The Evolution of World Bank Conditionality:
A Quantitative Text Analysis

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World Bank loan conditions are controversial. Much of the scholarly literature as well as popular criticism of Bank operations claim that the Bank has never really abandoned the much criticized “Washington Consensus,” decrying donor control and institutional or ideological inertia. Others, including the Bank itself, counter that the institution adapts over time, provides financing according to borrower needs, and thus remains a vital financial and technical resource for developing countries. In particular “country ownership” and “context-specific lending” have been declared goals of the World Bank for almost two decades now. But is this mere window-dressing, or did the World Bank fundamentally overhaul its approach?

Despite this vigorous debate, the actual content of Bank conditions remains understudied. In this paper, we argue that the Bank adapts considerably over time, and that key elements of the “Washington Consensus” have been almost entirely purged from the Bank’s conditionality. To provide evidence, we use structural topic models to study over 20,000 conditions of World Bank loans since 1989 and find considerable support for the claim that the Bank adapts more than critics claim. At the same time, Bank policy choices over time explain far more variation in conditionality than country-level characteristics: We find very little evidence of the influence of country-specific variables on the content of World Bank conditionality. Although the Bank has adopted many new issue areas, it applies these almost uniformly across borrowers.
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**Introduction**

The World Bank remains among the most important official lenders to developing countries. Like the International Monetary Fund (IMF), the Bank imposes conditions on loans that a country must fulfill to access finance. These conditions span diverse policy areas and intrude sometimes strongly on borrower countries’ policy options. Many scholars claim Bank lending reflects an unwavering commitment to “‘neoliberal policies’ for ideological and organizational reasons (Babb, 2013; Broad, 2006; Fine, 2009) or due to the influence of donors (Wade, 2002). This criticism is echoed by popular observers (Elliott, 2016; Townsend, 2009).

Recent research shows such that such criticism is valid when directed at the IMF. As one prominent article argues, Fund conditionality fails to account for important social and labor protections, reflecting a continuity of “Washington Consensus” policies at that institution (Kentikelenis, Stubbs, & King, 2016). But does the same assessment apply to World Bank conditionality? Or has the Bank moved to a nuanced approach focused on borrower-country specifics, as some hope (Güven, 2018; McLean & Schneider, 2014)?

We submit that neither of these perspectives reflect the evolution of World Bank conditionality. On one hand, the Bank has demonstrated the capacity to change its loan conditions over time. Indeed, we empirically show that the Bank often follows rhetorical policy pronouncements with identifiable changes in conditionality. But on the other hand, the Bank pursues these changes in a wholesale fashion, minimizing the role of borrower-specific characteristics. Indeed, we also show that across-the-board, “paradigmatic” change in Bank policies far outweighs country-specific factors in shaping the evolution of Bank conditionality.
To provide evidence, we analyze a dataset of over 1,000 World Bank loans and 20,000 conditions from 1989-2015. Quantitative text analysis techniques of maximum cosine similarity and structural topic modeling allow us to measure the rise and fall of topics in Bank loan conditions throughout this period. To our knowledge, this is the first paper in a vast academic literature on the Bank to use the content of loan conditions as the object of a rigorous quantitative analysis.

Our findings are summarized as follows: The “Washington Consensus” was based on ten policy recommendations (Williamson, 1990a) that revolved around macroeconomic adjustment and structural reforms such as financial liberalization, reduction of barriers to trade and investment, fiscal consolidation, and privatization (Babb, 2013). As we show below, World Bank conditionality has changed over time, to the point that it bears minimal resemblance to these prescriptions. Financial and trade liberalization, perhaps the most central concerns of the Washington Consensus, largely disappeared from World Bank conditions by the early 2000s. Budget and fiscal conditions also become far less common later in the 2000s, while privatization is the only area that maintains prominence in loan conditions. In turn, conditions unrelated to the Washington Consensus become much more prominent in this period, namely social policy areas such as health and education, borrower ownership, and governance reforms.

Furthermore, when loans are issued is far more important for the conditions they feature than which country receives the loan: Up to 50 percent of the relative prevalence of policy topics in loans depends on the year, even after controlling for numerous country-level variables. The latter, we find, are rarely influential in determining the topics covered by Bank loan conditions—while several variables are statistically significant, only low-income status can be called substantively influential in shaping
loan conditions. In sum, we find Bank loan conditions change substantially over time but not across borrowers.

The paper makes three main contributions. First, it advances our understanding of World Bank loans by subjecting prominent claims in the scholarly literature to empirical scrutiny. We show the Bank has retreated from a widely-criticized program of conditionality. This means that the content of World Bank conditionality cannot be explained by dominant theories of donor control or institutional and ideological inertia. Rather, we suggest that the Bank’s autonomous search for legitimacy lies at the heart of such change. We detail this theoretical implication in the penultimate section.

Second, we apply recent developments in text analysis to the World Bank’s loan conditions. This allows us to statistically analyze a much larger corpus of qualitative information than would be possible by intense reading of these texts. Furthermore, in contrast to primarily descriptive text analyses, our paper employs cosine similarity measures of distance between texts and structural topic models (STM) to adjudicate between different claims in the literature. Competing theoretical interpretations of Bank policy lead to different expectations of the textual content of Bank loan conditions, and the approach in this paper allows us to make objective assessments. Most importantly, as an unsupervised method, STM allows us to assess Bank conditions based on the word-by-word content of loan conditions rather than Bank-imposed rhetorical categories or pre-conceived notions held by the researcher. Rather than specifying beforehand what might constitute “neoliberalism,” or drawing on the Bank’s own pronouncements to identify the relative importance of policies, our method reveals the content of conditionality and makes our interpretation transparent and our findings reproducible.
Finally, our findings have important implications for World Bank policy debates. We find considerable evidence that the long-standing charge against the Bank—that it promotes economic liberalization at the expense of social protections or other policy priorities—is no longer justified. The types of conditions reflected in the Washington Consensus have become rare. Even countries that have few other options for finance, such as low-income countries, do not receive major economic liberalization conditions in Bank loans. In fact, our statistical results indicate that the poorest countries are even less likely to face such—already rare—conditions. However, the evidence suggests that the Bank does not substantially account for variation across borrower-country political economies. Aside from low-income status, few country characteristics appear to substantially influence conditionality. While the Bank’s emphasis in conditionality has changed over time, it still pays little heed to differences across countries.

**World Bank Loan Conditions: An Unresolved Debate**

Contrasting views of World Bank loan conditions hinge on debates about adaptability, donor influence, and country-specificity. On adaptability, the question is whether the Bank is predominately inertial or changes over time. Donor influence suggests that the Bank serves their interests, which should also encourage stability as these will change slowly if at all. Country specificity, on the other hand, would indicate that the Bank lends according to country needs rather than offering a one-solution-fits-all approach. A vigorous debate continues around these three views.

**Theories of Bank Behavior**

The large academic literature on the Bank has sought to explain who gets loans, the size of loans, organizational change, and non-compliance with standards. To our knowledge,
only one paper investigates the scope of Bank conditionality in a statistical approach (McLean & Schneider, 2014), but that paper measures the number of conditions. The content of Bank conditions remains understudied.

A prominent group of authors cites the external influence of donor countries on Bank operations. These studies submit that US power specifically (Fleck & Kilby, 2006; Kilby, 2009; Wade, 2002) or donors writ-large (Dreher, Sturm, & Vreeland, 2009; Lyne, Nielson, & Tierney, 2006) shape Bank lending. On the internal side, researchers point to the role of Bank staff ideology or organizational structure (Broad, 2006; Chwieroth, 2008; Fine, 2009; Weaver, 2008). Others connect a variety of external and internal factors in some form by focusing on dominant economic ideologies held by some combination of Bank staff, donors, and borrower bureaucrats (Babb, 2013; Park & Vetterlein, 2010; Woods, 2006). If loan conditions reflect such theories of donor interests or organizational and ideological persistence, then their content should not substantially change, and in particular not in the span of a few years.

In contrast, others argue the Bank changes due to crises or shifts in the global economy. Some, including the Bank itself (Kagia, 2005), claim a variety of crises and pressures alter Bank policy over time (Rodrik, 2006; Pauly, 2009). This suggests a broadening of the scope of Bank policy (Güven, 2018), partly for operational reasons and partly because earlier policy approaches appear unattractive to borrowers. This strand of literature directly contradicts the claims of ideological rigidity and donor influence, positing the Bank can learn or adapt, but leaves it open as to whether the Bank just adopts a new paradigm or indeed is guided by borrower needs.

Lastly, a group of scholars has recently pointed to the availability of alternative financing options for borrowers, both public (Bunte, forthcoming; Humphrey & Michaelowa, 2013; Woods, 2008) and private (Culpeper & Kappagoda, 2016; Gill &
Pinto, 2005; Park, 2009). The “age of choice” (Greenhill, Prizzon, & Rogerson, 2013) could theoretically shape Bank policy, including loan instruments and conditions (see, for example, Cormier, 2016). In particular middle-income countries have choice in borrowing, and can either tap financial markets or seek out public finance. Low income countries, on the other hand, are largely dependent on public sources. Compared to these theoretically ambitious studies, research on loan conditions is more limited in its scope, often driven by Bank pronouncements and critiques of Bank policy.

**Bank Conditions**

Conditionality in some form has been part of the World Bank’s mandate from its inception. It wasn’t until the 1980s, however, that conditionality became central to all Bank loans (Koeberle, 2003, p. 250). Both the Bank and IMF began to emphasize conditionality around the same time, and both face many of the same questions regarding its use (Buira, 2003, p. 2). However, perhaps because of its greater political salience in periods of crisis, the literature has investigated IMF conditionality much more rigorously (Chwieroth, 2015; Dreher, 2009; Dreher, Sturm, & Vreeland, 2015; Nelson, 2017; Stone, 2008).

Work that does consider Bank conditions primarily focuses on its (in)effectiveness. Some claim Bank intervention has little effect on, or is less important than, existing country policies or institutions (Burnside & Dollar, 2000, 2004; Easterly, 2006), that the effects of Bank involvement on growth are unidentifiable (Easterly, 2005), and even the possibility that Bank loans increase the likelihood of crisis (Dreher & Gassebner, 2012). While some at the Bank say loans and conditions can have positive effects (Koeberle, Bedoya, Silarsky, & Verheyen, 2005; Smets & Knack, 2014), many maintain a critical view (Babb, 2013; Babb & Carruthers, 2008, p. 201; Broad, 2006;
Research on the substantive content of Bank conditions is even less common. A starting point is the emergence of the Washington Consensus and its effect on Bank operations and conditions in the 1980s and early 1990s (Williamson, 1990b; Wright & Winters, 2010, p. 72). Among other aims, the paradigm emphasized privatization, disciplined fiscal reforms, and liberalization of trade, investment, and finance. The presence of the Washington Consensus is evident in the early years of the findings below. Absent from the Washington Consensus are social policy aims and less-stridently neoliberal economic policies.

The major outstanding question for analysis is the extent to which the nature of Bank conditions has changed from the Washington Consensus. McLean and Schneider (2014) and some of the Bank’s own research (Koeberle & Malesa, 2005; World Bank, 2007a, p. ii) show a gradual decrease in the number of conditions attached to loans but do not comprehensively address the content of conditions. While the Bank has ostensibly shifted away from one-size-fits-all lending where policy paradigms and standards lead to the same advice and conditions being applied to all countries (Branson & Hanna, 2000; Koeberle, Walliser, & Stavreski, 2006, p. 6; Rodrik, 2006), others disagree vehemently (Babb, 2013; Babb & Carruthers, 2008, p. 201; Dreher, 2009, p. 234; Koeberle et al., 2005, p. 11; Paloni & Zanardi, 2006, p. 21; Weaver, 2008). At best, it is unclear whether and to what extent the fundamental ideas underpinning Bank conditions have changed (Best, 2014, pp. 97–105; Park, 2009; Park & Vetterlein, 2010; Stiglitz, 2006, pp. 47–48).

We address this lack of clarity by using quantitative text analysis techniques. As a first step, we calculate a quantitative measure of similarity (defined in detail in the
appendix) between World Bank lending conditions by program, defined as the distance between the vectors of words used in these conditions. This measure captures change in the content of the conditions without regard to the content itself.

As a second step, we use an unsupervised machine learning method to drill down into the policy-specific content of Bank conditions, which allows us to trace the prevalence of key policy topics in Bank loans over time, as well as to estimate the extent to which country factors affect the content of conditions.

**Empirical Approach**

Our study builds on a unique World Bank dataset of conditions, or “prior actions,” that includes every condition in all Bank loans from 1990 to 2015. These conditions fall into several categories: “Prior actions,” or conditions that a borrowing country has to fulfill to obtain the loan, “prior actions for future tranches” of previous loans, “prior actions unbound by tranches” and “prior actions for floating tranches.” We aggregate these conditions by country-specific loan, so that we can investigate both changes over time in the content of the conditions as well as estimate the effect of country-specific, time-variant variables. To be sure, loan conditions are not the only communications between Bank and borrowers. They are embedded in a broader “country dialogue,” but they represent the tangible outcome of this dialogue and are publicly available.

**Cosine Similarity as a Measure of Change**

We first measure change in World Bank conditions in a purely quantitative fashion without considering their substantive content. To do so, we follow a “bag of words” approach, whereby the words of a text are turned into vectors of their count. We first strip the texts of all country-specific vocabulary, non-English terms, proper nouns and names. A vector of words from the text of the conditions attached to each World Bank
program is one observation. We then calculate a measure of distance between these vectors called cosine similarity. This measure ranges from 0, indicating two completely different texts in terms of the words used, to 1 for two completely similar texts in terms of words and frequencies. Following Pagliari and Wilf (2018), we use the maximum cosine similarity, i.e. the maximum of the pairwise cosine similarity measure between a given conditionality text and all conditionality texts published previously. When this value is high, then the Bank merely copies conditions from one program to the next, while when it is low, the Bank changes the substantive content of the conditions.

Figure 1 shows this measure over time. Clearly, starting the late 1990s, the Bank’s lending conditions have undergone considerable and ongoing change. While remaining completely agnostic about the substantive content of conditions, this trend contradicts claims of a static approach or inertia in Bank policy.
What substantive changes can we discern in Bank policies? Given the broad mandate of the Bank, its loans typically touch upon numerous policy issues. Tracing conditionality over time via such documents lends itself to the use of a quantitative method that allows document text to be grouped along multiple topical dimensions simultaneously, for which structural topic models are designed.

**Structural Topic Model**

Topic models are a relatively recent development in the statistical analysis of texts, and were originally proposed by Hofmann (1999) and Blei et al. (2003) as an unsupervised machine learning method to estimate the thematic content of text documents. In this approach, “topics” are words that frequently occur together. As in methods of dimension reduction like cluster analysis, the researcher needs to specify the number of topics, and the statistical analysis reveals the topics that emerge for a given number. In the ideal scenario, a smaller number of topics provides a high-level view of the content of the texts, while a greater number would break the texts into more granular topics.

In practice, not all ranges of numbers will yield semantically coherent topics. Many researchers therefore advocate trying out a range of topic numbers, and then checking whether the topics appear sensible to a human reader (Grimmer, 2010; Grimmer & Stewart, 2013; Quinn, Monroe, Colaresi, Crespin, & Radev, 2010). This is a laborious process, in particular because topics need to be further validated. Rather than just relying on the words that appear with high probability when identifying a topic, the researcher needs to go back to the source documents. To do so, the researcher has to read a sample of documents that the statistical approach suggests as “representative” of a topic, and then evaluate whether each topic indeed accurately captures the relevant theme in the document. These documents have a high proportion of a particular topic assigned to them.
Furthermore, we have to assure that the number of topics does not affect the conclusions. To do so, we increase the number of topics gradually. A sensible maximum number of topics is reached when an additional topic merely splits a policy area into two smaller issues—for example, university and secondary education—that nearly always appear together, and for which we do not have separate theoretical expectations. In addition, we need to check if the distribution of the other topics over time remains stable when such more finely-grained topics appear. Reassuringly, this is the case for World Bank conditions. To offer full transparency, our appendix includes the lists of high probability and exclusive words that help us identify topics. Our replication code allows the interested reader to explore the stability of our topic allocation. To reiterate, with our unsupervised approach, the topics emerge from the text and are interpreted by the reader, and may therefore differ considerably from how the Bank describes its own policy approach. Topic modelling can therefore either challenge or support “official” rhetoric.

All topic models assume that the language, i.e. the meaning of the words used, stays constant over time. This is clearly not the case with many types of political discourse, but less of a problem in our application: While the content of Bank conditions may change over time, the definition of those topics—from general macroeconomic policies to education to health to governance—is consistent enough to allow for comparison of the presence of those topics across many years. Development economists and policy-makers may talk about a variety of issues, but an economist from the 1980s would not use very different terms to describe the same policy area as someone from the 2010s. By extension, while Bank staff may change how they group conditions into “themes,” we are simply concerned with whether or not a topic’s presence in the actual text of conditions changes over time.³
We use the structural topic model (STM) (Roberts, Stewart, Tingley, & Airoldi, 2013) to incorporate covariates, or “document metadata” in the STM terminology, into our analysis. Specifically, we estimate the effect of document-specific covariates on the topics and their prevalence over time across all documents (Grimmer, 2010; Grimmer & Stewart, 2013). One “document” in our analysis is the set of all conditions related to a project, which in turn is approved at a particular point in time for a particular country.

Data

We opt to minimally pre-process all text by excluding country names, country-specific abbreviations, months, a set of generic verbs, and terms in languages other than English. We then assemble a set of covariates at the level of program, year and country. Our data is annual and determined by loan approval year, as the Bank only recently started to provide the approval date by quarter.

Since the Bank lends to low- and middle-income countries, it is unsurprising that data on covariates of interest is limited. However, the correlation between low-income status and the incidence of missingness ranges from merely 0.05 to a maximum of 0.18. Whether a loan makes it into our sample is therefore not driven by the characteristics of a particular class or subset of borrower (i.e. by low- or middle-income country status), limiting concern that results are unduly biased toward a particular subset of borrowers.

To establish the temporal ordering, we sort the topics by loan number because the Bank numbers loans consecutively. We then apply a smooth spline function with ten knots to turn year into a continuous covariate. This allows us to estimate how topic prevalence changes as a non-linear function of time. Unavoidably, this move also prevents us from including any covariates that vary annually but not across borrowing countries, much like when including year fixed effects in a panel analysis.
When considering covariates, we are thus restricted to the inclusion of country-level variables that vary over time. Three variables capture political aspects of countries to which the Bank lends. First, we include a standard measure of democratic governance with the Polity IV aggregate coding (Polity). Schultz and Weingast (2003) explain how democracies have more access to private finance, making it important to account for this in the context of sovereign finance research. Moreover, while democratic governance is correlated with many facets of a country’s political economy and policies, two aspects stand out in relation to World Bank loans and the topics identified below: democracies spend more on primary education and health (Stasavage, 2005), policy objectives of many World Bank loans, and are much more transparent in providing data on their fiscal and economic situation (Hollyer, Rosendorff, & Vreeland, 2011), a frequently-mentioned goal in World Bank documents.\(^5\)

Second, we include government partisanship in the analysis. Left-leaning governments have a specific set of policy preferences, which should shape what they are willing to concede to the World Bank in exchange for loans. Partisanship is coded using the Database of Political Institutions (Beck, Groff, Keefer, & Walsh, 2001). Following Pinto’s use of the same data (2013, p. 118), the variable *Left Government* is coded according to the partisanship of the branch of government that most controls policy, meaning partisanship of the majority party in parliamentary systems and the partisanship of the president’s party otherwise. In our coding, the variable has a value of 1 only for Left governments. Center and Right governments are coded as 0.

Third, we consider the international strategic dimension of IFI lending by including alignment of borrowers with the United States. Previous research indicates the US influences World Bank lending outcomes (Fleck & Kilby, 2006). Similar findings are identified in the literature on IMF loans (Dreher & Jensen, 2007; Stone, 2011).
While IMF research by Dreher, Sturm, and Vreeland (2015) also considers Security Council membership, the same authors find an unclear Security Council effect with respect to the Bank (Dreher et al., 2009). Accordingly, we simply focus on the General Assembly to proxy US influence. This potential effect is operationalized by including borrowers’ alignment with the United States in United Nations General Assembly voting (Bailey, Strezhnev, & Voeten, 2017). The variable is called *UN Vote*.

We then include economic variables from the World Development Indicators (WDI) database to capture different aspects of borrowing countries’ economies and their need for Bank financing. We include a measure of *annual GNI growth*, as fast-growing countries are less likely to have budget issues and severe borrowing needs. In addition, we generate a dummy variable (*LIC*) for the income category of Bank borrowers that equals one if the country is classified as low income. Low or Middle Income Country status largely reflects whether or not a country has access to the Bank’s International Development Association (IDA) window, shaping which Bank resources and loan instruments a borrower can access. Income category also helps account for a country’s creditworthiness, as LICs have less access to private markets than middle-income countries (World Bank, 2012, secs. 8, 21.).

We also include the variable *domestic credit market*, measured as the amount of private domestic credit available to public and private borrowers, as the domestic financial market depth could shape borrowers’ relationship with the Bank and determine some loan conditions related to financial market development. Similarly, we include the average annual interest rate governments face when going to external markets (*IntRateExtDebt*), as this may shape borrowers’ ability to finance itself without the Bank. While these may not be perfect substitutes for Bank financing, it is important to
consider the possibility that borrowers may “shop” for finance (see Humphrey & Michaelowa, 2013).

Finally, we include two covariates related to financial crises. The first captures whether the borrower is currently under an IMF program. It is possible that the presence of the IMF shapes conditionality insofar as the Bank and Fund coordinate (Marchesi & Sirtori, 2011, p. 292). We thus include a dummy variable for IMF programs drawn from Kentikelenis, Stubbs, and King (2016). The second captures whether the borrower is currently experiencing an economic crisis. This could shape Bank conditions insofar as periods of crisis lead to a different policy agenda. We again code a dummy for whether a country is in such a crisis (Laeven & Valencia, 2012).³

**Estimated Topics**

If Bank conditionality has changed from 1990-2015, how do the specific policy areas covered by Bank loan conditions change over that period? STM techniques allow us to assess conditionality at this level of detail by tracing how often policy topics appear in Bank loan conditions over time.

Given the above pre-processing, we find that asking the statistical analysis to parse documents based on seven topics (policy areas) provides considerable semantic coherence. Avoiding overlap is important, as overly-similar topics are non-exclusive and water down the ability to trace topic themes (Roberts et al., 2014, p. 1067). Including more than seven topics yields overlap. Even increasing the revealed topics to eight gives rise to an 8th topic that is largely redundant to the words and year-over-year plot of Topic #2.

We base our topic labeling on analyzing four analytical outputs provided by STM and their subsequent validation with source texts. This includes the words most likely to be associated with the topic (the “highest probability” words in the STM topic
identification output), the exclusivity of words to the topic (the “FREX” words in the STM topic identification output uses the weighted harmonic mean to rank word exclusivity; see Airoldi & Bischof, 2016), and the words least-frequently appearing in other topics (both “lift” and “score” reflect this measure). The appendix shows these outputs and our subsequent labeling of those topics.

For each of the seven topics, we examined the ten documents that were most associated with the topic.9 We thus label the topics based on not only the STM output, but document analysis and context. This procedure ultimately yields the short hand labels shown in Table 1.

Most of these loan condition topics are straightforward. Budget and expenditure refers to fiscal policy conditions about taxing and spending, often concerned with expanding tax bases or limiting spending to achieve fiscal consolidation. Governance conditions focus on reform of public institutions, especially legal or regulatory institutional change and ministerial reorganization or transparency.10 Financial sector reforms refer to conditions about the domestic banking sector, ranging from restructuring to capital requirements. Privatization conditions seek downsizing or eliminating state-owned enterprises, often in major sectors like utilities. Liberalization conditions cover policies designed to increase integration into the global economy, such as tariff elimination and open capital flows. Health and education conditions cover two major focal points of social policy and investment.

Table 1: Short-hand labels for estimated topics

<table>
<thead>
<tr>
<th>Budget &amp; Expenditure</th>
<th>Governance Reforms</th>
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<tbody>
<tr>
<td>Privatization</td>
<td>Trade &amp; Investment Liberalization</td>
</tr>
<tr>
<td>Health &amp; Education</td>
<td>Borrower Ownership</td>
</tr>
<tr>
<td>Financial Sector Reforms</td>
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</table>
Borrower ownership requires some explanation. While borrower ownership may be seen as a nebulous concept (Johnson & Wasty, 1993), the Bank’s use of the term reflects the idea that borrowers must exhibit political and institutional “buy-in” for policy change to occur (Best, 2014, Chapter 5). Leaving inherent normative issues aside, we simply seek to assess whether references to ownership are empirically present in conditions. This is the case if, following Best’s discussion of ownership (2014, p. 104), conditions exhibit a reliance on domestic institutions and informal benchmarks. Such language implicitly reflects Bank trust in borrowers’ political and institutional capacity to achieve desired ends. The presence of borrower ownership in Bank lending practices is debated by the Bank and the development community (World Bank, 2007a, p. ii), making our attempt to empirically trace ownership in loan conditions an important exercise.

It is useful to re-emphasize that the STM approach, in a fashion similar to statistical cluster analyses, gives rise to these topics. We propose this is analytically preferable to relying on the Bank’s own rhetorical labels and researchers’ pre-conceived biases for text analysis. Unsurprisingly, several of the topics identified are similar to the Bank’s own categories. However, others do not overlap, indicating that there are substantive advantages to our unsupervised inductive approach.

**Findings**

The most remarkable finding is that Bank conditions exhibit a substantial amount of change over time. Change over time occurs quickly, often within a few years, and some topics completely disappear. This finding is hard to square with claims of policy inertia due to internal habits or external influences at the World Bank. Second, country-level political and economic variables, among them income level, domestic financial depth, growth, crisis periods, borrower partisanship, and regime type, variously increase or
decrease the likelihood that policy topics are present in conditions. Relative to the change over time, however, these country-level variables are substantively of small to minimal importance. In other words, the Bank has overhauled the policy content of its loan conditions, but tends to apply these across all borrowers.

**Changes in Bank Conditions Over Time**

We begin by analyzing change over time. Figure 2 shows the prevalence of the different topics as a function of time after controlling for the country-specific variables. The scale of the y-axis is the share of all conditionality text that year estimated to belong to the topic.

The rise and fall of the two topics of trade and investment liberalization (Topic 4) as well as financial sector reform (Topic 7) provide strong support for the conventional criticism of 1990s “Washington Consensus” Bank policy: Structural Adjustment Loans (SAL) dominated, aiming to open borrowing countries’ economies and mold domestic banking sectors into attractive investment sites. Indeed, we find evidence that during the 1990s the Bank emphasized these two topics almost to the exclusion of all others as. In 1995, taken together, they are estimated to comprise up to 90 percent of Bank conditions.

Subsequently however, both topics experience a rapid and drastic decline in prevalence during the late 1990s. Since then, their estimated prevalence has largely been indistinguishable from zero. While neoliberal policies continued in the United States after the 2000s (Harvey, 2005, Chapter 7), the trade, investment, and financial sector conditions associated with neoliberalism at the Bank evidently did not last (in contrast to, for example, Broad, 2006; Fine, 2009; Wade, 2002). This does not fit with theories of policy inertia or with predominant influence of World Bank donor countries.
Figure 2: Prevalence of Policy Areas in Bank Conditions Over Time
Figure 2 continued. Note: Ribbons denote 95% confidence intervals.
A search for renewed output legitimacy, on the other hand, would lead us to expect precisely such a pattern. The timing of the late 1990s fits extremely well with a reaction to post-Asian Financial Crisis criticism of SAL-related policies promoted by the Bank and others (Haggard, 2000; King, 2001; Noble & Ravenhill, 2000; Woo, Sachs, & Schwab, 2000). The Bank apparently has minimized its commitment to centerpieces of orthodoxy such as liberalization and financial sector reform (Rodrik, 2006). However, it is also possible that liberalization and banking sector conditions simply no longer needed to be formally included in loans. This would be the case insofar as liberal trade, capital, and banking policy norms became internalized by borrowing country elites and bureaucrats, as has been said to be the case in some African LICs (Harrison, 2001). We find wholesale application of this latter interpretation questionable in light of a major shift to the left in Latin America (Cameron & Hershberg, 2010; Levitsky & Roberts, 2011) and illiberal policies in China, India, South Africa, and elsewhere in the years under study here (Sandbrook, 2014, Chapter 2), which cannot be squared with a full internalization of neoliberal norms.

**Health and Education**

The Bank began to place particularly serious emphasis on education and health care at the turn of the century (Vetterlein, 2007). Such a shift is reflected in the 1999 Poverty Reduction Strategy Papers (PRSPs), which sought to anchor economic development in pro-poor policies by emphasizing “improvements in education and health” in loans (International Monetary Fund & World Bank, 2002, p. 11).

Our analysis shows that this is almost immediately reflected in the estimated topics. Health and education conditions (Topic 5 in Figure 1) were statistically
indistinguishable from zero until 2000, and then show a drastic rise in prevalence through most of the 2000s. While this decreases into the 2010s, health and education conditions never became as uncommon as they had been in the 1990s. This gives credence to Vetterlein’s (2007, p. 513) argument that, although the Bank had rhetorically noted the importance of social policy for years, it only took on “operational significance” in the 2000s. At the same time, the remarkable rise in prevalence suggests that these conditions are applied across borrowers, with a peak share of around 0.45 in 2005. It is of course possible that Bank projects warranted devoting half of all conditions to health and education policy around that time, but a more likely explanation is that the Bank included these conditions as a matter of principle rather than in response to specific borrower needs that presumably would have existed already in the late 1990s, when the prevalence of such conditions is estimated to be statistically indistinguishable from zero.

*Borrower Ownership*

The PRSPs also emphasized borrower ownership by focusing on inclusive development and the need for local institutional buy-in and capacity. Indeed, beyond social spending, a second focus of the PRSPs was to ensure Bank efforts are “responsive to local contexts and (...) build local ownership” (Best, 2014, p. 9; Kagia, 2005, Chapter 4). In the early 2000s the Bank was skeptical it had achieved sufficient ownership with the PRSPs and ostensibly moved to rectify this (World Bank, 2004, p. viii).

Conditions that indicate borrower ownership were defined earlier to be conditions that emphasize domestic institutions and informal benchmarks, reflecting concern for domestic institutional capacity and buy-in. Figure 1 Topic 6 shows that after being statistically indistinguishable from zero in the 1990s, conditions reflecting borrower ownership gained prevalence in 2000. Halfway through the 2000s, conditions
reflecting borrower ownership spiked to the extent that ownership is estimated to be the most prevalent loan condition topic since the late 2000s. This fits with the Bank’s claim that in 2004 the PRSPs had not yet yielded sufficient ownership levels and sought to improve this (World Bank, 2004, p. viii).

Again, this brings into question the applicability of theories about inertia and dominant donors in the context of conditionality. Around the same time the Bank began to eschew trade liberalization, capital liberalization, and involvement in domestic financial sectors, Bank conditions began to emphasize borrower ownership, an approach to conditionality that likely bolsters Bank legitimacy in the eyes of borrowers.

**Budget and Expenditure, Governance, and Privatization**

Other topics do not exhibit the drastic changes seen above, but their prevalence shifts at different times. For example, budget and expenditure conditions (Topic 1) are relatively uncommon except for a 10-year period from the late 1990s-late 2000s. Because these fiscal policy conditions trend downward from the late 2000s, they likely cannot be explained by the same factors that may account for the increased prevalence of social and ownership conditions. The governance topic follows a similar pattern. After gaining some prevalence in the late 1990s, public sector reform conditionality peaks in the mid 2000s and trends downward. The budget & expenditure and governance reform topics never make up more than approximately 20-25 percent of the loan condition text, ebbing and flowing in prevalence.

Finally, the topic of privatization (Topic 3) adds a further layer of complexity. Privatization became a preference of Bank staff in the 1980s and was a policy priority from the Cold War through post-1989 democratic transitions (Nellis, 2002, pp. 2–6). Similar to other SAL conditions such as liberalization and banking reform, the World Bank noted in the mid-2000s that “privatization efforts often arouse dissatisfaction and
opposition from civil society and policymakers, who question its benefits” (World Bank, 2005, p. 9).

Given this and the drastic decrease in liberalization and banking sector reform conditions, one may expect the prevalence of privatization conditions to behave as those other SAL conditions. The Bank even grouped them together in conditionality reviews as “sensitive” areas of concern (World Bank, 2007a, p. iii) and “eliminate[d] all reference to privatization as an explicit objective” of loans (Best, 2014, p. 98).

Despite these concerns, the prevalence of privatization conditions increased in the late 1990s and reached its peak in estimated prevalence in the late 2000s. Although prevalence dips in the early 2010s, the topic largely remained different from zero through 2015. This contradicts the pattern of other “sensitive” conditions, the prevalence of which decreased dramatically from the late 1990s, and the Bank’s own claims that the Bank sought to minimize privatization. This may reflect the resurgence of Bank infrastructure project loans to compete with Chinese finance (Güven, 2018, p. 410), as project loans typically seek to minimize state-owned enterprises’ (SOEs) use of Bank funds. Another interpretation would be that the Global Financial Crisis prompted demand for project loans and inefficient SOEs became a major concern at the Bank. While we must leave an in-depth analysis for future research, privatization did not go the way of liberalization in the evolution of World Bank conditionality.

**Bank Conditions Across Countries**

We now turn to the estimated effects of our country-level covariates on topic prevalence. Table 2 shows the coefficient estimates from the STM for the seven topics. We omit coefficients of the year splines that are already reflected in the plots in Figure 2.
All but one topic (trade and investment liberalization) is significantly related to variation in borrower characteristics at conventional levels, but with the exception of low-income status, none can be considered substantively important to loan conditions. Trade and investment liberalization is not significantly related to any of country-level variables, so there is no evidence that the Bank enforces liberalization on a certain subset of borrowers and indeed went from wholesale commitment to largely avoiding liberalization conditions as identified in Table 2, Topic 4.

The other six topics’ presence in loan conditions is only slightly associated with different borrower characteristics. A left-leaning government in power means that loan conditions are less likely to relate to Health & Education, possibly because they already emphasize such policies, and more likely to feature borrower ownership—but this shift represents substantively only about 5-6 percent of total topic prevalence. Democratic governance increases the important of the budget and expenditure topic. This is intuitive insofar as democracies spend more (Tavares & Wacziarg, 2001) and elected politicians are tempted to use “fiscal engineering” to boost their own popularity, particularly in developing democracies (Brender & Drazen, 2005).
Table 2: Regression Estimates

<table>
<thead>
<tr>
<th>Coefficients:</th>
<th>Budget &amp; Expenditure</th>
<th>Governance Reforms</th>
<th>Privatization</th>
<th>Trade and Investment Liberalization</th>
<th>Health &amp; Education</th>
<th>Borrower Ownership</th>
<th>Financial Sector Reforms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Left Government</td>
<td>-0.003 [0.015]</td>
<td>-0.008 [0.023]</td>
<td>-0.009 [0.023]</td>
<td>0.006 [0.020]</td>
<td>-0.062 * [0.026]</td>
<td>0.055 [0.022]</td>
<td>0.021 [0.023]</td>
</tr>
<tr>
<td>Polity</td>
<td>0.004 [0.001]</td>
<td>-0.002 ** [0.002]</td>
<td>0.000 [0.002]</td>
<td>-0.003 [0.002]</td>
<td>-0.004 [0.003]</td>
<td>0.006 [0.002]</td>
<td>-0.001 [0.002]</td>
</tr>
<tr>
<td>GNI growth/year</td>
<td>-0.003 [0.002]</td>
<td>0.002 [0.002]</td>
<td>0.006 [0.002]</td>
<td>-0.002 * [0.002]</td>
<td>-0.002 [0.003]</td>
<td>-0.003 [0.002]</td>
<td>0.001 [0.002]</td>
</tr>
<tr>
<td>UN Assembly Vote</td>
<td>-0.001 [0.001]</td>
<td>-0.002 [0.001]</td>
<td>0.004 [0.002]</td>
<td>-0.002 [0.001]</td>
<td>0.000 [0.002]</td>
<td>-0.002 [0.002]</td>
<td>0.003 [0.002]</td>
</tr>
<tr>
<td>Domestic credit market</td>
<td>0.000 [0.000]</td>
<td>-0.001 [0.000]</td>
<td>0.000 [0.000]</td>
<td>0.000 [0.000]</td>
<td>0.000 [0.000]</td>
<td>0.001 [0.000]</td>
<td>0.000 [0.000]</td>
</tr>
<tr>
<td>Interest Rate External Debt</td>
<td>0.003 [0.003]</td>
<td>-0.007 [0.005]</td>
<td>0.005 [0.005]</td>
<td>-0.001 [0.004]</td>
<td>-0.001 [0.006]</td>
<td>0.003 [0.005]</td>
<td>-0.002 [0.005]</td>
</tr>
<tr>
<td>LIC</td>
<td>-0.040 [0.019]</td>
<td>-0.033 [0.028]</td>
<td>0.020 [0.030]</td>
<td>0.025 [0.025]</td>
<td>0.192 * [0.034]</td>
<td>-0.102 [0.026]</td>
<td>-0.061 [0.025]</td>
</tr>
<tr>
<td>IMF program</td>
<td>0.017 [0.017]</td>
<td>-0.005 [0.025]</td>
<td>0.033 [0.027]</td>
<td>0.037 [0.020]</td>
<td>-0.022 [0.031]</td>
<td>-0.030 [0.024]</td>
<td>-0.029 [0.022]</td>
</tr>
<tr>
<td>Crisis</td>
<td>0.057 [0.029]</td>
<td>0.057 [0.039]</td>
<td>-0.013 [0.039]</td>
<td>0.034 [0.036]</td>
<td>-0.047 [0.044]</td>
<td>-0.063 [0.037]</td>
<td>-0.024 [0.035]</td>
</tr>
</tbody>
</table>

Significance codes: *** p < 0.001, ** p < 0.01, * p <0.05, . p <0.1. Intercept and spline coefficients omitted.
However even a maximum 20-point shift in Polity’s democracy score, from full autocracy to full democracy, only equates to an estimated shift in topic prevalence of approximately 8 percent, holding all other variables constant. Democratic governance makes borrower ownership-conditions more prevalent, with an estimated shift of about 12 percent across the range of the variable. Compared to time, these are not substantively large effects for the majority of countries in the sample.

Annual GNI growth is only significantly associated with privatization, and even then the effect is small, again never exceeding 12 percent but typically ranging from 0.6 to 3 percent for 95 percent of the countries. We also find no statistically significant effects of the interest rate on new external debt, of participating in an IMF program, or currently experiencing an economic crisis. The first suggests that the availability of alternative funding sources for borrowers plays little role in the content of loan conditionality. The second indicates the IMF’s presence does not lead to different approaches by the Bank. The third implies that crises do not affect the Bank’s general approach to conditionality, though not conventional levels of statistical significance, budget conditions appear more likely in times of crisis. This final point suggests just how universally the Bank’s new conditionality program is applied, and how different from SAL that program has come to be.

Finally, the one substantively significant borrower characteristic is a borrower’s income level. LICs and MICs do not receive the same shares of budget expenditure, health and education, ownership, and financial sector reform conditions. Less prevalence of budget and expenditure conditions in LICs may reflect policy uncertainty due to LICs’ low tax-and-spend institutional capacity (for discussion see Prichard & Leonard, 2010). Fewer financial sector conditions in LICs may be a product of large-
scale foreign entry into LIC banking sectors, making reform less urgent (for a discussion of this issue, see Detragiache, Tressel, & Gupta, 2006).

In contrast, health and education conditions are more prevalent in LICs. This may be due to the Bank’s focus on social policy in LICs in particular (International Monetary Fund & World Bank, 2002 note a specific focus on LICs in PRSPs). MICs are also more likely to have capacity and resources devoted toward these policy areas, so the Bank may not push for such conditions in MICs (Fallon, Hon, Qureshi, & Ratha, 2001). Lack of institutional-capacity may also explain ownership being less likely in LICs.

**Implications: Toward Clarity in Theories of Bank Lending**

The evolution of World Bank conditionality that our findings show cannot be explained by dominant theories of Bank operations based on donor control, organizational inertia, or ideological commitments. Indeed, a key implication of the above findings is that theorization of Bank lending that fits with the empirical record is lacking. While all of these factors are certainly important components, the evolution in Bank conditionality signals a more thorough analysis of operational change at the Bank is needed.

As a first step in this discussion, we suggest that Bank loan conditions may have been influenced by concerns about legitimacy, in particular “output legitimacy” based on its deemed expertise (Zürn & Stephen, 2010, p. 94) in development policy. Legitimacy in this sense implies that an international institution (in this case coterminous with a bureaucratic organization) is recognized as “rightful” in its practices (Reus-Smit, 2007, p. 159). Over time the Bank’s output legitimacy has been negatively affected by association with the Washington Consensus, “tarnish[ing] the Bank’s authoritative status as an international development ‘expert’” (Park, 2009, p. 330). Particularly since the late 1990s, this has led to “soul-searching” among Bank staff and
management “about the nature of its conditions” (Best, 2014, p. 95).

This history means the Bank could try to regain legitimacy in the eyes of many stakeholders, including donors, borrowers, the development community, the private sector, civil society organizations, and citizens. To do so, Bank policies would have to strike a balance between the interests and preferences of these multiple audiences. In other words, the Bank’s multiple audiences mean its search for legitimacy should result in a policy program where the Bank systematically maintains some components of its initial policy program while changing others. Indeed, we submit that this could be a reason why some components of the Washington Consensus persist in Bank conditions (such as privatization) while others do not (such as liberalization), as shown above.

The effect of multiple audiences on organizations with global reach has been detailed elsewhere, most notably in the “audience-based understanding” of major NGOs’ legitimacy and authority. Because they must “find [ideas] they can sell to multiple interests,” major NGOs maintain legitimacy by avoiding “drastic shifts” and pursuing non-radical change (Stroup & Wong, 2017, p. 24). We propose the Bank is in a similar position. Facing multiple audiences with diverse interests, the Bank must pursue change, but not such radical change that no conditionality program is identifiable.

The Bank’s multiple audiences are evident. Donors continue to shape Bank loan operations and expect that Bank loans lead to reform (Lyne et al., 2006; Kilby, 2009; Vestergaard & Wade, 2013). Conditionality is designed to drive that reform and pure flexibility or no conditionality would not make development finance more effective (Babb & Carruthers, 2008; Winters, 2010; Wright & Winters, 2010, p. 72). Meanwhile, developing country governments at times seek conditional loans that help push through unpopular reforms or align with borrowing government preferences (Vreeland, 2003;
Some go further and argue borrowers have come to influence conditions more than donors (McLean & Schneider, 2014), though this claim does not fit well with our empirical findings in this paper.

But it is not only donors and borrowers that the Bank must account for when considering legitimacy. The Bank is also concerned with and affected by the private sector and civil society. For private finance, the Bank identifies with an “eclectic” approach where the Bank and other development institutions fill gaps that do not crowd out private finance (Gutierrez, Rudolph, Homa, & Blanco Beneit, 2011, pp. 6, 17). In infrastructure, the Bank has emphasized the role of the private sector via public-private partnerships (World Bank, 2018). The Bank has also been explicitly concerned with civil society organizations and borrowing-country citizens since at least the Poverty Reduction Strategy emphasis at the turn of the century (International Monetary Fund & World Bank, 2002; Vetterlein, 2007). Reflecting this, education, health, and other social policy areas have emerged as Bank focal points (Rodrik, 2006).

It is worth noting that these audiences also affect the input legitimacy of the Bank (Hurd, 2007, Chapter 3) by participating in Bank policy-making procedures. The Bank does strategically consult with non-state actors on the input-side of its operations (World Bank, 2007b, 2014, 2018). But because conditionality is a substantive policy outcome (Hurd, 2007, pp. 66–69), focus on output legitimacy clarifies that for the Bank, the key task is to produce loan conditions that sufficiently satisfy an array of actors.

To be sure, this leaves the exact influence and effect of each part of this audience unclear. What is clear, however, is that traditional theories of IO behavior strictly focused on powerful states, international coalitions, organizational inertia, or ideological commitment do not explain changes in the content of Bank conditions over time. We find The Bank “does what it says it will do” more often than much of the
literature expects. Past Bank policies that led to unexpected, negative consequences in borrower countries can be and evidently are often minimized, as they threaten to undermine the institution’s legitimacy.

And yet, while we find the Bank adapts over time, we do not see substantial variation of conditions across borrowers. In other words, we see broadly similar approaches across countries at a given time. Of course, purely borrower-driven conditionality would risk, as described above, being no conditionality at all. In this light, it may not be surprising that country-level variables have minimal influence on the content of conditions. While we recognize that this may itself be a policy shortcoming for the Bank, we remain agnostic on this point for the purpose of considering the theoretical implications of this paper’s empirics.

Conclusions

World Bank conditions have changed over time, eschewing key elements of the Washington Consensus. At least as often as not, these changes reflect Bank policy pronouncements. This means theories of policy inertia based on donor influence, organizational obstacles, or ideological rigidity cannot explain Bank conditionality over time. Indeed, the evidence suggests the Bank’s policy approach changes in order to attain output legitimacy in the eyes of itself, borrowers, and other stakeholders. Our research provides evidence that the Bank adapts over time, contradicting popular critiques that the neoliberal Washington Consensus “is alive and well” at the Bank (Elliott, 2016), that the Bank does not address social policy in any substantive way (Townsend, 2009), or that the role of the U.S. at the Bank unduly minimizes Bank effectiveness (Wroughton, 2012).

Unsubstantiated criticism of the Bank may lead potential borrowers to avoid the Bank for the wrong reasons, leading to missed opportunities for beneficial financing.
This is not to claim that the Bank does not have priorities or that it always matches its rhetoric, but the Bank does appear more flexible over time than many critics suggest. Our paper suggests these issues warrant consideration because they affect developing countries’ use of the Bank, and thus the Bank’s ability to contribute to development.

This does not mean the Bank lends strictly according to borrower needs. In fact, our results suggest quite the opposite. Country-characteristics have little to no substantively significant effect on the content of loan conditions, save a few differences between LICs and MICs. The Bank’s approach is not shaped much by borrower specifics. Bank policies still reflect a particular set of focal areas, although these have changed over time. Whether all countries should obtain loan conditions exhorting them to improve their social policies, while none should further liberalize trade, for example, is a difficult policy proposition. Adapting to country needs is clearly operationally challenging but some degree of adaptation on this front may be necessary for the Bank to further its contribution to development.
References


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1 “Policy” and “topic” will be used interchangeably throughout the paper. Topics reflect the substance of a loan condition, which is the same as the condition’s policy focus.

2 While our dataset comprises all loans since 1980, when the Bank started imposing conditions for all loans, coverage of covariates is extremely limited for the first decade, forcing us to omit those years from the sample. Our data is similar to the Bank’s Adjustment Lending Conditionality and Implementation Database (ALCID), though extended by Bank staff in the years since ALCID stopped. Bank staff shared this data for this research.

As we find that World Bank staff members are either hurried typists or orthographically challenged, we correct spelling extensively throughout the documents—without this work the model produces correlations based on consistent misspellings. The list of excluded words is available in the replication data for this study.

Both variables could be measured directly, but coverage is extremely limited in the World Bank Development Indicators, although this begs the question how the Bank evaluates country policies in this case.

Sovereign credit ratings cover fewer country-years than income category, especially in the LIC context.

See the Web Appendix for details on each variable.

We include crises since 2012, the end of this dataset, manually (see the Web Appendix).

For this we use the `findThoughts` function in the STM package that uses the posterior probability of a topic given a document.

For clarity, key words for this topic include: institutions, government, management, deputies, accountable, laundering, inquiry, various ministry acronyms, and “LDP,” which stands for a “Letter of Development Policy,” the document outlining the “significant changes in existing laws, regulations, and administrative practices” necessary for borrowers to receive budget support-style loans (World Bank, 2017, n. 11).
## Appendix to “The Variation in World Bank Conditionality”

### Data Sources

<table>
<thead>
<tr>
<th>Variable Name</th>
<th>Source</th>
<th>Coding Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Left government</td>
<td>Beck et al. 2001</td>
<td>Left only = 1; Center and Right = 0</td>
</tr>
<tr>
<td>Polity</td>
<td>PolityIV</td>
<td>Polity2</td>
</tr>
<tr>
<td>GNI Growth/year</td>
<td>World Development Indicators</td>
<td>NY.GNP.MKTP.KD.ZG</td>
</tr>
<tr>
<td>UN Vote</td>
<td>Bailey et al. 2017</td>
<td>PctAgreeUS</td>
</tr>
<tr>
<td>Domestic credit</td>
<td>World Development Indicators</td>
<td>FS.AST.DOMS.GD.ZS</td>
</tr>
<tr>
<td>Interest rate</td>
<td>World Development Indicators</td>
<td>DT.INR.PRVT</td>
</tr>
<tr>
<td>external debt</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low-income country</td>
<td>World Bank</td>
<td>History of income group for each country-year coded manually using World Bank file OGHIST.xsl, found here: <a href="https://datahelpdesk.worldbank.org/knowledgebase/articles/378834-how-does-the-world-bank-classify-countries">https://datahelpdesk.worldbank.org/knowledgebase/articles/378834-how-does-the-world-bank-classify-countries</a></td>
</tr>
<tr>
<td>IMF program</td>
<td>Kentikelenis et al. 2016</td>
<td>IMF = 1 if country was under an IMF program of any time during any point of the year</td>
</tr>
<tr>
<td>Crisis</td>
<td>Laeven and Valencia 2012</td>
<td>We include crises since 2012, the end of this dataset, manually (Venezuela 2012-2015; Ukraine 2013-2014; Russia 2014; Brazil 2014-2015; China 2015).</td>
</tr>
</tbody>
</table>

### Cosine Similarity

Cosine similarity is a measure that has been used in the political science literature to measure the “distance” between diverse sets of texts, from pieces of legislation (Garrett and Jansa, 2015) and bilateral tax treaties (Arel-Bundock and Lechner, 2018) to parliamentary speeches by prime ministers (Diodati et al., 2018). Cosine similarity is one of several “bag of words” approaches whereby a document is reduced in its dimensions to a vector of the words that appear in the text and their frequency.

Accordingly a text is represented by a vector $\mathbf{s}_t = \{s_{t1}, s_{t2}, ..., s_{tm}\}$ for all words in the
text $M = \{1,2, \ldots, m\}$. Cosine similarity between two texts $i$ and $j$ is defined by the equation

$$\text{CosSim}(s_i, s_j) = \frac{s_i^T s_j}{\sqrt{s_i^T s_i} \sqrt{s_j^T s_j}}$$

This value is bound between 0 (indicating no similarity) and 1 (two texts that are completely similar in the words they contain and their frequencies).

We use the measure of “maximum similarity” defined by Pagliari and Wilf (2018) to capture innovation in World Bank lending conditions. $\text{MaxSim}_i$ is defined as the maximum of the pairwise cosine similarity measures between a given conditionality text $s_i$ and all conditionality texts $s_j$ published previously. A high value of this measure indicates that once country-specific vocabulary has been stripped out, the lending conditions in two different World Bank programs are very similar. A low value shows that the World Bank has drawn up new conditions using words that were either less frequently or not at all contained in prior conditions. The measure therefore captures similarity but remains entirely agnostic regarding the kind of change that occurs. A decline in similarity, as in our Figure 1 in the main text, indicates innovation and change in the conditions that the World Bank imposes on borrowers.

**STM Topic Labels**

**Budget & Expenditure Topic Top Words:**

Highest Prob: health, least, province, expenditures, tranche, province's, release, paragraph, million, percent, revenues, agreement, months, set, current, year, second, bank, provinces, approved
FREX: province, province's, tranche, falls, release, immediately, attained, provinces, means, legislature, incurred, months, preceding, revenues, third, million, second, continuous, expenditures, current

Lift: attained, attainment, concomitant, cornerstone, falls, insurer, pre-paid, revenue-sharing, uninsured, able, accrediting, admit, affiliate, agency-wide, ambulatory, analogous, answered, applies, arbitrage, arg

Score: province's, province, tranche, falls, paragraph, immediately, attained, becomes, mentioned, patients, non-personal, revenue-sharing, hereby, release, referred, uninsured, preceding, bloc, whether, departing

*Governance Reform Topic Top Words:*

Highest Prob: policy, development, accordance, financial, letter, paragraph, bank, association, including, government, management, provisions, adopted, banks, new, action, institutions, made, approved, submitted

FREX: association, ldp, accordance, letter, provisions, paragraph, shall, policy, paragraphs, development, provisioning, made, gnp, laundering, measured, banking, substance, institutions, deputies, excess

Lift: fasf, habitat, hand, inquiry, mhu, mofep, reinsurance, revocation, subvented, undertook, gnp, laundering, measured, terrorism, academy, accountable, accountants, acknowledged, acquires, actively

Score: paragraph, measured, ldp, substance, paragraphs, deputies, association, undertakings, ffcb, laundering, fr, fasf, cih, provisioning, banks, deposit, gnp, mofep, mhu, subvented
Privatization Topic Top Words:

Highest Prob: electricity, energy, power, tax, financial, including, action, companies, state, management, new, adopted, market, international, strategy, regulatory, private, government, privatization, revenue

FREX: benchmark, power, energy, electricity, generation, fuel, transmission, continued, arrears, fertilizer, state-owned, tariffs, plants, international, railway, wholesale, aviation, concessions, companies, collections

Lift: accurately, asymmetric, cip, commensurate, dti, edl, evn, fail, formula-based, generators, kwh, liquefied, mechanical, menu, minor, mofps, offsets, refund, s.r.o, sedp

Score: benchmark, electricity, power, non-reversal, ventures, energy, oil, tariffs, plants, fuel, fertilizer, mofps, hydropower, privatization, tariff, receivable, consumers, valor, wastewater, nepra

Trade and Investment Liberalization Topic Top Words:

Highest Prob: tax, reduce, eliminate, action, investment, price, tariff, increase, prepare, study, complete, prices, imports, private, rate, agricultural, make, review, products, fy

FREX: imports, price, eliminate, rice, abolish, products, restrictions, tariff, prices, exports, cereals, comp, liberalize, vat, quantitative, controls, cfaf, exemptions, remove, min

Lift: abandon, airways, antidumping, apcom, automaticity, ave, baggage, bargaining, billings, bnic, brackets, breeding, broke, broken, cbr, cereals, chads, cheque-writing, cif, clothing
Score: comp, min, abolish, max, forex, groundnut, price, announce, details, cereals, tariff, rice, corn, liberalize, cotton, dev, terms-of-reference, imports, mens, beans

**Health and Education Topic Top Words:**

Highest Prob: education, government, health, new, procurement, management, including, least, approved, programs, policy, development, action, strategy, financial, ministries, draft, monitoring, primary, submitted

FREX: districts, universities, district, teachers, procurement, mtef, textbooks, education, sanitation, ministries, community, recruitment, human, local, departmental, prsp, manual, higher, communes, primary

Lift: mdgs, quintile, universities, a1, abandonment, accommodation, accompany, accrual-based, accuracy, achievements, actuals, ad-hoc, ad-valorem, add, adjusts, admissions, advancement, advertised, advertisement, af

Score: universities, mtef, districts, textbooks, undertakings, prsp, psp, schools, municipalities, district, textbook, quintile, communes, mes, departmental, maternal, education, teachers, teacher, girls

**Borrower Ownership Topic Top Words:**

Highest Prob: borrower's, dated, evidenced, issued, published, official, gazette, management, resolution, adopted, inter, alia, including, issuance, minister, tax, approved, programs, established, bank

FREX: disaster, dated, evidenced, gazette, official, borrower's, published, minister, alia, territory, inter, duly, waste, issued, violence, copy, emissions, solid, secretary, aimed
Lift: accumulative, acknowledgement, adhesion, aga, age-grade, age's, agglomeration, aims, artificial, avoidance, beca, became, burdens, cicc's, citizen's, citizenry-at-large, clerk, clinic, cnh, co-financing

Score: dated, evidenced, borrower's, substance, disaster, solid, violence, municipalities, gazette, minister, waste, minutes, official, intersectoral, guarantor's, copy, mef's, results-based, emissions, non-communicable

Financial Sector Reforms Topic Top Words:

Highest Prob: bank, banks, financial, privatization, new, macroeconomic, issue, commercial, consistent, regulations, private, restructuring, pension, government, market, draft, carrying, least, loans, funds

FREX: banks, securities, mills, trust, lending, commercial, bonds, deposits, shares, privatize, loans, capitalization, issue, pension, bank, loan, offer, supervision, nationalized, hydrocarbons

Lift: abrogating, abstention, abuses, accede, advantages, afore, agro-processing, alem, alienation, aligns, amalgamations, amd, annotated, announcements, anti-monopoly, appealing, arc, attractive, augmenting, bailiff

Score: mills, banks, structural, nationalized, privatization, securities, commercial, bank, sell, fra, capitalization, imss, deposit, details, loans, privatize, ncbs, forex, pass, commercialize
References


