees from its U.S. refugee resettlement program (Jerving, 2025a). Meanwhile, the UN Refugee Agency (UNHCR) is bracing for up to 6'000 job cuts (Lynch, 2025a). As funding reductions continue, further layoffs across international organizations appear inevitable.

To sustain its efforts to end HIV/AIDS, Tuberculosis, and Malaria (HTM), TGF conducts a periodic replenishment, securing new pledges from public and private donors and investing money in three-year grant cycles. Since its inception, it has disbursed $US65 billion, becoming the world's largest multilateral provider of grants to strengthen health systems. TGF's financing has contributed to a 63% reduction in combined death rates from HTM, saving 65 million lives (The Global Fund, 2025, pg.6-11).

The eighth replenishment is currently underway, culminating in a high-stakes replenishment conference in November 2025, where donors will confirm their financial commitments. The Global Fund is asking donors for US$18 billion for its eighth grant cycle, running from 2027 to 2029, allowing the Fund to sustain current levels of support to countries. However, in an moment of political and economic uncertainty, where shrinking aid budgets and the de-prioritization of global health funding are reshaping international assistance, the Fund is facing a challenging replenishment[2].

In this radical landscape, making predictions may seem speculative. However, it is precisely in times of uncertainty that distinguishing what can be determined with reasonable confidence from what cannot becomes crucial. This research aims to identify key political and economic factors that have shaped past TGF replenishment outcomes to inform a predictive framework for estimating future funding trends. Although private sector contributions are briefly considered, the focus remains on public donors, primarily governments, as they provide the majority of The Global Fund's financing. By doing so, the study seeks to provide The Global Fund with a data-driven tool to navigate a volatile funding environment.

A look at the distribution of financial contributions to The Global Fund from 2001 to 2022 reveals significant variation in the size of individual public sector donor pledges. The vast majority of donor countries contribute between US$1 million and US$200 million, while only a few have pledged over US$1 billion (see Figure 1). High-value pledges are rare but substantial, with the United States being the only country to have made multi-billion-dollar contributions.

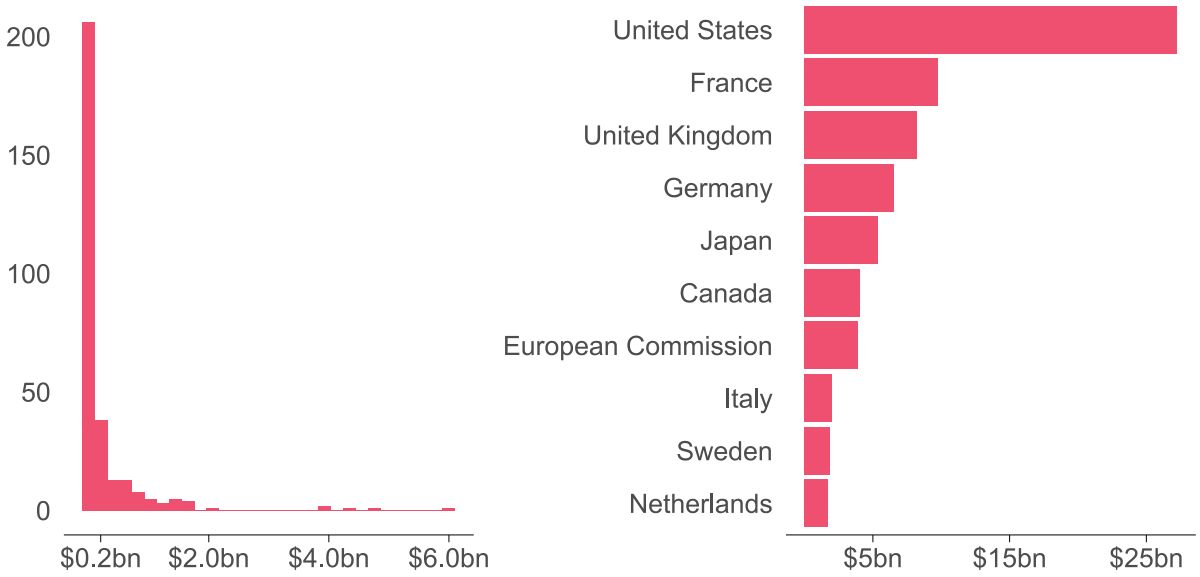
Like many international organizations, TGF relies heavily on the US as its largest donor, with a cumulative contribution of US$27 billion since 2001 (see Figure 2). This dominance underscores the US's strong commitment to multilateralism over the past two decades. Beyond the US, the next largest contributors are France, the United Kingdom (UK), Germany, and Japan, having each contributed over US$5 billion. Historically, TGF's top ten donors have been exclusively high-income members of the Organisation for Economic Co-operation and Development (OECD). These rankings have remained broadly consistent across replenishment cycles, highlighting the Fund's reliance on a stable group of donors for the past two decades.

OECD countries account for over 90% of public sector pledges to The Global Fund, with the United States' share increasing in recent years (see Figure 2 & 3). In 2022, just as development assistance for health was reaching record levels due to the COVID-19 pandemic, US contributions spiked to 42% of total public sector pledges, reaching US$6 billion (Apeagyei (Micah), Dieleman and Leach-Kemon, 2024). Meanwhile, pledges from non-OECD countries have remained stable since 2001, with no significant increase from BRIC members such as China, Brazil, or India. This suggests that BRIC countries are unlikely to offset expected funding cuts from the US and key European donors, raising concerns about potential funding gaps. More importantly, the lack of support from BRIC nations may signal a failure to effectively engage with these donors, though it is known that China, in particular, prefers bilateral aid over multilateral contributions.

Despite its reliance on a small group of major donors, TGF has successfully expanded its donor base since 2016, notably through private sector engagement and new public sector contributors. The share of private sector pledges increased from 3% in 2001 to 8% in 2022, although it has remained stagnant since 2019 (see Figure 4). This growth reflects TGF's ability to leverage new technologies and private sector expertise to develop smarter solutions for combating HTM, attracting large donations from foundations like the Bill & Melinda Gates Foundation and (RED).

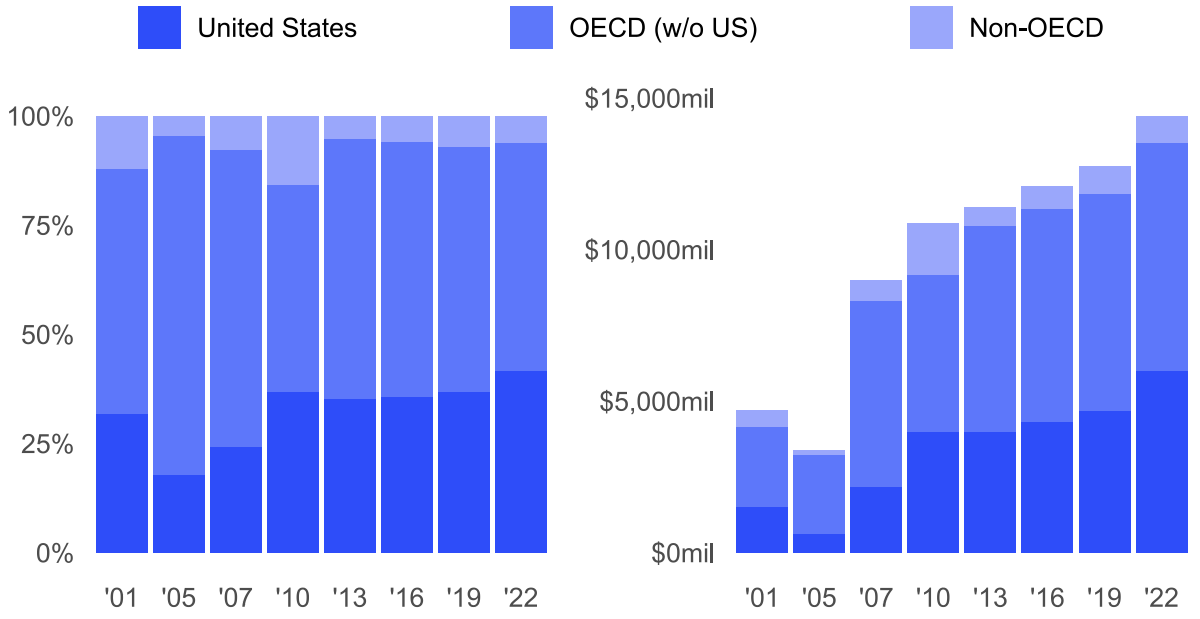
[2]As the US undergoes a major overhaul of its international aid apparatus, key European donors are also scaling back their foreign assistance. France, facing fiscal pressures, has reduced its aid budget by 35%. The UK plans to cut its foreign aid allocation from 0.5% to 0.3% of gross national income by 2027, prioritizing defense spending. Additionally, Belgium, the Netherlands, and Switzerland have announced similar reductions in aid budgets (Galvin, 2025). Germany is likely to follow suit. However, there is some optimism. Reports on the US government's reshaped international aid strategy seem to indicate that global health remains a priority (Toosi and Lippman, 2025; Jerving, 2025b).

Figure 1 & 2: Pledge Distribution and Top Ten Donors of The Global from 2001 to 2022



Source: The Global Fund (TGF), author's calculation
Author: Bruno Alves de Carvalho (balvesdecarvalho1906@gmail.com)

Figure 3 & 4: Perentage and US Dollar Share of Financial Contributio to The Global Fund



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Likewise, the number of public sector donors increased from 28 in 2013 to 36 in 2016, reaching 58 in 2019 and 49 in 2022 (see Figure 5). This is higher than the initial group of public donors in 2001, who benefited from the excitement surrounding the creation of this innovative financing mechanism. Most new donors are low to middle-income countries, reflecting a positive shift toward greater self-financing among recipient nations.

However, despite this broader participation, contributions from new donors remain relatively small, suggesting their pledges are more intended to be symbolic commitments rather than financially transformative. This means they cannot compensate for potential reductions from major donors like the US and key European countries. Additionally, while the number of donors has increased, the median pledge per country has declined, from US$46.2 million in 2013 to US$10 million in 2022 (see Figure 6). This underscores a critical point: increasing the number of donors alone is not enough to sustain overall funding levels. To build a more resilient financial model, TGF must attract a greater share of mid-sized donors, balancing its funding base and reducing dependence on a single dominant donor[3].

Overall, the skewed distribution of pledges reveals deep structural realities about international funding: economic disparities, donor dominance, and long-term sustainability risks. Even though TGF has made progress in diversifying its donor pool, the financial weight remains highly concentrated among a few key players. These issues notwithstanding, the Global Fund has benefited from consistent growth in public sector funding, from US$4.7 billion in 2001 to US$14 billion in 2022, enabling it to improve health outcomes in developing countries and earn international recognition. While the success of its grants has undoubtedly played a role in securing continued support, other factors may have also influenced public donor contributions. This question is particularly relevant in an era when financing appears to be driven less by the measurable impact of international aid and more by the alignment of that aid with donor countries' national interests. In other words, we must look beyond the effectiveness of aid programs and examine the economic and political conditions shaping public donor contributions.

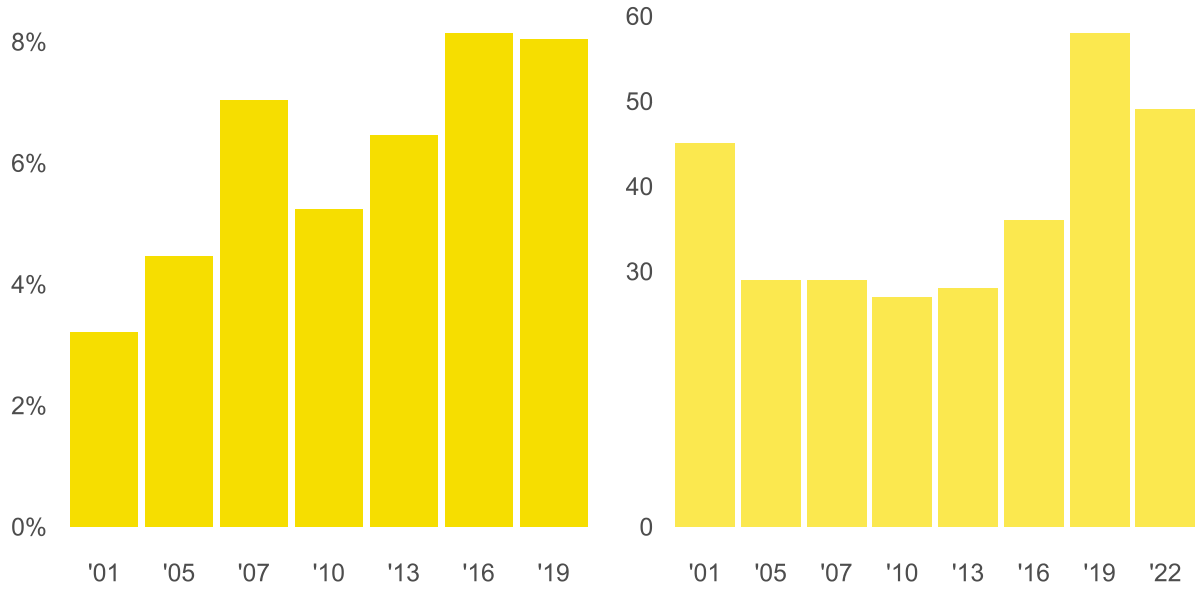
The extent of public sector pledges to The Global Fund can be understood as a function of supply and demand. The demand for funding is represented by current recipient country needs, as well as trends in the incidence and mortality of HIV/AIDS, tuberculosis, and malaria (HTM). Based on these factors, The Global Fund, in collaboration with academic experts, has estimated that US$18 billion is needed between 2027 and 2029 to stay on track to end HTM by 2030. On the supply side, a country's ability and willingness to contribute money to the partnership can be inferred from the overall pool of funds allocated for foreign aid. One way to assess this is through trends in Official Development Assistance (ODA), which reflect the total volume of aid disbursed by donor countries. Higher ODA levels may indicate a greater likelihood of increased contributions to The Global Fund. Similarly, if other international aid organizations receive greater public sector contributions, The Global Fund may also benefit, given that these organizations operate within the same sector and under similar funding conditions.

More fundamentally, the extent to which the supply of funds matches demand depends on the broader political and economic context of donor countries. For example, a government experiencing strong economic growth and fiscal stability may be better positioned to contribute than one facing recession and high public debt. Political ideology may also play a role: left-leaning governments, which typically emphasize universal healthcare and poverty reduction, may be more inclined to support humanitarian initiatives, whereas right-leaning governments may prioritize domestic spending and military investments. Additionally, electoral cycles could impact funding commitments. During an election year, governments may be preoccupied with domestic politics, making it harder for The Global Fund to make its investment case heard.

Nonetheless, some governments may still maintain or even increase contribut¨ions due to pre-existing commitments or a desire to uphold international credibility, regardless of political and economic conditions.

[3]Exploring alternative funding sources beyond donors could also serve as a hedge against funding risks. This is particularly relevant for The Global Fund, which relies entirely on donor funding to finance its operations and investments. Such an approach might offer a more attractive hedge than attempting to expand the donor base, as the latter could become increasingly difficult in a world where globalization is retreating. There are already signs that the US may reduce funding to international organizations that receive financial support from China and other countries competing with America's global influence (Lynch, 2025b).

Figure 5 & 6: Percentage of Private Sector Contributions and Number of Public Sector Donors



Source: The Global Fund (TGF), author's calculation
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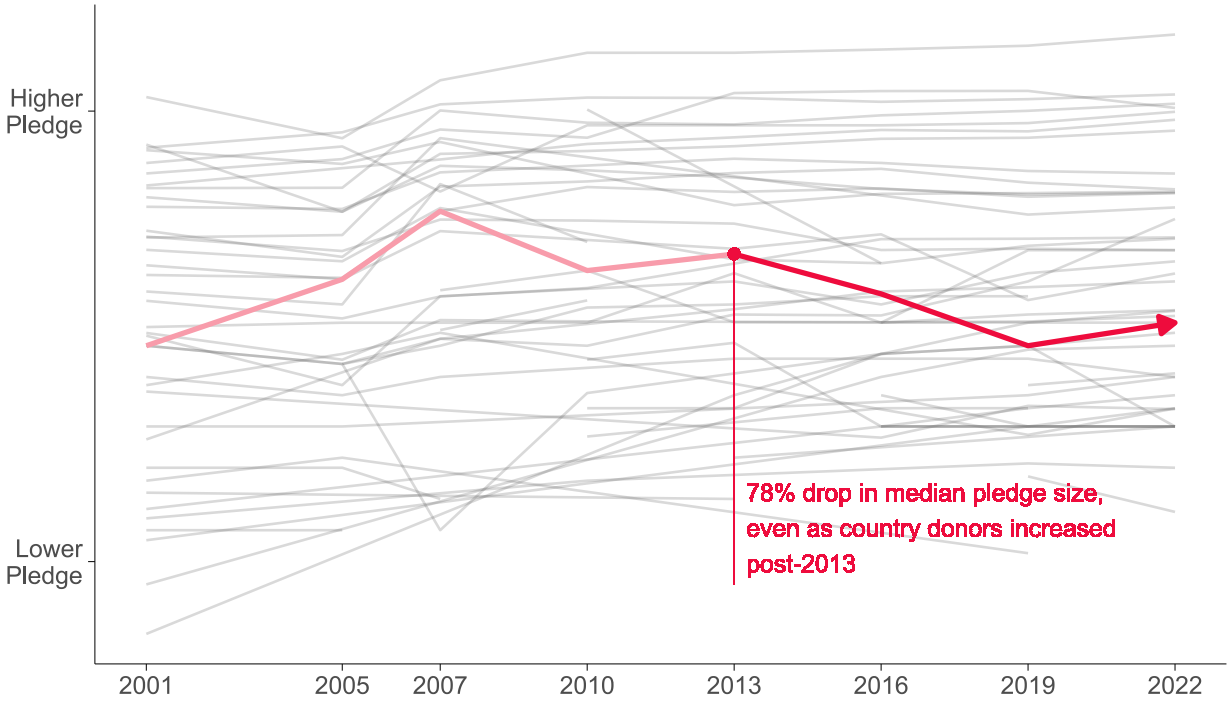
Figure 7: Log of Financial Contributions to The Global Fund by Country Donor from 2001 to 2022, Median Pledge in Red



Source: The Global Fund (TGF), author's calculation
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The generalizations outlined above may not apply universally. These considerations form the basis of six hypotheses that this research will test using publicly available data from multiple reputable sources, namely: the International Monetary Fund (IMF), the OECD, the Center for Global Development (CGD), the Chapel Hill Expert Survey (CHES), the Party Government in Europe Database (PAGED), the ParlGov project, and the Manifesto Project database (MP).

Having analysed the historical replenishment outcomes of The Global Fund and outlined our hypotheses, we will now dig deeper into the data to test our assumptions, identify patterns and trends in donor behavior, and attempt to model these behaviors to create a predictive framework for estimating future funding outcomes. Following that, we will discuss the implications of the findings and offer recommendations for the future sustainability of The Global Fund, particularly in light of the evolving political and economic challenges.

Hypotheses

1. If the financial contributions from government donors to other global health organizations, such as GAVI, and multilateral development banks, like the IDA, decline, then the financial contributions from public donors to The Global Fund (TGF) will decrease, because TGF tends to align its funding expectations with global trends in public health financing.
2. If the Official Development Assistance (ODA) disbursements of government donors decline, then the financial contributions from public donors to The Global Fund (TGF) will decrease, because TGF's funding is indirectly influenced by overall humanitarian aid trends.
3. If the fiscal outlook of government donors, measured *inter lia* by rising public debt and deteriorating fiscal balances, worsens, then the financial contributions from government donors to The Global Fund (TGF) will decrease, because weaker fiscal health limits governments' ability to make discretionary international contributions.
4. If the macroeconomic outlook of government donors, measured *inter lia* by GDP growth and unemployment, worsens, then the financial contributions from government donors to The Global Fund (TGF) will decrease, because weaker economic growth limits governments' ability to make discretionary international contributions.
5. If the ideological placement of government donors, measured by their political and / or economic orientation, leans to the right, then the financial contributions from public donors to The Global Fund (TGF) will decrease, because right-wing governments tend to prioritize fiscal discipline and are less ideologically aligned with humanitarian spending.
6. If the replenishment year coincides with the re-election year of donor governments, then their financial contributions to The Global Fund (TGF) will be smaller, because electoral priorities and domestic political considerations may reduce focus on international aid commitments and make it more challenging for TGF to secure funding.

Hypotheses Testing

The Global Fund is part of an ecosystem of international health organizations, each playing a crucial role in combating HTM in low to middle income countries. For instance, while TGF might finance the purchase of health products, it relies on other partners to store, transport, and administer these products to affected communities. This interconnected network means that the success or failure of one organization can significantly impact the others.

We can reasonably assume that this interdependence extends to financing. Most global health organizations depend on ODA to fund their programs and staff worldwide. Additionally, they often rely on the same group of wealthy donors, though the degree of dependence may vary. As a result, the funding levels received by other international aid organizations might serve as a useful benchmark for the funding TGF receives during its replenishments.

To test this assumption, we used data collected by the CGD on the country pledges received by various Multilateral Development Banks (MDBs) or concessional funds, such as the International Development Association (IDA) of the World Bank, health funds like GAVI and the Coalition for Epidemic Preparedness

Innovations (CEPI), and climate funds over the past two decades. By comparing these pledges with contributions received by The Global Fund between 2001 and 2022, we found a strong positive correlation across all organizations. While the data is more limited for recently established entities like the Green Climate Fund (GCF) and CEPI, the overall trend holds (see Figure 8). This suggests that The Global Fund's replenishment outcomes are closely aligned with those of other major multilateral funds, implying that when donors increase funding to GAVI, for instance, they are also likely to increase funding to The Global Fund, and vice versa.

This strong relationship may indicate that public sector donors treat their international aid portfolios holistically, viewing support for different global priorities, such as health and climate, as complementary rather than competing. In this way, global aid does not appear to function as a zero-sum game, where increases to one fund necessarily mean cuts to another. Instead, donor behavior seems to follow a "win-win" or "loss-loss" pattern: when overall aid budgets grow, many multilateral organizations benefit, and when budgets shrink, several are affected simultaneously. In today's climate of constrained aid budgets, the critical question may be not whether funding will fall, but which organizations will bear the greater burden.

Financial contributions to The Global Fund are also strongly and positively correlated with the levels of ODA disbursements by public sector donors. This relationship is expected, as ODA represents the main financial channel through which governments support the economic development and welfare of low and middle income countries, and The Global Fund serves as a key multilateral mechanism through which donors fulfill these commitments in the health sector. Therefore, the more a country spends on ODA, the more we can typically expect it to contribute to The Global Fund. Conversely, if a country's overall ODA spending declines, its contributions to The Global Fund are also likely to fall.

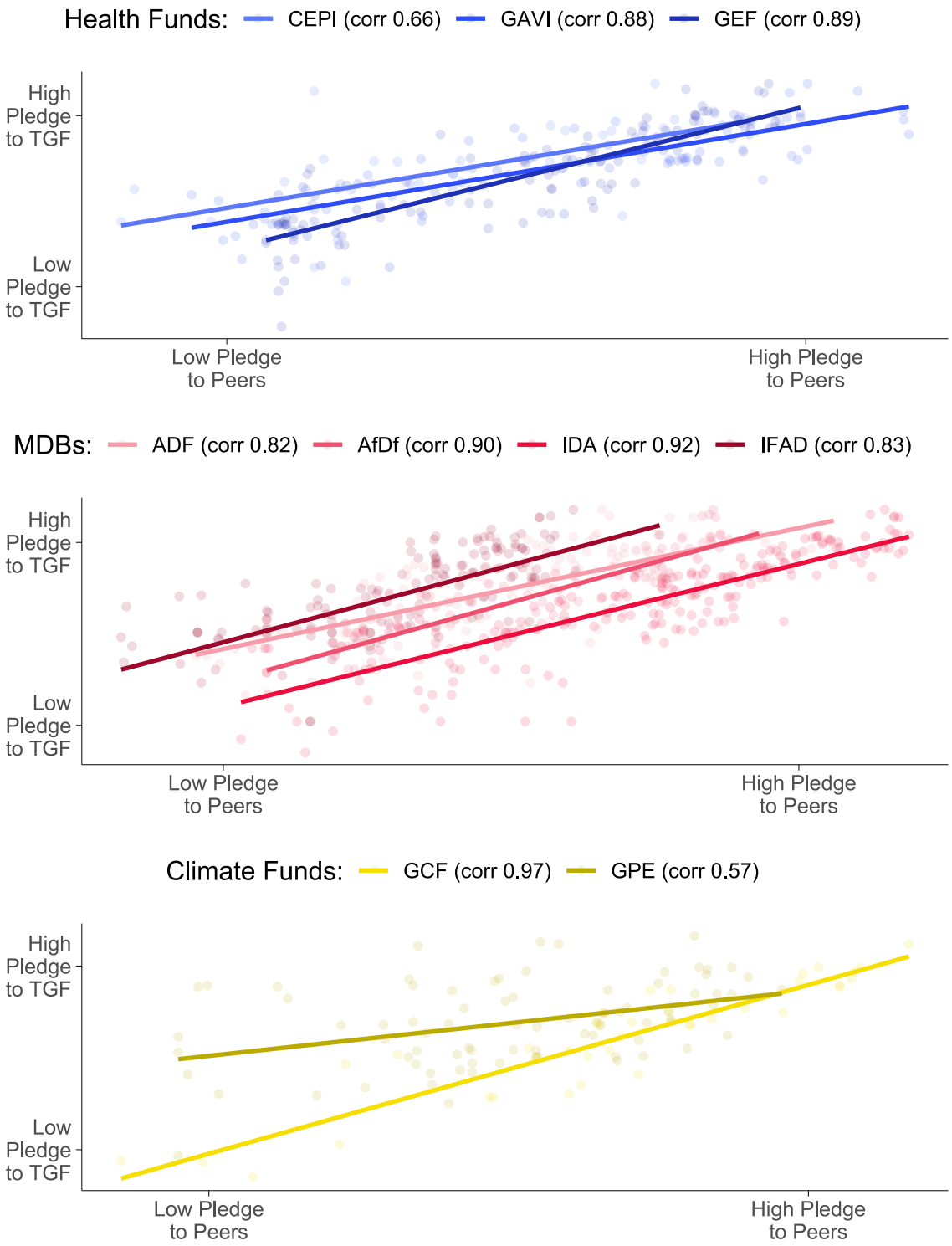
Importantly, the strength of this relationship may vary depending on a government's preference for bilateral versus multilateral aid. If a country primarily delivers aid through bilateral channels, changes to its ODA envelope may have a more limited impact on The Global Fund compared to countries that prioritize multilateral mechanisms.

Beyond the direct supply of funding to aid organizations and recipient countries through ODA, the economic and political context of donor countries is also expected to play an important role in shaping contributions to The Global Fund. Government pledges must ultimately be financed through domestic tax revenue or borrowing. As such, a country's tax capacity and its ability or willingness to raise debt can enable or constrain its potential to supply ODA, and, by extension, its ability to fund global health initiatives like The Global Fund. However, it is important to note that ODA levels are not determined solely by fiscal space; they often reflect political priorities and strategic choices.

The IMF regularly compiles data to monitor the fiscal health of governments around the world. Its Fiscal Monitor includes eight standardized indicators (as percentages of GDP): government expenditure, government revenue, (primary) net lending / borrowing, gross debt, net debt, and cyclically adjusted (primary) balance. These measures gauge whether a government is operating within prudent fiscal limits or running into fiscal strain.

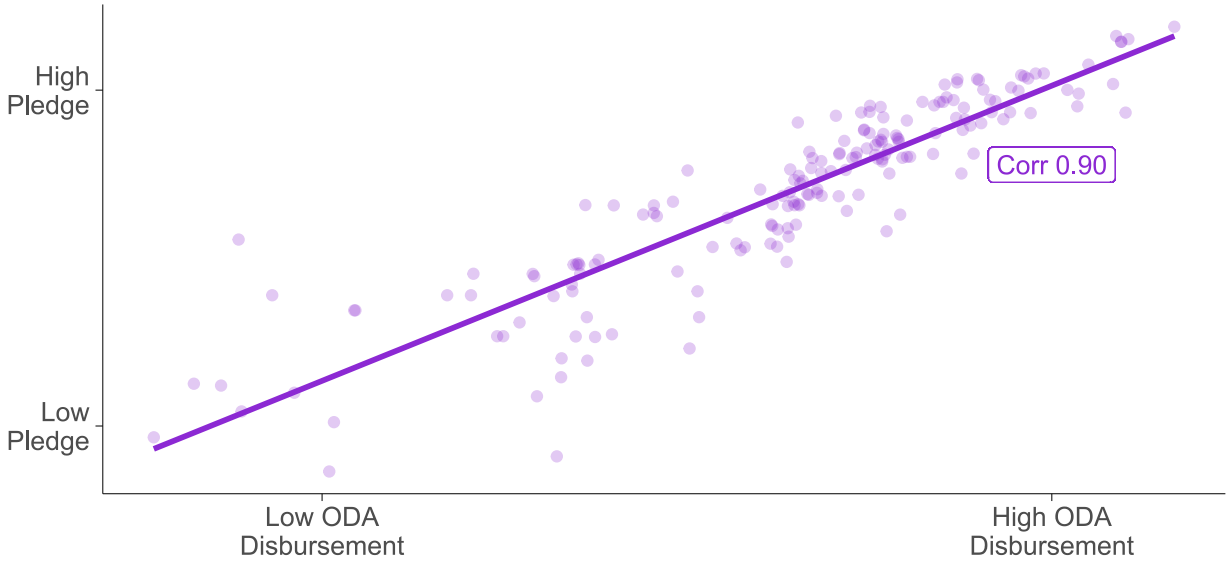
By mapping these fiscal metrics against donor contributions to The Global Fund, we find that pledges exhibit a weak negative correlation with indicators of fiscal balance. When looking at the overall fiscal stance without adjusting for the economic cycle, the correlation between fiscal balance and contributions is very weak, suggesting there may be no meaningful relationship between the two. However, when we isolate the structural fiscal position by removing cyclical effects, the correlation strengthens slightly, though it remains weak overall.

Figure 8: Moderate to Strong Correlation Between Pledges to The Gl
and Peer Organizations (USD)



Source: Center for Global Development (CGD), author's calculation
Author: Bruno Alves de Carvalho (balvesdecarvalho1906@gmail.com)

Figure 9: Strong Correlation Between Pledges to The Global Fund and ODA Disbursements (USD)



Source: Organisation for Economic Co-operation and Development (OECD), author's calculation
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This points to a tentative trend: donor countries that are structurally more fiscally conservative, or that operate under tighter long-term budgetary constraints, tend to pledge less to The Global Fund than those with less sustainable levels of public debt.

This pattern is further supported by the weak positive correlation observed between government debt levels and financial contributions to The Global Fund. When examining the total stock of government debt, or gross debt, we find a moderate correlation with TGF pledges, indicating that countries with higher debt burdens are not necessarily limited in their ability to provide aid, and may actually be more inclined to pledge generously. However, when we shift focus to net debt, adjusting for government financial assets, the correlation weakens. This is likely because government assets are often illiquid or politically constrained, and therefore do not directly translate into available or discretionary resources for development assistance. In other words, while gross debt may reflect a broader willingness to rely on debt-financed spending, net debt offers less insight into a government's real-time capacity or political inclination to fund The Global Fund.

At first, it may seem counterintuitive that countries with higher debt burdens might also contribute more to The Global Fund. Instead, one might expect highly indebted countries to reduce discretionary spending, such as aid, in an effort to repair their balance sheets. However, countries that are more comfortable financing public spending through debt may, paradoxically, have greater fiscal space to maintain or even increase aid commitments. Some high-income countries enjoy strong credit ratings and low borrowing costs, giving them more flexibility to sustain international commitments, including ODA. In this context, global health spending can be viewed not as a financial burden, but as a strategic investment aligned with foreign policy and soft power objectives.

Countries with stronger fiscal balances may also be constrained by domestic rules or political pressures. For example, Germany's "debt brake" limits the federal deficit to 0.35% of GDP. Switzerland has a similar mechanism that caps spending based on cyclical economic performance. In such settings, even when fiscal capacity exists, legal or political constraints may prevent governments from increasing international aid. Much like the US, recent budget cuts to foreign aid in the Netherlands have been justified under a "Netherlands-first" approach, highlighting that political will, not just fiscal capacity, often determines aid decisions.

Finally, the data also shows that donor pledges are weakly and positively correlated with levels of government

expenditure and revenue. This aligns broadly with our previous observations, as we might expect governments that spend more to carry higher debt burdens and often exhibit weaker fiscal balances. Similarly, countries with greater capacity to raise revenue through taxation may have more fiscal space to allocate towards global health, even if higher revenues are typically associated with more balanced budgets and lower debt levels.

What makes this finding particularly interesting is that it suggests donors are willing to mobilize either their own funds or borrowed resources to finance multilateral initiatives like The Global Fund. Although our analysis does not track whether TGF pledges are financed through debt or taxes, the patterns suggest that, for some governments, sovereign debt may serve as a flexible policy instrument, enabling them to support TGF when it aligns with broader diplomatic, humanitarian, or geopolitical goals, rather than requiring trade-offs with domestic spending. For others, financial contributions to The Global Fund may represent a relatively minor share of total revenue, small enough to absorb without the need to incur additional debt.

To explore how broader macroeconomic conditions might affect public sector funding, we examined macroeconomic indicators using data from the IMF's World Economic Outlook. These include GDP (%) change and GDP per capita, inflation, unemployment, trade, and investment levels. One of our initial assumptions was that a strong economic outlook would positively influence financial contributions to The Global Fund.

[Integrate better] One notable trend is the weak positive correlation between pledges and GDP per capita. As a rough proxy for individual wealth and a country's level of development, GDP per capita helps explain why wealthier countries tend to contribute more to The Global Fund. This is consistent with the Fund's donor profile, which is largely composed of high-income countries with greater fiscal space to support multilateral health efforts.

While we find a weak negative correlation between unemployment and pledges, suggesting that countries experiencing rising unemployment may be slightly less inclined to contribute, likely due to fiscal pressures from lower tax revenues and higher welfare spending, the rest of the relationships paint a more nuanced picture.

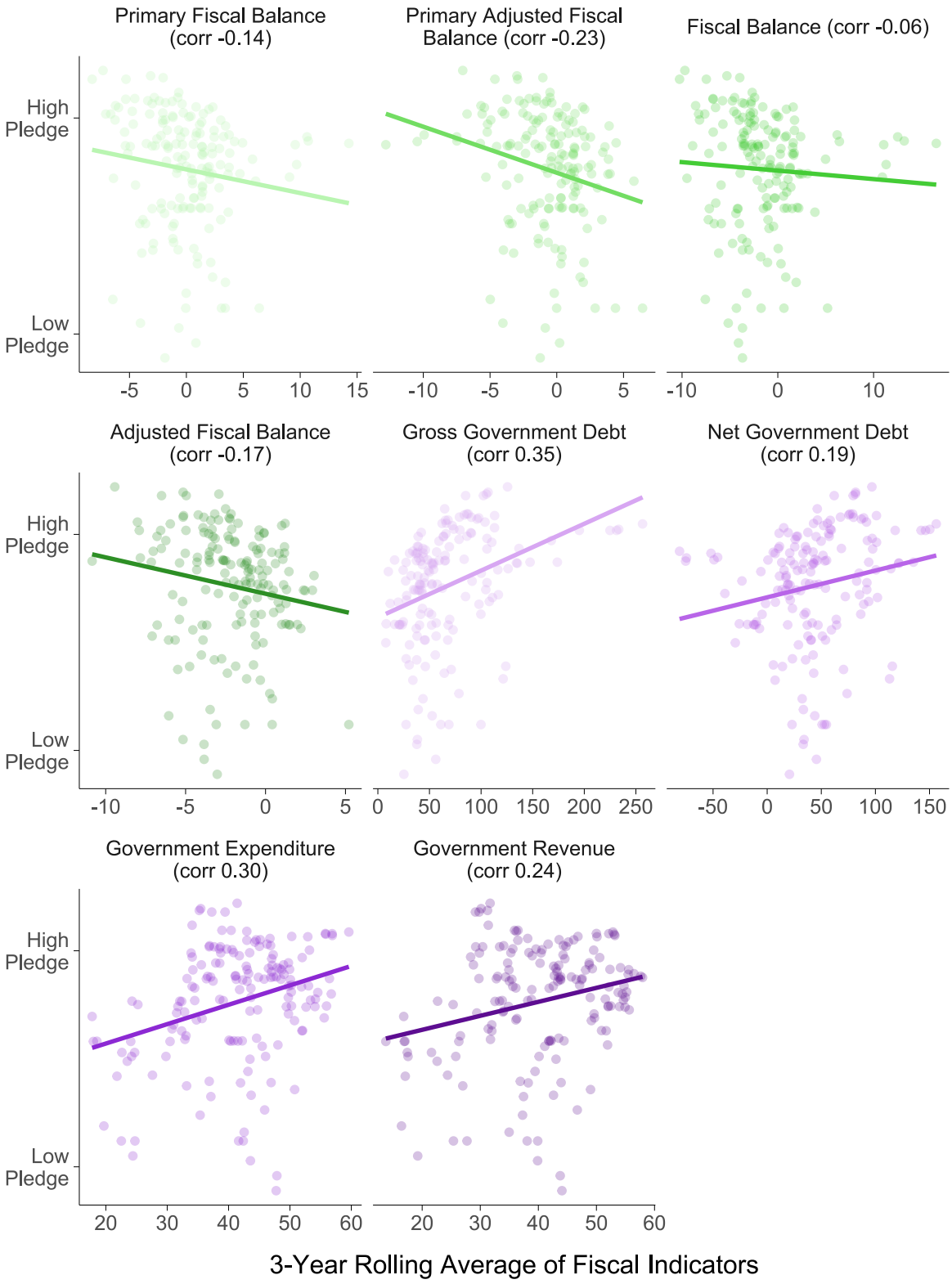
Interestingly, the rate of GDP growth appears to be negatively correlated with pledges. This counterintuitive trend likely reflects the composition of TGF's donor base: countries that have seen rapid economic growth, say above 6% annually, over the past two decades are predominantly emerging or developing economies, which are not major contributors to the Fund. In contrast, the largest donors, such as the US, Japan, Germany, and France, have experienced more modest growth during the same period, which may help explain this inverse relationship.

This trend is mirrored by the positive relationship between GDP per capita and pledges. As a rough proxy for individual wealth and a country's level of development, GDP per capita helps illustrate why wealthier countries tend to contribute more to The Global Fund. This is consistent with the Fund's donor profile, which is largely composed of high-income countries with greater fiscal space to support multilateral health efforts.

Additionally, inflation shows a weak negative correlation with pledges. Even though moderate inflation can accompany economic growth, high inflation often reflects economic instability or policy uncertainty. For donors, high inflation may erode the real value of contributions or signal a fragile economic environment, leading them to scale back or delay pledges.

When examining total investment levels, often viewed as an indicator of domestic confidence in future growth, we observe no significant correlation with donor pledges. This suggests that domestic economic optimism does not necessarily translate into higher international aid commitments to The Global Fund. Likewise, the negative relationship between pledges and trade volume suggests that increasing trade activity is not a strong driver of donor generosity. Many emerging economies with rapidly rising trade integration are not primary contributors to The Global Fund, while traditional donors with slower trade growth possess greater fiscal capacity to fund the partnership.

Figure 10:



Source: International Monetary Fund (IMF), author's calculation
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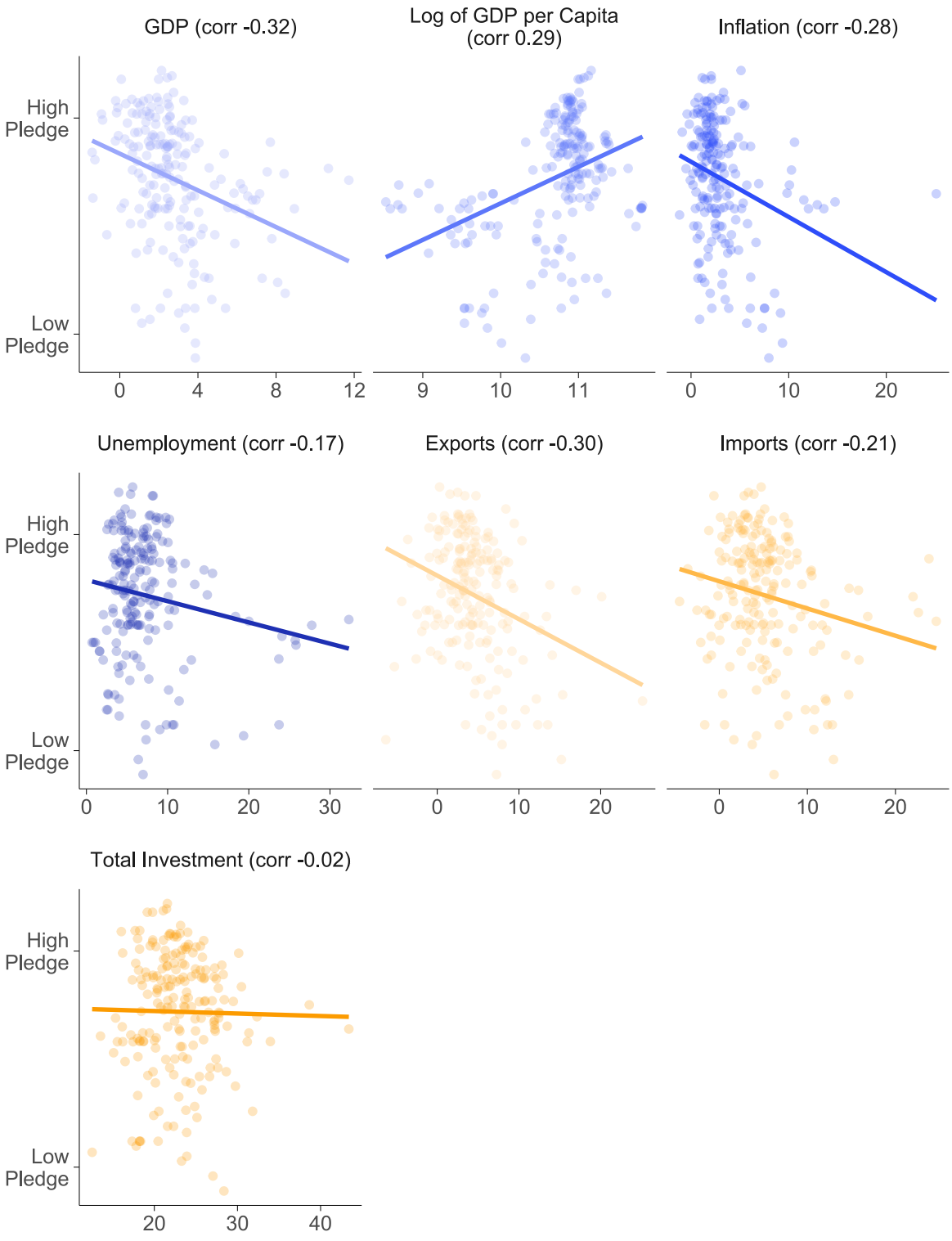
Figure 11:



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In sum, across all key macroeconomic indicators analyzed, we observe weak to no correlations with Global Fund pledges. This suggests that while economic conditions may shape the broader fiscal landscape, they are not strong predictors of donor behavior toward TGF. Indeed, there is some historical evidence supporting this. During the 2008 Global Financial Crisis, while many governments cut or postponed some domestic spending, aggregate levels of ODA held relatively steady. Donor commitments to The Global Fund, in fact, continued to rise in nominal terms between 2007 and 2016 (see Figure 4). This resilience indicates that global health funding may be shielded, at least in the short term, from economic shocks.

There are multiple reasons for this. Many donor governments treat global health as a moral or diplomatic priority, and multilateral platforms like The Global Fund encourage burden-sharing and peer accountability. As a result, a country might sustain or increase pledges based on prior rounds of funding even during periods of economic weakness to maintain international credibility or signal leadership in global health.

This underscores the importance of political context in shaping the level of funding The Global Fund receives. Though political dynamics are inherently fluid and difficult to quantify, we will try to examine their potential influence through a set of commonly held views. A common belief is that left-leaning governments, being more aligned with humanitarian values, are more inclined to support international aid. A notable example is the Biden administration, whose progressive agenda included a strong commitment to global health, and to The Global Fund in particular. Similarly, commentators often express concern when replenishments coincide with election periods in key donor countries, fearing that governments may prioritize re-election campaigns over global health commitments. On the surface, both assumptions seem reasonable.

To explore these dynamics, we compiled historical data on the ideological orientation of major democratic donors to The Global Fund, drawing from four key databases. The Chapel Hill Expert Survey (CHES) provides expert assessments of party positions across Europe; PAGED tracks party participation in executive office globally since 1990; ParlGov links information on elections, political parties, and governments in parliamentary systems; and the Manifesto Project analyzes party manifestos to quantify ideological positions and policy priorities over time.

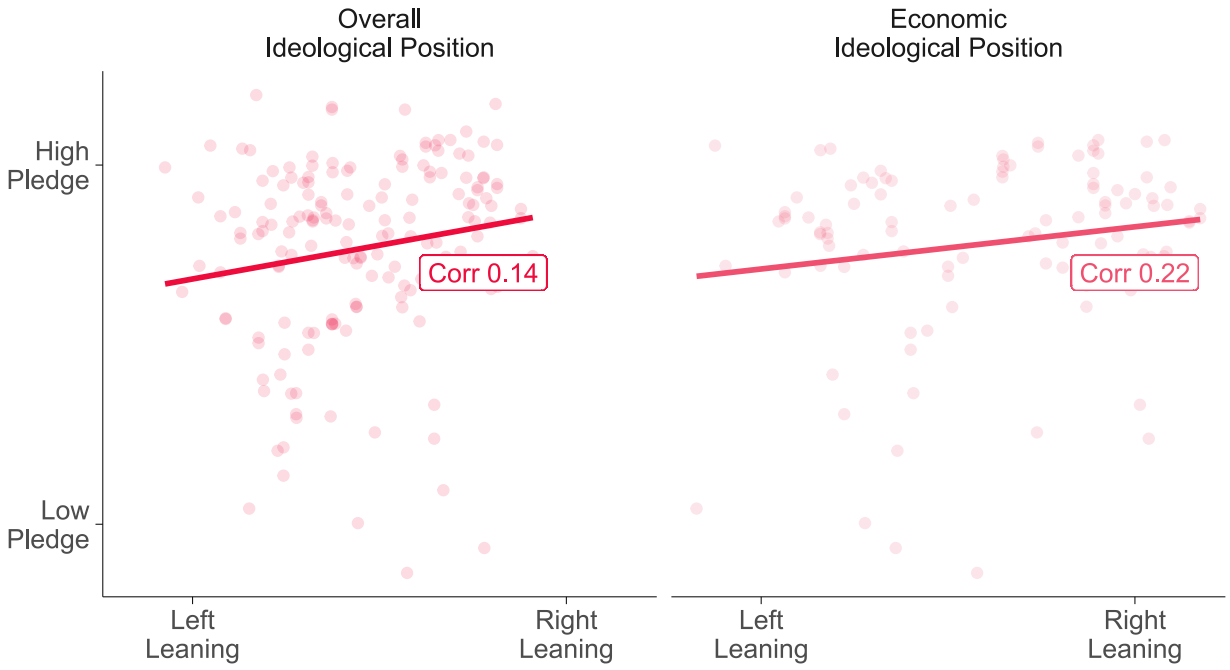
Surprisingly, the data indicates a weak but positive relationship between the ideological placement of donor governments and their financial pledges to The Global Fund. This suggests that right-leaning governments tend to pledge slightly more slightly more on average, though not consistently or reliably, than left-leaning ones. Economic ideology appears to correlate more strongly with pledges than overall political ideology, implying that funding levels may be more closely tied to governments' economic priorities than their overall political orientation. However, the weakness of these correlations means that ideology alone is not a strong or consistent predictor of donor behavior.

Indeed, historical examples challenge conventional assumptions. It was the conservative Republican Bush administration that launched the President's Emergency Plan for AIDS Relief (PEPFAR), one of the largest bilateral health initiatives in history. Many right-leaning governments in the 2000s and 2010s actively supported the liberal, rules-based international order that fostered multilateral initiatives like The Global Fund, though this was equally true for many left-leaning governments. In fact, The Global Fund has traditionally enjoyed broad bipartisan support. For example, the first Trump administration not only maintained support for the Fund but increased the U.S. contribution in 2019. More broadly, parliamentary democracies like Germany or the UK can blur ideological lines as budget and foreign aid decisions might reflect consensus rather than partisan ideology, further weakening the ideological link.

These examples suggest that a simplistic left-to-right ideological framework may not offer a reliable heuristic for predicting public sector pledges. Political ideologies are fluid and evolve over time. In the current landscape, we have even seen former champions of multilateralism, like the U.S. Republican Party, take a more adversarial stance toward the liberal international order they once helped shape.

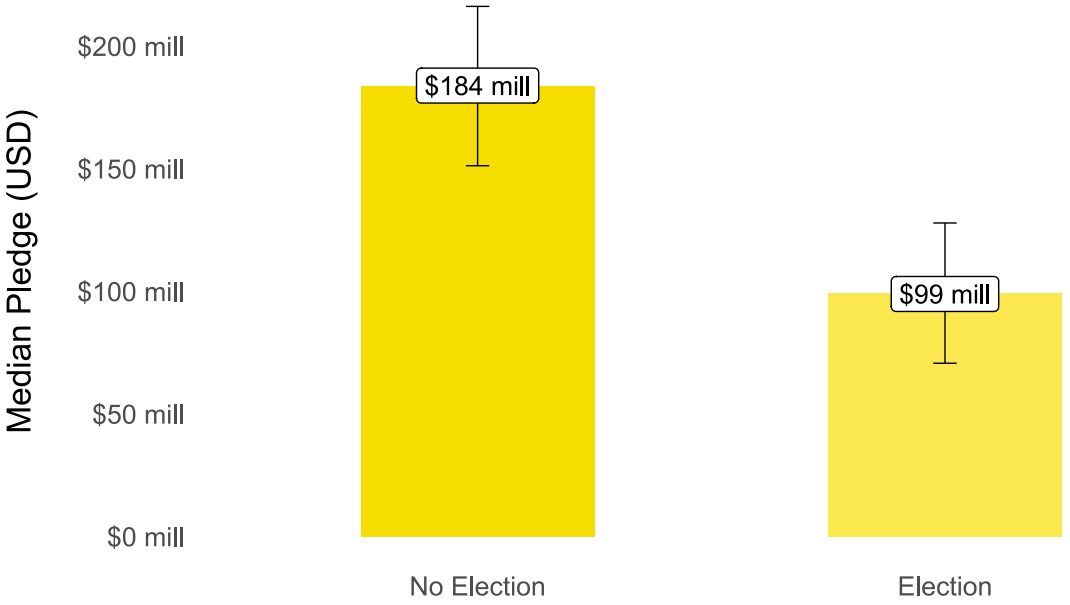
A more useful political factor influencing contributions to The Global Fund may be the timing of domestic elections. The data shows that the median pledge decreases significantly, from $184 million to $99 million, when replenishment periods overlap with national elections. While this correlation is also weak, the trend may reflect several plausible dynamics: elections can cause administrative delays, lead to fiscal caution as governments avoid new spending commitments, and trigger shifts in political attention toward domestic

Figure 12:



Source: Chapel Hill Expert Survey (CHES), Party Government in Europe Database (PAGED), ParlGov project, and the Manifesto Project database (MP), author's calculation
Author: Bruno Alves de Carvalho (balvesdecarvalho1906@gmail.com)

Figure 13:



Source: Chapel Hill Expert Survey (CHES), Party Government in Europe Database (PAGED), ParlGov project, and the Manifesto Project database (MP), author's calculation
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priorities that resonate more strongly with voters. These factors may collectively reduce the bandwidth and willingness of governments to make ambitious international pledges during electoral periods.

So far, the analysis suggests that several commonly held assumptions do not fully hold up under scrutiny. While pledges to The Global Fund are strongly correlated with overall ODA levels and with contributions to other multilateral development organizations, and while domestic elections in donor countries appear to have a dampening effect on pledges, we find little evidence that a donor's fiscal or macroeconomic outlook is strongly associated with higher contributions. Likewise, widely held beliefs about the influence of political ideology on donor generosity have also been called into question.

Nonetheless, to rigorously test these relationships, we need to take the analysis a step further by modeling them mathematically through regression analysis. This approach allows us to assess the influence of individual factors, such as fiscal metrics, political ideology, or economic conditions, while controlling for other variables simultaneously. In doing so, we can better isolate the specific impact of each factor and identify the drivers of financial contributions to The Global Fund.

Regression analysis also enables us to evaluate the reliability of our observations by testing their statistical significance and goodness of fit. This helps us determine whether the relationships we have identified are likely to hold beyond past replenishment outcomes, making them applicable to future replenishments. Finally, assuming we are able to build a robust model that captures the key predictors of public sector pledges, we may even be able to generate informed projections of future funding outcomes.

Recommendations

Development assistance for health peaked in 2021 at US$84 billion with the COVID-19 pandemic. Return to pre-pandemic levels of funding is already underway, levels of financing could fall farther below if donors reallocate development assistance away from health due to other priorities like war or climate change. At best, health funding is regressing to the mean.

Methodolgy

Before modeling, I performed some anticipatory transformations to the data. We used the US Federal Reserve Bank's price deflator to transform nominal dollar pledges into 2022 constant prices to limit the impact of currency fluctuations on the model. Additionally, we created a new variable calculating the average donor pledge to each development organization in our sample. This helped limit the impact of colinearity in the final model. We did the same with the different measures of party ideological orientation. Finally, we calculated the log of each dollar denominated variable to improve model performance. For economic indicators, we calculated the 3-year rolling average to account for the effect of previous economic performance on donor pledges during the replenishment year.

Important to ask which model to use. Multiple are available. For sake of practicality, and given our small sample size (n = 141), I decided to opt for a multiple linear regression, over a multi-level model, which might have better modeled the structural nature of the data, though it may have under-performed due to the small number of donor observations. A multilevel model typically requires n observations per unit and n number of units to function properly (citation).

Thankfully, it is possible to account for the fixed-effects of the donor countries in a multiple linear regression by including the donor variable in the model, as well as the value of the replenishment year. This will help off-set the impact of country and time specific effects on the other coefficients, allowing us to have a cleaner view of the actual impact of predictors on the outcome of the replenishment.

However, the introduction of donor countries as a control variable increases the number of variables in our model, as each donor country is represented as a separate variable in the model. The reliability of a model can be negatively impacted when the number of predictors is large in comparison to the number of observations. Moreover, we are including many predictors that may not have any relation with donor pledges, and including them may create unnecessary complexity in the resulting model.

For these reasons, I used two methods to manage these issues: forward stepwise selection and shrinkage. The former involves beginning with a model containing no predictors and then adding one predictor at a time, starting with the predictor that gives the greatest additional improvement to the fit. The objective being to identify the model with a subset of the predictors that performs best against the test data. The latter involves shrinking the predictors towards zero and identifying the level of shrinkage that performs best against the test data. This is a well known technique used to mitigate high variance, which can help improve the reliability of a model. There two best-known shrinkage types are the ridge regression and the lasso. We used both but have a preference for the lasso because it has the added advantage of performing variable selection by actually shrinking irrelevant predictors to exactly zero, hence facilitating the interpretation of the model results. Additionally, we have reasons to believe the lasso will perform better than the ridge regression because our descriptive analysis has shown that donor pledges seem to be strongly associated with a small subset of predictors, namely the amount spend on ODA and the financial contribution to other international development organizations like The Global Fund.

To compare the performance of these three different modeling techniques, we used a re-sampling method known as cross-validation. This involves repeatedly drawing a sample of the data, refitting the model on each sample, and testing each model on the rest of the data. In other words, cross-validation involves randomly dividing the data into a training and validation set, allowing us to assess the performance of a model trained on the training set and tested on the validation set. The purpose of cross-validation is to simulate real life. Instead of fitting the model on the whole data from the start, we can learn a great deal about how accurate and reliable our model is likely to be by training it on a sample of our data and testing it on "new" data, that is, the data we left out. The challenge of many statistical models based on a sample of a wider population is generalizability: will your model behave the same with new data? The cross-validation approach allows us to mimic this.

We opted for a 5-fold cross-validation, randomly splitting observations into five non-overlapping validation groups. After running each model, we compared them using the Mean Squared Error (MSE), a measure of the validation set error rate, that is, how close the model predictions match the actual pledges of the new test data. The smaller the MSE the better. Before jumping into the cross-validation results, it is important to note that we excluded the control variables, namely the donor countries and the replenishment year, from this initial phase of the variable selection process. This is because all control variables need to be included in the final model, regardless of their significance, if we want to control for country and time specific noises in the data.

The results show that the multiple linear regression, or OLS (for Ordinary Least Squares), performed on average better than the ridge regression and lasso when fitted against the validation set. The ridge regression performed the least well, with the lasso performing bang in the middle. At first, this shows that a full model like the ridge regression, even if it shrinks predictors, tends to underperform against models that select a subset of predictors. Additionally, it doesn't seem like the shrinkage, whether in the ridge or lasso, provides an edge over the multiple linear regression combined with stepwise selection.

Table 1: Table 1: Mean Squared Error by Model

OLS	Ridge	Lasso
0.67	0.73	0.7

If we examine which variables were included in the OLS model with the lowest MSE in each fold, we observe that, 5 out of 5 times, the model contains the value spent on ODA and the financial contributions to other development organizations by donor countries. Other economic and political factors are also included, but less often. Some variables are behaving strangely as compared to our descriptive analysis, though. We did not expect the unemployment rate to be positively related to pledges, neither did we expect the % change in GDP to be positively associated with pledges, even though this was our initial hypothesis.

Table 2: Table 2: Predictors Included in Best OLS model

Variable	Included	Mean_Coef
oda_spent_log	5	0.7540442
other_orgs_cp_log	5	0.6595083
gdp_cp_rllavg02	3	0.1084560
gdp_per_cap_cp_log_rllavg02	1	0.6245307
yes_elec	1	-0.2664715
unemployment_rt_rllavg02	1	0.0891353

Interestingly, the six variables included in one or more of the best OLS models correspond with the top six stronger predictors in the ridge regression and lasso (see table 3 and 4), though the lasso tends to include more variables in more of its models than the OLS. Each of these six predictors also seem to be behaving in the same direction. This leads us to think that the final model would have to include either all or at least some of these six variables: ODA disbursements, financial contributions to other development organizations, GDP per Capita, % Change in GDP, election year, and the unemployment rate.

Table 3: Table 3: Predictors Included in Best Ridge Regression

Variable	Mean_Coef
oda_spent_log	0.7034599
other_orgs_cp_log	0.6329802
gdp_per_cap_cp_log_rllavg02	0.4687356
yes_elec	-0.2252039
gdp_cp_rllavg02	0.0874203
unemployment_rt_rllavg02	0.0620298
adjfsclblc_rllavg01	-0.0241781
imports_vl_rllavg02	0.0234048
Total_investment_rllavg02	-0.0207480
lr_all	0.0192702
prmryfsclblc_rllavg01	0.0171899
prmryadjfsclblc_rllavg01	0.0140604
inflation_rt_rllavg02	0.0113104
exports_vl_rllavg02	-0.0101360
grsdbt_rllavg01	0.0030844
expdtr_rllavg01	-0.0016318
revn_rllavg01	-0.0014241
fsclblc_rllavg01	-0.0010522
ntdbt_rllavg01	-0.0009877

Table 4: Table 4: Predictors Included in Best Lasso

Variable	Included	Mean_Coef
oda_spent_log	5	0.7208286
other_orgs_cp_log	5	0.6552166
gdp_cp_rllavg02	5	0.0684934
unemployment_rt_rllavg02	5	0.0455947
gdp_per_cap_cp_log_rllavg02	4	0.2440381
yes_elec	4	-0.1685914
lr_all	3	0.0027206
imports_vl_rllavg02	2	0.0296070

Variable	Included	Mean_Coef
Total_investment_rllavg02	2	-0.0231038
inflation_rt_rllavg02	2	-0.0191062
prmryadjfsclblc_rllavg01	2	0.0030300
grsdbt_rllavg01	2	0.0007513
prmryfsclblc_rllavg01	1	0.0174462
adjfsclblc_rllavg01	1	-0.0086971

The variable selection conducted by the lasso has the advantage of being less restrictive than the one done by the OLS, without necessarily sacrificing too much predictive accuracy. It is therefore worth keeping it for the moment, unlike the ridge regression which includes all variables but suffers from the lowest predictive accuracy.

We will now run the OLS and lasso models again with the control variables and compare their output. Variables selected at least once in the cross-validation of the OLS are included in this new regression model. The lasso is run on all predictors again, but this time the model includes control variables.

Examining the lasso first, we see that a shorter list of variables was selected, suggesting the control factors removed some noise from the model. The coefficient path plot shows how the variables behave depending on the shrinkage value, called lambda. The optimal lambda value highlighted by a black vertical line indicates the level of shrinkage that delivers the highest predictive accuracy. All non-zero variables at that lambda value indicate a relevant signal, as opposed to zeroed-out variables, highlighted in grey, which are considered to be noise.

Similarly, the strength of the predictors was also refined, with the coeficient for contributions to other development organizations cut almost by half, from 0.66 to 0.38. Other variables were strengthened, with the coeficient of election year nearly doubling from 0.098 to 0.17. Surprisingly, the lasso shrank the GDP per capita to zero, even though it had appeared a strong predictor in all model types prior to adding the controls. Additionally, some predictors are behaving unexpectedly. For example, we would expect the adjusted fiscal balance and the primary fiscal balance to have the same directional association with pledges, but the first is negative and the second is positive. Yet, some variables who behaved strangely in the first lasso model now seem to behave as expected, such as the unemployment rate which is now negatively associated with pledges.

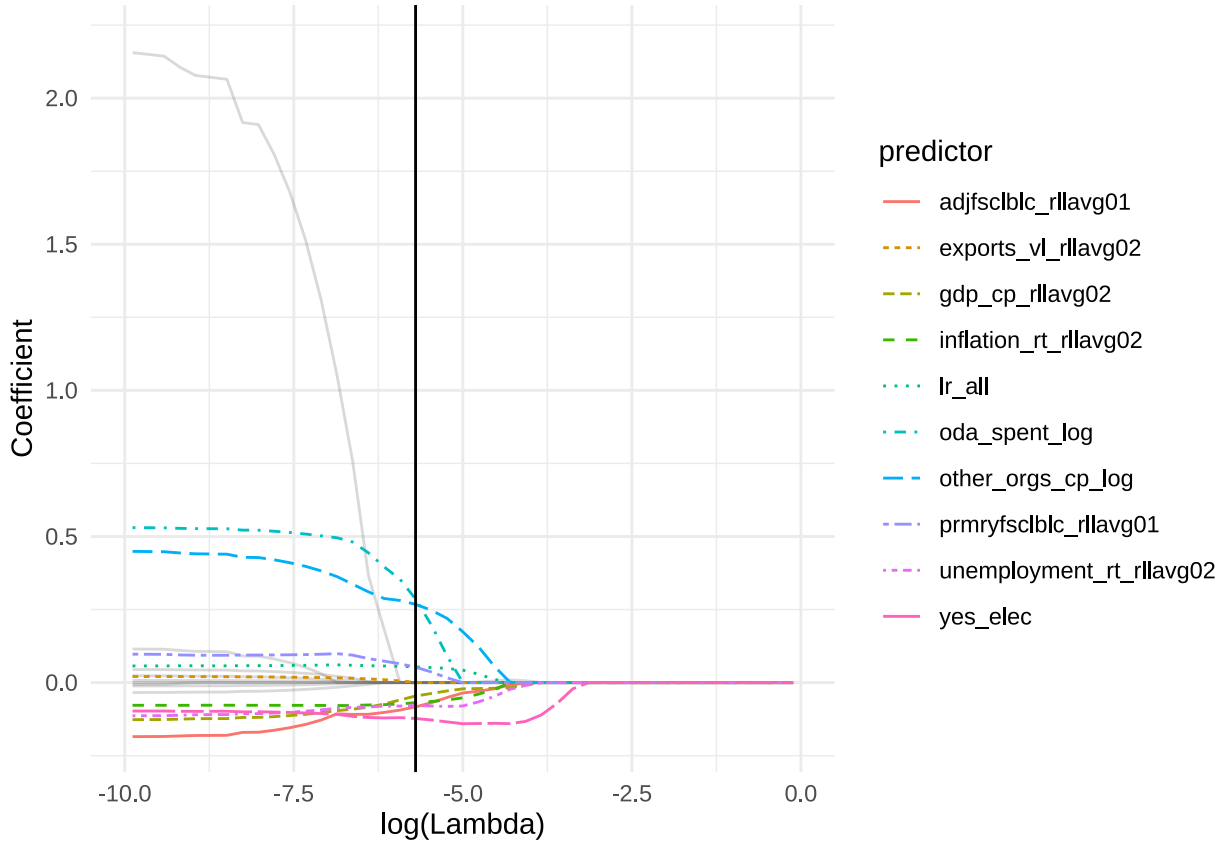
Switching to the OLS model, we can see similar changes. The coefficient strength of the ODA disbursements and contributions to other organizations are reduced by a similar proportion, though they remain the strongest overall predictors of pledges in both the lasso and OLS. Both the % Change in GDP and the Unemployment Rate now seem to be behaving as we would expect from our descriptive analysis.

Table 5: Table 7:

Variable	Coef
oda_spent_log	0.6024546
other_orgs_cp_log	0.3784998
yes_elec	-0.0978967
adjfsclblc_rllavg01	-0.0869754
prmryfsclblc_rllavg01	0.0785729
gdp_cp_rllavg02	-0.0564813
inflation_rt_rllavg02	-0.0531607
unemployment_rt_rllavg02	-0.0492652
lr_all	0.0432843
exports_vl_rllavg02	0.0012277

Table 6: Table 6:

Variables	Coef
oda_spent_log	0.6259517
other_orgs_cp_log	0.3647519
gdp_cp_rllavg02	-0.0509000
gdp_per_cap_cp_log_rllavg02	0.7677343
yes_elec	-0.1149611
unemployment_rt_rllavg02	-0.0421040

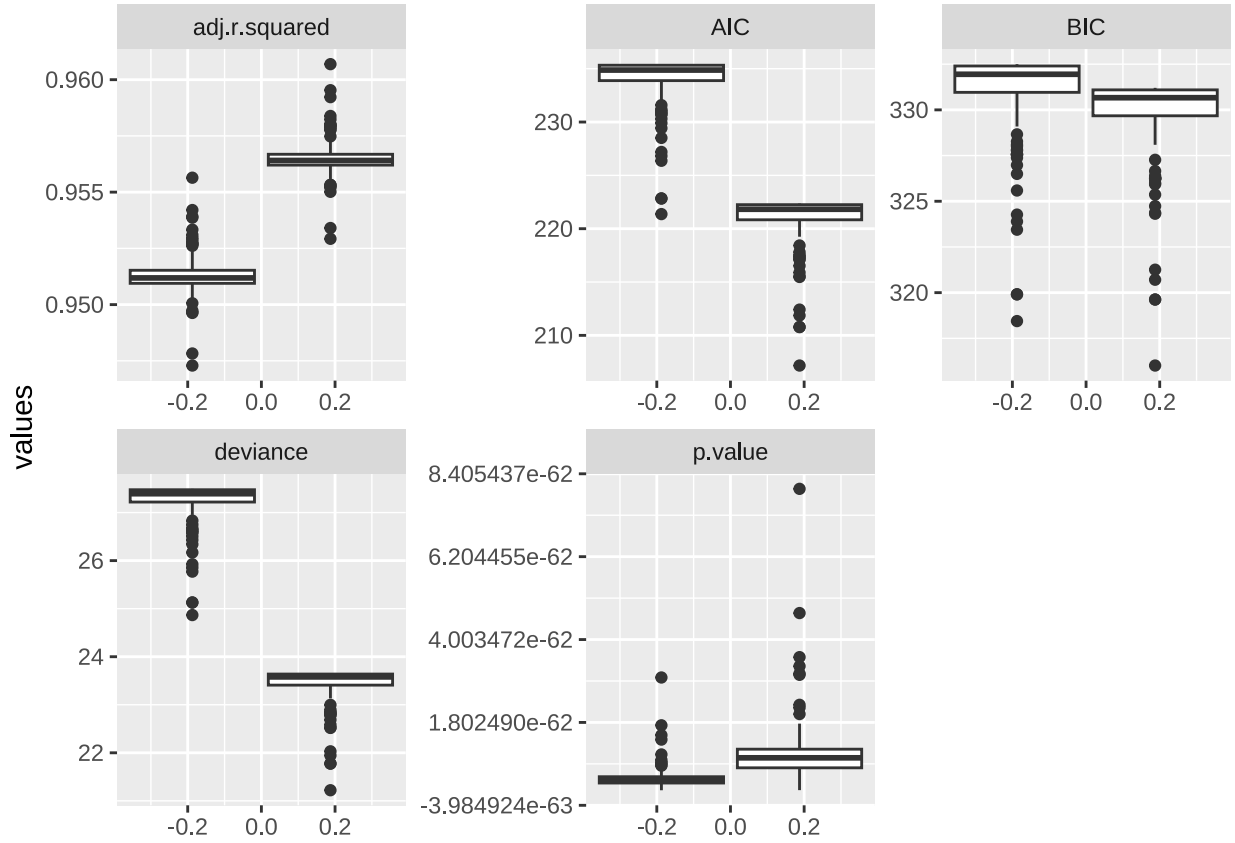


What is most encouraging is that the OLS and lasso yield broadly consistent signs for the predictors. To decide which final model to select, we opted to first compare the predictive performance of the lasso against a post-lasso OLS using Leave-One-Out cross-validation (LOOCV). Note this isn't an ideal scenario because we have already trained the models on the full data, meaning this does not constitute a true test, and results should be interpreted as indicative.

The reason we want to run this comparison first is to see if the lasso's regularization actually improve predictive accuracy. What we found is the post-Lasso OLS model outperformed the penalized Lasso model itself. This suggests that the bias introduced by shrinkage outweighed its potential benefits in reducing variance. This is further corroborated by the fact that the OLS model also performed better than the lasso. Given that the ratio of predictors to observations remains small in our dataset, and because we have constrained some variables with penalty factors, meaning they are always included, this may have reduced the effective "dimensionality" of the problem, possibly making the penalty less critical. In this context, Lasso's main advantage (shrinkage for stability in high-dimensional settings) might not provide much benefit.

We are left with two models: the forward step-wise OLS and the post-lasso OLS. When comparing the

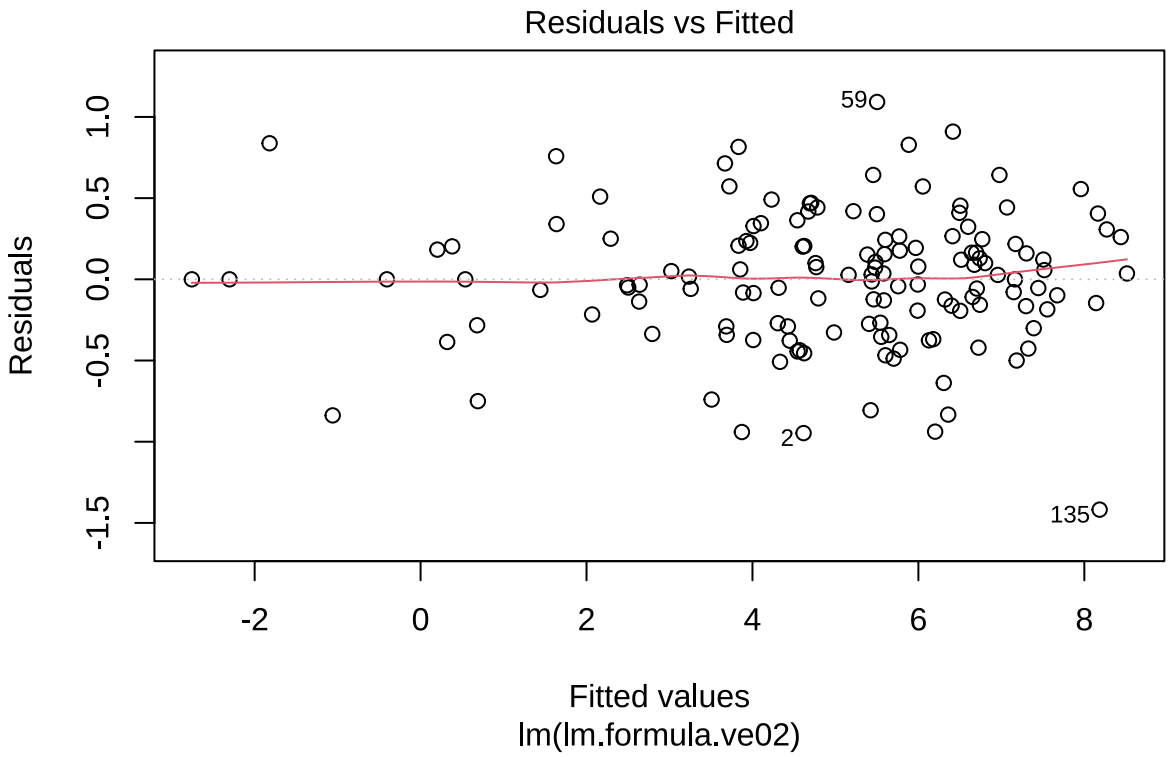
performance of the two models against key metrics using LOOCV, we find that the post-lasso OLS out performs the OLS consistently. The subset selection achieved by the lasso seems to outperform the forward step-wise selection, when control variables are included. Our final model is therefore the post-OLS lasso.

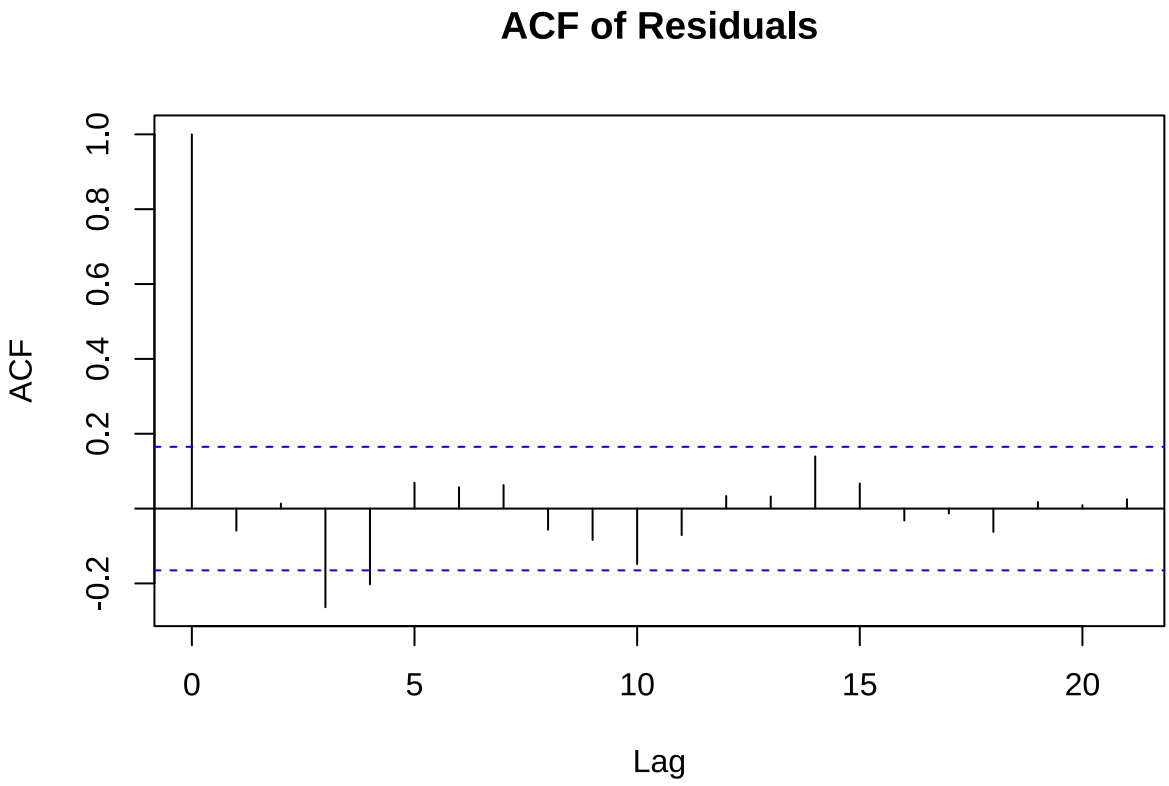


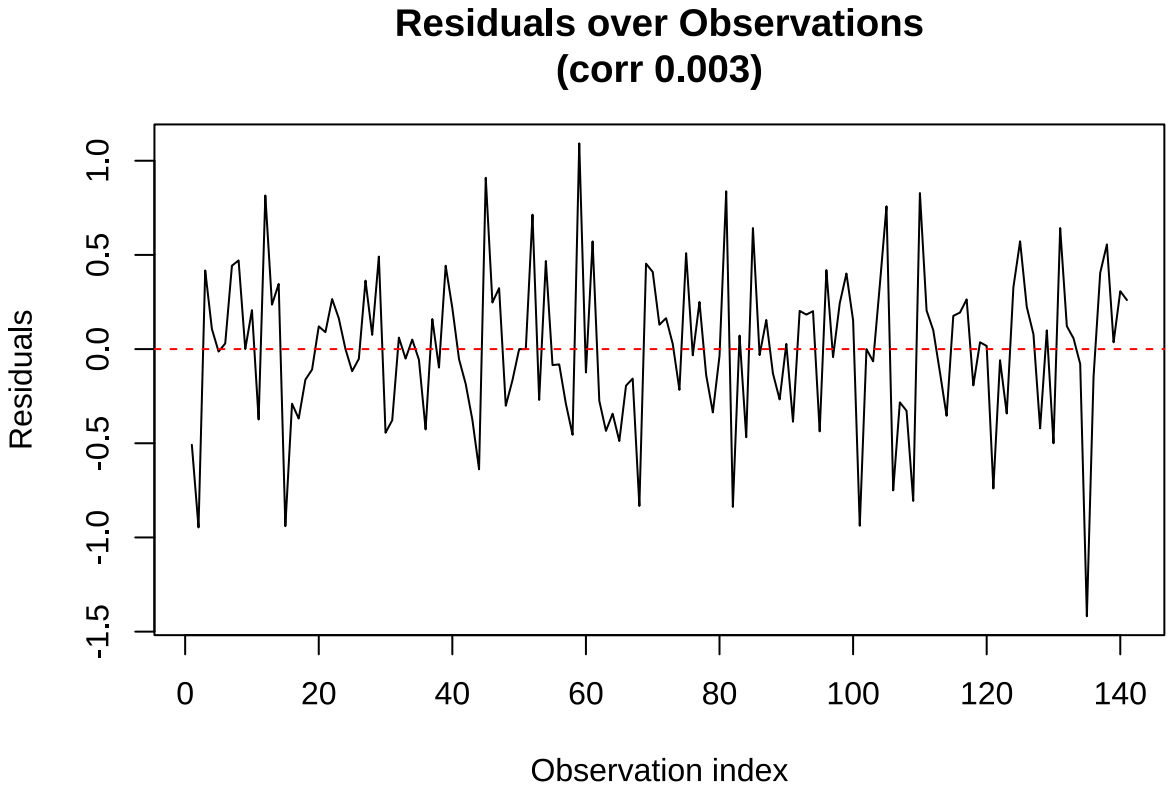
Now that we selected our model, the next step is to run some post-estimation tests to see if the model is aligned with assumptions underlying the OLS and to identify any other problems that may undermine the reliability of the model coefficients and predictions. The OLS has six classical assumptions: 1. Linearity of the response-predictor relationships 2. Random sampling 3. No perfect collinearity 4. Zero conditional mean 5. Homoskedasticity, or the constant variance of error terms 6. Normality

We can plot the residuals of the model against the fitted values to estimate the linearity of the response-predictor relationship. If the plot does not indicate any pattern, then the linearity assumption is respected. In our case, the red line in plot # is flat, indicating that the relationship between the pledges and the predictors is linear. Plot # shows this relationship is broadly linear for all predictors. The OLS is therefore an appropriate technique to model the relationship between pledges and the economic and political factors we selected.

Our dataset includes data on the # donor countries, including all the largest donors. It is therefore representative of The Global Fund's donor base. However, there a related issue which is the correlation of error terms. Because we have a combination of panel and time series data, our observations may be somewhat correlated. We can examine this using a visual and statistical test. The visual seems to reveal no obvious relationship between the error terms. When running the Durbin-Watson test, we find that we cannot reject the null hypothesis that the true autocorrelation is 0 (p-value = 0.09275) at a 5% significance level. Despite successfully passing this test, we may still want to use robust standard errors as we will see later.


Residuals vs Fitted
Residuals
1.0
0.5
0.0
-0.5
-1.5
59
2
135
-2
0
2
4
6
8
Fitted values
lm(lm.formula.ve02)


ACF of Residuals
ACF
1.0
0.8
0.6
0.4
0.2
-0.2
0
5
10
15
20
Lag



No predictor is an exact linear combination of one or more other predictors in our post-lasso OLS, although the financial contributions made by donor countries to other multilateral organizations like TGF is highly correlated with their ODA disbursements (corr 0.95). This is a practical issue rather than a violation of the classic linear regression assumptions. We conducted a VIF test to quantify the magnitude of the multi-collinearity and find that, even if it is far from extreme, it is somewhat problematic. A VIF value above 5 requires consideration and justification. The easiest solution would be to remove one of the two predictors, but that would impact the explanatory potential of our model, because we want to be able to distinguish the value disbursed annually by donor countries to ODA from the contributions they pledged, but have not necessarily spent, to organizations similar to The Global Fund on a cyclical basis. We therefore believe it is justified to retain both predictors in the model and to caveat that the estimates for these factors might be slightly exaggerated.

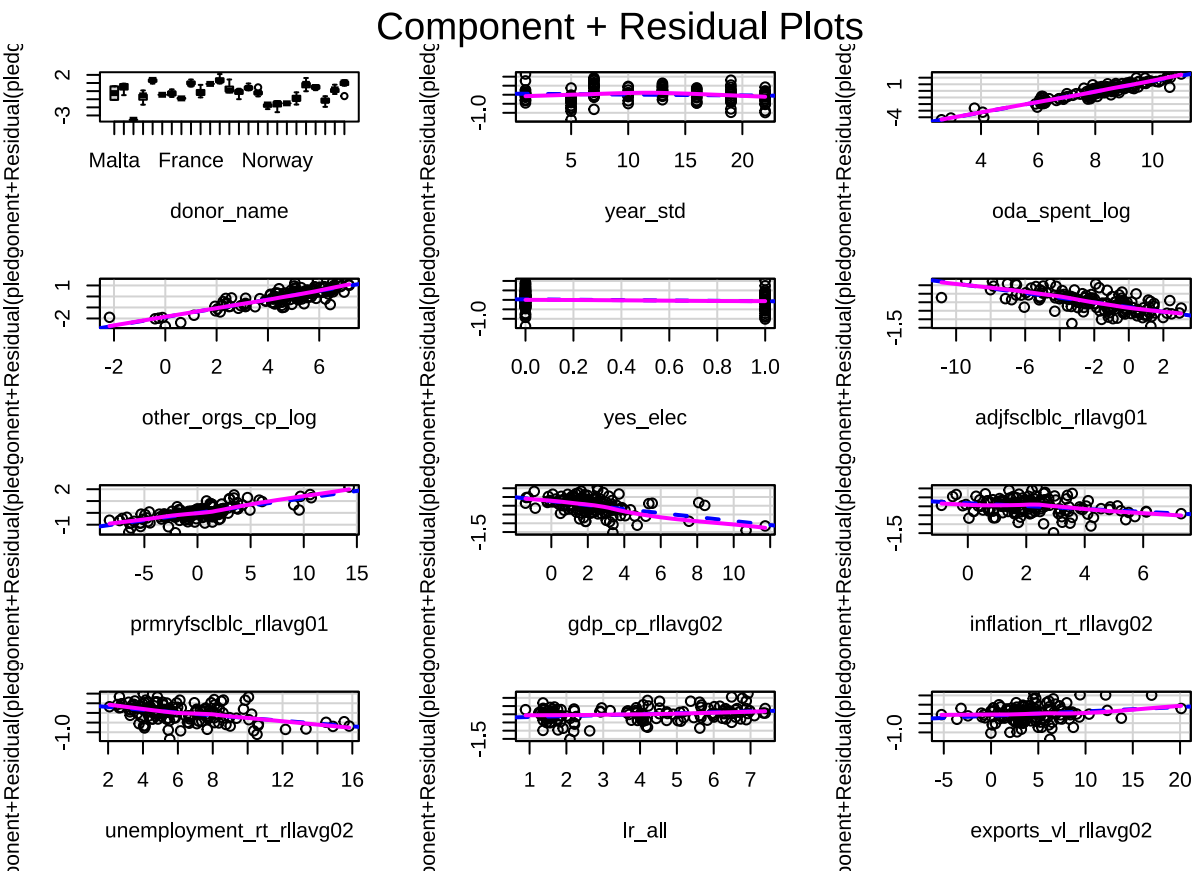
Another key assumption is what is left unexplained in our model, known as the error term or noise, is random and unrelated to our predictors. Basically, we don't want our model to miss a hidden pattern, the omission of which may erroneously distort our results. The key to this assumption is ensuring all key predictors are included in the model. By including a multitude of political and economic factors thought in the industry to be related to TGF's replenishment outcome, I hope to have mitigated this issue enough to ensure causal validity.

There are practical ways to estimate if we have omitted significant variables from our model. One of them is to check the residuals against the fitted values. We saw previously that the relationship between the predictors and our outcome was broadly linear. When we examine each predictor individually, we notice this is broadly the case for each predictor. The time variable, year, does appear to have a very slight convex relationship. We can introduce a polynomial term with limited impact to the existing fit and assumptions of the model, while centering the variable to keep multi-collinearity stable.

Finally, the "Ramsey" test provides a statistical means to check whether omitted non-linearities remain in the error term. The test result suggests the model likely does not omit important information (p-value =

0.56). In sum, it seems reasonable to assume that our model does not violate the zero conditional mean assumption.

```
##                                GVIF Df GVIF^(1/(2*Df))
## donor_name                8.672080e+05 24        1.329569
## year_std                  2.345792e+00  1        1.531598
## oda_spent_log             8.205479e+01  1        9.058410
## other_orgs_cp_log         3.946793e+01  1        6.282351
## yes_elec                  1.504023e+00  1        1.226386
## adjfsclblc_rllavg01       8.321032e+00  1        2.884620
## prmryfsclblc_rllavg01     1.318960e+01  1        3.631749
## gdp_cp_rllavg02           6.458768e+00  1        2.541411
## inflation_rt_rllavg02     2.671543e+00  1        1.634485
## unemployment_rt_rllavg02 7.422933e+00  1        2.724506
## lr_all                    6.323362e+00  1        2.514630
## exports_vl_rllavg02       4.333059e+00  1        2.081600
```




```
##                                GVIF Df GVIF^(1/(2*Df))
## donor_name                1.279330e+06 24        1.340383
## year_c                    2.346544e+00  1        1.531843
## I(year_c^2)               2.200320e+00  1        1.483348
## oda_spent_log             8.242117e+01  1        9.078610
## other_orgs_cp_log         4.266353e+01  1        6.531733
## yes_elec                  1.516428e+00  1        1.231433
## adjfsclblc_rllavg01       8.361298e+00  1        2.891591
## prmryfsclblc_rllavg01     1.318961e+01  1        3.631750
## gdp_cp_rllavg02           6.999005e+00  1        2.645563
```

```
## inflation_rt_rllavg02    3.495575e+00  1        1.869646
## unemployment_rt_rllavg02 7.424291e+00  1        2.724755
## lr_all                   6.332665e+00  1        2.516479
## exports_vl_rllavg02      4.388903e+00  1        2.094971
```

A remaining assumption of Linear regression is homoskedasticity. We can visually examine if our model violates this assumption by plotting the standardized residuals against the fitted values. If the residual plot shows a funnel shape, then our model suffers from heteroskedasticity, meaning the variance in the error terms is not constant across the spectrum of our outcome variable. Thankfully, plot # shows our model does not violate homoskedasticity. The studentized Breusch-Pagan test, which allows us to test for heteroskedasticity statistically, suggests that our model does not break this assumption (p-value = 0.44).

The final assumption to address is normality of the error terms. Basically, our residuals should be distributed like a bell curve. Given our medium sample size, this assumption is not strictly required if we want valid inferences, but since it underpins key features of our model such as statistical significance and confidence intervals, we still think it's worth examining.

Normality can be gauged through a Q-Q plot. If the standardized residuals fall along the dotted line, then the normality assumption is respected. In our case, plot # shows this is mostly the case. Residuals at the tail often deviate from the dotted line, so this is not abnormal. There is no S-shape. Calculating Kurtosis and Skewness of the residuals also provides a numerical way to check for normality. A skewness of -0.41 indicates that our residuals are approximately symmetric. The Kurtosis does seem to indicate a heavier tail, which is also visible from the Q-Q plot. Notice that the bottom tail tends to deviate from the line. Although this signals some outlier risk, our model does not break the normality assumption in any meaningful way.

Speaking of outliers, these are predictions that substantially deviate from the actual value observed in the date. We can identify outliers by dividing each residual by its estimated standard error. This computes the studendized or standardized residuals, which allows comparison of residuals across observations. Any studendized value above three are possible outliers (James et al., 2021, 98). Plot # highlights two outliers. The model significantly overestimates the pledge, measured in constant prices from 2022, from the US in 2005, while underestimating the pledge from Italy in 2001.

Although removing these two outliers slightly improves the model's fit (see table #), it is not recommended to exclude them from the model. Unless outliers are caused by an error in the data collection, they generally highlight a possible deficiency in the model, like a missing predictor.

Besides outliers, it is also important to screen the model for predictions that are large relative to other observations. Such high leverage points, as they are called, tend to have a sizable impact on the model's fit. We can identify these points using the leverage statistic. Any value at least two times the average leverage indicates a high leverage point. I identified nine such points in table #.

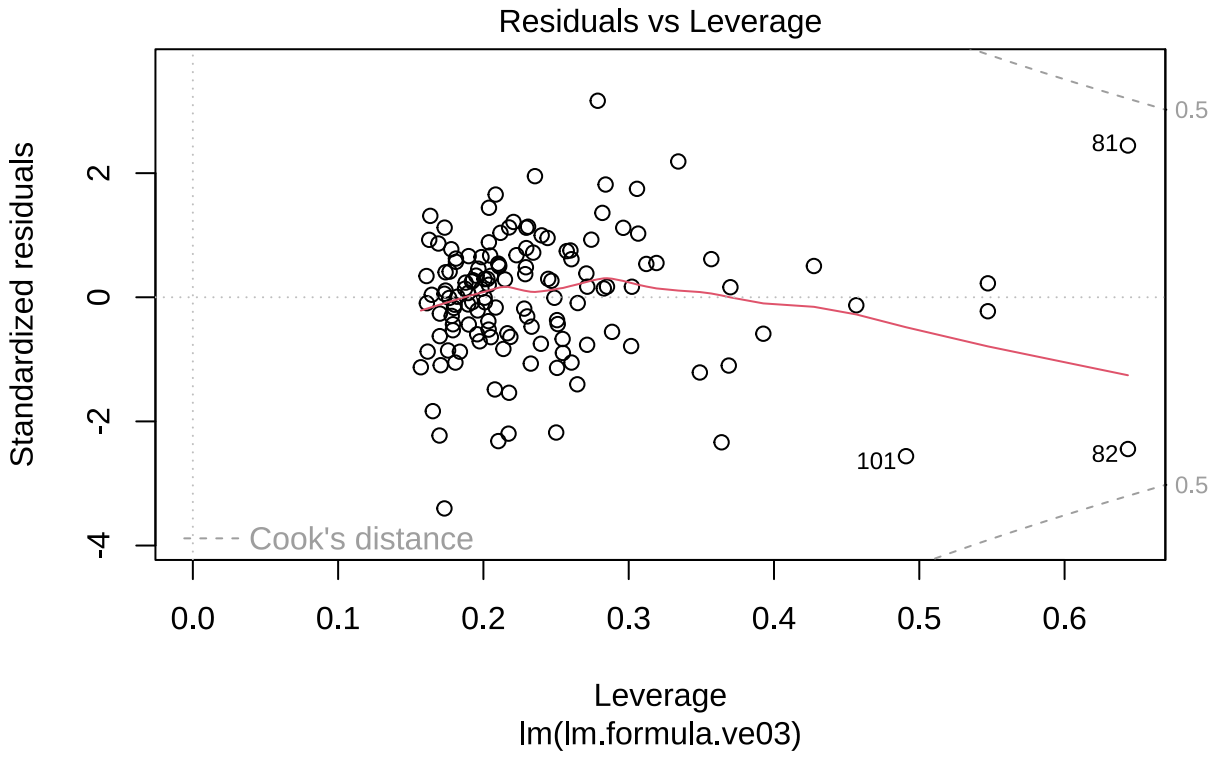
Because Austria, Cyprus, Iceland, and Poland only donated once to The Global Fund, these observations lie exactly on a unique combination of predictors that no other observation shares, hence why the model prediction is equal to the underlying observation.

Since neither the outliers nor the high leverage points are data collection anomalies, and because they represent meaningful donor-year cases and are genuinely part of the Global Fund history, we cannot simply drop them from the model. Moreover, we saw that the outliers did not have an outsized impact on the model fit. This is also the case for the majority of the high leverage points. The residuals are mostly zero or very low, indicating these leverage points do not have a strong influence on the model fit. Dropping the high leverage points also does not have a significant impact on the goodness of the model fit (see table #).

For these reasons, I have decided to include these observations in the final model. To mitigate any risk, however, we computed a robust regression, which downweights high leverage and outlier cases. This ensures we can rely on the model coefficients and their significance with a reasonable level of confidence.

In sum, our post-lasso model approximately respects all classical assumptions of a linear regression, meaning we can leverage the model to draw inferences and make predictions with reasonable confidence.

To-dos: calculate robust regression, review methodology, and show results / predictions.




```
## # A tibble: 2 x 4
##   pledge_USD_cp  fits  year donor_name
##           <dbl> <dbl> <dbl> <fct>
## 1          731.  212.  2001 Italy
## 2          868. 3613.  2005 United States
```

```
## # A tibble: 2 x 5
##   version adj.r.squared   AIC   BIC sigma
##   <chr>           <dbl> <dbl> <dbl> <dbl>
## 1 ve03            0.959  215.  327. 0.461
## 2 ve04            0.967  183.  294. 0.415
```

```
## # A tibble: 8 x 6
##   pledge_USD_cp    fits residual leverage  year donor_name
##           <dbl>   <dbl>    <dbl>    <dbl> <dbl> <fct>
## 1        1.71    1.71      0        1      2001 Austria
## 2        0.1     0.1000    0        1      2022 Cyprus
## 3       11.6    12.5      -0.07     0.547  2007 Finland
## 4       21.6    20.1       0.07     0.547  2010 Finland
## 5        0.667   0.667     0        1      2001 Iceland
## 6        0.375   0.191     0.673    0.644  2019 Malta
## 7        0.15    0.294    -0.673    0.644  2022 Malta
## 8        0.0635  0.0635    0        1      2001 Poland
```

```
## # A tibble: 2 x 5
##   version adj.r.squared   AIC   BIC sigma
```

```
##   <chr>           <dbl> <dbl> <dbl> <dbl>
## 1 ve03            0.959  215.  327. 0.461
## 2 ve05            0.942  195.  287. 0.452
```

This is a micro analysis, so focus on The Global Fund (over ODA and Global Health as such). Basically, don't mix macro into a micro analysis. Make sure you stay grounded in your data.

Sources

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