Her Majesty's Aid: A Principal–Agent Analysis of Development Assistance in the Late British Empire*

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Abstract

Can foreign aid expand fiscal capacity? Drawing on principal–agent theory, I argue that foreign aid builds capacity when the interests of the donor and the political leadership of the recipient state are aligned and when aid administrators in the recipient's bureaucracy face high-powered incentives to exert effort toward the mission's goal. Using history as a laboratory, I examine both predictions by studying the impact of the precursor of foreign aid—the Colonial Development & Welfare fund—on tax efforts in 12 British colonies in Africa between 1929 and 1969. Drawing on originally collected data and archival research, I demonstrate that imperial aid boosted colonial taxation because patronage governors were replaced by career officials who shared London's agenda for the colonies; and because meeting the fiscal mandate of the program was incentive-compatible with professional advancement of colonial bureaucrats. The analysis offers practical insights about aid efforts to build capacity in sovereign nations.

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1 Can foreign aid build states?

After the end of the Cold War, the aid regime shifted attention to "capacity building." International Financial Institutions (IFIs) and aid agencies published numerous white papers emphasizing the importance of supporting functional states.[1] The research community responded to this initiative by examining the impact of developmental aid on one (if not the) central aspect of state capacity: the power to tax, or "fiscal capacity." While most of this scholarship suggests that foreign aid *erodes* fiscal capacity,[2] in this paper I identify two conditions under which development assistance can exert a positive impact on local taxation: First, the donor and political leadership in the recipient state must share preferences for the mission's goal—namely capacity building; second, aid administrators within the recipient's bureaucracy must be highly incentivized to exert effort toward the mission's goal.

To test these two propositions, randomizing the local leader's type and the incentive system within the recipient's aid administration is the ideal, but practical and ethical reasons preclude doing so. To overcome methodological constraints in addressing this relevant theoretical *and* applied question, I propose to use history as a laboratory and study the precursor of modern-day foreign aid—the Colonial Development & Welfare (CD&W) Fund launched by London in 1929 and targeted at colonies without self-governing institutions.[3]

The CD&W initiative included a *fiscal mandate* to compel colonial authorities to match imperial aid with local taxation. The responsibility for aid and fiscal performance fell ultimately on the colonial governors, who were appointed by and remained accountable only to

[1]The influential *Proposal for a Comprehensive Development Approach - A Discussion Draft*, circulated in 1999 by the then World Bank President, James D. Wolfensohn, encapsulates the reorientation of development policy; and the World Banks' *Capacity Development Results Framework* characterizes the state-centered approach to development today.

[2]Bräutigam and Knack (2004); Combes, Ouedraogo and Tapsoba (2016); Devarajan, Azam and O'Connell (1999); Ghura (1998); Gupta, Pivovarsky, Clements and Tiongson (2003); Heller (1975); Marineau (2020); Moss, Pettersson Gelander and van de Walle (2006); Remmer (2004); and Svensson (2000). Others have found null effect of aid on local taxation: Boone (1996); Carter (2013); Clist and Morrissey (2011); Leuthold (1991); and Teera and Hudson (2004).

[3]The 1929 initiative was dubbed the Colonial Development Fund, and starting in 1940, the "Welfare" dimension was added to the title and content of the program. For language efficiency, I use "CD&W" exclusively.

London. Governors were the highest political authority in the colony as well as the vertex of the local civil service, known as the Colonial Service. Positions of responsibility in the Colonial Service, including aid design and implementation and taxation, fell in the hands of British expatriates. These were recruited by open competition in London and inducted into the Colonial Service after a probatory period. Once arrived in the colony, Civil Service officials were accountable to their immediate superior and ultimately the governor.

Key reforms in imperial governance during the interwar years were instrumental in satisfying the two conditions under which aid could enhance local taxation: First, mission-oriented colonial officials were recruited into the Colonial Service. This process involved replacing patronage governors with career officials who shared London's developmental agenda for the colonies. Second, meritocratic evaluation replaced seniority rule in decisions over compensation and promotion within the Colonial Service. Merit-based assessments were applied at every rank, including colonial governors, who needed to fulfill the fiscal mandate of the aid program to qualify for promotion to higher-status colonies. Ultimately, the CD&W initiative expanded local taxation because bureaucratic reforms within the Service addressed two principal-agent issues in aid administration: preference misalignment and poor incentives.

The empirical investigation of the argument is divided into two parts: First, I study the fiscal impact of imperial aid with a panel of 12 British colonies in sub-Saharan Africa between 1929 and 1969, the full life-span of the program. Using two-way fixed effect regressions, I show positive impact of imperial aid on colonial taxation: Approximately, a one-standard deviation increase in imperial aid expanded colonial taxation by five percentage points. I address threats to inference twofold: I study now-declassified correspondence between several departments of the Colonial Office—the administrative branch within the British Civil Service in charge of colonial policy—to identify the criteria that the metropole followed to allocate imperial aid. This analysis shows that colonies with a weak fiscal apparatus received disproportionally more imperial aid. The archival reconstruction is complemented by an identification strategy that relies on shocks in the UK balance of payments to leverage exogenous variation in the amount of aid received by each colony. The main result of the first part of the empirical analysis suggests that imperial aid did expand local taxation. These findings stand in contrast to a substantial body of literature that highlights a *negative* effect of aid on taxation in the postcolonial world.[4] Why did imperial aid work where foreign aid failed?

I address this puzzle in the second part of the paper, where I examine empirically the two conditions discussed in the theory section: namely, aid performance is expected to improve when the donor and the recipient's leadership share preferences (condition i) and when aid administrators in the local bureaucracy are incentivized to exert effort toward the mission's goal (condition ii). To evaluate the two propositions empirically, I exploit the dual nature of colonial governors: they were the highest-ranked *political* authority of the colony but also *career bureaucrats* within the Colonial Service. I reconstruct the career trajectories of the 80 colonial governors in Africa between 1929 and 1969 and establish their conditions of entry into the Colonial Service, first governorship, reappointment, and retirement. Using two- and three-way fixed effect models (colony, year, governor), I show that the positive effect of imperial aid on taxation revealed in the first part of the analysis is explained by reforms in gubernatorial recruitment and performance-based bureaucratic policy affecting gubernatorial promotion, thus offering empirical credence to the theoretical argument.

My quantitative evidence builds on original data collection and archival research involving hundreds of historical records and official publications. I complement these with qualitative evidence of declassified communications, parliamentary debates, and published memoirs of officials working for the Colonial Office and in aid delivery in the colonies. Together, the quantitative and qualitative evidence offers a comprehensive account of the various stages of the CD&W program—its political motivation, bureaucratic workings, and implementation in the colonies—as well as its fiscal performance on the ground.

In leveraging historical evidence to inform modern-day debates, one should carefully de-

[4] Refer to fn. 2.

limit the scope conditions of the findings, which are two in this case: first, the metropole had full control over the recipient's political *and* bureaucratic apparatus. London hand-picked colonial governors and shaped the administrative organization of the Colonial Service. Although this condition (fortunately) no longer holds, the evidence lends support to arguments in favor of expanding aid in the presence of "reformers," namely local leaders with a *credible agenda* to use development assistance for intended purposes.[5]

The findings also suggest that a well-greased aid bureaucracy is instrumental for foreign aid to perform satisfactorily. Development programs today are used to equip local bureaucracies with skills and know-how to absorb aid.[6] My results advocate for complementing technical aid with personnel policy that explicitly rewards local bureaucrats for exerting effort toward the mission's goal. If the imperial aid teaches anything, it is that the agent's self-interest was a crucial ingredient to meet the fiscal mandate of the CD&W initiative.

The second scope condition is precisely that fiscal mandate, which compelled colonial treasuries to share project costs with local taxation. Possibly the closest, best-known substitute in the modern aid regime is policy conditionality (i.e., austerity, privatization, deregulation).[7] Some scholars have found positive effects of IMF conditionality on local tax mobilization,[8] but much debate surrounds its effects on social protection and electoral accountability.[9] Cost-sharing may offer an alternative to policy conditionality. Although it is relatively uncommon, cost matching is practiced by major official agencies (e.g., the Millenium Cooperative Corporation) and the existing evidence is encouraging if only because it minimizes aid fungibility.[10]

The use of aid to expand capacity speaks to the literature on international state building

[5] Collier (2006, p.1486). I resume this discussion in the conclusion.
[6] Chauvet and Collier (2008).
[7] Cormier and Manger (2021); Kentikelenis and Stubbs (2023); Vreeland (2007).
[8] Gupta, Pivovarsky, Clements and Tiongson (2003); Crivelli and Gupta (2016).
[9] Kentikelenis and Stubbs (2023); Collier (2006).
[10] Pack and Pack (1990).

but deviates from the current focus on postconflict settings[11] and receiverships after default.[12] In this paper I examine whether and how foreign assistance can articulate local capacity via *development* grant-in-aid (as opposed to *military* funds) outside of active conflict zones and financial crises. Last but not least, the importance of performance-based promotion speaks to debates on best practices in foreign aid delivery: Isham, Narayan, and Pritchett, Cruz and Schneider, and Winters examine mechanisms of "bottom-up" accountability to improve aid performance. These initiatives enable end users, or citizens, to participate in the design and implementation of aid programs, making aid administrators accountable to the local population.[13] The findings in this paper are consistent with "top-down" explanations pointing to tighter oversight of local bureaucracies as a means to improve program performance.[14]

The rest of the paper is organized as follows: In Section 2 I elaborate on the two conditions under which developmental aid makes states: screening mission-driven agents and designing performance-based contracts within aid bureaucracies. Section 3 offers an overview of the CD&W program, the historical setting in which I test both mechanisms. This account is complemented with qualitative evidence of the fiscal mandate of the program. Section 4 introduces the original data I collected on imperial aid to test the fiscal impact of the CD&W initiative in 12 British colonies in Africa from 1929 to independence. I address threats to inference by reconstructing (and testing) the allocation criteria from declassified records and by exploiting exogenous variation in aid flows resulting from shocks in the British balance of payments. I examine the two theoretical mechanisms of aid effectiveness in Section 5 by focusing on the career trajectories of 80 colonial governors in Africa. Results suggest that aid grew tax collection when and because it served the career interest of colonial governors. An alternative mechanism for the positive impact of imperial aid on local capacity, namely expanding the human capital of the Colonial Service staff, is considered but does not

[11] Blair (2021); Doyle and Sambanis (2000); Fearon and Laitin (2003); Fearon and Laitin (2004); Fortna (2008); Krasner (2004); Lake (2016); Lee (2022); Sexton (2016).

[12] Fishlow (1985); Maurer (2013); Queralt (2022).

[13] Cruz and Schneider (2017); Isham, Narayan and Pritchett (1995); Winters (2010). For by-passed aid, see Baldwin and Winters. (2023).

[14] Iyer and Mani (2012); Olken (2007); Raffler (2022).

receive empirical support. Section 6 concludes with results interpreted in light of modern-day debates on aid performance.

2 Aid, Capacity Building, and Principal–Agent Theory

A donor who seeks to build capacity in a foreign country faces a set of challenges commonly known as principal–agent problems. Under this framework the donor, now *principal*, establishes a mission goal (e.g., growing the capacity to tax of a foreign nation) and delegates its implementation to an *agent* (e.g., a sovereign leader of the recipient state). The agent might share a real interest in using aid funds to build a strong tax institution—that is the principal's wish—but then again, they may not. Crucially, the agent's *type* is private information as well as the (changing) conditions on the ground. A "bad type" in disguise can exploit the information asymmetry to get away with poor aid performance.[15]

In broad terms, aid contracts can fail because of adverse selection—the donor cannot discern ex ante whether the agent has similar preferences[16]—and moral hazard—the agent may not exert enough effort toward the mission goal or may use funds for spurious purposes, for instance, to reward political supporters.[17] Much of the literature in political science examines the deviation of funds for political goals, a major problem when aid is fungible.[18] Because fungibility was not an issue under the imperial context (details below), I focus attention on adverse selection in screening good types plus moral hazard in effort inducement.

The relationship between adverse selection (expressed as the distance between the preferences of the principal and the agent) and moral hazard (i.e., the amount of effort exerted by the agent) has been examined by Berman, Lake, Padró i Miquel and Yared in the context

[15]Throughout I assume that aid programs are administered by local bureaucrats, who become de facto aid administrators.

[16]The principal may not know whether the agent is competent, but I do not consider this possibility here.

[17]Azam and Laffont (2003).

[18]Bermeo (2016); Jablonski (2014), Jones (2005); Reinikka and Svensson (2011).

of postconflict reconstruction.[19] Building on a theoretical model, they prove that tight preference alignment between the donor and local leadership (or "proxy") reduces the cost of inducing the latter to exert effort. That is, when the donor's agent shares the mission's objectives, the principal needs to grant fewer and smaller carrots to induce good performance. Berman et al. find that preference alignment is also important for dynamic considerations: if aid expands institutional capacity (e.g., the power to tax), the donor needs assurances that tomorrow's proxy will use the strengthened capacity for good—not to expropriate political rivals. If the donor does not have a say in or cannot anticipate who the future proxy is, the present value of capacity investment decreases. Overall, the model developed by Berman et al. predicts that tight alignment between the preferences of the donor and local proxy reduces the present costs of the aid program and facilitate long-term aid commitments.[20]

Screening local leaders who share the mission's goal is crucial but potentially insufficient to guarantee aid performance. Incentives within local bureaucracies should be fine-tuned (or "incentive compatible") with the goals of the aid program—in this case, capacity building. A common problem in the *administration* of aid is that local bureaucrats are poorly compensated[21] and may find signing new aid programs more profitable than implementing existing ones.[22] When compensation within local bureaucracies is poor, government officials tend to nurture continued relationships with donors to access "free excludable benefits": including the project vehicle, cash for operating expenses, sitting fees to attend meetings, and so on.[23] Ironically, "cash-starved ministries" reward the arrival of fresh projects regardless of

[19] Berman, Lake, Padró i Miquel and Yared (2019).

[20] For related applications outside the foreign aid literature showing the importance of ideological affinity between principal and agents see Spenkuch, Teso and Xu (2023) and Chiovelli, Fergusson, Martinez, Torres and Valencia Caicedo (2024).

[21] Hirschmann (2003, p.230) offers an illuminating first-hand account of the implementation of technical assistance in Tanzania. He was taken aback by the low morale among government officials, who were vastly underpaid and lacked incentives "to collect and communicate data with care [to the central government] even if they have the training to do so." Hirschmann recollects a conversation with a local official, who reflected upon the poor incentives to perform: "In referring to officers in the data analysis unit of his ministry, a Tanzanian, whose salary was topped up by a donor, said of his colleagues on local salary: 'They don't get paid enough to think. It is perfectly reasonable not to. Why should they?"' (p.229).

[22] Moss, Pettersson Gelander and van de Walle (2006, p.9).

[23] van de Walle (2001, p.208).

adequacy or potential increase in recurrent expenses after completion.[24] The multiplicity of donors together with distorted incentives within the recipient's public sector translate into an inflation of small, uncoordinated aid projects that "undermine rather than support state institutions."[25]

The importance of incentive structures within aid administrations has been formally examined by Wane.[26] In this theoretical model, the leadership of the aid agency seeks to push the recipient out of a poverty trap, but the staff of the aid agency maximizes their own welfare, which is independent of the developmental impact of the project. Stated differently, self-interest is at the *core* of the incentive system in the aid agency. Wane examines two promotion rules within the organization: one based on the number of new projects signed by the staff (or aid administrator) and another contingent on the performance or "success" of the signed project. Despite usual trade-offs in accountability models arising from high performance thresholds,[27] the performance-based promotion rule proves most effective in increasing the welfare of the recipient's population—the principal's goal. The emphasis on project performance compels aid staff to focus on projects with ex ante high probability to meet the promotion threshold. In practice, projects likely to end in waste and delay will be screened off more often than not.

Wane's treatment of career concerns indicates that aid administrators within local bureaucracies need to face high-powered incentives to exert effort to fulfill the mission's goal; otherwise, secondary goals take priority and render aid ineffective. Wane's proposition is consistent with recent experimental evidence of non-pecuniary incentives to bureaucrats shown outside of the aid literature.[28]

In light of the preceding discussion, I expect that foreign aid performance will improve

[24] van de Walle (2001, p.205).
[25] Ghani and Lockhart (2009, p.98).
[26] Wane (2004).
[27] See Ferejohn (1986) for a canonical treatment.
[28] Khan, Khwaja and Olken (2019) find that merit-based postings in Pakistan increase annual property tax collection by over 30 percentage points. Hassan (2020) shows that political leaders in Kenya strategically assign postings to discipline career bureaucrats.

when (i) preferences of donors and local leadership are relatively aligned *and* (ii), aid administrators in local bureaucracies operate under performance-based career advancement rules.[29] These simple but powerful theoretical propositions have not been empirically tested, and that should come as no surprise. Under normal circumstances (and for the right reasons), donors cannot pick and choose leaders of sovereign nations or impose promotion rules on foreign bureaucracies. To examine the empirical leverage of the two propositions, I suggest considering a close historical substitute: the imperial aid regime in the late British Empire.

Remaining clear in the next pages, the end of patronage appointment and the introduction of merit-based promotion rules within the Colonial Service offer a methodologically convenient variation in both theoretical mechanisms: preference alignment between London and the colonial leadership and performance-based promotion rules within the ranks of the Colonial Service. Before I show empirical evidence of that, I offer an overview of the CD&W initiative and its fiscal mandate.

3 Imperial Aid

The interwar years were a hectic period in British politics: The Labour Party assumed power for the first time (briefly in 1924 and again in 1929), unemployment surpassed 20%, protectionist policy regained popularity, and national socialism and communism grew within the established parties. In this context the British Parliament passed unanimously the 1929 *Colonial Development Act*, a bill granting imperial funds for development projects in Crown colonies and dependent territories, namely colonies without self-government.[30]

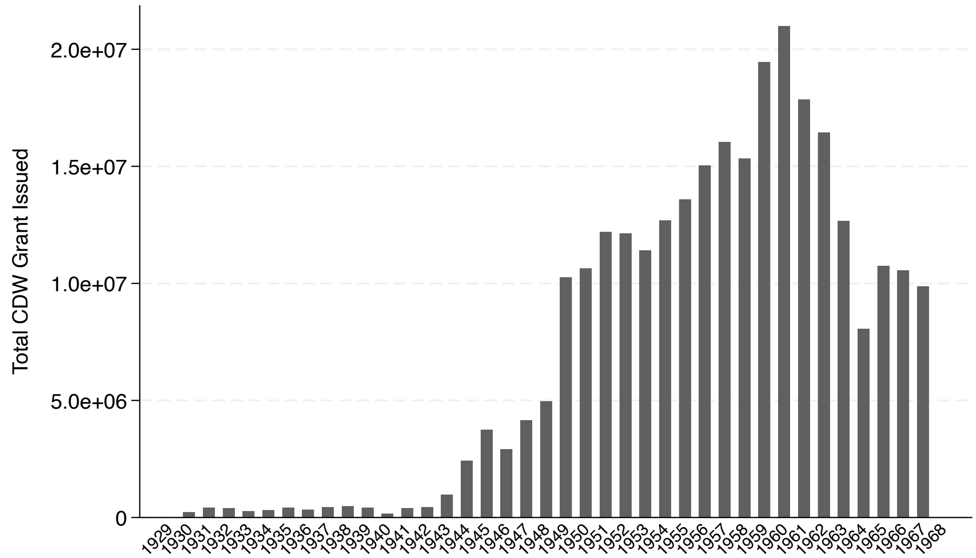
The 1929 Act represented a major deviation from the Gladstonian principle that had governed the relationship between the metropole and the colonies.[31] Although occasional subsidies had been granted in the past to cope with natural disasters, this was the first

[29] Besley and Ghatak (2018, p.420) show that effort incentives within bureaucracies *reinforce* the effect of mission motivation on performance, creating positive synergies.

[30] India did not qualify because it exceeded those limits. See Casler and Gaikwad (2023) for details on constitutional reforms in India under empire.

[31] Davis and Huttenback (1988).

Figure 1: Total Annual Grants-in-Aid to the Empire



Note: Territorial CD&W grants to the 56 Crown colonies and other nonself-governing protectorates: **Africa:** Basutoland, Bechuanaland, Gambia, Gold Coast, Kenya, Mauritius, Nigeria, North Rhodesia, Nyasaland, Seychelles, Sierra Leone, Somaliland, Swaziland, Tanganyika, Uganda, Zanzibar. **South-East Asia**: Ceylon, Hong Hong, Malaysia, North Borneo, Sarawak, Singapore, Strait Settlements. **Indian Ocean/Pacific**: Solomon Islands, Fiji, Gilbert and Ellice Islands, New Hebrides, Pitcairn Island, Tonga. **Middle East/Mediterranean:** Aden, Cyprus, Gibraltar, Jordan, Malta, Palestine. **West Indies:** Antigua, Bahamas, Barbados, Bermuda, British Guiana, British Honduras, Cayman Islands, Dominica, Grenada, Jamaica, Leeward Islands, Montserrat, St. Kitts, Nevis and Anguilla, St. Lucia, St. Vincent, Trinidad, Turks and Caicos Islands, Virgin Islands. **Atlantic**: Ascession Islands, Falkland Islands, Newfoundland, St. Helena, Tristan da Cunha. Source: Own elaboration based on sources cited in text.

time that the metropole assumed that the British taxpayer was responsible for the economic prosperity of the colonies.[32]

The Colonial Development Fund program encapsulated a variety of interests in British politics: the Liberals saw an opportunity to grow international markets in times of economic contraction;[33] within Labour, the Fabians viewed the bill as an opportunity to improve living conditions in the colonies, and the trade unionists emphasized the opportunity to secure cheaper inputs for British industry, a sentiment shared by the Tories. Oswald Mosley, the leader of negotiations, summarized the *dual mandate* of the CDW program: "The Bill is to develop the Colonies agriculturally and industrially *and* to provide employment in this country."[34]

[32] Constantine (1984) and Stammer (1967).

[33] See, for instance, the Liberal Party Manifesto for the 1929 election.

[34] HC, July 18, 1929. Considered in Committee: Colonial Development Bill, Volume 230. Italics added.

In the early years of the program, most imperial aid went to the West Indies, where a Comptroller General had been appointed early on to coordinate scheme proposals in the region. By 1940 it had become obvious that funds were too modest to enable truly transformative projects and that the 1929 bill missed an important aspect of development: education. In recognition, in June 1940 the British Parliament passed the *Colonial Development and Welfare Act*, stipulating that developmental had to balance economic growth and the welfare of colonial peoples. The spirit of the 1940 Act changed 180 degrees in comparison to the one in 1929: it recognized that social welfare of native people was crucial for any metric of development. The letter of the law was supported by a fivefold increase in funds plus a shift in the balance between grant-in-aid and loan-in-aid from 50–50 before 1940 to 95% in grants afterward.

Geopolitical circumstances impeded the full implementation of the 1940 Act. Modest funding was issued in the early 1940s, and the few projects that moved forward were connected to war efforts. As reflected in Figure 1, colonial development regained momentum in the last months of the war. To encourage new applications, the British Parliament passed the Colonial Development and Welfare Act of 1945, which addressed many of the issues raised by its critics and eased multiyear programming by allowing CD&W funds to cover recurrent expenditures. Perhaps most importantly, the 1945 bill eliminated an earlier provision that obliged colonies to return any unspent balance by the end of the fiscal year. Last but not least, the bill more than doubled the funds of the 1940 Act from £50 million to £120 million to be spent over the course of 10 years.

Colonies responded to the 1945 bill by submitting a myriad of new project proposals, ranging from infrastructure to health care to education. To match demand, the British government expanded the funds in 1949 and 1950 with new bills and again in 1955, 1959, 1963, and finally 1965. Following a wave of independence declarations, the CD&W program was terminated in 1969, and British aid continued in the form of official development assistance.

By 1969 London had transferred £362 million in CD&W funds to the colonies divided across 11,200+ developmental projects or "schemes" in 56 colonial territories. Relative to the British economy, the CD&W program represented about 0.9% and 0.6% of the island's GDP at the beginning and the end of the program, respectively.[35] The size of the program was significant for recipients, too: In Africa, where most of the funds were spent, CD&W grants represented 11.6% of total local revenue and surpassed 50% in smaller colonies like Bechuanaland (Botswana) and Gambia.

3.1 The Workings of Imperial Aid

Imperial aid was granted to projects, which were formulated and implemented by members of the Colonial Service, recruited in London and assigned to the colonies on a permanent basis (details below). The agency of native peoples in the CD&W program was limited and indirect. District officials—hands-on midrank officials of the Colonial Service—toured the territories, met chiefs, and collected requests for development projects, from roads, to soil erosion to elementary schools. Occasionally, the collaboration was formalized: for instance, in the Sukumaland Development Scheme in Tanganyika (Tanzania), initiated in 1946, a team of colonial service officials met regularly with chiefs at the headquarters of the Federal Council (representing fifty chiefdoms) to present progress reports, discuss plans, and request local support from native authorities.[36]

Once drafted, proposals were submitted to the Colonial Office in London for evaluation, which was strict. Initially, all proposals were examined by the Colonial Development Advisory Committee—a veto player populated by business owners, trade unionist, and public officials—which advised the Colonial Office. Project scrutiny was tight and ensured that development funds were not used as budgetary aid, which would have violated the CD&W mandate.[37] With the internal expansion of the Colonial Office, the evaluation of applications was conducted in-house starting in 1941. The proposals were now evaluated by sectoral and

[35] For reference, the UK spent 0.5% of its GDP on aid as of 2021 (OECD Stat.).

[36] Purvis (2001, p.95). For other excerpts of the *Corona Journal* narrating first-hand accounts of district officers interacting with native authorities for development purposes, see Wilson (2001) and Du Satoy (2001).

[37] Abbott (1971, p.77).

regional departments in the Colonial Office, which consulted with the Treasury to establish the financial feasibility of every plan.[38] Most often, the sponsors were requested to make revisions and adjustments. Once revised and resubmitted, conditional on approval by the Colonial Office *and* the Treasury, the project was presented by the Secretary of State for the Colonies to the Parliament for its approval, granting MPs an opportunity for examination.[39] An Auditor Office to control spending was put in place to assist monitoring efforts by the Colonial Office.[40]

The tight supervision of the CD&W funds minimized fungibility—in particular, the misuse of developmental funds to finance budget deficits, which would have weakened incentives to expand local taxation. No indication appears in the published record or archival materials of funds been redirected for purposes other than intended. Fund fungibility was not an issue for imperial aid.

3.2 The Fiscal Mandate

Imperial aid was designed to expand and complement local revenues, not replace them. During colonial times recipients were expected to use CD&W funds for filling the financial gap of specific development projects, not for budgetary purposes. To avoid fiscal relaxation,[41] the fiscal infrastructure of colonies—or "state machinery" as officials referred to it—received close attention from the program designers. Colonial administrators were expected to mobilize local resources to copay CD&W projects with new forms of taxation. Arthur Creech Jones (Labour), then Undersecretary of State for the Colonies, referred to this goal as follows:[42]

> I would also like the further implementation of the *pledge* which was given at the time of the passing of the 1940 Act, that there shall be a steep increase of direct taxation in the Colonies. The *building up of taxable capacity* should go on, and the

[38] Jeffries (1956) for the internal expansion and specialization efforts in the Colonial Office.

[39] Morgan (1980*a*, p.81).

[40] Morgan (1980*a*, p.90).

[41] That risk was early recognized by prominent advisors to the British government: e.g., Kaldor (1963, p.410).

[42] HC, 16 February 1945. Debate: Third Reading of the 1945 CD&W Bill, Vol. 408. Italics added.

> work of development accelerated, but that direct taxation, already started in many of the Colonies, should as a policy be more vigorously pursued.

Jones's words illustrate what the *official mind* wanted from the colonial administrators—building taxable capacity—while acknowledging universal obstacles to tax reform, namely opposition from the local population (European and native) to direct taxes.[43]

Starting in 1945, colonial authorities were required to submit 10-year development plans, including an estimate of recurrent costs and a statement of metropolitan *and local* funds budgeted for CD&W projects. George Hall (Labour), Secretary of State for the Colonies, reminded participant colonies of the need to raise direct taxation to cofund CD&W projects:[44]

> Rates of taxation vary considerably from one colonial territory to another, and it is important that direct taxation borne mainly by the richer members of the community should be reviewed, if this has not been done recently, so as to ensure that local revenues are making an adequate and fair contribution towards the cost of the development and advancement of the territory.

The same communication enclosed a memorandum explaining how development plans had to be formulated. Section II.(2) of this memorandum, *Revenue side of the plan*, reaffirmed the need to increase taxation to secure future revenue sources with which to fund CD&W projects. Consistently, in the first 21 development plans approved by the Colonial Office, over one third of all project proposals were to be funded locally.[45] The fiscal mandate was present also in the individual project applications, in which the sources of local revenue that would be used to help pay every specific CD&W project had to be listed. Appendix D offers one such example for Gambia.

Efforts to reshuffle fiscal taxation via CD&W ffunds continued over the years. John Dugdale (Labour), the Minister of State for Colonial Affairs in 1950, alluded to implicit conditionality in the assistance program:[46]

[43] Gardner (2012) for case-specific accounts. Also notice that white settler communities (except Kenya) were testimonial in African colonies without self-government.

[44] Cmd. 6713, 1945: par. 11.

[45] Bradley (1950, p.56). The actual local contribution would grow over time, reaching two thirds of all spending.

[46] HC, 09 November 1950. Floor Debate: Second Reading of the CD&W Bill of 1950, Vol 480.

> When we come to consider requests which some territories will no doubt make from to time for additional funds, we shall feel bound to have regard, no matter how admirable the purpose for which the money is sought, to the ability and willingness of these territories to increase their own taxation within the limits of their capacity. We attach considerable importance to this.

Five years later, Alan Lennox-Boyd (Conservative), Secretary of State for the Colonies, insisted on shared financial responsibility between the metropole and the colonies in the Despatch addressed to all colonial governors:[47]

> Taking the colonial territories as a whole, local funds have since 1945 provided more than half the total finance required for development. Governments will naturally continue to look first to their own financial resources [...] and will need carefully to examine the possibilities of raising additional revenues for development.

The emphasis on revenue mobilization was well understood by Colonial Service officials, that is, agents on the ground. A conference unmistakably titled *Techniques of Development Finance in Colonial Territories* attended by 33 colonial tax administrators from Africa, the West Indies, and the Far East acknowledged the following the final memorandum:[48]

> It is, after all, one of the *fundamental objectives* of His Majesty's Government's policy of Colonial Development that the revenues of the less fortunate territories should be strengthened as a result of the assistance which has been so generously given.

To meet this end, the machinery of tax collection received close attention by the metropole and the colonial administration alike: The British Board of Inland Revenue (the British equivalent of the American IRS) deployed experts to articulate the administration of colonial income tax departments from the early stages of the CD&W initiative.[49] These efforts were supplemented by the creation in 1942 of the Colonial Income Tax Office, a new division

[47] Cmd. 9462: p.1955

[48] Conference of the Technique of Development Finance in British Colonial Territories, 1951: p.7. Italics added.

[49] Conference of the Technique of Development Finance in British Colonial Territories, 1951: p.12

within the Board of Inland Revenue that assisted colonial governments to target British multinationals trying to repatriate profits to the metropole and escape colonial taxation.[50]

The Colonial Income Tax Office offered advice on legislative grounds, and their specialists addressed inquiries about colonial and overseas tax legislation. At the request of colonial governments and in coordination with the Department of Technical Co-Operation, it deployed specialists in the field to advise tax reform.[51] Starting in 1952, the Colonial Income Tax Office offered six-month training courses for colonial tax personnel in London. The course targeted British and native candidates with proven experience in the field. By 1967, this office had trained 373 students from 40 colonies. Often, CD&W scholarships were granted to pay for the training of colonial officers in London.[52]

Efforts to expand the colonial fiscal machinery to fund development projects were remarkable: in fact, 64% of all development projects had been funded by local resources by 1959 (compared to 15% by imperial aid),[53] with total development expenditure representing 25% of *all* colonial expenditure.[54]

In the next section, I examine whether a causal effect can be traced between imperial aid and fiscal capacity at the colony level. I will revisit the principal–agent framing in section 5 to explain why—in contrast to the experience of the postcolonial world—development aid had a *positive* effect on local tax capacity in British colonies.

4 Aid Effects

In this section I examine whether the inflow of CD&W funds expanded local taxation in 12 Crown colonies and protectorates in Africa, the region that received most of the funds. The territories in the sample (with modern-day names in parenthesis) are Basutoland (Lesotho), Bechuanaland (Botswana), Gambia, Gold Coast (Ghana), Kenya, Nige-

[50] O.D. 1/1.
[51] O.D. 1/16.
[52] Conference of the Technique of Development Finance in British Colonial Territories, 1951: p.13.
[53] Morgan (1980*d*, p.159).
[54] Cmd. 672, 1959: p.3.

ria, Northern-Rhodesia (Zambia), Nyasaland (Malawi), Sierra Leone, Swaziland (Eswatini), Uganda, and Tanganyika (Tanzania).[55]

To reconstruct the CD&W program, I collected information on yearly CD&W issues per territory from multiple sources: For 1929–1939, I digitized the *Colonial Development Annual Abstract Accounts*; for 1940–1969, I relied on the *UK's Annual Civil Appropriation Accounts* (Class II section). I classified issues into three categories: grant-in-aid, loan-in-aid, and research. Ninety-five percent of funds were issues in the first category, which is why I limit attention to grants-in-aid.

To analyze the fiscal impact of imperial aid I focus on annual colonial taxation. I draw this variable from Albers, Jerven, and Suesse, who reconstructed the fiscal trajectory of 48 African polities since 1900.[56] I follow their recommendation and set *real tax revenue per capita* as the outcome variable. This variable is computed as the ratio of nominal tax revenue per capita over nominal day wages. Substantively, the outcome variable indicates the number of workdays that the government collects from each worker on an annual basis. Crucially, nominal day wages are included in the denominator of this measure, allowing comparisons over time and across territories.[57]

The tax revenue measure includes standard taxes in colonial Africa: direct taxes (e.g., poll taxes and income taxes[58]) and indirect taxes (e.g., excises) *net of trade taxes.* To further isolate tax mobilization efforts, nontax revenue is eliminated from the outcome variable. All things considered, the outcome variable offers a good measure of hard-to-collect taxes expressed in per capita constant value.[59]

[55]Refer to Appendix A for a regional breakdown of CD&W funds and to Appendix B for a map of British African Colonies.

[56]Albers, Jerven and Suesse (2023).

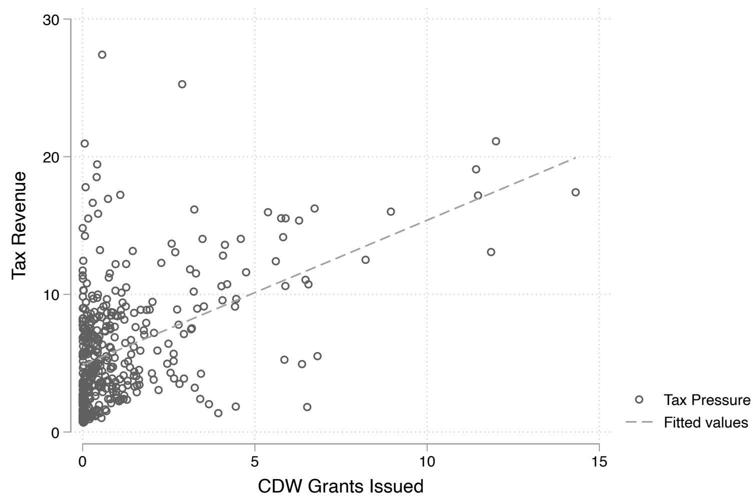
[57]Notice that price deflators or GDP estimates did not exist before the 1960s. Hence wages are the best option to deflate monetary values.

[58]Income taxes were first introduced during World War II to pay for it.

[59]This measure does not include revenue raised by Native Treasuries (Bolt and Gardner, 2020; Bolt et al., 2022). Importantly, CD&W fund *allocation criteria* (addressed in section 4.3) did not consider the existence of Native Treasuries (or lack thereof) because these operated independently of colonial treasuries—a good example of the African "bifurcated state" (Mamdani, 1996). Any unobserved characteristic that made some colonies rely on Native Treasuries that could also affect colonial taxation is factored into the statistical analysis by the inclusion of colony fixed effects.

To facilitate comparison, I express annual CD&W grant-in-aid issues on the same scale as the outcome variable: *wage-deflated* CD&W issues *per capita*. I show the bivariate relationship between real tax revenue and CD&W funds per capita in Figure 2. This plot shows a positive relationship between colonial tax yields and imperial aid. In the empirical analysis that follows I investigate whether this association can be interpreted causally.

Figure 2: Tax Pressure vs. CD&W Grants in British African Colonies, 1929–69.



Note: Tax pressure and CD&W Issues are expressed in per capita, constant value.

4.1 OLS models

Throughout, I consider the fiscal effort exerted by the colonial administration to be proportional to annual issues of CD&W grants. To test this proposition, I fit the following expression:

$$\text{Tax Revenue}_{i,t} = \beta_0 \text{Tax Revenue}_{i,t-1} + \beta_1 \text{CDW Issue}_{i,t} + X'_{it}\Phi + \rho_i + \theta_t + \epsilon_{i,t} \qquad (1)$$

where the first lag of the dependent variable is included to account for serial dependence; X_{it} denotes time-varying colonial covariates; and ρ_i and θ_t colony and year fixed effect batteries, respectively, to account for unobserved time-invariant characteristics of colonies and common secular trends. Notice that the contemporaneous relationship that I model in expression 1 measures the immediate efforts that colonial administrators made to match imperial aid with local resources—as required by the CD&W fiscal mandate—and it does not capture dynamic effects of aid on the tax capacity.[60]

The CD&W program was intended to grow the economy and welfare of the recipient colony; hence any controls that correlate with either of those outcomes will bias the estimate of interest, β_1 in Expression (1). Bearing this in mind, I select a minimal battery of relevant controls X_{it}. The first one is colony population, which I log-transform. Population is shown to be a key determinant of CD&W fund *allocation* (more in Appendix H) and is likely correlated with wealth (hence the tax base). Population data is drawn from Albers et al.[61] I also include an indicator for internal conflict (e.g., the Mau Mau rebellion in Kenya) because it may require an increase in taxation to pay for defense costs while putting developmental projects on hold; thus, it is a relevant control. Data on internal conflict are drawn from the V-Dem project (v.13), which compiles Brecke's war compendium at the polity level.[62] Last, I include a control for the market value of natural resources built by Albers et al., following Bazzi and Blattman's methodology.[63] This variable results from an interaction of time-varying world market prices with the basket of export commodities of the colony, capturing exogenous changes in aggregate demand, which may simultaneously grow the tax base and attract further development investment.

Access to CD&W funds terminated right after independence, implying that territories remain in the dataset as long as they are part of the empire. Because independence in the British Empire occurred gradually, the panel becomes unbalanced in the later years of the analysis.[64] I show that results hold when the data are subset to the 1945–1961 period, when

[60]That analysis would require the use of lags (or leads) among other modeling assumptions about direct and indirect effects of aid on revenue (e.g., aid-led expansion of the tax base).

[61]Albers, Jerven and Suesse (2023).

[62]Coppedge et al. (2023) and Brecke (2012).

[63]Albers, Jerven and Suesse (2023); Bazzi and Blattman (2014).

[64]Ghana is the first territory to gain independence in 1957 followed by Nigeria in 1960, and Sierra Leone and Tanganyika in 1961. Eswatini (then Swaziland) gains independence last, in 1968.

the panel is strongly balanced and aid flows peak.

4.2 Correlates of Imperial Aid

Table 1 presents a battery of OLS models with colony fixed effects. Column 1 reexamines the bivariate relationship between taxation and CD&W funds in Figure 2 keeping time-invariant colony-level variation constant. The coefficient is positive and different from zero.[65] Column 2 accounts for serial correlation by adding a first lag of the dependent variable, leading to a substantial attenuation of $\hat{\beta}_1$. Column 3 adds a battery of year fixed effects to account for any secular trend in aid or tax mobilization. Model 4 adds the three covariates: population, internal conflict, and resource revenue. The coefficient of interest, $\hat{\beta}_1$, decreases in their presence, meriting their consideration. Substantively, results in column 4 imply that a one-standard deviation increase in CD&W issues increases average tax revenue by five percentage points, holding everything else constant.[66]

Table 1: Colonial Tax Revenue and CD&W Issues, 1929–69

	(1)	(2)	(3)	(4)	(5)	(6)
CDW Grant Issue	0.93***	0.16*	0.18**	0.16*	0.24**	0.35***
	(0.09)	(0.09)	(0.08)	(0.09)	(0.12)	(0.12)
Colony FE	Yes	Yes	Yes	Yes	Yes	Yes
Lagged DV	No	Yes	Yes	Yes	Yes	Yes
Time FE	No	No	Yes	Yes	Yes	Yes
Controls	No	No	No	Yes	Yes	Yes
Mean DV	6.06	6.06	6.06	6.06	7.21	7.60
Time coverage	1929–69	1929–69	1929–69	1929–69	1946–61	1929–69
Observations	404	398	397	397	181	169
R-squared	0.59	0.87	0.89	0.89	0.88	0.90

Note: Monetary units are expressed in per capita constant terms. Controls are: log of Population, Resources Value, and Internal Conflict. Refer to Appendix O for the expanded version of the regression table. Robust standard errors in parenthesis: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

[65] Given the small number of countries to cluster standard errors, I stay with standard robust errors. Bootstrapping clustered standard errors leads to similar estimates. Refer to Appendix E.

[66] Results are unlikely to result from Nickell bias. For $\hat{\beta}_0 = .83$ and T = 39 the bias is approximately $-(1+\hat{\beta})/(T-1) = 0.048$, or 5.8% of $\hat{\beta}_1$.

Columns 5 to 6 run two robustness tests: I work with a strongly balanced panel in column 5 by focusing on the 1946–1961 period, that is, from the postwar years to the beginning of the empire's end. Results are virtually identical to those in column 4: although the coefficient of aid issue increases, so does the mean of the outcome variable. I take care of small misalignments between fiscal years between the metropole and the colonies in model 6. The fiscal year in the UK ran from April to March of the following year, whereas that of the colonies varied. Some followed the fiscal year of the metropole: Basutoland, Bechuanaland, and Swaziland. Others followed the January-to-December calendar year (Gambia), but some transitioned away from it, adopting a July-to-June fiscal year starting in 1954 (Gold Coast, Kenya, Nigeria, Northern Rhodesia, Nyasaland, and Uganda) and 1958 (Sierra Leone). In practice, for some colony–years, the British fiscal year includes three months of the following calendar year, raising questions about sequential causality. To assuage reverse causation concerns, column 6 reruns expression (1) subsetting the sample to the colonies that shared the UK's fiscal calendar from beginning to end (Basutoland, Bechuanaland, and Swaziland) and to colonies that transitioned to the British fiscal calendar after they did. Although the sample size decreases, the magnitude and precision of the coefficient of interest is comparable with the full sample results.[67]

The analysis in Table 1 shows that an increase in CD&W funds is associated with an increase in colonial taxation. An endogeneity problem may exist, however, if *high* taxation predicts CD&W inflows (reverse causation) or if colonies that are more likely to expand taxation are prone to receive CD&W funds for unobserved, time-varying reasons (an omitted variable bias). I address both threats to inference separately.

4.3 Allocation Criteria

Did colonies with higher capacity to tax receive more imperial aid? The simple answer is no. To prove this, I study fund allocation criteria with now-declassified records. Specifically,

[67] In Appendix F I run a third robustness test by expressing variables in annual changes. Results hold. I confirm that results are not driven by data outliers in Appendix G.

I reconstructed internal correspondence in the Colonial Office in the 1940s, in which staff of various departments discussed which criteria to follow to allocate imperial aid. The debate lasted for six months and concluded with a formal recommendation to the Secretary of State for the Colonies, who had the last word on this matter. The recommendation to the Secretary of State included a list of variables that should guide the allocation of funds. I examine the predictive power of those recommendations under a regression framework. To conduct this exercise, I compiled the six allocations for the full life-span of the CD&W program as well as data for all the variables listed in the recommendation to the Secretary of State.

The analysis reveals that two of these variables, namely colonial population and revenue per capita, explain over two thirds of the allocation variation; and no remaining variables are statistically different from zero. Crucially, the analysis of the allocation criteria shows that *higher* revenue per capita predicts *smaller* aid allocations. In other words, imperial aid was disproportionally targeted at colonies with weak fiscal institutions, assuaging concerns of reverse causality. I summarize the archival and statistical exercise in Appendix H.

4.4 Shocks in Aid

What if unobserved, time-varying factors drove the relationship between aid issues and colonial tax mobilization? To address this hypothetical, I gain leverage on identification by exploiting sudden changes in the Balance of Payments (POB) of the UK—the "donor"—to obtain exogenous variation in imperial aid.

The British economy had been under stress since World War I.[68] The rise of global protectionism followed by the Great Depression weakened global demand for British exports, limiting access to foreign reserves. This situation grew into a major problem when the UK issued large loans denominated in US dollars to wage World War II. The Treasury struggled to keep the UK BOP afloat, requiring major devaluations of the sterling pound in 1931 and 1967.[69]

[68] Eichengreen (2004).
[69] Schenk (2010, ch.1).

Students of colonial development have suggested that the generosity of CD&W flows was linked to the UK BOP: When the BOP was in surplus, the Treasury had fiscal space to issue imperial aid, whereas in deficit years nonessential expenses—including CD&W issues—were cut to prioritize debt service.[70] I take advantage of this observation to gain leverage on identification.

Specifically, I model the *observed* volume of aid received by colonies—the issues analyzed in Table 1—as an interaction between the *expected* aid—an endogenous variable—and the UK BOP—an exogenous variable. To measure the expected volume of aid, I rely on CD&W *commitments*, which were the project accounts from which issues were drawn.[71]

The aid commitment to a given project was decided following the lengthy evaluation referred to in section 3.1. Project proposals were handled by the Colonial Office and the Treasury and voted annually on the floor of Parliament. Given this multi-staged, detail-oriented procedure, I expect commitments to be relatively inelastic to short-term shocks in the UK BOP.

Aid commitments were *expected*—thus endogenous—but the cycle of the UK BOP was unpredictable and orthogonal to any given colony. By modeling the *observed* aid as an interaction between aid *commitments* and the UK BOP, I obtain an exogenous measure of aid indexed at the colony-year level. If this strategy is right, we should expect an increase in issued aid when the BOP was in surplus and a decline when it ran a deficit. Crucially, the duration and intensity of those cycles are unpredictable and unrelated to colony characteristics.[72]

Data. To implement this test, I digitized the 11,200+ commitments of the CD&W program from 1929 to 1969 for the 56 participant colonies (although here I focus on the 12 territories

[70] Abbott (1970, p.1226), Little and Clifford (1965, p.241); Havinden and Meredith (1993, p.222); Morgan (1980*b*, p.84); Tomlinson (2003, p.421).

[71] Refer to Appendix C for a diagram showing the nested structure of allocations, commitments, and issues.

[72] Appendix K shows results of a model in which aid issues are regressed on an interaction between annual commitments and the UK BOP. Results are fully consistent with this interpretation.

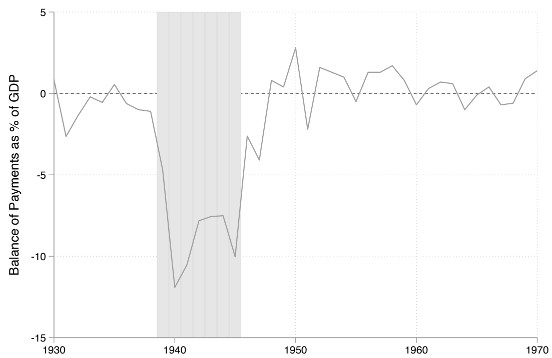
in sub-Saharan Africa). For the years between 1930 and 1939, the data come from the *Annual Reports of the Advisory Committee of Colonial Development*; and for the years 1941 to 1969, from the *Annual Returns of Schemes*.[73] I classified each project by sector and aid type (grant, loan, research) and computed annual grant totals for African territories expressed as per capita work-day equivalents (hence the same scale as for the outcome variable).

Figure 3a shows the evolution of the UK BOP, which fluctuated around zero before and after World War II, when it experienced a severe negative shock. For Figures 3b and 3c, I created an indicator variable that takes value 1 when the UK BOP was in surplus and zero otherwise. In Figure 3b committed aid in surplus years is compared with deficit years: It shows that the generosity of commitments increased somewhat in years of BOP surplus, but differences across groups were not statistically different (t=1.2). This is consistent with the slow-moving process of project evaluation and approval. In contrast, aid issues were highly sensitive to the UK BOP. As shown by Figure 3c, aid issues were three times larger in years of UK BOP surplus than deficit years (t=6.19). A scale comparison between figures suggest that when the BOP was in surplus, the expected and observed aid was roughly the same—as it should be—but issues experienced a sharp decline when the UK BOP ran a deficit. Appendix J shows that the discontinuity in aid issues across surplus and deficit years holds at the colony level. That is, the metropole did not strategically allocate limited resources to some colonies in bad times. These patterns confirm the observation made by imperial aid historians: in bad years for the UK BOP, the Treasury cut back on imperial aid across the board.

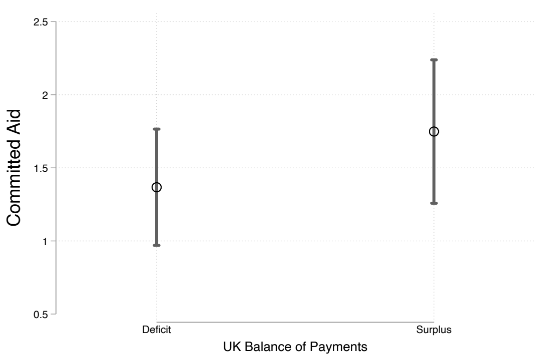
Next, I replace the aid issue variable in expression (1) with an interaction between annual commitment and UK BOP. The commitment variable measures the maximum volume of new aid that a colony can receive in any given year, and the UK BOP adds exogenous variation

[73]Because of the transition from Colonial Development to the Development and Welfare program in 1940, no new commitments are made that year.

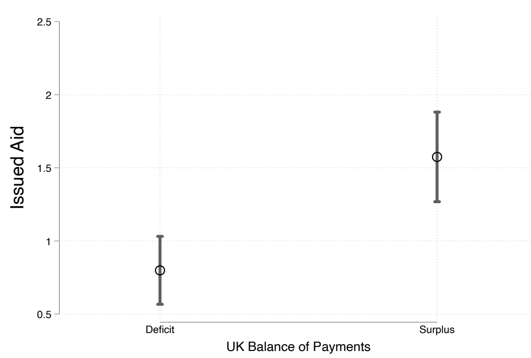
Figure 3: UK Balance of Payments and Imperial Aid



(a) UK's BOP as a % of GDP



(b) CDW Commitments (ttest = 1.20)



(c) CDW Issues (ttest = 6.19)

Note: World War II years in gray in panel (a). Data in panels (b) and (c) for 12 colonies in sub-Saharan Africa. Data of BOP and GDP from 1929 to 1947 from Feinstein (1976) and from Office of National Statistics from 1948 to 1969.

to the actual transferred funds. With this, I model colonial tax revenue as follows:

$$\begin{aligned} \text{Tax Revenue}_{it} &= \gamma_0 \text{Tax Revenue}_{i,t-1} + \gamma_1 \text{CDW Commitment}_{it} + \gamma_2 \text{UK BOP}_t \\ &+ \gamma_3 (\text{CDW Commitment}_{it} \times \text{UK BOP}_t) + X'_{it}\Theta + \rho_i + v_{it} \end{aligned} \tag{2}$$

with X_{it} and ρ_i denoting time-varying colony-specific controls and colony fixed effects, respectively.[74] To meet the cost-sharing mandate, tax revenue should generally increase with committed funds, $\gamma_1 > 0$, and disproportionally so following positive shocks in imperial aid, $\gamma_3 > 0$. UK BOP is dichotomized for presentational purposes in Figures 3b and 3c, but I use the original continuous variable in the regression analysis.

Table 2: Colonial Tax Revenue and Imperial Aid Shocks, 1929–69

	(1)	(2)	(3)
CD&W Commitment	0.095**	0.097***	0.094**
	(0.037)	(0.037)	(0.038)
UK BOP	-0.046*	0.023	0.046
	(0.027)	(0.047)	(0.046)
CD&W Commitment × UK BOP	0.023**	0.022**	0.021*
	(0.011)	(0.011)	(0.011)
Mean DV	6.06	6.06	6.06
Lag of DV	Yes	Yes	Yes
Colony FE	Yes	Yes	Yes
Controls	Yes	Yes	Yes
World War II Indicator	No	Yes	Yes
Year Polynomial	No	No	Yes
Observations	388	388	388
R-squared	0.880	0.880	0.882

Note: All monetary units are expressed in per capita, real value. Controls are: log of Population, Resources Value, and Internal Conflict. Refer to Appendix O for the expanded version of the regression table. Robust coefficients in parenthesis. *** p<0.01, ** p<0.05, * p<0.1.

Column 1 in Table 2 reports results for expression 2 stricto sensu. I add a World War II indicator variable in column 2 to account for the dip in the UK BOP during those years. I

[74]Notice that year fixed effects are absorbed by the *UK BOP* variable. Importantly, inflation is taken care of because all monetary units are expressed in constant terms.

add a third-order polynomial of time in column 3 to account for any secular trend in aid or taxes not captured by the BOP. Results are virtually identical across specifications: Local tax revenue increased in proportion to the expected amount of imperial aid, $\hat{\beta}_1 > 0$—the endogenous part of the interaction—and it expanded further with a surplus in the UK BOP, $\hat{\beta}_3 > 0$.

I revisit these results under an instrumental variable framework in Appendix L, where I instrument CD&W issues with the interaction between CD&W commitments and the UK BOP. The identification assumption relies on conditional exogeneity; that is, once the CD&W commitments are accounted for in the first and second stage, any effect of the *Commitment* $\times$ *UK BOP* interaction on the dependent variably runs only through *CD&W issues*. The exclusion restriction would be under threat if there were time-varying factors spuriously correlated with the UK BOP that also affected colonial taxation (e.g., a global dip in colonial commodities). The exclusion of trade taxes and resource royalties from the outcome variable helps assuage those concerns. Results of the IV model in the Appendix mimic those in Table 2: imperial aid expanded colonial taxation.

5 Making Imperial Aid Work

The positive effect of imperial aid on fiscal capacity contrasts with the mixed evidence in the postcolonial world, where foreign aid is said to weaken incentives to tax[75] and erode the tax apparatus of the state.[76] Why did imperial aid work where foreign aid failed?

In Section 2 I discussed two conditions for positive aid performance: First, the donor and the political leadership of the recipient country should share policy preferences (condition i)—in this case for capacity building; second, aid administrators in the recipient country should operate under an incentive structure that rewards effort to fulfill the mission's goal

[75] Bräutigam (2002), Martin (2023), Morrison (2009), Moss, Pettersson Gelander and van de Walle (2006), Prichard (2015) and Ross (2004).

[76] Ahmed (2012), Albers, Jerven and Suesse (2023), Besley and Persson (2011), Bräutigam (2002), Gupta et al. (2003), Smith (2008), and van de Walle (2001).

(condition ii).

The fiscal mandate of the CD&W initiative was met, I argue, because a series of reforms in the Colonial Service starting in the interwar period screened like-minded officials into colonial governorships, thus meeting condition i, and established an incentive architecture that rewarded high-performing officials with salary increases and promotion within the Colonial Service, hence meeting condition ii. Next, I elaborate on these reforms and test key empirical implications leveraging the career trajectories of colonial governors.

5.1 Recruitment into the Colonial Service

The top agent in the colony was the governor, the "king-pin" in the system of relationships between the metropole and the dependent territory.[77] Governors personified the Crown in the territory and the executive powers, and all the constitutional functions of the Crown were vested in them.[78] To fulfill these functions, governors were granted broad powers in security as well as financial and political matters. The broad gubernatorial responsibilities came with generous remuneration and a comfortable lifestyle.

Governors were appointed by the Secretary of State for the Colonies, the head of the Colonial Office in London. Patronage appointments to governorships were common in British history and were rationalized as part of a trust-based system. Only individuals with certain character, manners, and upbringing could be trusted for such a powerful and minimally monitored office.[79] This rationale had survived various attempts to introduce meritocratic appointment and promotion in the British Administration starting with the 1854 Trevelyan–Northcote Report.[80] Governorships were the last vestige of patronage in the British civil service.

The limitations of the old system became apparent after World War I: tighter reliance

[77] Although legislative councils were created in the last years of colonial rule, the governors were not accountable to them, only to the Secretary of State for the Colonies.

[78] Jeffries (1956, p.35).

[79] Cain and Hopkins (2016); Heussler (1963).

[80] O'Gorman (2001); Shefter (1994, p.45-8).

on colonial economies, imperial competition in Europe and overseas, and an improvement in telecommunications and transportation called and allowed for professionalized governorships working in unison with the metropole.[81] The patronage system was effectively terminated in 1930 with the publication of the Warren Fisher Report—the "Magna Carta of the Colonial Service."[82] Old practices were curtailed by the establishment of a new personnel division within the Colonial Office, staffed by career bureaucrats—not political appointees—who handled all questions of recruitment, promotions, and discipline.[83] The personnel division was subdivided into two sections: recruitment was in the hands of a newly established Colonial Service Appointment Board, populated by three members with field experience in the colonies. Promotion, transfer, pensions, and conditions of employment were handled by the Staffing Division.

Reforms in recruitment into the organization infused a strong dose of professionalism into the Colonial Service:[84] "Promotion to all higher posts [was] by selection based on experienced, qualifications, and merit, and not merely by seniority."[85] Within a decade of the Warren Fisher Report, the vast majority of governors comprised career officials who had climbed up the ladder as opposed to connected individuals.[86]

At the junior level, the Warren Fisher Report consolidated the selection practices initiated in the first decade of the 20th by Sir Ralph D. Furse.[87] In 1910 he was commissioned to modernize the colonial service by incorporating much-needed technical expertise. To attract that kind of talent, he targeted recent graduates by coordinating with University Appointment Boards:[88]

> By this time [late 1920s] we had a secret list of Oxford and Cambridge tutors in

[81] Cohen (1958, p.80-8).
[82] Jeffries (1938, p.55).
[83] Kirk-Greene (2006, p.31).
[84] Kirk-Greene (2006, p.32) and Lee (1967, p.137).
[85] Bradley (1950, p.17).
[86] Lee (1967, Diagram V, p.138).
[87] Furse would be involved in recruitment efforts for almost four decades, and he is considered one of the architects of the modernization of the institution.
[88] Furse (1962, p.223).

order of the reliability of their reports on undergraduates: we knew pretty well whose swans would turn out to be geese.

To attract better candidates, Furse rebranded the Colonial Service as a respectable career. Leaflets were printed and distributed at universities and major weekly magazines and mainstream authors were commissioned to write booklets that presented the colonial administration as a fine profession.[89] Furse lobbied governors to improve salaries and living conditions in the colonies to attract talent into the Service. These efforts secured tax exemptions, benefits, and generous leave policy for new recruits.[90] Furse's ultimate goal was to match the Colonial Service to "the high status enjoined by the Indian Colonial Service in the public mind,"[91] and arguably he did: following World War II, more than two thirds of new recruits joined straight from college.[92]

The life of a student at a university in England was quite different from that of a district officer in Africa. Starting in 1926, new recruits enrolled in Tropical African Administrative Services, a course offered at Oxford and Cambridge (and eventually the London School of Economics as well) for general training. Those with sectoral skills took specialized courses: For instance, cadets in the Education service received training at the University of London's Institute of Education; agriculturalist cadets attended the Imperial College of Tropical Agriculture in Trinidad; those in the Colonial Forestry Service and the Colonial Veterinary Service attended the new Imperial Forestry Institute at Oxford; and those in the Colonial Medical Service attended the Liverpool School of Tropical Medicine and the London School of Hygiene and Tropical Medicine, inaugurated in 1924.[93] A second push toward colonial training followed the Devonshire report of 1946, which introduced postgraduate training to cadets separated by a one year of training in the field before they passed "probation."[94] Based on interviews conducted with retired Colonial Service officials, these courses had a

[89] Kirk-Greene (2006, p.35-6).
[90] Kirk-Greene (2006, p.32) and Furse (1962, p.220).
[91] Kirk-Greene (2006, p.43).
[92] Gardiner (1998, p.41).
[93] Kirk-Greene (2006, p.27-8).
[94] Lee (1967, p.45-7).

marked ideational element[95] and fostered a strong *esprit de corps* among participants.[96]

Recruitment reforms at the senior and junior level initiated in the interwar years terminated patronage practices but also attracted a particular type of individual. Merit was important—thus the emphasis on college graduates—but also as sense of shared mission. Furse—a fervent advocate of empire—prioritized making recruits confident "in the general rightness of British Colonial aims and policy,"[97] which was already questioned internationally and domestically. Drawing on surveys of former recruits, Gardiner confirms that a substantial number of officers had joined the Service drawn by a "sense of imperial mission." One recruit put it thus:

> [I] entered the Kenya administration in the 1950s in the belief that "the British Empire was, on the whole, the best thing that happened to mankind since the Roman Empire."[98]

That sense of mission ran in the family: many admitted candidates had a family history of service to the Empire (including the Indian Civil Service and missionaries) going back generations.[99]

The esprit de corps and sense of shared mission were reinforced by annual summer courses at Oxford, University social clubs, magazines (e.g., *Corona*, the Journal of HM's Colonial Service), and sectoral conferences with peers from other colonies. The emphasis at the recruitment stage on selecting trained *and* like-minded individuals who thought of the Colonial Service as a life career potentially mitigated adverse selection in imperial aid governance.

Alternatively, one could argue that imperial aid worked because, by construction, imperial governance aligned the preferences of the donor and the agents (say, London and the Colonial Governor, respectively); however, principal–agent issues between the metropole and imperial agents had been common in the British Empire before the interwar years. Gailmard documents the tension between London and governors in American colonies and shows

[95] Stockwell (2018, p.100).
[96] Gardiner (1998).
[97] CO 877/27/1: Paragraph 17.
[98] Gardiner (1998, p.106-7).
[99] Gardiner (1998, p.142).

that independent legislatures were created to limit the executive powers of imperial administrators.[100] However, this was not a solution in colonies without self-governing institutions, hence the importance of screening like-minded agents into colonial governorships.[101]

5.2 Performance Incentives

Alongside recruitment efforts, interwar reforms in the Colonial Service cultivated the importance of on-the-job performance. As noted above, most governorships were filled by career officials within 10 years of the Warren Fisher Report. The vast majority of these governors had spent 20 to 30 years working in lower echelons of the Colonial Service. In fact, the majority of African governors had held the position of district officer earlier in their careers, a hands-on, intermediate rank in the command chain.[102] District officers were deployed on the ground, and their job was to implement guidelines from provincial commissioners who were themselves accountable to the governor. District Officers presided over assistant officers and probatory cadets. About three quarters of the governors in Africa post 1930 began their careers as cadets and were promoted all the way within the ranks.

Governors had ample prerogatives over colonial policy, including tax policy, and their performance was closely monitored by the Staffing Division in London, whose members decided on their tenure. Governors could be reappointed—only a third were, itself revealing—and promoted to a higher-status colony that offered more generous compensation and retirement pensions.[103] The "plums of the service," or Class I Colonies, were Nigeria, Kenya, Malaya, Ceylon, Tanganyika, and Hong Kong.[104] Uganda, Northern Rhodesia, and Sierra Leone in Africa constituted Class II; and Gambia, Nyasaland, and Somaliland, Class III. Zanzibar

[100] Gailmard (2024).

[101] Frictions between London and imperial agents had occurred in numerous colonies of the British empire (Anderson, 2023; MacDonald, 2020) and in other empires, too, including the Spanish (Chiovelli et al., 2024; Guardado, 2022), the Ottoman (Karaman, 2009) and the Qing (Ma and Rubin, 2019; Sng, 2014). Gerring, Ziblatt, Van Gorp and Arévalo (2011) offer an extensive discussion on the challenges of imperial governance.

[102] Kirk-Greene (1979, p.236).

[103] Jeffries (1949, p.102).

[104] For example, the governor's salary in 1947 in Nigeria was compensated with £6,500, compared to £2,500 in Gambia (Kirk-Greene, 2000, Table 7.3).

and the High Commissioner Territories of Southern Africa (Basutoland, Bechuanaland, and Swaziland) came in last place. Ambitious Colonial Secretaries (second to governors) vied for a Class IV or III governorship, and sitting governors postulated for coveted vacancies in higher-ranked colonies.

New governors were designated to the poorest colonies, and those who performed well were transferred to wealthier ones.[105] Similar to tournament models in modern-day China,[106] fiscal performance became crucial for gubernatorial reappointment and promotion after the Warren Fisher Report. Using causal inference methods, Xu shows that colonial governors who raised more taxes and enacted more tax ordinances were promoted to colonies with more status and higher salaries.[107] Kirk-Greene suggests that monitoring of gubernatorial performance was all the more tighter in colonies receiving CD&W funds.[108] The case of Gambia, one of the poorest colonies at the time, is illustrative: in 1945, the Governor Hilary Blood set up Native Treasuries for the purpose of colonial development in the *Protectorate* (the section of the territory under native authority). He bestowed the chiefs running the Native Treasuries with the powers to raise taxes and build infrastructure to stimulate development and expand the tax base.[109] In recognition of his efforts, Blood was rewarded with a second governorship, this time in Barbados.

The interwar reforms strengthened career incentives for junior officials, too. Reformers of the Colonial Service held that the best way to appeal to capable candidates and induce performance was to offer a clear track for professional promotion within the Service. The 1932 unification of colonial civil services, also recommended by the Warren Fisher Report, was a key step in this direction.[110] Colonial administrations were largely siloed organizations before the unification, guided by idiosyncratic traditions and rules; and transfers to other colonies were rare. The unification of 35+ colonial administrations (including the histor-

[105]Meredith (1975, p.494).
[106]Li and Zhou (2005) and Truex (2016).
[107]Xu (2018).
[108]Kirk-Greene (2000, p.227).
[109]Ceesay (2019, p.94-6).
[110]Jeffries (1938).

ically prestigious Indian, Malayan, and Sudanese Civil Service) expanded the professional opportunities of ambitious officials and standardized promotion criteria. Sir Charles Jeffries, who led the unification, stated:[111]

> The main purpose of the unification scheme [...] was to aid recruitment by offering candidates admission to a corporate Service with a promise of consideration for advancement to any of the scheduled posts for which their qualifications and merits make them eligible. [...] Eligibility for promotion outside their territories was now written into the constitution instead of being an uncovenanted act of patronage on the part of the Secretary of State. [The members of the unified service] benefited too from the improvements in salaries, pension arrangements, and general conditions of employment associated with the development of the unification scheme.

The unification matched standards of the Service to those offered in the best reputable colonies and granted a new set of opportunities to officials deployed in poorer territories. According to Kirk-Greene, the unification was most consequential for the professional and technical staffs of smaller colonies, for whom the promotion prospects for a career in one were frequently unfavorable.[112]

Performance-based salary rules accompanied the unification, and the Warren Fisher Report included a recommendation to use a long incremental salary scale to induce performance. In particular, it advocated for the use of an "efficiency bar",[113]

> which requires the production of a certificate of efficiency from the Head of the officer's Department before further progress up the scale can be made. Our evidence shows that the purpose of the institution of the long scales was to prevent a block in promotion, and to promote recruitment by offering to candidates the prospect of attaining at least a reasonably high salary in return for efficient service and irrespective of the occurrence of vacancies."

The efficiency bar was enshrined in *Appointments in Her Majesty's Colonial Service,* an annual publication prepared by the Colonial Office detailing conditions of service, promotion, and transfers of Colonial Service personnel.[114] The Warren Fisher Report concluded by

[111] Jeffries (1972, p.13).
[112] Kirk-Greene (2006, p.31).
[113] Cmnd. 3554: p.33.
[114] Colonial Office (1954, Section 8, par. 8).

stating that promotion to higher-rank officers would occur "by selection on the sole basis of merit,"[115] a major deviation from the old seniority rule.

Performance assessment. Reforms in promotion and compensation rules in the interwar years were designed to induce effort among imperial agents even if they were deployed to less than ideal posts. But how was performance assessed? Governors led the process. Unlike bureaucratic leaders today,[116] colonial governors micromanaged their staff and monitored subordinates closely. Governors gained a reputation for doing so and were casually nicknamed the "stick of H[is] M[ajesty]."[117]

Governors wrote annual confidential reports for all their senior officers and submitted copies to the Colonial Office. Promotion requests within or to another colony required the recommendation of the Governor.[118] The Staffing Division at the Colonial Office had the final word on promotion and raises in salary, but they based their decision largely on the annual report that Governor wrote about all senior subordinates.[119] The centrality of the governor's confidential reports was recognized in the "Promotions to Higher Appointments" section of the final report of the 1948 Conference of African Governors in London:[120]

> The annual confidential reports supplied by Governors form the basis of the Colonial Office system of "noting" [i.e., consideration for promotion]. As these reports come in, they are carefully scrutinized not only by the Colonial Service Department but also by the appropriate geographical department, the appropriate adviser (where there is one) in the case of professional officers, and by a higher authority [Secretary of State] with a view to determining whether any particular officer should be specially noted as suitable for consideration of promotion in the ensuing year. [...] The *main criterion* which determines whether an officer shall be noted is merit as shown by his report.

Holding the key to promotion and raises in salary, the governor exerted substantial leverage over the career trajectory of his subordinates. If meeting the fiscal mandate was impor-

[115] Cmnd.3554: p.34.
[116] Patty (2018, p.202).
[117] Jeffries (1949, p.102).
[118] Even appeals to the Secretary of State regarding a governor's decision were elevated through him (Jeffries, 1972, p.10).
[119] Other than the governor's annual reports, the Colonial office had records only of the officer at the time he or she joined the service (Jeffries, 1956, p.145-6).
[120] FO 371 67589, Appendix V, Colonial Service: p.8. Italics added.

tant for promotion, one can expect a governor to use his powers to compel subordinates to meet the goal. A biographical anecdote illustrates how the governor's expectations trickled down the command chain. Sharing his experience as a cadet in Northern Rhodesia, Harry Franklin recollects the instructions that he received from his District Commissioner upon arrival:[121]

> "The only [duty] that matters, if you want promotion, is tax-collection. The more tax you collect the higher the governor will rate you."

To sum up, starting in the interwar years, the Colonial Service was transformed into a modern bureaucratic organization in which colonial governors, the top political and bureaucratic authority of the colony, were carefully vetted to assure commitment to the mission's goal. In this organizational hierarchy, the governor's fate was in hands of the Colonial Office, and the fates of his subordinates were in his. Screening "good" types into senior and junior posts became a priority in the metropole; however, to ensure effort toward the mission's goal, on-the-job performance incentives were offered at every rank of the Civil Service, from the governor to the probatory cadet.

5.3 Screening and Performance: An Empirical Test

Having discussed recruitment and promotion policies in the Colonial Service, I next leverage the specific career trajectories of colonial governors in Africa to test the two theoretical mechanisms of aid performance: (i) preference alignment between donor and local leadership and (ii) high-powered incentives within the aid bureaucracy to exert effort toward the mission's goal. To address the first set of issues (i.e., adverse selection), I study the recruitment mechanisms into governorships. To examine performance incentives to fulfill the fiscal mandate (i.e., moral hazard), I focus on gubernatorial reappointment and retirement pension qualifications.[122]

[121] Franklin (1974, p.37).

[122] Ideally one would test recruitment into and career incentives within the lower echelons of the Colonial Service; however, it is not possible to match subnational fiscal performance to individual officers.

5.3.1 Recruiting Mission-Oriented Types

Here I examine whether the positive effect of aid on local revenue mobilization revealed in Section 4 resulted from improvements in the recruitment of colonial governors, the highest-rank political authority in the colony. Given governors' massive power and leverage over their subordinates, I expect their commitment to the CD&W initiative to be instrumental in meeting the fiscal mandate.[123]

I use two strategies to identify the governor's *type*: First, following Xu, I differentiate between governors appointed before and after the publication of the Warren Fisher Report in 1930.[124] Those appointed before 1930 assumed office under the old patronage system, whereas those appointed after 1930 underwent an independent evaluation of their record and aptitude. I expect the new recruitment system to screen in governor candidates with proven commitment to London's agenda for the colonies, including the CD&W program and its fiscal mandate.

I hand-coded the career trajectories of the 80 governors who served in African colonies between 1929 and 1969 from Kirk-Greene's (1980) biographic compendium.[125] I divide governors into two groups—*Warren Fisher* vs. *Patronage* appointees—based on the starting date of their first governorship ever. Because the CD&W initiative was launched in 1929, only a fraction of governors assumed their first ever governorship before 1930: 13% of the

[123]Strategic appointment of governors is a possibility. The second part of this exercise allows for governor fixed effects.

[124]Xu (2018) shows that governors appointed after the Warren Fisher Report of 1930 mobilized more fiscal revenue, but he does not consider the role of imperial aid or its fiscal mandate.

[125]In the main analyses, I drop 5 governors who were manifestly appointed for political reasons: Edward William Macleay Grigg, Evelyn Baring, George Stewart Symes, Hubert Winthrop Young, and Malcolm John MacDonald. Three of these individuals were appointed after the Warren Fisher reform and were commissioned with very specific missions; e.g., MacDonald was appointed to Kenya in 1963 and navigated the last year of this territory as British colony. The political reasons that led to their appointment are explained are explained by Kirk-Greene (1979) and Nicolson and Hughes (1975). Appendix M shows that all results, except the Warren Fisher Governor test, hold.

colony–year sample. With that caveat in mind, I run the following interaction model:

$$\begin{aligned}\text{Tax Revenue}_{it} &= \beta_0 \text{Tax Revenue}_{i,t-1} + \beta_1 \text{CDW Grant Issue}_{it} + \beta_2 \text{Warren Fisher Appointee}_g \\ &+\beta_3(\text{CDW Grant Issue}_{it} \times \text{Warren Fisher Appointee}_g) + X'_{it}\Phi + W'_g\Gamma \\ &+\rho_i + \delta_t + v_{it}\end{aligned} \tag{3}$$

with $X_{i,t}$ denoting the same time-varying colony-level controls as in previous models; W_g governor-level controls; and ρ_i and δ_t colony and year fixed effects, respectively. I expect $\beta_3 > 0$ if the Warren Fisher reform screened mission-committed types into colonial governorships. The before–after divide may correlate with other differences: younger governors might have received a better education and had had less time to assume a governorship by 1930 (meaning that younger governors might be particularly high performing). To account for this possibility, I control (separately) for the governor's date of birth (DOB) and for the year of entry into colonial service.

Columns 1 and 2 in Table 3 show differences in *Warren Fisher* and *Patronage* appointees in meeting the fiscal mandate of the CD&W program, and Figure 4a plots marginal effects drawn from column 1. The effect of aid on tax revenue is not different from zero in the presence of a patronage appointee ($\hat{\beta}_1 = 0$), but it is positive and different from zero when the colony is under command of a governor appointed following the Warren-Fisher report ($\hat{\beta}_3 > 0$).

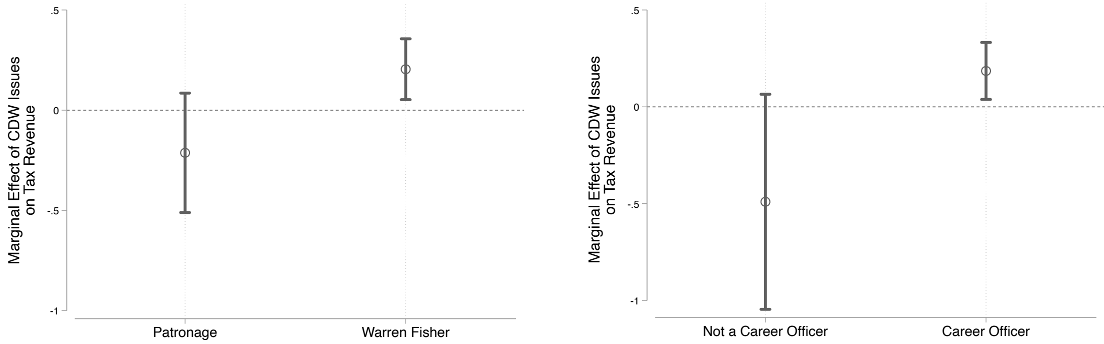
A second strategy to identify the governor type relates to professional background. After World War I, junior recruits joined the service via "open competition;" in addition to formal qualification requirements (e.g., a bachelor's degree) candidates had to submit recommendation letters (often from ex-service members) and be interviewed by the Colonial Office. Upon a positive interview, they spent two full years "in probation" (one receiving specific training at Oxford and Cambridge, another in the field) after which—and conditional on a positive report—they became civil servants. Candidates under probation received the title

Table 3: Recruitment Track and Administrators Performance

	(1)	(2)	(3)	(4)
CDW Grant Issue × Warren Fisher	0.417**	0.406**		
	(0.182)	(0.186)		
CDW Grant Issue × Career Official			0.675**	0.674**
			(0.331)	(0.329)
CDW Grant Issue	-0.213	-0.203	-0.490	-0.489
	(0.180)	(0.186)	(0.336)	(0.335)
Warren Fisher	0.527*	0.497		
	(0.317)	(0.303)		
Career Official			-0.012	-0.039
			(0.173)	(0.168)
First lag DV	Yes	Yes	Yes	Yes
DOB	Yes	No	Yes	No
Date of Entry	No	Yes	No	Yes
Controls	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Colony FE	Yes	Yes	Yes	Yes
Observations	379	379	379	379
R-squared	0.889	0.889	0.890	0.890

Note: These models examine whether the governor's recruitment method impacted the fiscal performance of the CD&W program. Warren Fisher = 1 if first ever appointment into governorship dates after 1930 Warren Fisher Report, 0 otherwise. Career Official = 1 is the governor entered the civil service as a cadet, 0 otherwise. Colony-level controls: Controls: log of Population, Resources Value, and Internal Conflict. Governor-level controls are: D.O.B. (date of birth) and Date of Entry (date of first appointment into the colonial service regardless of rank). Refer to Appendix O for the expanded version of the regression table. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Figure 4: Recruitment and Fiscal Performance



(a) Appointment (b) Background

Note: Figures show the marginal effects based on column 1 and 3 in Table 3 respectively. 90% CI. A governor is appointed by meritocratic criteria (patronage) if he assumes his first gubernatorial office after (before) 1930. A governor is a career officer if he joined the Colonial Service as a cadet; he is not a career officer if he was recruited from the private sector, military, or Colonial Office (the latter is not part of the Colonial Service).

"cadets."[126] Almost two thirds of the governors in the dataset initiated their careers as cadets. Other paths to governorship included military service (particularly after World War II), the private sector (businessmen with experience in trade and mining), and the Colonial Office (which belonged in the Civil Service, not the Colonial Service).

The path from cadet to governor was complex: After the two-year probation (later extended into three), they were promoted to assistant district officers, then to district officers, (assistant) provincial commissioners, (deputy) chief secretary, and finally governor. On average 23 years were needed for promotion within the ranks from cadet to governor (with a sample maximum of 34 years) and possibly multiple international moves.

I expect governors who had entered the service as cadets to fully interiorize the mission's goal. I expect these career governors, having prolonged field experience, to know which tasks to prioritize and how to communicate those to their subordinates as well as monitor compliance with their instructions. With regard to imperial aid, I expect these "cadet-made

[126] Expressions such as "Assistant District Officer, Assistant District Commissioner, Assistant Resident, Assistant Collector" denoted the same rank. Cadet = 1 in the dataset if the governor biography in Kirk-Greene (1980) lists any of the above expressions.

governors" to be more effective in meeting the CD&W fiscal mandate than noncareer officials, who might assume office without know-how, leadership skills, and shared interests.

I test this proposition by rerunning expression (3), but this time I use Career Official as the modulating variable. Drawing from Kirk-Greene's biographies, I establish whether African governors entered the Service as cadets, and I interact that variable with CD&W issues. Results are reported in columns 3 and 4 in Table 3, where I control for the governor's DOB and date of entry into the service, respectively. Figure 4b plots marginal effects in column 3, too, for the ease of interpretation. Results suggest that the CD&W fiscal mandate was more likely to be met when a career governor was in command.

Results in this section are consistent with the theoretical mechanism—that is, screening aid administrators who share the mission's goal improves aid performance. Arguably, "Warren Fisher governors" and "cadet-made governors" not only shared London's agenda for the colonies but also possessed individual qualities that helped them promote within the ranks and attain a governorship (e.g., above-average competence). Although it is impossible to study the screening mechanism in isolation with observational data, next I examine how governors reacted to performance incentives specifically.

5.3.2 Performance Incentives

I leverage two pivotal moments in a governor's career—reappointment and retirement—to examine the role of performance-based incentives. Governorships granted quasi-absolute powers to their holder, professional and social prestige, and emoluments more generous than most civil service positions in the metropole. First-time governors were often assigned to a Class IV (perhaps III if lucky) colony. The Colonial Office observed his performance in that role and decided whether to reappoint him (possibly with a higher status colony's governorship). Relatively few governors—one third of the total—convinced the Colonial Office of their having merits for reappointment. If successful, multiple governorships awaited in the future, up to four in the sample data. The make-or-break point was clinching that first reappointment.

In addition to future earnings and social status, reappointment increased the probability of securing a governor's retirement pension, generous by every standard of the day. To qualify for a governor's pension, the candidate had to complete ten years as governor (later relaxed to three) and be 60 years of age (later relaxed to 55). Failing to meet either qualifying criteria meant that the rank (or job) prior to assuming the governorship was used to compute the pension's emoluments—in practice, a substantial pecuniary loss. This (genius or perverse) rule strengthened incentives to clinch a gubernatorial reappointment:[127]

> The peculiar nature of governorships, as to tenure and pension: tenure of one appointment was usually confined to a period of six years from the date of assumption of duty, but a governor's pension was granted only after ten years of governorship, failing which an official would draw a pension based upon his salary and years of service before appointment as governor: *this put a premium on getting a second governorship* regardless perhaps of age or health.

Following Nicholson's and Hughes' observation, I expect first-time governors to be particularly effective in meeting the fiscal mandate of the CD&W program. By mobilizing local revenue to match imperial aid, first-time governors could signal their value to the Colonial Office and aspire to reappointment. I test this proposition by following the model specification in Expression (3), this time using as modulator a dummy variable that equals "1" if the colony is ruled by a first-time governor. I report results in column 1 and 2 in Table 4, where I control for the governor's DOB and date of entry into the service, respectively. For ease of interpretation, I also show marginal effects in column 1 in Figure 5a. The results of this test are consistent with the theoretical mechanism: in the presence of performance-based promotion incentives, CD&W funds expanded colonial taxation among first-time governors (compared to those who had held this office two or more times).

For most office holders, the governorship was the post from which they retired.[128] The retirement pension of governors was subject to special legislation: To qualify for it, governors

[127]Nicolson and Hughes (1975, p.95). Italics added.
[128]Kirk-Greene (1980, p.26).

Table 4: Career Incentives and Fiscal Performance

	(1)	(2)	(3)	(4)
CDW Grant Issue × First Time Governor	0.305**	0.293**		
	(0.123)	(0.121)		
CDW Grant Issue	-0.103	-0.092	0.282**	0.268*
	(0.128)	(0.127)	(0.131)	(0.140)
CDW Grant Issue × Age Requirement Met			-1.498**	-1.575*
			(0.742)	(0.801)
First Time Governor	-0.009	0.022		
	(0.188)	(0.189)		
Age Requirement Met			-0.358	-0.347
			(0.630)	(0.641)
First lag DV	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
DOB	Yes	No	No	No
Date of Entry	No	Yes	No	No
Colony FE	Yes	Yes	Yes	No
Governor FE	No	No	Yes	No
Colony-Governor FE	No	No	No	Yes
Tenure Requirement Met	-	-	Yes	Yes
Observations	380	380	163	163
R-squared	0.895	0.895	0.970	0.970

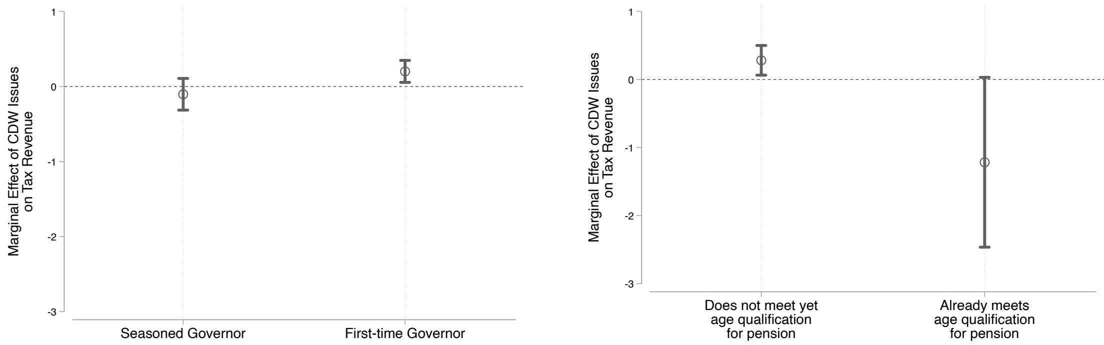
Note: First Term Governor = 1 if governor is in his first governorship. Age Requirement Met = 1 if Governor meets the minimum age to opt for retirement pension. Tenure Requirement Met = 1 if Governor meets the minimum number of years in office to opt for retirement pension. Colony-level controls: Controls: log of Population, Resources Value, and Internal Conflict. Governor-level controls: D.O.B.: Date of Birth; Date of Entry = date of first appointment into the colonial service regardless of rank. Refer to Appendix O for the expanded version of the regression table. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

were required to complete 10 years in office—the *tenure requirement*. The threshold for career officials was reduced in 1935 to three years. If the governor failed to meet the tenure requirement, his pension was calculated based on the rank (or profession) prior to assuming gubernatorial office. Anecdotal evidence shows that governors with military background vied for their reappointment to secure the substantially more generous pension of a colonial governor. Some like Sir Gordon Guggisberg, strove for it despite poor health, dying months short of meeting the 10-year mark.[129]

To offer a second test for the power of on-the-job incentives, I focus on governors who al-

[129]Kirk-Greene (1979, p.217).

Figure 5: Career Incentives and Performance



(a) Seeking First Reappointment (b) Before/After Pension Qualification

Note: Figures show the marginal effects based on column 1 and 3 in Table 4, respectively. 90% CI. Scale of left figure has been adjusted to match that in right figure, hence the seemingly small effects. First Governorship = 1 if colony has a first-time governor in office, 0 otherwise; Age Requirement = 1 if the governor meets the minimum age to qualify for the retirement pension, 0 otherwise. Governor meets age qualification if he is 60 year-old (or 55 after 1947). All governors in panel (b) meet the tenure requirement.

ready met the tenure requirement and exploit the discontinuity created by the minimum age requirement. If incentives work, more effort toward the CD&W fiscal mandate by *tenured* governors can be expected before they turned 60 (55 after 1947) than afterwards. Once governors met both requirements, the Colonial Office run out of carrots to induce gubernatorial effort.

To conduct this test, I subset the sample to governors who had met the tenure requirement, 42% in the data (N=163). Notice that the relatively low percentage of tenured governors is consistent with the high bar for reappointment. Within this selected subset one quarter of governors met the age requirement, too, which suggests that remaining active past the retirement age was unusual (if only because health conditions could be a handicap in the tropics as numerous autobiographies suggest). To make this test more compelling, I consider governor-, colony-, and year- fixed effects as well as colony-governor- and year- fixed effects. These specifications retrieve the average effect of imperial aid on taxation for a tenured governor before and after he secured the age mark for retirement. I report results in columns 3 and 4 in Table 4 and show marginal effects of column 3 in Figure 5b.

The patterns are revealing: While tenured governors were under the minimum age requirement, an inflow of CD&W funds was met with an increase in local taxation similar in size to the effects reported in Table 1; however, the sign of the coefficient turns negative (and borderline statistically significant) when tenured governors crossed the minimum age mark. Stated differently, once the last requirement that gave access to the golden retirement pension was met, governors stopped delivering on the fiscal front. In retrospect, one can presume that the few governors who stayed in office past retirement age were not commissioned to prioritize development. The contrary would suggest poor judgment on the Colonial Office's end.

5.4 Alternative Mechanisms: Human Capital

The positive impact of imperial aid on tax performance may not result from fine-tuning selection and promotion rules in the Colonial Service but from capacity-building efforts, namely the creation of modern tax agencies and the qualification of personnel. This alternative mechanism could coexist with performance-based concerns to secure tax performance.

The Colonial Office launched several initiatives to grow the capacity of colonies to collect taxes (details in Section 3.2). One of those was a training program by the Colonial Income Tax Office in London. From 1952 to 1968, over 300 colonial administrators participated in these six-month courses in London. Participants had to prove a prolonged experienced as colonial tax collectors, be sponsored by the head of their department, and secure funding from their own colony. In Appendix N, I examine whether the positive association between CD&W issues and tax revenue is driven by the number of participants in this program. Because candidates could participate only if they received support from their home government, I use this measure as a proxy of colonial efforts to grow human capital in tax capacity.

Results of this test are null. Perhaps this variable does not fully reflect colonial efforts to grow local capacity. Maybe the impact of human capital investment in fiscal capacity requires longer time horizons. Although these are plausible explanations, of the 24 colonial students from Africa who participated in this program before independence, 21 were notably nominated under the tenure of a first-time governor, namely when the incentives of the latter to mobilize taxation were strongest.

More generally, the concentration of student nominations in the first term of governors is consistent with the idea that imperial aid was effective because one of its key goals—building self-sustaining colonies—aligned with the career incentives of aid administrators.

6 Conclusion and Implications

Imperial aid was met with local taxation because organizational reforms in the Colonial Service discriminated in favor of like-minded agents and provided them with high-powered incentives to meet the fiscal mandate of the program. These findings rely on two scope conditions: First, the donor had virtually unlimited powers to pick-and-chose the local leadership and shape colonial bureaucracies; second, the program included a fiscal mandate that compelled local bureaucrats to match imperial aid with local resources.

The first condition is unusual in the postcolonial world, but not unheard of. For instance, Faye and Niehaus show that the US gives more aid to US-friendly leaders when they opt for reelection to help them retain office.[130] Donors have the greatest leverage over local leadership in postconflict settings, enabling them to select proxies who are committed to state-building efforts.[131]

Perhaps, the key question is not whether donors can influence who assumes local leadership but whom they are willing to give aid to. Paul Collier, who accumulates vast experience in the modern aid regime, advocates directing aid toward countries with "reform-minded leaders" who have already shown commitment to policies that drive economic growth and development—for instance, proactively launching a fiscal reform. These leaders are more likely to use aid effectively and make substantial progress in reducing poverty.[132] The empirical

[130] Faye and Niehaus (2012). A gloomier expression of foreign interference is treated in Berger et al. (2013).
[131] Fearon and Laitin (2004); Krasner (1999); Lake (2016).
[132] Collier (2007, ch.7).

analysis in this paper lends indirect support to that recommendation: the replacement of unvetted governors with career officials who likely shared the CD&W fiscal mandate increased the effectiveness of imperial aid in mobilizing local taxation.

Under imperial governance, the metropole's leverage over local institutions extended into the colonial bureaucracy. Imperial aid worked because it aligned promotion incentives of career officials with the mission's goal. Self-interest of aid administrators—from governors to cadets—was a key ingredient to the success of the CD&W program in mobilizing local taxation. This result speaks to Collier's emphasis on the provision of technical assistance to change the culture of civil service organizations, "which can be an obstacle rather than an instrument."[133] His work with Chauvet suggests that sequencing types of aid can be important for its performance: technical assistance should precede financial aid as a means to prepare the local civil service to make the best use of development funds.[134] The empirical evidence in this paper suggests that technical assistance should include organizational and managerial technologies to allow the newly acquired skills to flourish. Transferring performance-based promotion rules to local bureaucracies as part of aid programs should pay an important role in those efforts.

The second scope condition of this paper is the fiscal mandate of the CD&W program, which encouraged local agents to cofund development projects with local resources. This practice may not be prominent in the modern aid regime, but it exists: The Millenium Challenge Corporation—a US government aid program targeting large infrastructure and capacity-building efforts—is based on "cost-share" initiatives, and so are some USAID projects.[135] Encouragingly, the limited empirical evidence of cost-sharing in the postcolonial world suggests that it can also help reduce fungibility.[136] For countries that lack capacity to share costs, Fearon and Laitin contemplate donors' advancement of state-building funds with the understanding that recipients will repay after basic security and economic exchange

[133] Collier (2007, p.111).

[134] Chauvet and Collier (2008).

[135] US Aid cost-share is explained here.

[136] Pack and Pack (1990).

are reestablished. Importantly, under this arrangement local leaders have an incentive to "establish legitimate domination" as soon as possible to minimize foreign debt and regain sovereignty.[137] Although fund matching under colonial rule was limited to preempt fiscal relaxation, in sovereign nations it could potentially enhance local ownership (e.g., cofunding elevates the bargaining power of aid recipients) and reinforce political accountability of local leaders vis-à-vis taxpayers.

To conclude, the analysis of the CD&W program offers a fresh look at the late British Empire, a period surprisingly underresearched in political science despite its many potential consequences for postcolonial trajectories.[138] This paper suggests that imperial aid was effective in mobilizing local taxation, a key pillar of the modern state. Future researchers should establish whether higher tax pressure was beneficial to the local population, for instance by expanding aid-funded public services to native populations, and whether the fiscal efforts in the last decades of the empire pushed newly independent nations into different fiscal trajectories

[137]Fearon and Laitin (2004, p.37).

[138]Important exceptions are Lee and Paine (2019*b*,*a*) and Opalo (2022), who examine the *political* legacies of constitutional reform and colonial legislatures in European colonies beginning during the interwar period. See also Huillery (2009) and Ricart-Huguet (2021) for *economic* legacies of *colonial* (as opposed to *imperial*) investment.

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NOT FOR PUBLICATION

Supplementary Online Appendices

Her Majesty's Aid

These appendices contain materials, results, and robustness checks that supplement the main text.

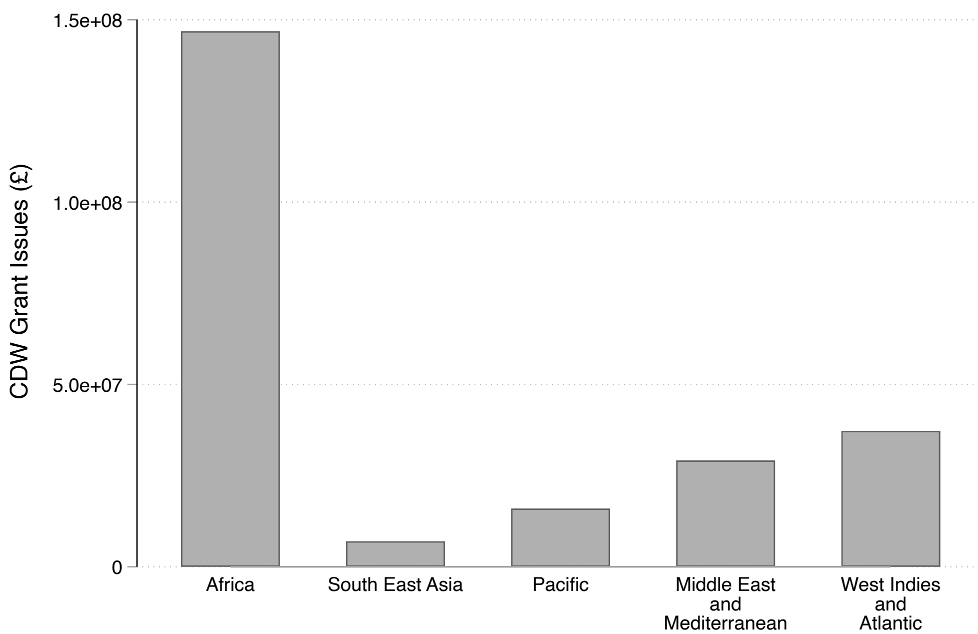
A Data

Table A-1: Summary statistics

Variable	Mean	Std. Dev.	Min.	Max.	N
per capita tax revenue (constant)	6.02	4.466	0.687	27.411	416
per capita CD&W issues (constant)	1.123	1.946	0	14.312	409
ln(Population)	14.467	1.421	12.107	17.562	421
Natural Resource Market Value	12.958	12.694	1.098	62.322	421
Internal Conflict	0.015	0.12	0	1	409
Post-Reform Governor	0.864	0.343	0	1	404
Cadet-made-Governor	0.723	0.448	0	1	404
First Governorship	0.594	0.492	0	1	404
D.O.B.	1894	12.014	1869	1916	404
Date of Entry	1919	12.247	1890	1948	404
Tenure Requirement	0.433	0.496	0	1	404
Age Requirement	0.136	0.343	0	1	404

Note: The Unit of analysis is the colony-year. CD&W issues denotes days-of-work equivalent received in grant money per inhabitant. Source: For 1929–1939, *Colonial Development Annual Abstract Accounts*; for 1940–1969, the *UK's Annual Civil Appropriation Accounts* (Class II section). CD&W commitments denotes days-of-work equivalent aid committed per inhabitant. For 1929-9, data from *Annual Reports of the Advisory Committee of Colonial Development*, and 1941-69, from the *Annual Returns of Schemes*. Per capita tax revenue: denotes days-of-work equivalent paid in taxes; Population and Natural Resource Market Value are drawn from Albers, Jerven and Suesse (2023). Natural Resource Market Value is time-varying world market prices with the a basket of export commodities of the colony. Internal Conflict, originally from Brecke, drawn from Coppedge et al. (2023). Governor's D.O.B.: Date of Birth; Date of Entry = date of first appointment in the colonial service regardless of rank. Post-Reform Governor = 1 if first ever appointment into governorship dates after the 1930 Warren Fisher Reform, 0 otherwise. Cadet = 1 if the governor entered the civil service as a cadet, 0 otherwise. First Term = 1 if governor is in his first term. Tenure requirement = 1 if the governor has reached the 10-year minimum requirement for the full retirement pension (3 years starting in 1935). Age requirement = 1 if governors is 60 year-old (55 starting in 1947). Governor's data hand-coded from Kirk-Greene (1980).

Figure A-1: Regional Distribution of CD&W Funds, 1929–1969

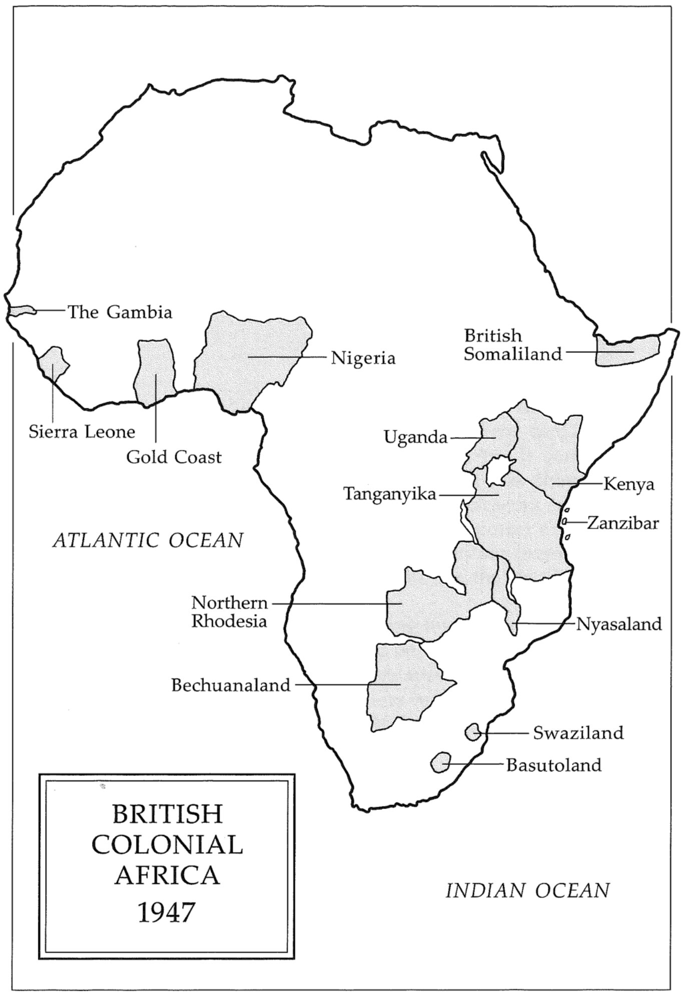


Note: This figure shows the nominal value of total CD&W grant-in-aid issued (i.e., actually received by the colonies) during the entire life-span of the program by region

B British African Colonies

This maps shows all Crown colonies and protectorates in British Africa. Somaliland is not considered in the analysis because price deflators are not available for this colony.

Figure A-2: British Colonial Africa in 1947. Source: Kirk-Greene (2006).



C Allocation, Commitments, Issues

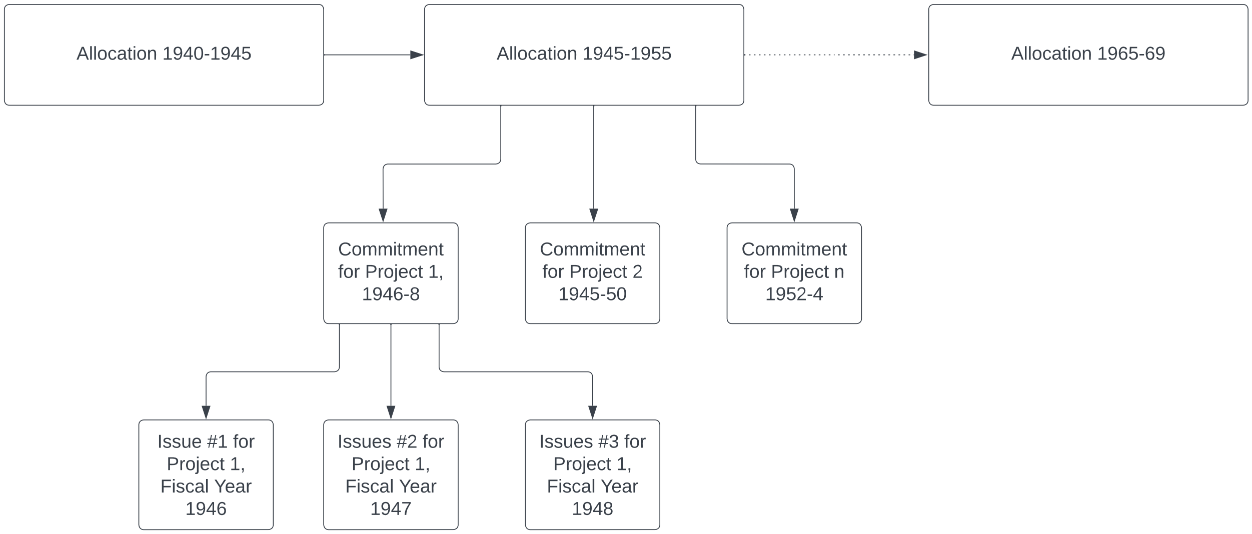


Figure A-3: Allocations, Commitments, and Issues

The CDW program had six Allocations, 11,200+ Commitments, and various annual Issues per commitment. Allocations offered multi-year CDW budgets to each recipients for a predefined number of years. Commitments offered multi-year funds to individual projects. Issues reflected the actual flows of CDW moneys to fund each project. The total sum of issues could not exceed the total funds commitment to each project. The total sum of commitments for a given colony could not exceed the CDW allocation to that colony.

D Example of a CD&W Project Application

Individual project applications submitted from the colony to the Colonial Office enclosed an itemized list of imperial and colonial funds for the project. Figure A-4 shows an example for a school project in Gambia. In this case, the metropole, via CD&W grant-in-aid, would assume 85% of the cost.

Figure A-4: Excerpt of CD&W grant-in-aid application for Education, Gambia 1944. Marks added by author. Source: CO 87/265/5:

ENCLOSURE NO. III TO GAMBIA DESPATCH NO. 133 OF THE 24TH OF DECEMBER, 1945

DRAFT ESTIMATES FOR 1946 - 1950

	Items	1946	1947	1948	1949	1950	Remarks
1.	(a) Lady Education Officer	720	750	750	750	750	See previous application.
	(b) One 2nd Grade Store-Keeper & Attendance Officer	230	230	230	230	230	" " "
	(c) One 3rd Grade Clerk	50	60	78	84	100	" " "
	(d) Bathurst Primary School Teachers including 2 European Headmistresses of Girls and Infants Schools plus One African Inspector of Boys Primary Schools.	6,000	6,500	7,000	7,000	8,000	See Memorandum.
	(e) One Carpenter	72	72	72	72	72	See previous application.
	Armitage School, Georgetown						
	(f) Education Officer (Principal, Armitage School)	500	550	600	650	700	See Memorandum.
	Other Charges						
2.	Grants for Salaries of Secondary School Staffs	6,000	6,000	6,000	6,000	6,000	See Memorandum.
3.	Scholarships to Secondary Schools	800	800	800	800	800	See previous application.
4.	Materials for repairs to School Equipment	200	200	200	200	200	" " "
5.	Scholarships Abroad	1,400	1,600	1,800	2,000	2,000	See Memorandum.
6.	Feeding of School Children	3,000	3,500	3,500	3,500	3,500	" "
7.	Materials for Primary Schools	800	800	800	800	800	" "
8.	Rents, Maintenance and Caretaking of Buildings	1,000	1,000	1,000	1,000	1,000	" "
	Special Expenditure, Bathurst						
9.	Purchase & Repairs of School Furniture	100	-	-	-	-	See Memorandum.
10.	Purchase of School Equipment & Initial New Equipment	1,500	-	-	-	-	" "
11.	Buildings - Alteration & Extensions to Existing Buildings	1,000	-	-	-	-	" "
							TOTAL
	TOTAL EXPENDITURE =	23,372	22,062	22,830	23,086	24,152	115,502
	Less Gambia Expenditure under these Heads in 1939 =	2,758	2,758	2,758	2,758	2,758	13,790
	Additional expenditure in respect of the scheme	20,614	19,304	20,072	20,328	21,394	101,712
	Amount of additional expenditure to be met from Colonial revenue	614	304	2,072	4,328	7,394	14,712
	Amount of assistance under Colonial Development and Welfare Act sought in respect of the scheme	20,000	19,000	18,000	16,000	14,000	87,000

E Bootstrapped Standard Errors

Table A-2 shows the main results with bootstrapped standard errors at the colony level.

Table A-2: Colonial Tax Revenue and CD&W Issues, 1929–1969

	(1)	(2)	(3)	(4)
CDW Grant Issue	0.18**	0.16**	0.28*	0.35***
	(0.08)	(0.09)	(0.12)	(0.12)
Lagged DV	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Colony FE	Yes	Yes	Yes	Yes
Controls	No	Yes	Yes	Yes
Synched FY	No	No	No	Yes
Period	1929-69	1929-69	1946-61	1929-69
Observations	397	397	181	169
R-square	0.79	0.79	0.88	0.90

Note: Colony-clustered standard errors in parenthesis : * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Monetary units are expressed in per capita constant terms. Controls: log of Population, Resources Value, and Internal Conflict.

F Main results with Variables expressed in First Differences

Table A-3: Changes on Colonial Tax Revenue as a function of Changes in CD&W Issues, 1929–1969

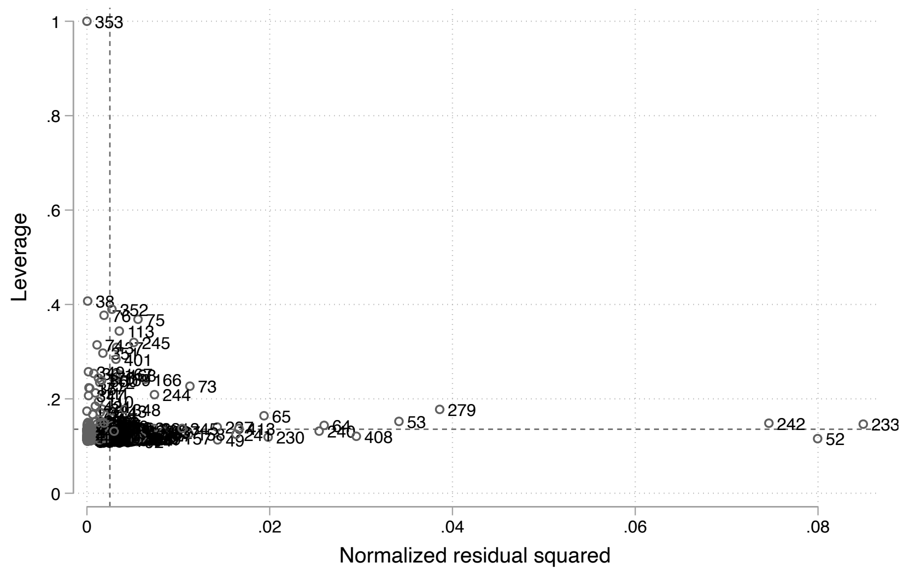
	(1)	(2)	(3)	(4)
Δ CDW Grant Issue Per Capita	0.16**	0.17**	0.27**	0.22**
	(0.08)	(0.08)	(0.12)	(0.10)
Mean DV	0.17	0.17	0.18	0.12
Year FE	Yes	Yes	Yes	Yes
Colony FE	Yes	Yes	Yes	Yes
Controls	No	Yes	Yes	Yes
Synched FY	No	No	No	Yes
Period	1929-69	1929-69	1946-61	1929-69
Observations	385	385	181	166
R-squared	0.15	0.16	0.20	0.30

Note: Standard errors in parenthesis. Monetary units are expressed in per capita constant terms. Controls, expressed in levels: log of Population, Resources Value, and Internal Conflict. *** p<0.01, ** p<0.05, * p<0.1

G Impact of Outliers

The dataset is small and there is a risk that results are driven by outliers. Figure A-5 shows a `lvr2plot` Stata plot to identify cases that potentially influence results. There are three residuals without much leverage on the horizontal axis (no. 242, 52, and 233) and another one with a small residual but high leverage (case no. 353). These cases are 1952 and 1961 Northern Rhodesia, 1952 Bechuanaland, and 1967 Swaziland (the latter being the one with high leverage).

Figure A-5: Identifying Influential Cases: Residuals vs. Leverage



I rerun model 4 in Table 1 in the main text after dropping the four outliers, and I report results in the Table A-4. The new coefficients are virtually indistinguishable to those in Table 1 in the main paper. If any, because the CDW coefficient is now larger while the DV mean is smaller, results in Table 1 may be underestimating the effect of aid in the presence of outliers.

Table A-4: Colonial Tax Revenue and CD&W Issues, 1929–1969, excluding outliers.

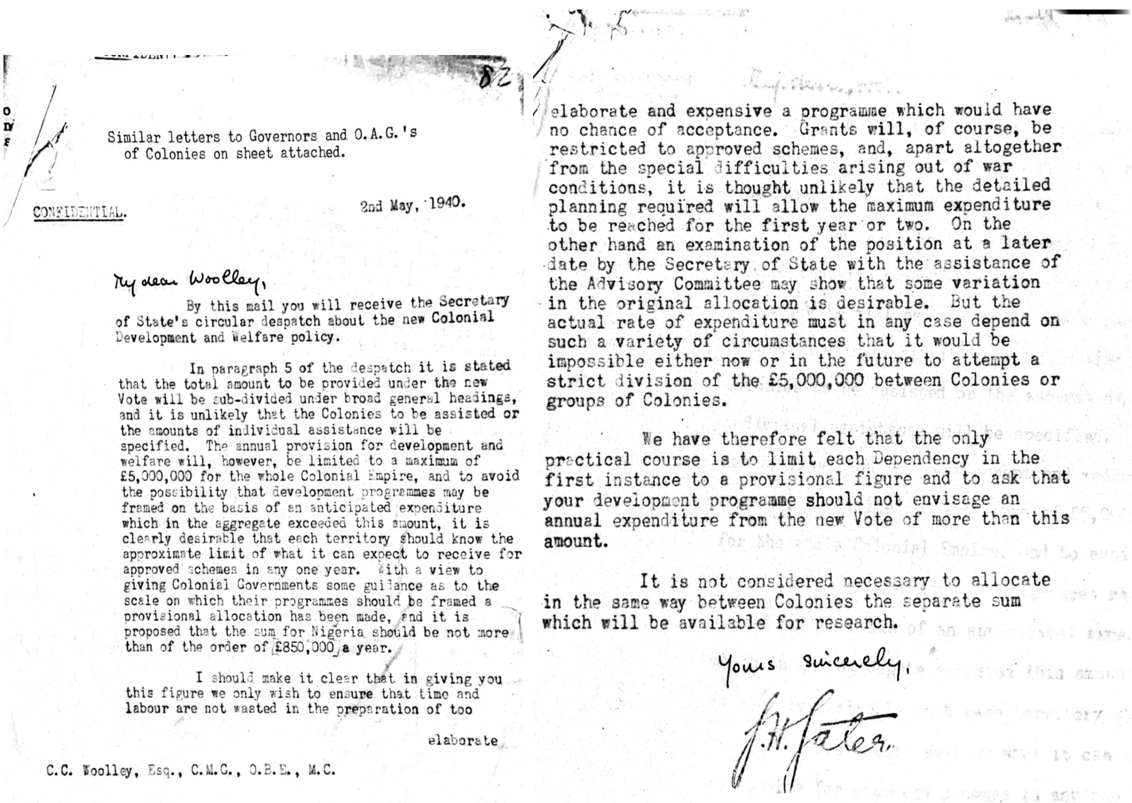
	(1) Tax Pressure
CDW Grant Issue	0.18**
	(0.08)
ln(Population)	-3.21
	(3.06)
Value of Resources	0.03
	(0.02)
Internal Conflict	0.46
	(0.68)
Lagged DV	Yes
Year FE	Yes
Colony FE	Yes
Controls	Yes
Mean DV	5.87
Observations	392
R-squared	0.91

Note: Monetary units are expressed in per capita constant terms. Controls are: log of Population, Resources Value, and Internal Conflict. Because a lag of the dependent variable is included, dropping four outliers eliminates twice the number of observations from the effective sample *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

H CD&W Fund Allocation

This section shows that colonies that had lower tax capacity received disproportionately more CD&W funds, lowering concerns of reverse causality. To come to this conclusion we need to study CD&W fund *allocations*, which established a colony-specific cap to the annual funds that governors could expect from the metropole.[139] The first allocation took place in 1940 as part of the Colonial Development and Welfare Act. As reflected in the official communication of the allocation for 1940 to Nigeria, reproduced in Figure A-6, allocations were intended to help colonial administrators to prepare financially realistic project proposals:

Figure A-6: 1940 Allocation to Nigeria, Official Communication



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Similar letters to Governors and O.A.G.'s of Colonies on sheet attached.

CONFIDENTIAL.

2nd May, 1940.

My dear Woolley,

By this mail you will receive the Secretary of State's circular despatch about the new Colonial Development and Welfare policy.

In paragraph 5 of the despatch it is stated that the total amount to be provided under the new Vote will be sub-divided under broad general headings, and it is unlikely that the Colonies to be assisted or the amounts of individual assistance will be specified. The annual provision for development and welfare will, however, be limited to a maximum of £5,000,000 for the whole Colonial Empire, and to avoid the possibility that development programmes may be framed on the basis of an anticipated expenditure which in the aggregate exceeded this amount, it is clearly desirable that each territory should know the approximate limit of what it can expect to receive for approved schemes in any one year. With a view to giving Colonial Governments some guidance as to the scale on which their programmes should be framed a provisional allocation has been made, and it is proposed that the sum for Nigeria should be not more than of the order of £850,000 a year.

I should make it clear that in giving you this figure we only wish to ensure that time and labour are not wasted in the preparation of too

elaborate

C.C. Woolley, Esq., C.M.G., O.B.E., M.C.

elaborate and expensive a programme which would have no chance of acceptance. Grants will, of course, be restricted to approved schemes, and, apart altogether from the special difficulties arising out of war conditions, it is thought unlikely that the detailed planning required will allow the maximum expenditure to be reached for the first year or two. On the other hand an examination of the position at a later date by the Secretary of State with the assistance of the Advisory Committee may show that some variation in the original allocation is desirable. But the actual rate of expenditure must in any case depend on such a variety of circumstances that it would be impossible either now or in the future to attempt a strict division of the £5,000,000 between Colonies or groups of Colonies.

We have therefore felt that the only practical course is to limit each Dependency in the first instance to a provisional figure and to ask that your development programme should not envisage an annual expenditure from the new Vote of more than this amount.

It is not considered necessary to allocate in the same way between Colonies the separate sum which will be available for research.

Yours sincerely,

G.H. Gater.

Note: Circular telegram sent by Sir George Gater, the Permanent Undersecretary of State for the Colonies, to Charles Woolley, the Chief Secretary of the Governor of Nigeria (CO 859/40/6)). In 1940, Nigeria received an allocation of £850,000.

There were a total of six allocations in the lifespan of the program: 1940, 1945, 1955,

[139] I offer an extended account of the allocation of CD&W funds elsewhere.

1959, 1963, and 1965. Based on now-declassified records, I reconstructed six months of internal deliberations within the Colonial Office about which criteria to follow to allocate CD&W funds in 1945. Perhaps surprisingly, internal debates did not follow any political directive from the top. The opposite seems true: the heads of the Colonial Office departments denounced the lack of political instructions to accomplish the task. On February 2, 1945, O.G.R. Williams (Assistant Secretary of the CO) admitted to Sir Sidney Caine (Assistant Undersecretary of Finance, Production and Research) that their superior (the Secretary of State) had "disavowed in this speech on the Second reading of the Colonial Development and Welfare Bill any idea of detailed planning in the Colonial Officer" and that for the time being they would rely on a memorandum made by Frederik J. Pedler at the Finance Department of the Colonial Office in December 1944.[140]

In that memorandum Pedler had explained his train of thought in much detail: He had first allocated the £120 million based on the colonies' population, but he was not happy with the outcome. Pedler discussed various criteria to justify cuts to the population-based allocation. The ability to float loans at home or in London was an important one to him. For instance, "Nigeria's credit ought to be good for loans" (p.2)—a sufficient reason to cut CD&W funds by 20% relative to the £34 million that Nigeria would have received if they had only followed the population rule. Fiscal surplus was another factor justifying an allocation cut. Gambia, which had experienced a fiscal surplus for five years in a row, 1939–1944, was considered by Pedler in less need of CD&W funds than its per population figure suggested. Pedler advocated for a cut in aid also for colonies that had barely used the funds granted in the previous allocation of 1940 (e.g. Bermuda) and for territories affected by war (e.g., Malaya and Hong Kong) because conditions there were not apt for developmental investment. Last but not least, Pedler considered the colony's "capacity to spend"—a criterion that did not seem to follow any objective metric—as a limiting factor in the amount of CD&W funds to be allocated. Citing Somaliland to support his argument, he asserted that despite having

[140] CO 852/589/11.

much need for funds, the population-corresponding £2 million where more than Somaliland could handle given its weak government machinery.

Pedler considered other criteria that justified allocation increases. The territorial area was one of them: smaller territories were assumed poor, calling for larger allocations, all else constant. Regional grievance was another criterion in his view. For instance, "it would not be possible to restrict Uganda to half of Kenya's share and allocating little funding to Northern Rhodesia [because of its many resources and surplus, as that] "would be a crisis" (p.5).

The allocation drafted by Pedler established a focal point among the departments in the Colonial Office over the next months. In the official allocation that followed, most colonies received less than Pedler suggested because he allocated small funds to centrally administered schemes, which were expanded during the internal debates in spring 1945. His memorandum, nonetheless, granted the population considerable leverage in the allocation of funds, continuing a practice initiated in the 1940 allocation.[141]

Deviations from the population rule required lengthy justifications from the Department heads involved in the negotiations. The preference for this criterion was not unanimous, and several officials aired their frustration. For instance, J.B. Williams, in a meeting with the Secretary of State on March 7, 1945, denounced the population rule for ignoring the resources of each colony.

The discussions extended over the next months. The correspondence among the heads of the departments showed some improvisation, particularly in the allocations of poorer colonies. That of Aden, for instance, was described as "a wild guess" of the funds needed by the territory (CO Correspondence, January 17, 1945). Some dismay was also perceived in the discussions; for instance, Sir Arthur Dawe, Deputy Undersecretary of State at the Colonial Office, admitted on January 22, 1945 that

> the difficulties in finding any reasonably 'scientific' basis of the allocation are

[141] CO 859/40/6.

> obvious. I am not sure that all the relevant factors [discussed in Pedler's memorandum] have been brought into this picture or that the right weighting has been given to those which do appear. I am inclined to think that the population factor, although tempered by the other considerations mentioned by Pedler, has been rather too prominent.

Other officials involved in the negotiations would have preferred to pause allocations and wait for all developmental plans to arrive, but they understood that option was not "politically" feasible (CO Correspondence, March 3, 1945).

Despite the many considerations and idiosyncratic circumstances mentioned in the internal correspondence, the Department heads tried to follow objective criteria that could be measured and compared. Consistently, population, revenue, and debt were often mentioned in the correspondence. A statistical compendium was put together and widely circulated in the final stages of the negotiation. The compendium was "prepared for giving details of population, revenue surpluses and public debts, the financial assistance already given or promised under the 1940 Act and the estimated amounts outstanding as being unexpended" and was shared by the Comptroller General F. Stockdale ahead of the last meeting with department heads where a final recommendation to the Secretary of State for the Colonies was made.[142] An excerpt of the compendium is reproduced in Figure A-7.

Agreed on at a meeting on June 5, 1945, the final allocation recommendation by the Deputy Under Secretary of State (second in command), the assistant undersecretaries, the heads of Department, and the Comptroller General of the West Indies, was elevated to the Office of the Secretary of State on June 12, 1945. CO records on the CD&W allocation became sparser in the following months, and debates occurred around specific colonies. For the most part, the internal communications between June and November, when allocations were made public, dealt with how to deliver the news to the colonies in order to avoid grievance and misunderstanding.

The definitive 1945 allocation, published in the Despatch of Nov 12, 1945,[143] deviated

[142]May 30, 1945, letter for discussion with Assistant Undersecretary of State (CO 852/589/11).
[143]Cmd. 6713.

	I AREA	II POPULATION	III REVENUE			IV DEBT	V SURPLUS	VI ASSISTANCE ISSUED	VII ASSISTANCE OUTSTANDING (a)	VIII 1940 ALLOCATION x 10	IX FURTHER PROMISES	X COMPREHENSIVE PLANS: COST	ASSISTANCE REQUESTED	ASSISTANCE PROMISED	XI POPULATION PROPORTION	XII SUGGESTED ALLOCATION
	'000 sq.miles	'000	£.'000	£ per sq.mile	£. per head	£.'000	£.'000	£.'000	£.'000	£.'000	£.'000	£.'000	£.'000	£.'000	%	£ ~~£.'000~~
West Africa																
Gambia	4	185	357	89	2	39	196	30	120	800		1,410(5)	1,410(5)		0.3	1,000,000 ~~800,000~~
Sierra Leone	28	1,799	1,544	55	1	1,370	712	207	416	1,200					2.7	7,500,000 ~~[illegible]~~
Gold Coast	92	3,960	4,958	54	1	10,400	2,756	92	157	2,300		5,000(5)	1,000(5)	4,000(1)	6.0	3,500,000
Nigeria	373	21,261	9,857	26	0.5	24,765	2,250	423	7,090	8,500		40,000	27,000		32.6	24,000,000 ~~[illegible]~~
Margin for Readjustments																2,500,000 ~~3,000,000~~
Total West Africa	497	27,205	16,716	34	0.6	36,574	5,914	751	7,783	12,800					41.6	34,000,000
East Africa																
Somaliland	68	347	175(1)	2	0.6	236 (11)	nil	nil	316	350					0.5	750,000
Kenya	220	3,661	4,818	22	1	17,581	2,500	276	755	2,300		17,000	5,000	-	5.6	5,000,000 ~~4,750,000~~
Uganda	80	3,931	2,352	49	0.6	2,850	3,650	23	1,283	2,300		4,800(6)	2,300(6)	2,300(6)	6.0	3,000,000
Tanganyika	339	5,418	3,501	10	0.6	7,556	500	325	-	3,200		12,000	9,600		8.3	7,500,000 ~~6,750,000~~
Zanzibar	1	250	477	477	2	nil	nil	14	88	350					0.4	750,000
Margin for Readjustments																1,500,000
Total East Africa	708	13,607	11,323	16	0.8	28,223	6,650	678	2,442	8,500					20.8	18 ~~17,[illegible]00,000~~
Central Africa																
Nyasaland	38	1,676	931	25	0.6	3,610	430	38	309	1,000					2.6	2,500,000
Northern Rhodesia	290	1,385	2,888	10	2	2,347	2,000	19	20	1,000					2.1	2,000,000
Margin for Readjustments																500,000
Total Central Africa	328	3,061	3,819	12	1	5,957	2,430	57	329	2,000					4.7	5,000,000
South Africa																
S.A.H.C.(Gen.)																
Bechuanaland Protectorate	275	266	282	1	1	nil	144								0.4	
Swaziland	7	156	200	29	1	nil	6		1,500		2,000				0.2	2,000,000
Basutoland	12	562	515	43	1	nil	403						319(5)		0.9	
Total South Africa	294	984	997	3	1	nil	553								1.5	

(a) These totals are too low in some instances, as the previous column includes payments made under C.D.F. schemes, totalling £561,000

(1) 1939 Revenue

Parl

Figure A-7: Excerpt of the statistical table prepared for the draft of the final recommendation to the Secretary of State for the Colonies for the 1945 allocation. Source: CO 852/589/11.

only slightly from the recommendations elevated to the Secretary of State in June of that year. The two series correlate at 0.99. In general, deviations occurred downward because the CO decided to keep a reserve of 10% for unexpected expenses. In the next section, I run a simple statistical test to examine whether the six allocations followed the objective criteria used by Pedler, Stockdale, and other top-rank CO officials in 1945.

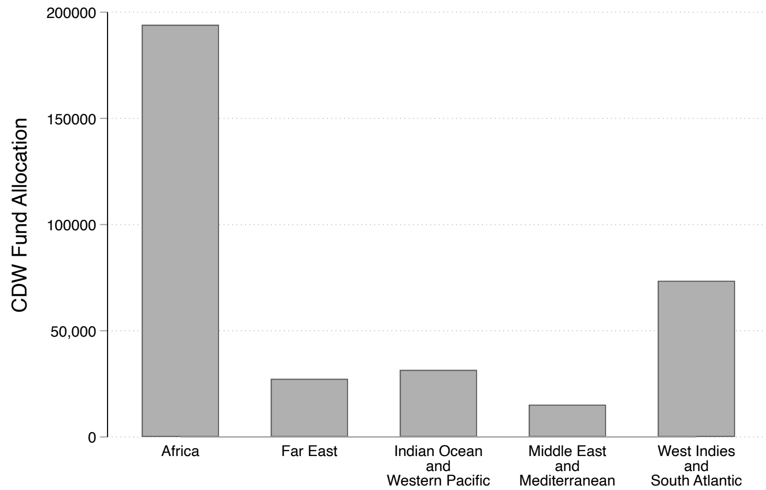
Allocation Data

The 1945, 1955, and 1963 allocations were published in separate dispatches presented by the Secretary of State for the Colonies to Parliament: Nov. 12, 1945,[144] April 26, 1955,[145] and Nov. 18, 1963.[146] To the best of my knowledge, the allocations for 1940 and 1959 were never published. I discovered them in the internal communications between the Colonial Office and the Treasury, which are kept at the National Archives at Kew (London). The allocations for 1940 were communicated separately to each colony on the Circular Telegram of May 2, 1940,[147] and the 1959 allocations were communicated in the Circular Despatch of July 21, 1959.[148] For the last allocation of the program, in 1965, I rely on Morgan.[149]

To analyze allocation criteria statistically, I must use the entire program data. To that end, I gathered allocations for 48 territories, a total of 204 colony–year observations. The 48 figure is slightly smaller than the total number of nonself-governing colonies (56) because I collapsed some units (e.g., St. Helena and Ascension) and dropped the case of Palestine and Transjordan (these territories were pooled together in some allocations, and I could not locate covariate data for the Transjordan) and the case of Malta, which received in 1959 a vast allocation of £20 million for idiosyncratic reasons. The sum total of allocations in this period was £341,821 million, thus matching the aggregate official statistics published by the Foreign & Commonwealth Office in 1971. The resulting panel is unbalanced because

[144] Cmd. 6713.
[145] Cmd. 9462.
[146] Colonial No.357.
[147] CO 859/40/6.
[148] CO 1025/109
[149] Morgan (1980*c*, p.317).

Figure A-8: CD&W Fund Allocations, 1940–1965



colonies stopped receiving funds upon gaining independence (e.g., the Gold Coast past 1957) or under foreign occupation (e.g., Singapore in 1942–1945).

The regional distribution of CD&W funds for the six allocations between 1945 and 1965 are reported in Figure A-8. The distribution suggests that wealthier colonies, generally located in the Far East and West Indies, received relatively little funding, whereas poorer colonies, generally located in Africa, received most of the funds of the program.

In order to test the relevance of the factors discussed in the allocation of 1945, I gathered data on population, area, revenue, fiscal surplus (the difference between revenue and expenditure), debt, and unspent balance for every allocation year. Population and debt data are drawn from the *Stateman's Yearbook* (various years), the Area is taken from the *1929 Statistical Abstract of the Colonial Empire*, and figures for revenue and surplus for 1944–1959 are drawn from *The Colonial Empire* (various issues) and for 1963 from the *Stateman's Yearbook* of that year.[150]

The internal debate in the Colonial Office in 1945 suggests that the colony population was a prime factor in the allocation criteria. In column 1 I run a simple bivariate model between CD&W allocation and population. The resulting R-square is .52, confirming the

[150] A detailed data Appendix listing primary and secondary sources will follow.

Table A-5: CD&W Allocations 1940–1965

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Population	0.50***	0.50***	0.49***	0.49***	0.50***	-0.53**	-1.50***	-1.41***
	(0.02)	(0.02)	(0.01)	(0.02)	(0.02)	(0.20)	(0.30)	(0.29)
Revenue/Cap			-13.21***	-13.21***	-10.33***	-17.79***	-32.03**	
			(3.22)	(3.23)	(3.27)	(4.99)	(12.87)	
Fiscal Surplus				0.01	-0.02	0.05	0.25	
				(0.13)	(0.13)	(0.16)	(0.25)	
Public Debt/Cap					28.83**	-13.24	-32.11	
					(11.89)	(26.88)	(36.65)	
Outstanding Balance (%)								6.22**
								(2.96)
Allocation FE	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Colony FE	No	No	No	No	No	Yes	Yes	Yes
Deflated values	No	No	No	No	No	No	Yes	No
# Allocations	6	6	6	6	6	6	6	5
# Colonies	47	47	47	47	47	47	47	45
Mean DV (£000)	1,675	1,675	1,675	1,675	1,675	1,675	1,989	1,902
Observations	204	204	204	204	195	195	195	150
R-squared	0.52	0.55	0.56	0.56	0.58	0.76	0.80	0.90

Note: See text for sources. Standard errors clustered at colony in parentheses. *** p<0.01, ** p<0.05, * p<0.1

relevance of this variable. In the second column I add a battery of allocation indicators and the population coefficient remains stable, suggesting no correlation between the size of colonial population and duration in the program. In column 3 I control for the Revenue per "head" or capita, which is listed in column 5 in the statistical compendium assembled by the Colonial Office to decide the 1945 allocation (Figure A-7). This variable is negative and statistically significant. Based on this estimate, a one standard deviation increase in total revenue per capita decreased average allocation by £265.95 or 15.88%. The negative sign suggests that colonies struggling to mobilize domestic resources received more generous allocations.

In column 4 I consider fiscal surplus, also discussed in Pedler's memo. This variable is centered around zero. The null result holds if I normalize the surplus size by total revenue or by population. This result suggests that austerity policy was not rewarded by the CD&W program, a clear deviation from old Gladstonian economics.

In the internal correspondence between the CO and the Treasury in 1945, countries that could easily float loans on the London Stock Exchange were recommended to receive less funding from the CD&W program. In Column 5 I control for the outstanding public debt per capita. Most public debt was issued in London, but a few colonies had considerable domestic debt (e.g., Hong Kong). The coefficient for public indebtedness in column 5 is positive—against expectations—and statistically different from zero.

Column 6 offers a new perspective because it includes colony fixed effects and focuses on longitudinal variation within any given territory. The population coefficient flips, meaning that as population size increased, which would normally happen if the economy grew, colonies received less funding from the program. The revenue per capita remains negative and statistically different from zero while increasing its substantive impact. According to the new estimate, a one standard-deviation increase in revenue per capita, decreased average CD&W fund allocation by £358,163 or 21.4%, all else constant. In this model the coefficient for public debt turns negative (as originally expected) and statistically insignificant. This suggests that an increase in public indebtedness over time in a given colony was perceived, if at all, as a signal of investors' confidence in its revenue-generating capacity.

So far I have controlled for allocation fixed effects, which should correlate with price growth over time. To better adjust for inflation, in column 7 I deflate all monetary values and express them in 1955 pound sterling.[151] The new set of estimates in column 8 are substantively similar to those in column 7. Although the coefficients for population and revenue per capita increase, so does the average of the dependent variable.

In column 8 I consider the effect of any unspent balance, that is, the funds from the prior allocation that had not been spent by the time a new one was decided. I normalize the total funds unspent by the size of the previous allocation and multiply the resulting ratio by 100 for interpretation purposes.[152] In this model I drop other financial variable to avoid bad controls. Likewise, the total number of allocations is reduced to five because that for 1940 had no precedent. Although Pedler was reluctant to be generous with colonies that had not exhausted the previous allocation, the results suggest that the official allocations did not

[151]Inflation data are drawn from Feinstein (1976).

[152]This variable is larger than 100 for nine West Indian colonies in 1963 because some centrally kept funds were shared with the territories between allocations.

discriminate against slow spenders. If anything, the opposite holds true.

In sum, the statistical analysis points to two main criteria in allocation decisions: one was the population size; the other, the capacity to mobilize domestic revenue through taxation. Results for public debt and fiscal surplus are mixed. Unspent balances, which were more likely in colonies with weaker state machinery, increased the quantity of new allocations. Altogether, the analysis suggests that CD&W funds prioritized colonies with weaker tax capacity and state machinery, alleviating concerns of reverse causation in Table 1.

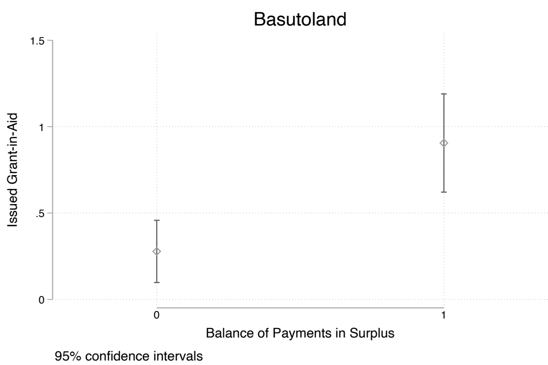
I An Example of Annual Commitments

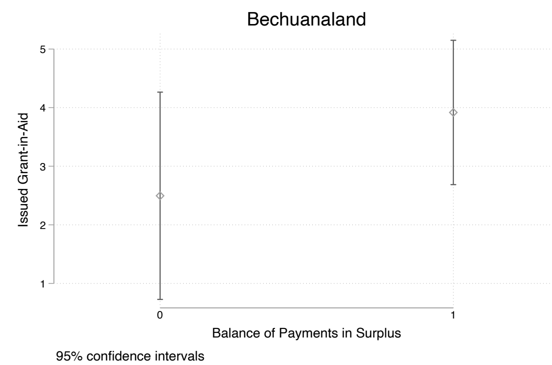
Figure A-9: Excerpt of 1951 CD&W Commitments to Nyasaland (Malawi). Source: House of Commons Papers 211, XXIV.267 (24). Color marks added by author for legibility. The first column indicates scheme number, followed by recipient, a summary of project description, and last column the total amount of committed pound sterling funds.

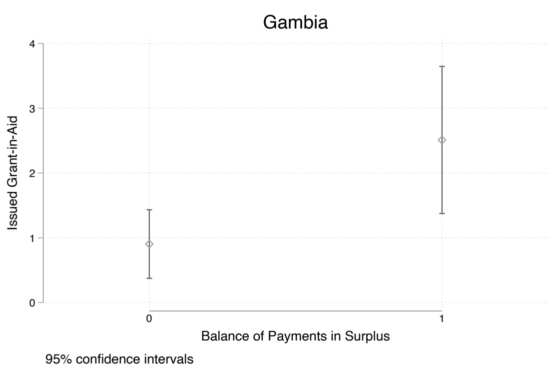
846D	Nyasaland ...	Mass education project ... ... *Further grant under Schemes Nos. D. 846, D. 846A. D. 846B and D. 846C (see House of Commons Papers Nos. 166 of 1948, 211 of 1949, 107 of 1950 and 189 of 1951) to continue the scheme of mass education and community development during the years 1952–54.*	38,641
1483A	do. ...	Provision of aeronautical wireless facilities ... *Supplementary grant under Scheme No. D. 1483 (see House of Commons Paper No. 189 of 1951) to provide for additional equipment at Chileka airport and for buildings and equipment at Lilongwe, Mzuzu and Karonga.*	8,990
1616	do. ...	Geological survey of corundum deposits ...	480
1625	do. ...	Geological Surveys Department ... ... *Grant to cover approximately 35 per cent. of the developmental expenditure of the Department over a five-year period. The provision will be devoted mainly to the supply of water for African villages.*	52,500
1672	do. ...	Secondary and technical education ... ... *The scheme provides for expanding facilities at the Government Secondary/Technical School at Dedza and establishing a Government junior trade training centre near Blantyre.*	90,600
1677	do. ...	Plant for road development ... ... *The grant covers the purchase of plant and equipment for the programme of road construction.*	60,454
1702	do. ...	Survey of Shire Valley project ... ... *Grant to cover 50 per cent. of the estimated cost of a comprehensive survey to be carried out as a preliminary to the preparation of a major scheme of development.*	150,000
1739	do. ...	Geological survey	160

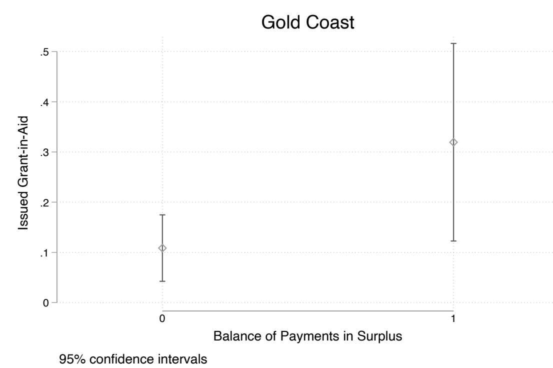
J Aid Shocks by Country

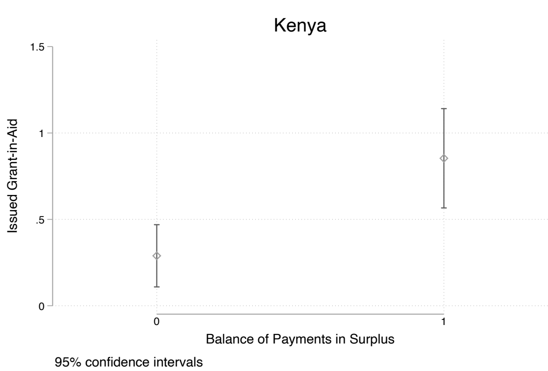
The figures in this Appendix show average per capita CD&W issue in constant value by colony in years of UK BOP surplus and deficit. The only country that did not experienced a systematic drop in CDW issues during deficit BOP years is Nyasaland (for no apparent reason). Results in Table 2 hold if Nyasaland colony is excluded from the analysis.

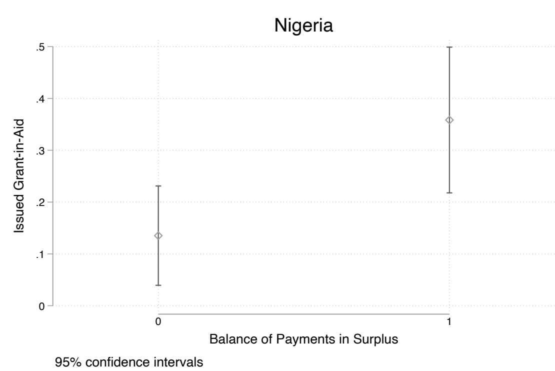


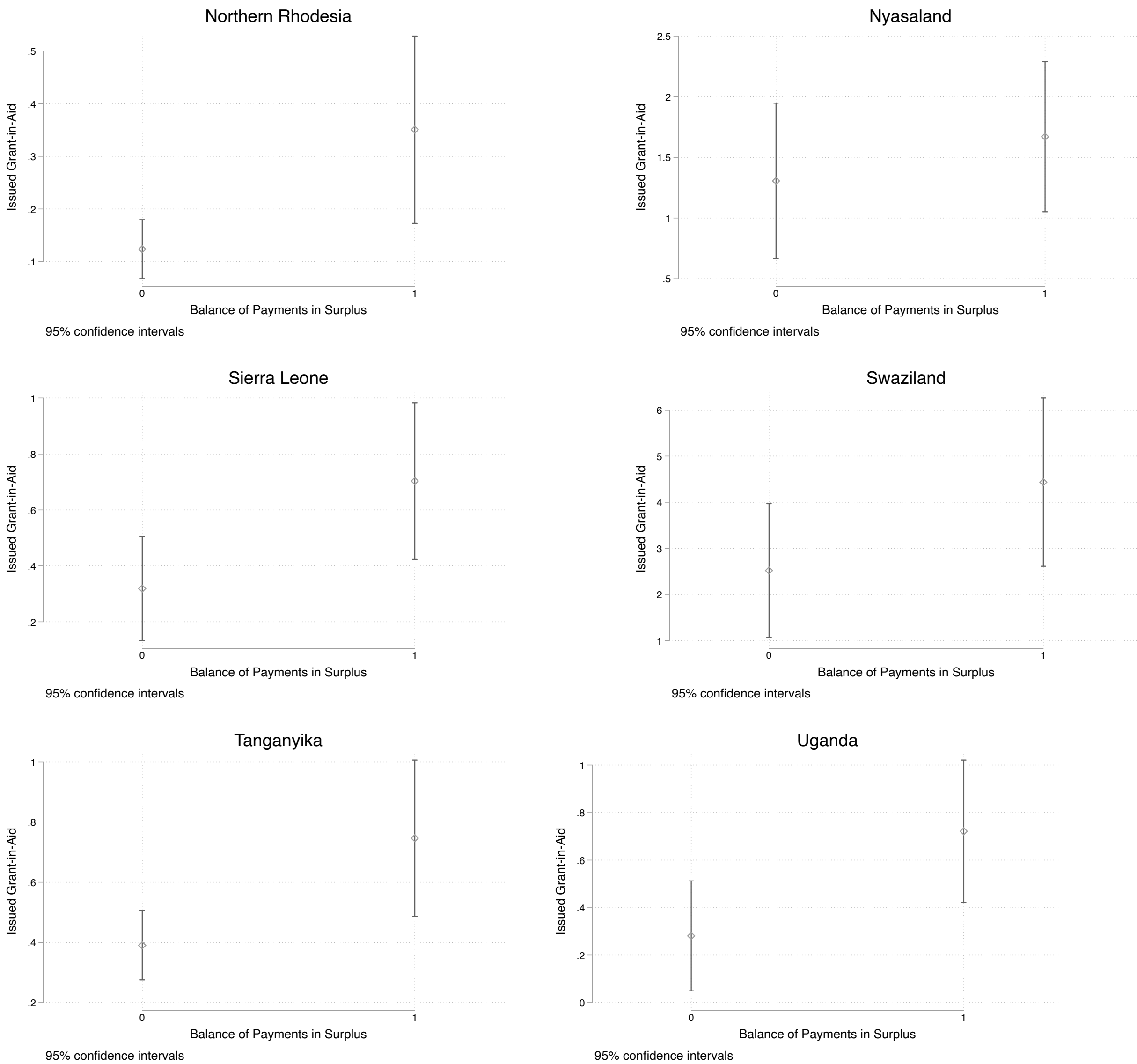











Northern Rhodesia
Issued Grant-in-Aid
Balance of Payments in Surplus
95% confidence intervals
Nyasaland
Issued Grant-in-Aid
Balance of Payments in Surplus
95% confidence intervals
Sierra Leone
Issued Grant-in-Aid
Balance of Payments in Surplus
95% confidence intervals
Swaziland
Issued Grant-in-Aid
Balance of Payments in Surplus
95% confidence intervals
Tanganyika
Issued Grant-in-Aid
Balance of Payments in Surplus
95% confidence intervals
Uganda
Issued Grant-in-Aid
Balance of Payments in Surplus
95% confidence intervals

K Issues as a function of Commitments and UK BOP

This appendix shows that aid issues are well predicted by the interaction between CDW Commitments and the British balance of Payments *keeping colony-specific time-(in)variant factors constant.* To show this, I fit the following model:

$$\begin{aligned}\text{CDW issue}_{it} &= \gamma_1 \text{CDW Commitment}_{it} + \gamma_2 \text{UK BOP}_t + \gamma_3(\text{CDW Commitment}_{it} \times \text{UK BOP}_t) \\ &+ X'_{it}\Phi + \rho_i + v_{it}\end{aligned} \tag{4}$$

where X_{it} denotes the same vector of covariates used in the main text (Population, Resource Value, and Internal Conflict) and ρ_i colony fixed effects. Year fixed effects are absorbed by the UK BOP. I expect $\hat{\gamma}_1 > 0$ and $\hat{\gamma}_3 > 0$, namely commitments should be positively correlated with issues and strengthen that association in surplus BoP years. This is what we observe in Table A-6

Table A-6: Shocks to CDW Issues

	(1)	(2)
CD&W Commitment	0.24***	0.24***
	(0.07)	(0.07)
UK BOP	-0.01	-0.04
	(0.01)	(0.03)
CD&W Commitment × UK BOP	0.03**	0.03**
	(0.01)	(0.01)
DV mean	1.153	1.153
Year FE	Yes	Yes
Colony FE	Yes	Yes
Controls	Yes	Yes
World War II indicator	No	Yes
Observations	396	396
R-squared	0.62	0.62

Note: UK BOP stands for UK Balance of Payments. All monetary units are expressed in per capita, real value. Controls are: log of Population, Resources Value, and Internal Conflict. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

L Instrumental Variable Framework

I instrument CD&W issues (the actual funds received by colonies) by the interaction between CD&W commitments (the funds that colonies expect to receive) and the UK Balance of Payments (BOP). Identification relies on the assumption that, conditional on controls, the interaction between committed aid and the BOP affects tax revenue only through issued funds. The exclusion restriction would be under threat if there were other time-varying factors that are spuriously correlated with the BOP and also affected tax revenue (e.g., a global economic crisis). I assuage this problem twofolds: First, I fit year fixed effects (at the cost of absorbing the "main effect" of BOP); second, the dependent variable does not consider trade related revenue nor resource royalties, minimizing direct effects from global shocks.

The first and second stages remain:

$$
\begin{aligned}
\text{AidIssue}_{it} &= \gamma_1 \text{AidCommitment}_{it} + \gamma_2 (\text{AidCommitment}_{it} \times \text{UK BOP}_t) \\
&\quad + \gamma_3 \text{Tax Revenue}_{i,t-1} + X_{it}' \Phi + \rho_i + \delta_t + v_{it} \\
\\
\text{Tax Revenue}_{it} &= \beta_1 \widehat{\text{Aid Issue}}_{it} + \beta_2 \text{Aid Commitment}_{it} + \beta_3 \text{Tax Revenue}_{i,t-1} \\
&\quad + X_{it}' \Omega + \lambda_i + \tau_t + \epsilon_{it}
\end{aligned}
\tag{5}
$$

where ρ_i, δ_t and λ_i, τ_t are colony and year fixed effect batteries in the first and second stage, respectively, and X_{it} are colony time-varying controls. Because the second stage includes a first lag of the outcome variable, for identification purposes I also include it in the first stage. The excluded instrument is (Aid Commitment$_{it} \times$ UK BOP$_t$) while AidCommitment$_{it}$ enters both stages to satisfy conditional exogeneity. Meanwhile, I do not include a control for UK BOP$_t$ because this is absorbed by the year fixed effects. By controlling for the CD&W Commitment in the second stage, the instrumented variable estimates the portion of tax revenue that changed as a result of shocks in the balance of payments.

Table A-7: Instrumental Variable Model of Colonial Taxation

	(1)	(2)	(3)
First Stage: CDW Issue			
CD&W Commitment × UK BOP	0.03***	0.03***	0.03***
	(0.01)	(0.01)	(0.01)
CD&W Commitment	0.24***	0.24***	0.23***
	(0.05)	(0.05)	(0.05)
Second Stage: Tax Revenue			
CD&W Issue	0.60***	0.60*	0.60*
	(0.16)	(0.32)	(0.36)
CD&W Commitment		-0.00	0.00
		(0.07)	(0.07)
First lag of DV	Yes	Yes	Yes
Colony FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Controls	No	No	Yes
Wald F (Kleibergen-Paap)	10.07	10.97	10.13
Observations	386	386	386
R-squared	0.61	0.61	0.61

Note: UK BOP stands for UK Balance of Payments. All monetary units are expressed in per capita, real value. Controls are: log of Population, Resources Value, and Internal Conflict. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

In columns 1 I run the closest specification to Table 1 in the main text, treating CD&W commitment as an excluded instrument along with the interaction term. In column 2 I include CD&W commitments in the second stage to address conditional exogeneity concerns. In column 3 I strictly fit expression (5) by including the colony-specific time-varying controls, X_{it}. The first-stage Kleibergen-Paap F-statistic for the excluded instrument is approximately 10, thus is unlikely that the estimates are biased by weak instrument. The coefficient for the instrumented variables is stable across specifications and twice the size of the OLS coefficient in the main paper, suggesting a strong local average treatment effect: that is, sudden increases in aid flows in times of rapid BOP fluctuation would have been matched by governors by double-downing on the fiscal mandate.

M Cuckoos in the Nest

The analysis of gubernatorial recruitment and on-the-job incentives in Section 5 in the main text excludes the so-called "cuckoos in the nest" (Nicolson and Hughes, 1975), namely governors who had been appointed clearly for political purposes. I identified five of these governors among those who served in Africa between 1929 and 1969. For instance, Evelyn Baring was appointed governor of Kenya in 1952 to suppress the Mau Mau rebellion. Further details of the political nature of these appointments are explained in Nicolson and Hughes (1975) and Kirk-Greene (1979).

In Tables A-8 and A-9, I run the same models in the main paper after including the "cuckoos" in the sample. Results hold for all specifications except for the very first test. That is, the inclusion of political appointees in the post-1930 governor group renders the interaction coefficient not statistical different from zero. This result seems consistent with the nature of their appointment.

Table A-8: Recruitment Track and Administrators Performance Including Cuckoos in the Nest

	(1)	(2)	(3)	(4)
CDW Grant Issue × Warrer Fisher Reform	0.223	0.211		
	(0.179)	(0.179)		
CDW Grant Issue × Cadet-made-governor			0.511**	0.504**
			(0.252)	(0.251)
CDW Grant Issue	-0.054	-0.039	-0.340	-0.331
	(0.182)	(0.184)	(0.252)	(0.251)
Warrer Fisher Reform	0.314	0.311		
	(0.294)	(0.282)		
Cadet-made-governor			-0.000	-0.004
			(0.163)	(0.158)
First lag DV	Yes	Yes	Yes	Yes
DOB	Yes	No	Yes	No
Date of Entry	No	Yes	No	Yes
Controls	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Colony FE	Yes	Yes	Yes	Yes
Observations	397	397	397	397
R-squared	0.887	0.887	0.888	0.888

Note: Warren Fisher Governor = 1 if first ever appointment into governorship dates after 1930, 0 otherwise. Cadet-made-Governor = 1 is the governor entered the civil service as a cadet, 0 otherwise. Colony-level controls: Controls: log of Population, Resources Value, and Internal Conflict. Governor-level controls: D.O.B.: Date of Birth; Date of Entry = date of first appointment into the colonial service regardless of rank. Robust standard errors in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Table A-9: Career Incentives and Administrator Performance including Cuckoos in the Nest

	(1)	(2)	(3)	(4)
CD&W × First Governorship	0.229*	0.222*		
	(0.123)	(0.120)		
CDW Grant Issue	-0.053	-0.040	0.264**	0.239*
	(0.127)	(0.126)	(0.125)	(0.137)
CD&W × Age Requirement Met			-1.497**	-1.640**
			(0.728)	(0.781)
First Governorship	0.084	0.131		
	(0.188)	(0.190)		
Age Requirement Met			-0.805	-0.775
			(0.742)	(0.745)
First lag DV	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
DOB	Yes	No	No	No
Date of Entry	No	Yes	No	No
Colony FE	Yes	Yes	Yes	No
Governor FE	No	No	Yes	No
Colony-Governor FE	No	No	No	Yes
Tenure Requirement Met	-	-	Yes	Yes
Observations	398	398	172	172
R-squared	0.893	0.893	0.968	0.969

Note: First Term Governor = 1 if governor is in his first governorship, 0 otherwise. Age Requirement Met = 1 if Governor meets the minimum age to opt for government pension. Tenure Requirement Met = 1 if Governor meets the minimum number of years in office to opt for government pension. Colony-level controls: Controls: log of Population, Resources Value, and Internal Conflict. Governor-level controls: D.O.B.: Date of Birth; Date of Entry = date of first appointment into the colonial service regardless of rank. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

N Tax Collection Courses in London

Improvements in local administration resulting from imperial aid may be an alternative, nonmutually exclusive causal mechanism for the strong association between CD&W issues and tax revenue. In this appendix I focus on one particular aspect of capacity building—skill acquisition—to explore this mechanism.

Starting in 1952, the Internal Bureau of Revenue set up a six month courses in London to train colonial officials in tax collection techniques. This program ran from 1952 to 1969 and trained 337 students from all over the empire. The training continued after independence.

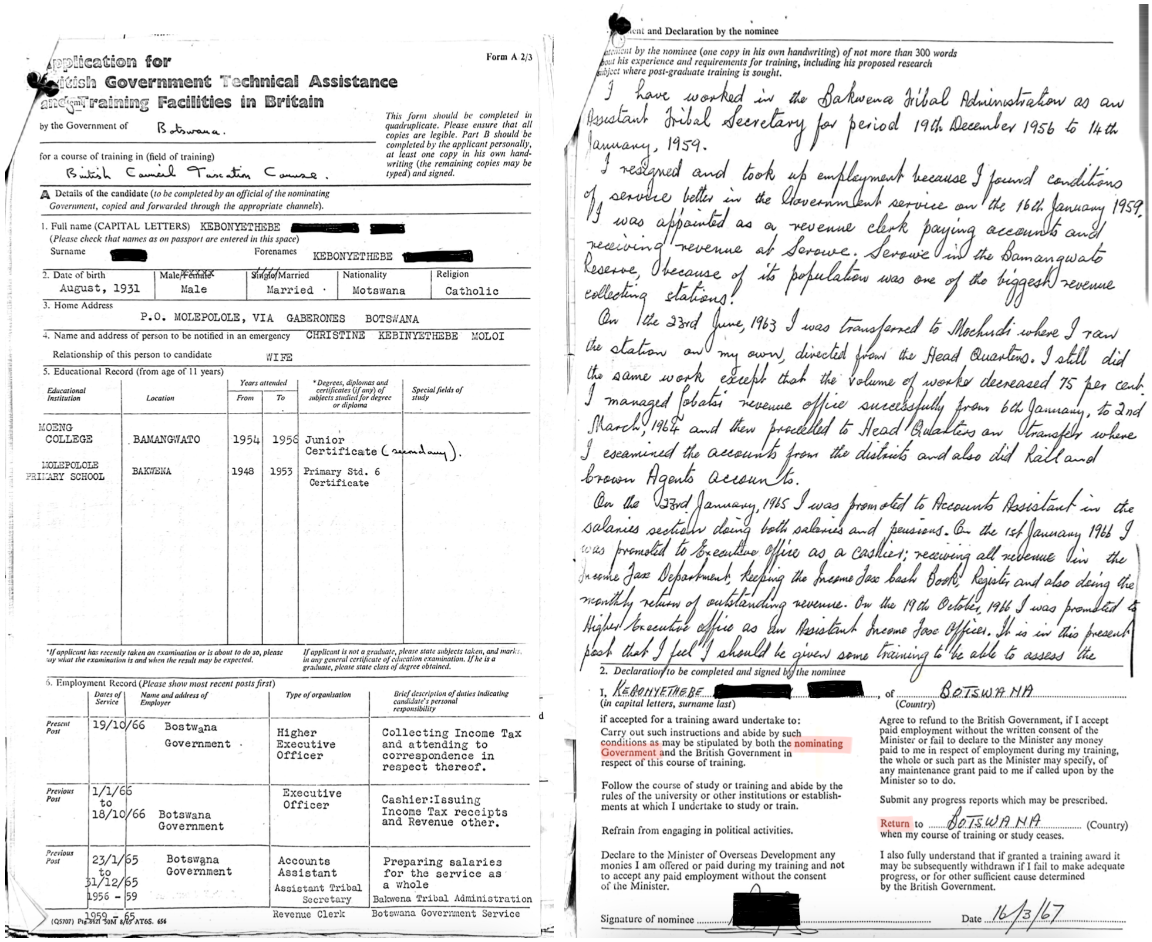
The course was targeted at management positions within colonial administrations, and colonial administrators nominated their candidates. Participation was competitive. Figure A-10 shows an application form by a Botswanan candidate (as of 1967, two years after independence). Mr. Kebonyethese was senior tax official in Botswana (I semi-anonymized the record). He had eleven years of experience in the colonial administration by the time he applied for this course. As stated in the type-written bottom left column on the second page of the application, Mr. Kebonyethese (like any other candidate), required the nomination of his government. Mr. Kebonyethese's proposal was rejected for not being sufficiently qualified.

The semi-annual program ran 37 courses in total with an average of 11 students per edition. I have coded the number of students at the colony–year level from the Colonial Income Tax Office records.[153] In the working sample (1952–independence, 12 African colonies), 24 African students participated in this program. I use their participation as a proxy of colonial efforts to build tax capacity.

In column 1 in Table A-10 I rerun the main analysis in Table 1 after 1952. The CD&W issues coefficient in the subset sample is qualitatively identical to that for the full sample. In column 2 I control for the time-varying, colony-specific number of colonial students in

[153]OD 1/20. The agency changed its name to Overseas Territories in its last years of operation. The agency was shut down in 1972 and starting in 1973 training of (former) colonies' personnel was conducted by the Inland Revenue Department (OD 1/25).

Figure A-10: Application for Colonial Income Tax Office course



Form A 2/3

Application for British Government Technical Assistance and Training Facilities in Britain

by the Government of Botswana.

for a course of training in (field of training) British Council Taxation Course.

This form should be completed in quadruplicate. Please ensure that all copies are legible. Part B should be completed by the applicant personally, at least one copy in his own handwriting (the remaining copies may be typed) and signed.

A Details of the candidate (*to be completed by an official of the nominating Government, copied and forwarded through the appropriate channels*).

1. Full name (CAPITAL LETTERS) KEBONYETHEBE [redacted]
(*Please check that names as on passport are entered in this space*)
Surname [redacted] Forenames KEBONYETHEBE [redacted]

2. Date of birth	Male/~~Female~~	~~Single~~/Married	Nationality	Religion
August, 1931	Male	Married	Motswana	Catholic

3. Home Address P.O. MOLEPOLOLE, VIA GABERONES BOTSWANA

4. Name and address of person to be notified in an emergency CHRISTINE KEBINYETHEBE MOLOI
Relationship of this person to candidate WIFE

5. Educational Record (from age of 11 years)

Educational Institution	Location	Years attended From	To	*Degrees, diplomas and certificates (if any) of subjects studied for degree or diploma	Special fields of study
MOENG COLLEGE	BAMANGWATO	1954	1956	Junior Certificate (secondary).	
MOLEPOLOLE PRIMARY SCHOOL	BAKWENA	1948	1953	Primary Std. 6 Certificate	

If applicant has recently taken an examination or is about to do so, please say what the examination is and when the result may be expected.

If applicant is not a graduate, please state subjects taken, and marks, in any general certificate of education examination. If he is a graduate, please state class of degree obtained.

6. Employment Record (*Please show most recent posts first*)

	Dates of Service	Name and address of Employer	Type of organisation	Brief description of duties indicating candidate's personal responsibility
Present Post	19/10/66	Bostwana Government	Higher Executive Officer	Collecting Income Tax and attending to correspondence in respect thereof.
Previous Post	1/1/66 to 18/10/66	Botswana Government	Executive Officer	Cashier:Issuing Income Tax receipts and Revenue other.
Previous Post	23/1/65 to 31/12/65	Botswana Government	Accounts Assistant	Preparing salaries for the service as a whole
	1956 - 59		Assistant Tribal Secretary	Bakwena Tribal Administration
	1959 - 65		Revenue Clerk	Botswana Government Service

(Q5707) Ptg.8421 50M 8/65 ATGS. 656

...ent and Declaration by the nominee

...atement by the nominee (one copy in his own handwriting) of not more than 300 words ...out his experience and requirements for training, including his proposed research subject where post-graduate training is sought.

I have worked in the Bakwena Tribal Administration as an Assistant Tribal Secretary for period 19th December 1956 to 14th January, 1959.

I resigned and took up employment because I found conditions of service better in the Government service on the 16th January 1959. I was appointed as a revenue clerk paying accounts and receiving revenue at Serowe. Serowe in the Bamangwato Reserve, because of its population was one of the biggest revenue collecting stations.

On the 23rd June, 1963 I was transferred to Mochudi where I ran the station on my own, directed from the Head Quarters. I still did the same work except that the volume of works decreased 75 per cent. I managed Lobatsi revenue office successfully from 6th January, to 2nd March, 1964 and then proceeded to Head Quarters on transfer where I examined the accounts from the districts and also did Rail and Crown Agents accounts.

On the 23rd January, 1965 I was promoted to Accounts Assistant in the salaries section doing both salaries and pensions. On the 1st January 1966 I was promoted to Executive Office as a Cashier; receiving all revenue in the Income Tax Department, keeping the Income Tax Cash Book, Register and also doing the monthly return of outstanding revenue. On the 19th October, 1966 I was promoted to Higher Executive Office as an Assistant Income Tax Officer. It is in this present post that I feel I should be given some training to be able to assess the

2. Declaration to be completed and signed by the nominee

I, KEBONYETHEBE [redacted], of BOTSWANA
(in capital letters, surname last) (Country)

if accepted for a training award undertake to:

Carry out such instructions and abide by such conditions as may be stipulated by both the nominating Government and the British Government in respect of this course of training.

Follow the course of study or training and abide by the rules of the university or other institutions or establishments at which I undertake to study or train.

Refrain from engaging in political activities.

Declare to the Minister of Overseas Development any monies I am offered or paid during my training and not to accept any paid employment without the consent of the Minister.

Agree to refund to the British Government, if I accept paid employment without the written consent of the Minister or fail to declare to the Minister any money paid to me in respect of employment during my training, the whole or such part as the Minister may specify, of any maintenance grant paid to me if called upon by the Minister so to do.

Submit any progress reports which may be prescribed.

Return to BOTSWANA (Country) when my course of training or study ceases.

I also fully understand that if granted a training award it may be subsequently withdrawn if I fail to make adequate progress, or for other sufficient cause determined by the British Government.

Signature of nominee [redacted] Date 16/3/67

Note: Source OD 1/19. Anonymized by Author.

London. I interpret this variable as a proxy of colonial efforts to improve local capacity. The effect for CD&W issues remains unaltered in the presence of the new control, suggesting that the latter does not drive the main effect. In column 3 I run the mirror image of the interactive model in Expression 3 in the main text. The effect of CD&W issues on tax revenue does not vary by student participation in training programs. Results remain null when I consider lags to student participation, cumulative stutent participation, or when I rerun the analysis for the full sample.

Table A-10: Tax Revenue as a function of Imperial Aid and Participation in Tax Training Programs, 1952–1969

	(1)	(2)	(3)
CDW Grant Issue	0.292***	0.299***	0.294***
	(0.106)	(0.106)	(0.106)
Tax Student		0.813	1.058
		(0.700)	(1.214)
Tax Student × CD&W issue			-0.150
			(0.477)
Lagged DV	Yes	Yes	Yes
Colony FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Controls	Yes	Yes	Yes
Observations	135	135	135
R-squared	0.898	0.901	0.901

Note: All monetary units are expressed in per capita, real value. Controls are: log of Population, Resources Value, and Internal Conflict. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

O Expanded Regression Tables Showing All Coefficients

This Appendix shows omitted coefficients in Table 1 to 4 in the main paper in compliance with the Journal policy.

Table A-11: Colonial Tax Revenue and CD&W Issues, 1929–69 (Table 1 in paper)

	(1)	(2)	(3)	(4)	(5)	(6)
CDW Grant Issue	0.93***	0.16*	0.18**	0.16*	0.24**	0.35***
	(0.09)	(0.09)	(0.08)	(0.09)	(0.12)	(0.12)
First Lag of Tax Revenue		0.90***	0.85***	0.83***	0.72***	0.66***
		(0.06)	(0.06)	(0.07)	(0.13)	(0.12)
ln(Population)				-2.00	-4.47	-0.45
				(3.92)	(6.77)	(8.71)
Value of Resources				0.03	0.02	0.04
				(0.02)	(0.05)	(0.03)
Internal Conflict				0.19	0.69	1.26
				(0.80)	(0.89)	(1.02)
Constant	5.00***	0.59**	0.81***	29.45	66.81	7.29
	(0.17)	(0.26)	(0.31)	(56.59)	(98.62)	(120.78)
Colony FE	Yes	Yes	Yes	Yes	Yes	Yes
Time FE	No	No	Yes	Yes	Yes	Yes
Mean DV	6.06	6.06	6.06	6.06	7.21	7.60
Time coverage	1929–69	1929–69	1929–69	1929–69	1946–61	1929–69
Observations	404	398	397	397	181	169
R-squared	0.59	0.87	0.89	0.89	0.88	0.90

Note: Robust standard errors in parenthesis: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Monetary units are expressed in per capita constant terms.

Table A-12: Colonial Tax Revenue and Imperial Aid Shocks, 1929–69 (Table 2 in paper)

	(1)	(2)	(3)
CD&W Commitment	0.095**	0.097***	0.094**
	(0.037)	(0.037)	(0.038)
UK BOP	-0.046*	0.023	0.046
	(0.027)	(0.047)	(0.046)
CD&W Commitment × UK BOP	0.023**	0.022**	0.021*
	(0.011)	(0.011)	(0.011)
First lag of Tax Pressure = L,	0.864***	0.863***	0.852***
	(0.065)	(0.065)	(0.068)
ln(Population)	0.036	-0.058	-2.217
	(0.807)	(0.824)	(3.918)
Value of Resources	0.025	0.025	0.033*
	(0.016)	(0.016)	(0.018)
Internal Conflict	0.620	0.564	0.632
	(0.505)	(0.520)	(0.550)
World War II Year		0.667	0.565
		(0.412)	(0.405)
Year			0.231***
			(0.089)
Year squared			-0.013**
			(0.006)
Year Cube			0.000**
			(0.000)
Constant	-0.054	1.284	31.234
	(11.413)	(11.652)	(55.374)
Mean DV	6.06	6.06	6.06
Colony FE	Yes	Yes	Yes
Controls	Yes	Yes	Yes
Observations	388	388	388
R-squared	0.880	0.880	0.882

Note: All monetary units are expressed in per capita, real value. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table A-13: Recruitment Track and Administrators Performance (Table 3 in paper)

	(1)	(2)	(3)	(4)
CDW Grant Issue × Warren Fisher	0.417**	0.406**		
	(0.182)	(0.186)		
CDW Grant Issue × Career Official			0.675**	0.674**
			(0.331)	(0.329)
CDW Grant Issue	-0.213	-0.203	-0.490	-0.489
	(0.180)	(0.186)	(0.336)	(0.335)
Warren Fisher	0.527*	0.497		
	(0.317)	(0.303)		
First lag of Tax Pressure	0.794***	0.796***	0.800***	0.800***
	(0.074)	(0.074)	(0.070)	(0.071)
ln(Population)	-1.644	-1.860	-3.362	-3.533
	(4.106)	(4.188)	(4.159)	(4.215)
Value of Resources	0.032	0.031	0.034*	0.033*
	(0.020)	(0.020)	(0.019)	(0.019)
Internal Conflict	-1.642*	-1.589	-1.970**	-1.897**
	(0.967)	(0.967)	(0.960)	(0.953)
DOB	-0.013		-0.017	
	(0.022)		(0.021)	
Date of Entry		-0.005		-0.008
		(0.012)		(0.012)
Career Official			-0.012	-0.039
			(0.173)	(0.168)
Constant	48.285	36.464	80.736	67.603
	(77.723)	(71.446)	(78.952)	(71.719)
Year FE	Yes	Yes	Yes	Yes
Colony FE	Yes	Yes	Yes	Yes
Observations	379	379	379	379
R-squared	0.889	0.889	0.890	0.890

Note: These models examine whether the governor's recruitment method impacted the fiscal performance of the CD&W program. Warren Fisher = 1 if first ever appointment into governorship dates after 1930 Warren Fisher Report, 0 otherwise. Career Official = 1 is the governor entered the civil service as a cadet, 0 otherwise. Colony-level controls: Controls: log of Population, Resources Value, and Internal Conflict. Governor-level controls are: D.O.B. (date of birth) and Date of Entry (date of first appointment into the colonial service regardless of rank). Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table A-14: Career Incentives and Fiscal Performance (Table 4 in paper)

	(1)	(2)	(3)	(4)
CDW Grant Issue × First Time Governor	0.305**	0.293**		
	(0.123)	(0.121)		
CDW Grant Issue	-0.103	-0.092	0.282**	0.268*
	(0.128)	(0.127)	(0.131)	(0.140)
CDW Grant Issue × Age Requirement Met			-1.498**	-1.575*
			(0.742)	(0.801)
First Time Governor	-0.009	0.022		
	(0.188)	(0.189)		
Age Requirement Met			-0.358	-0.347
			(0.630)	(0.641)
First lag of Tax Pressure,	0.807***	0.807***	0.431***	0.432***
	(0.071)	(0.071)	(0.152)	(0.153)
ln(Population)	-1.883	-1.994	-61.418***	-61.315***
	(4.139)	(4.181)	(22.373)	(22.514)
Value of Resources	0.028	0.028	0.060	0.050
	(0.019)	(0.019)	(0.062)	(0.075)
Internal Conflict	-1.762*	-1.724*	-0.446	-0.413
	(0.937)	(0.934)	(1.080)	(1.052)
DOB	-0.013			
	(0.021)			
Date of Entry		-0.009		
		(0.012)		
Constant	49.211	43.131	810.451***	846.874***
	(73.353)	(65.561)	(295.875)	(309.741)
Year FE	Yes	Yes	Yes	Yes
Colony FE	Yes	Yes	Yes	No
Governor FE	No	No	Yes	No
Colony-Governor FE	No	No	No	Yes
Tenure Requirement Met	-	-	Yes	Yes
Observations	380	380	163	163
R-squared	0.895	0.895	0.970	0.970

Note: First Term Governor = 1 if governor is in his first governorship. Age Requirement Met = 1 if Governor meets the minimum age to opt for retirement pension. Tenure Requirement Met = 1 if Governor meets the minimum number of years in office to opt for retirement pension. Governor-level controls: D.O.B.: Date of Birth; Date of Entry = date of first appointment into the colonial service regardless of rank. Governor-level controls drop after adding governor fixed effects. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.