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From Discussion to Action: Characterizing Areas of Reform in Latin America and the Caribbean*

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Abstract

Structural reforms modify the institutional and regulatory framework to foster economic growth and improve welfare. While initially linked to economic liberalization, the concept has expanded to encompass a more comprehensive array of sector-specific interventions. However, the increased level of detail in these reforms presents significant challenges in accurately identifying the specific type of reform implemented by each country. In this study, we employ a comprehensive analysis of the policy discussions in Article IV Staff Reports of the International Monetary Fund to shed light on the dynamic nature of reforms and unveil regional disparities in reform priorities. The findings demonstrate a notable shift in Latin American and the Caribbean countries, where there is a growing emphasis on reforms that prioritize transparency, enhance institutional quality, advance education and healthcare systems, and strengthen safety nets.

JEL Codes: C82; O2; O4

Keywords: Structural reforms; narrative approach; text analysis.

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1 Introduction

Structural reforms are policy actions that modify the institutional and regulatory framework. The goal is to boost economic growth in particular and economic welfare in general. Initially, the concept of structural reform was widely linked with the recommendations for economic liberalization that emerged from the Washington Consensus.¹ However, these waves of reform influenced by the consensus slowed in the 2000s. Interestingly, this did not mean that countries stopped implementing reforms, but rather that the term “structural” ceased to be exclusively associated with economic liberalization.

The concept of structural reform has been reshaped, in some cases, by disenchantment with market-oriented reforms and in other cases by the need to expand the development strategy in countries that have already liberalized their economies. Concerns about reducing inequities have also been added to the initial interest in reforms to promote economic growth. Today, those reforms are characterized by smaller and more varied interventions that simultaneously blend many diverse and granular areas, such as achieving a good business environment, investing in infrastructure, promoting tourism, and ensuring the rule of law (Cherif et al., 2020).

The greater granularity and diversification pose significant challenges in terms of systematically identifying reforms. The first challenge is to determine the specific areas that countries reform. The literature on reforms (e.g., Lora (1997); Alesina et al. (2020)) has focused on measuring those associated with economic liberalization, which has narrowed the scope of analysis to dimensions such as trade, the domestic financial sector, and product markets. However, these categories alone do not capture the spectrum of reforms observed today. For this reason, it is necessary to articulate a new categorization encompassing all areas of reform interest.

The second challenge is how to measure these reforms. Due to the lack of direct measurement, the literature relies on sizable variations in policy variables to identify reforms. However, it is not always possible to map one specific reform to changes in policy variables. This might be due partly to potential measurement errors and the subjectivity in quantifying how large the variation of an index is necessary to count as a reform. The difficulty in measurement – as pointed out in Lora (2001) – has stood in the way of adequately evaluating the impact of reforms on growth.

This paper uses policy discussions to assess and capture the areas of reform guiding eco-

¹The Washington Consensus was a term coined by John Williamson that referred to a list of 10 policy recommendations widely held in Washington to be needed in most or all Latin American countries as of 1989. These policies centered around fiscal discipline, market-oriented domestic reforms, and openness to trade and investment.

conomic policy in a particular country. Policy discussions specifically refer to the topics of analysis regarding reforms carried out in Article IV Staff Report of the International Monetary Fund (IMF). The information contained in these reports is helpful in several dimensions: first, this information allows us to identify the areas of interest for reform in a country and expand them beyond the existing categories in the literature; second, policy reports allows us to overcome some of the challenges of the indices above-mentioned; and third, by implementing text analysis of these reports, we can make cross-country comparisons, and perform empirical analyses that are not limited in areas or time studied. This paper aims to answer three questions about the relationship between policy discussions and reforms: their usefulness, the lessons we can learn from their implementation, and the relationship with reform approvals and other indices.

Why is it useful to focus on policy discussions to identify reforms? It is because there is a close link between reforms and policy talk: once a country identifies a strategic area for reform, discussions about its relevance, potential impact, approval, and implementation process increase. With a focus on policy talk, reform areas are identified based on the interest of a country on a specific topic and not only if a reform on this area has been approved. This is important nowadays when some of the attempts at reforms have failed to materialize due to factors beyond policymakers' control.

The focus on policy talk allows us to capture not only the present but also the potential future of reforms. Successful reforms take several years to prepare and adopt and often take longer to implement. Furthermore, reform successes followed earlier setbacks, and less successful reform attempts have helped set the stage for subsequent and sometimes far-reaching reform initiatives (OECD, 2010).

Our source for the analysis is the IMF Article IV Staff Reports compiled in [Bétin & Collodel \(2021\)](#). These reports result from bilateral discussions between IMF staff and the relevant economic actors in each country. There are significant advantages to using these documents to capture reform areas. First, is their large coverage in time and the relevant number of countries. Second, the context, challenges, and current economic developments are described across countries in these reports with a similar structure and comparable language.

However, there are also important limitations to mention. First, not all possible reform areas carried out by a given country are documented in Staff Reports. Even in this case, the importance and validity of the reforms included in these reports lie in the macro-critical nature that must accompany them. Second, these documents discuss many topics not limited to reforms; in fact,

only a fraction of the discussions pertain to reform topics. And third, the information is not balanced since not all countries have reports for all years.

What does policy discussion tell us about the evolution of reforms? The evolution of policy discussion about reforms in the IMF Staff Reports points to nine general areas of discussion (environment, financial, fiscal, governance, labor market, monetary, productive capacity, social, and trade), and uncovers two relevant periods to highlight. The first began in the late 1970s and peaked in the 1990s, characterized by a surge in the discussion about reforms focused on generating market-based incentives. The second period, which started in the mid-2010s, has not yet peaked. This second wave of discussions includes topics with more limited historical relevance according to existing structural reform proxies, particularly policy discussions about governance, environment, and social policies.

In Latin America and the Caribbean countries, the second period has been characterized by discussion of reforms areas such as governance and social. There has also been a resurgence in interest in discussing policy measures that improve productive capacity. In contrast, the intensity of financial, labor, and trade discussion has dropped since the 1990s.

These results hold important lessons about the evolution of reforms. In past decades, reforms for Latin America and the Caribbean represented a radical change in policy orientation, a transition from a market protection and state intervention model to a model that accentuated the active role of the markets. However, the current focus for reforms has shifted towards more specific and targeted interventions. An increase in discussions about topics such as institutions and corruption, environmental sustainability, natural disasters, education, health, income and gender equity, and safety nets exemplifies this.

From the intensity of the discussion, it is also possible to identify differences among countries. For example, although, in general, both Latin America and some Asian countries discuss infrastructure and the development of a business environment, the intensity of discussion in Asia is historically much higher than the discussion that occurred in Latin America.

How is policy discussion related to reform approvals? As previously mentioned, the reforms are discussed in diverse contexts beyond approval. However, we can identify when an increase in policy discussion resulted from the approval of a reform. The increase in conversation accompanies 84 percent of the reforms implemented in Latin America and the Caribbean. We can also compare the change in reform discussion with existing indices. The rise of one basis point in the reform talk is correlated with a 4.5 percent increase in the possibility of pro-market reforms iden-

tified using the database in [Alesina et al. \(2020\)](#). Therefore, there is a correlation between policy talk and effective policy reform.

To better understand these results, particularly the meaning of an increase in reform conversation and the measure of approved reforms, it is important to detail some methodological aspects of this paper. The intensity of the discussion about reforms is measured from two indices built using Natural Language Processing (NLP) techniques: The first is named the “Talk Index,” which reflects the share of an Article IV Staff Reports devoted to talking about a specific topic. In addition, it is also possible to identify the share of discussions around reforms for the same topic in a country’s policy discussion; this index is labeled as the “Reform Talk Index.” Thus, an increase in the intensity of conversation about a particular topic is a positive change in the Talk Index. In contrast, an increase in reform conversation is a positive change in the Reform Talk Index.

Finally, specifically approved reforms are identified following the narrative approach as in [Furceri et al. \(2018\)](#). Approved reforms are obtained for a sample of Latin America and the Caribbean countries from 2010 to 2017 by direct reading the IMF Staff Reports and reviewing events involving legislative and regulatory changes in the policy stance. Detailed reviews of newspapers and official gazettes complement this.

Related Literature. This paper is closely related to the strand of literature using NLP techniques in the context of reforms. While the interest of this paper interest lies in identifying areas for reform, for [Cherif et al. \(2020\)](#) the focus is on the evolution of paradigms in IMF discussions.

This paper complements the literature on reforms in Latin America and the Caribbean. Among these, [David et al. \(2022\)](#) stands out. The authors use the dataset developed in [Alesina et al. \(2020\)](#) for the period 1973 to 2014 to assess the impact of structural reforms in the region. The authors find evidence that significant changes in the Reform Index (towards reforms) have positive effects on GDP and employment that reach 2 percent after five years; these effects operate through the promotion of investment and the de-facto openness of the economy. Nonetheless, the authors also find that reforms have had economically small but statistically significant adverse effects on inequality and poverty. More recently [Ari et al. \(2022\)](#) combines a broad set of cross-country structural indicators into synthetic scores to key structural areas. The authors find that structural reforms in the area of product, labor and financial markets as well as the legal system have a significant impact on economic growth in a 5-year horizon.

The rest of the paper is organized as follows. Section 2 presents the definition, evolution, and scope of structural reforms with a focus in Latin America and Caribbean countries. Section 3 de-

scribes sources, methodology, and areas of reform obtained using NLP. Section 4 examines how the discussion is related to reform approval. Section 5 describes the trends in reform discussion for Latin America and the C and the rest of the world. Section 6 presents two applications of the index, and section 7 concludes.

2 Structural Reforms: Expanding the Scope

Before presenting our analysis of reforms through the lens of policy discussion, it is important to discuss how the concept and scope of structural reforms have evolved and the challenges involved to better identify the areas of the current reforms.

Under the umbrella of structural reforms, there have been a myriad of definitions, objectives, and policy recommendations over time that have ranged from market-oriented to more institutional or equity-oriented prescriptions. Structural reforms are simply put, measures that modify the institutional and regulatory framework in which businesses and people operate ([ECB \(2017\)](#)). The [IMF \(2015\)](#) considers reforms as policies geared towards raising productivity by improving the technical efficiency of markets and institutional structures and by reducing or removing impediments to the efficient allocation of resources. Thus, structural reforms aim to facilitate the reallocation of resources (adjustment capacity), boost competitiveness, build resiliency, and increase the growth potential of the economy to ultimately improve the welfare conditions of the population.

A central premise of these definitions is that structural reforms are justified by the existence of barriers to efficiency that prevent countries from reaching their full potential. These barriers may include cumbersome licensing, permits, and tax procedures; poor contract enforcement; inflexible labor markets; and regulations that favor local monopolies and state-owned enterprises [Bailliu & Hajzler \(2016\)](#). Since their conception in the 1980s, structural reforms have been linked to removing the plethora of regulations, controls, and other impediments to the unfettered working of market economies [OECD \(1980\)](#).

As a result of the economic ideas of the time and the influence of multilateralism, structural reforms were initially associated with the concept of “laissez-faire,” which posits that economic efficiency is achieved mainly through a more active role of market forces. This idea reflects one of the pillars of the Washington Consensus, which is that the market as a mechanism or structure should be left to work without interference. However, the market as a mechanism can take many different forms, with historically unlimited varieties, leaving the state with the crucial role of electing

the form that works best ([Macaes, 2013](#)).

The phase of structural reforms aimed at economic liberalization presented a wide variety of possibilities ranging from reducing government intervention to decreasing restrictions on trade and financial transactions, removing state-imposed price controls, and abolishing state monopolies ([Ostry et al., 2009](#)). At the time of their implementation, the reforms constituted an abrupt change in the economic paradigm. For example, the first wave of reforms directed at economic liberalization that started in Latin America and the Caribbean in the 1980s signified a major departure from existing policies focused on the import-substitution model.

The early 1990s gave rise to a wave of reforms focused on openness in both the domestic financial sector and the capital account. For example, in Latin America and the Caribbean financial reforms signified the adoption of policies aimed at lowering reserve ratios, eliminating controls on interest rates, and dismantling mechanisms for obligatory investments and mandated lending ([Lora, 2001](#)). Also during the 1990s, developing economies turned towards adopting more market-friendly-agricultural policies. And by the end of that decade, a new wave of reforms appeared that focused on the deregulation of the telecommunications and electricity sectors. During this period in Latin America and Caribbean countries, 57 percent of the value of privatizations took place in infrastructure sectors.

2.1 The Slowdown of Reforms

These major liberalization waves in developing economies slowed in the 2000s. During this period, financial liberalization reforms followed an S-curve evolution - that is, they progressed slowly, accelerated from the late 1980s to the late 1990s, and then slowed after 2000 ([Li et al., 2021](#)) -. Similarly, [Cherif et al. \(2020\)](#) point out that the discussion in IMF documents of terms such as “privatization” peaked in the mid-1990s, and today only appears sporadically in country reports. This suggests that the terms associated with the Washington Consensus narrative no longer pre-dominate in the policy discussion as in previous decades.

To better see this point, one can follow [David et al. \(2022\)](#) to build measures of structural reforms using the Reform Index of [Alesina et al. \(2020\)](#).² We assess the evolution of reforms in five areas: trade, domestic financing, external financing, product markets, and labor markets. Reforms are identified as episodes of significant variation in the index of each sector. In particular, two

²Section 3 presents a more detailed description of the characteristics and sources of this Reform Index.

types of episodes are defined: reforms and reversals. Reforms (reversals) denote liberalization (tightening) reforms, and correspond to a positive (negative) change in the specific index larger than two standard deviations.³

Table 1 summarizes the number of reforms undertaken from 1985 to 2014. However, the results around the pivotal year of 2000 are presented. Odd columns (labeled as “Before”) present the statistics on reforms for the period from 1985 to 1999; even columns (labeled as “After”) present the statistics on reforms for the period 2000 to 2014.

There are three important results to highlight. First, regardless of the area of analysis, the bulk of reform episodes described occurred before 2000. More specifically, reforms in Latin America and the Caribbean seem to have happened in the late 1980s and early 1990s, which is consistent with the identification of “reform wave” episodes by IMF (2015) (see panel A of Figure F1 in Appendix F). One can see that each area’s average variation in the Reform Index from Alesina et al. (2020) is also lower after 2000. Whether or not the change in the values in each index is indicative of the magnitude of the reform implemented, it signifies the presence of relatively smaller reforms.

Second, the number of countries implementing these type of reforms is also seen as being in decline. The average number of reforms (including reversals) dropped from 1.7 per country before 2000 to 1.2 after.

Finally, not only is the number of reforms lower after 2000, there is also a surge in the number of reform reversals, particularly in domestic finance. In other words, countries began to reverse some of the progress toward liberalization.

2.2 A New Scope for Reforms

The slowdown or reversal of the type of reforms implemented in the 1980s or 1990s does not mean that the concept of structural reform has disappeared, but rather that its meaning has ceased to be simply a synonym for liberalization. Cherif et al. (2020) points out that use of the term “structural reform” started picking up in the early 1980s at the same time as the terms “privatization” and “liberalization.” However, the discussion of “structural reform” kept gaining relevance in the discourse, even when the relevance of “liberalization” and “privatization” started fading. Since the start of the 2000s the relative use of the term “structural reform” has stabilized in IMF documents.

³The identification of reforms based on significant variation in the indices is not exempt from problems. For instance, we can identify reforms using alternative methods, such as the algorithm proposed by Bai & Perron (2003). Alternative methodologies might affect the specific dates, number, and magnitude of reforms. However, the central message of the decelerating pace of reforms in these areas after 2000 remains.

Table 1: Structural Reforms Before and After 2000

Statistic	Trade		Ext. Finance		Dom. Finance		Product Market		Labor	
	Before	After	Before	After	Before	After	Before	After	Before	After
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Major changes (number)	88	22	50	21	186	48	131	78	40	23
<i>of which: reforms</i>	74	16	42	14	181	33	131	74	11	9
<i>of which: reversals</i>	14	6	7	7	5	13	0	4	29	14
Major changes (percent)	8	1.7	3.9	1.6	15	3.8	10	6.1	3.1	1.8
<i>of which: reforms</i>	5.4	1.1	3.1	1	13.4	2.4	9.7	5.4	.8	.6
<i>of which: reversals</i>	1	.4	.5	.5	.3	.9	0	.2	2.1	1
Threshold	12.2	5.7	15	9.3	11.1	6.5	13	9.5	6.2	6.4
Total	1095	1257	1254	1260	1239	1260	1300	1260	1253	1260
No of countries	88	90	90	90	90	90	90	90	90	90
No of countries with reforms	53	18	38	17	80	29	71	51	34	19

Source: Authors' calculations.

Notes: Structural reforms are computed as episodes in which the growth rate of the reform index in [Alesina et al. \(2020\)](#) exceeds 2 standard deviations. Reforms correspond to positive variations in the index. Reversals correspond to negative variations in the index. The categories of the index include trade, external finance (ext. finance), domestic finance (dom. finance), product market and labor reform. The period before corresponds to reforms undertaken between 1985 and 1999. The period after correspond to reforms undertaken between 2000 and 2014. N=Number.

The question that arises is why the scope of structural reforms has broadened. Several factors might have influenced the shift in scope for reforms. First, there might have been a potential disenchantment with the results of market-oriented reforms, and recognition of a vaster array of granular economic transformations that are pro-growth. This consideration becomes more relevant when the pervasive effects of certain reforms on inequality is factored in. [Ostry et al. \(2021\)](#) show that financial and capital account liberalization seem to increase both growth and inequality, as do some liberalization measures of current account transactions. Thus, there is a call for broader institutional reforms that are good for growth and equality.

Second, the collection of lessons learned from past reforms might have influenced the shift in thinking. The effectiveness of market reforms to promote economic growth is mediated by an appropriate set of macroeconomic, institutional, and political environments.⁴ For example, [OECD \(2010\)](#) stressed the importance of sound public finances for reform progress. The lessons from development economics illustrate the relevance of more microeconomic evidence to guide policies aimed at influencing economic growth or welfare ([Artuc et al., 2020](#)). Thus, adapting the playing field for the complete development of further market reforms might become a reform in itself for a country.

Third, structural reforms are a dynamic concept, and a change in the focus of reform talk can be expected depending on the country's level of development. The type of structural reform that

⁴[Prati et al. \(2013\)](#), [Christiansen et al. \(2013\)](#), and [Alesina et al. \(2020\)](#) built on de-jure indicators for financial, trade, product market, and capital account liberalization to assess the impact of reforms on growth. The conclusion that emerges from these studies is that although structural reforms can promote growth, their effects are heterogeneous across countries. Factors such as the authority of the executive power, the distance to the technology frontier, or the moment in the cycle where reforms are undertaken shape the effectiveness of reforms to promote growth.

a country implements may change significantly as the country grows, as noted in [Acemoglu et al. \(2005\)](#). In effect, by introducing “appropriate institutions,” relatively backward economies could grow faster. Nevertheless, the type of institutions (structural reforms) needed to foster growth differs from the institutions (structural reforms) required to sustain growth. For example, barriers to entry may be less of a restriction to promote economic growth at the early stages of development. As the country moves closer to the world technological frontier, these barriers may significantly limit productivity growth and innovation. Alternatively, as [Rodrik \(2006\)](#) highlights, enhancing private investment incentives may require improving the security of property rights in one country but enhancing the financial sector in another.

All these elements together have paved the way for a new narrative of pro-growth reforms. Reforms are channeled to much more specific and smaller interventions. The ECB points out that reforms can target specific objectives and sectors, such as those encouraging innovation in critical industries. According to [Cherif et al. \(2020\)](#), within the structural reform narrative many more factors of a diverse and granular nature fit simultaneously, such as achieving a good business environment, investing in infrastructure, promoting tourism, ensuring the rule of law, promoting access to finance, and tackling inequality.

Reforms have also been permeated by an interest in social justice and inclusion. Reforms can improve the quality of other government-influenced drivers of economic growth, such as improving education and healthcare systems, strengthening public infrastructure spending frameworks, and changing laws and regulations that constrain women’s participation in the labor force ([IMF \(2019\)](#)). Reforms that increase access to education or reduce tax evasion are relevant not only because they support economic growth but also because they promote social fairness.

So what would be those objectives pursued by structural reforms? In this context, [IMF \(2015\)](#) identifies four main objectives: first, boosting incomes and economic efficiency through investment or labor/product market reforms; second, promoting fairness and equity through tax and subsidy or social spending reforms; third, fostering economic and financial stability (for example through export diversification, financial supervision, and management of capital flows); and fourth, by improving quality of life of the population through education, healthcare, and climate reforms.

A definition similar to the objectives of the reforms can be found in [Swaroop \(2016\)](#), who summarizes the general objectives of structural reforms in six objectives: first, maintain low inflation and manageable fiscal and current account balances; second, promote competition and trade openness; third, improve a country’s business environment by enforcing contracts and the rule

of law, enhancing the quality of public bureaucracy, and minimizing corruption; fourth, ensure the safety and soundness of financial institutions; fifth, enhance labor productivity by providing infrastructure capital; and sixth, promote equality of opportunity to access public services.

Defined by their objectives, structural reforms can involve multiple areas, but determining how to assess these areas systematically becomes a major challenge. The next section discusses current reform measures and present alternatives to expand this scope.

3 Identifying Reform Areas from Policy Discussions

To the extent that the objectives pursued by structural reforms have broadened, precisely identifying the current areas of reform has become a complicated task. Until now, the emphasis has been exclusively on identifying and analyzing the impact of pro-market reforms. This section discusses the existing indices attempting to capture reforms and present a methodological proposal to extend the scope of analysis. This methodology involves identifying and categorizing the discussions between critical economic players in a country and the IMF, using natural language processing (NLP) techniques. We identify 52 thematic areas grouped into nine more general reform categories: environment, financial, fiscal, governance, labor market, monetary, productive capacity, social, and trade.

3.1 Current Reform Measures: Scope and Limitations

Measuring and determining the scope of structural reforms is not an easy task. The first attempts to systematically measure structural reforms in Latin America were by [Lora \(1997, 2001, 2012\)](#), and [Morley et al. \(1999\)](#). Their main objective was to describe and measure the progress of the region's pro-market reforms using an index that summarizes the evolution of policies in the trade, financial, tax, privatization, and labor-areas. The index builds on policy (e.g., tariffs, taxation rates, or required reserve ratios), rather than outcome variables (e.g., foreign trade, size of public spending, or financial depth) to measure reforms consistently across countries and time.

More recently, [Alesina et al. \(2020\)](#) measured structural reforms covering regulations for many emerging markets and low-income developing countries from 1970 to 2011. The authors considered structural reforms in the areas of domestic and external finance, trade, and product and labor markets. In general, all indicators for each area of reform were scaled to range from 0 to 1, with

higher values representing a greater degree of liberalization. The identification of financial policy changes in these categories was done through a detailed reading of available financial reports and research articles produced by the IMF, including Article IV Staff Reports, Financial System Stability Assessments, the Global Financial Stability Report, and IMF Selected Issues and Working Papers. For product market reforms, the identification of policy changes was facilitated by regulatory information from the International Telecommunication Union, the International Energy Agency, and country profiles from the Clean Energy Info Portal.

These indices have in common that they build quantitative measures based on a selected set of areas of pro-market reforms (e.g., financial, fiscal, and product markets, among others), focusing on identifying approvals. However, some pro-market reforms might be left out from these measurements. For example, while in [Alesina et al. \(2020\)](#) there is a focus on privatization in the energy and telecommunication sectors, the analysis ignores some other areas of privatization in infrastructure that are also strategic in certain countries (e.g., transport). Also of note is that the focus on some pro-market reforms limits the variation of these indices in some countries after 2000, leaving as an open question the alternative areas in which Latin America and the Caribbean countries are reforming.⁵

3.2 Capturing Reforms from Policy Discussions

Up to this point, this paper has discussed how the scope of reforms has broadened and how current indices only measure a set of pro-market reforms. To expand the analysis on reforms beyond economic liberalization, this section follows [Alesina et al. \(2020\)](#) in the use of information from Article IV Staff Reports. In particular, areas of reform are identified by systematically reviewing and classifying the topics of conversation in public policies that take place in these reports, using NLP.

Why is policy conversation useful for assessing reforms? It is because the reform process is inherent to the policy discussion. Once a country identifies a strategic area for reform, increased discussions can be expected about its relevance, potential impact, approval, and implementation process. For example, the surge in discussion about labor reforms signals the presence of distortions in the area and a potential appetite for reform.

Therefore, the reform areas are identified based on the country's interest in pursuing them and

⁵Section 2 discusses the slowdown of reforms after 2000s more extensively.

not limited to their success in terms of approval.⁶ The focus is on identifying priority sectors for reform without considering the political conditions for its adoption. There are two main reasons behind this approach. First, successful reforms take years to prepare and approve and much longer to implement. And second, reforms are often preceded by setbacks – even some reforms that were not approved may have contributed to the success of subsequent reforms by deepening policymakers’ understanding of the issues involved (OECD, 2010).

3.2.1 Database Sources

As mentioned previously, policy discussions are captured from (publicly available) IMF Article IV Staff Reports. These documents result from the bilateral discussions between IMF staff and key economic players in each country (i.e., country authorities and other relevant counterparts in the private and public sectors). They present economic and financial information, but more importantly, they discuss the country’s economic developments and policies. A critical advantage of these documents is that they describe the context, challenges, and current developments across countries with a similar structure and a comparable language.

The source for the reports is the repository made available by [Bétin & Collodel \(2021\)](#). The repository contains information from the reports from 1978 to 2020 for 185 countries worldwide (see Appendices [A](#) and [B](#) for the full list of countries worldwide and in Latin America and the Caribbean). On average, for each year of the sample, information is available for 91 countries. As depicted in column (1) of [Table 2](#), there are 3,913 documents with Latin America and the Caribbean accounting for 17 percent of the entire sample.

It is important to point out three limitations arising from using IMF documents. First, not all possible reforms carried out by a given country are documented in the Staff Reports. Nevertheless, the importance and validity of those reforms that are included rest in their macro-critical character, which must accompany all reforms discussed in IMF Article IV Staff Reports. Thus, reforms are not distinguished between major and minor, as [Furceri et al. \(2018\)](#), since the set of reforms reviewed and recorded might not be fully comprehensive. Instead, they are labeled here simply as macro-critical reforms.

Second, only a fraction of the discussions pertain to reform topics. There are a number of additional topics that are discussed in IMF Staff Reports, so it is important for the analysis to

⁶However, as will be shown in [Section 4](#), there is a strong correlation between the increase in discussion on a topic and approved reforms.

Table 2: Size of Documents in Sample

Region	Number of Documents	Total Noun Phrases			Labeled Noun Phrase		
		Mean	Min.	Max.	Mean	Min.	Max.
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
World	3,913	3,495	180	27,351	911.3	6	4,994
<i>East Asia & Pacific</i>	661	3,430	223	15,434	892.8	33	3,407
<i>Europe & Central Asia</i>	1,100	3,935	180	27,351	998.0	15	4,994
<i>Latin America & Caribbean</i>	675	3,096	238	12,994	834.1	57	3,984
<i>Middle East & North Africa</i>	472	3,236	232	16,875	892.2	6	3,920
<i>North America</i>	79	4,775	255	16,084	1,104	76	4,170
<i>South Asia</i>	185	3,759	341	22,305	973.3	41	3,171
<i>Sub-Saharan Africa</i>	741	3,225	209	14,453	845.8	7	3,850

Source: Authors' calculations based on data from [Bétin & Collodel \(2021\)](#).

Note: Min=Minimum; Max=Maximum.

separate the general discussions from those about reforms. And third, meetings of IMF staff and country government personnel are not held on a synchronized schedule. The number of countries that present the Staff Report differs yearly, and in no year do 100 percent of countries meet with IMF staff.

3.2.2 Methodology

The methodology consists of three steps in applying NLP techniques to the collection of IMF Article IV Staff Reports. First, all noun phrases in the documents are extracted. There are several reasons to use noun phrases instead of n-grams: (i) n-grams alone do not have a sense without context, while, by comparison, a noun phrase is a word or group of words that contains a noun and functions as the subject, object, or prepositional object and itself has a meaning; (ii) noun phrases can be thought of as the subset of n-grams with meaning; and (iii) the aim is to capture general areas of policy discussion without limiting them to just the discussions that include the word “reform.”

The search of IMF Staff Reports identified 69,407 noun phrases with a frequency of at least 10 observations. Columns (2) to (4) of Table 2 present information about the number of noun phrases collected in the first step. On average, 3,495 noun phrases per year were identified. As column (3) depicts, the number of captured noun phrases for certain years is relatively low. This is because, before 1983, the number of countries with IMF Article IV Staff Reports (around 40) was well below the general average.

Second, all noun phrases are labeled and grouped into similar economic content categories. For example, noun phrases such as “central bank,” “tax revenues,” and “business environment”

Table 3: Policy Areas of Discussion

1. Environment	2. Financial	3. Fiscal
Climate Change Disaster Risk Environmental Sustainability*	Banking Sector* Capital Market* Financial Inclusion Financial Regulation* Non-banking Sector	Budget* Debt* Deficit* Expenditure* Fiscal Regulation Revenue*
4. Governance	5. Labor market	6. Monetary
Crime* Decentralization Institutional Framework* Transparency*	Employment* Female Participation Informality Labor Force Quality Pensions* Social Security Wages*	Central Bank* Exchange Market* Inflation* Liquidity* Monetary Framework* Policy Rate*
7. Productive capacity	8. Social	9. Trade
Business Environment* Energy* Infrastructure* Investment* Mining Privatization* Public Sector* Telecommunications* Tourism Traditional Sectors* Transport Utilities*	Education* Gender Equality Health* Housing Migrants Safety Nets*	Export Market* Tariffs* Trade Agreements

Source. Authors' calculations based on publicly available IMF Staff Reports publicly available.
Note: Asterisks (*) depict areas in which reform discussions are present.

are grouped into general discussion areas, such as monetary, fiscal, and productive capacity, respectively. This categorization was done by combining a manual labeling process for the top occurrences (up to a frequency of 300) and an automated process of partial matching for the rest (see Appendix C for more details).⁷

The use of a more time-consuming manual classification instead of machine learning techniques responds to the existence of many noun phrases that do not convey enough information for their classification. The approach used here reduces the chances of more inaccurate classifications. Columns (5) to (7) of Table 2 show that approximately 26 percent of the total noun phrases were labeled (based on judgment). On average, we have 911 labeled noun phrases yearly at a re-

⁷The manual labeling follows an approach similar to Drechsel & Aruoba (2022), in which each author went through the classification process independently and then discussed disagreements in the classification case by case.

gional level. For Latin America and the Caribbean, the average number of labeled noun phrases is smaller and close to 834.

Following the procedure above, we identify 52 thematic areas, subsequently classified into nine more general areas: environment, financial, fiscal, governance, labor market, monetary, productive capacity, social, and trade. These categories and subcategories of policy discussion are presented in Table 3. Appendix D presents a more detailed discussion of the definitions and criteria behind these categories. Section 5.2 discusses the reform areas and analyzes their historical trends.

In the third step, we identify which of the labeled noun phrases occur in the context of discussions about reforms. This is done through a rules-based algorithm that assigns these properties based on the noun phrase containing particular keywords (see Appendix C for details on the rules). In other words, for each category, the number of noun phrases containing the word “reform” or synonyms within a country-year set are counted.⁸ For example, Table C1 in Appendix C shows the case of Egypt (EGY) in 2010; there are 56 noun phrases characterizing discussions on inflation, and two of them were in the context of reforms. Table 3 presents the areas that have involved reform discussions with an asterisk; notice that not all topics are prone to discussions on reforms.

With this information, two indices were constructed that account for the frequency with which a topic appears. The first index, the *Talk Index*, reflects the intensity of general conversation about a specific topic (category or subcategory in Table 3). To be more precise, equation 1 represents the Talk Index TI_{scy} of a specific subcategory/category s , of country c , in year y found in an IMF Article IV Staff Report. TI equals the number of noun phrases (np_{scy}) matched to that subcategory/category s in the country c during the year y over the total number of noun phrases (np_{scy}) of the Article IV Staff Report for country c in year y .⁹

$$TI_{scy} = \frac{np_{scy}}{np_{scy}} \quad (1)$$

Additionally, the intensity of discussions around reforms for the same issue in a country’s policy discussion can be identified. This index is labeled as the *Reform Talk Index* (RTI). Equation 2 represents the RTI of a specific subcategory/category s , of country c , in year y found in an IMF Article

⁸Synonyms for reforms include terms such as legislation, act, amendment, policy, measure, adjustment, and program, among others.

⁹Usually, the literature on text analysis normalizes all indices by the size of the document to capture measures of relative importance. Since the interest here is the relevance of a concept within and not necessarily across countries, we opt for not using this type of normalization.

Table 4: Relationship between Talk Index and Reform Talk Index

	Alternative Specifications					
	Level		Dummy		LAC-Region	
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A						
<i>Dependent Variable: Talk Index (TI_{scy})</i>						
RTI_{scy}	1.496*** (0.041)	1.441*** (0.028)				
$RTI_{scy} \cdot \mathbb{1}_{RTI>0}$			0.720*** (0.008)	0.492*** (0.008)		
$RTI_{scy} \cdot \mathbb{1}_{LAC}$					0.126 (0.123)	0.111 (0.075)
Panel B						
<i>Dependent Variable: Total Noun Phrases (nps_{scy})</i>						
$ref \cdot nps_{scy}$	1.635*** (0.054)	1.627*** (0.042)				
$ref \cdot nps_{scy} \cdot \mathbb{1}_{ref \cdot nps_{scy} > 0}$			30.686*** (0.496)	23.362*** (0.411)		
$ref \cdot nps_{scy} \cdot \mathbb{1}_{LAC}$					0.033 (0.143)	0.062 (0.102)
Observations	250,432	250,432	250,432	250,432	250,432	250,432
Country-sector effects	No	Yes	No	Yes	No	Yes
Time effects	No	Yes	No	Yes	No	Yes

Source: Authors' calculations. "Level" includes all variables without transformation. "Dummy" includes a dummy variable when the Reform Talk Index is different from zero. "LAC-Region" includes a dummy for Latin-American and the Caribbean Countries. TI_{scy} stands for Talk Index in sector s , country c , in year y . RTI_{scy} stands for the Reform talk Index in sector s , country c , in year y . Standard errors in parentheses, and clustered at the country-sector level. ***, **, and [*] denote significance at the 1, (5), and [10] percent levels.

IV Staff Report. RTI equals the number of noun phrases matched to that subcategory/category s that pertain to discussion on reforms ($ref \cdot nps_{scy}$) in country c during year y over the total number of noun phrases (nps_{scy}) of the IMF Article IV Staff Report for country c in year y .

$$RTI_{scy} = \frac{ref \cdot nps_{scy}}{nps_{scy}} \quad (2)$$

3.2.3 Discussion of Reform in IMF Staff Reports

Discussion of macro-critical reforms constitutes an important part of IMF Staff Reports. For instance, when discussing a topic in the context of reform, a more significant part of the Staff Report is devoted to that topic than when there is no discussion of reforms. To better see this positive correlation between indices, we compare them by estimating a set of regressions. Although there is a correlation by construction, since the Reform Talk Index is a subset of the Talk Index, this exercise allows us to show how discussing reforms increases the general discussion in Article IV Staff Reports. In other words, an area is discussed more intensely when associated with reforms.

Table 4 reports the results for three different specifications. In columns(1) and (2) of panel A,

the index levels of reform talk (RTI_{scy}) and talk (TI_{scy}) are directly compared. When the Reform Talk Index increases by 1 unit, the Talk Index is proportionally larger by 1.4 units. Columns (3) and (4) compare how the average Talk Index changes when there are reform discussions relative to when there are not. For this, the Reform Talk Index is interacted with an indicator variable ($1_{RTI>0}$) that takes the value of 1 when the Reform Talk Index is greater than zero; that is, when in year y , in country c , and sector s there is a discussion about reforms. Controlling for country-sector and time effects, the average of the Talk Index falls from 0.7 to 0.4. However, in both cases, these values are statistically significant and larger than those observed in periods of no reform. Finally, columns (5) and (6) evaluate whether differences are specific to Latin American and Caribbean countries. For this, the Reform Talk Index is interacted with an indicator variable (1_{LAC}) that takes the value of 1 for countries in Latin America and the Caribbean. No statistically significant differences in the index due to regional effects are found.

To analyze whether this effect is related to the size of the documents in the sample, panel B of Table 4 reports the same scenarios as panel A using instead the number of noun phrases. Columns (1) and (2) compare the total number of noun phrases (nps_{scy}) with those about reforms ($ref \cdot nps_{scy}$). For each noun phrase associated with reform talk for sector s , country c , and year y , the number of total noun phrases increases more than proportionally by 1.6. Similarly, as indicated in columns (3) and (4), there are, on average, 23 more noun phrases in a reform discussion context than in one that is not. To see this, the number of noun phrases on reforms is interacted with an indicator variable ($1_{ref \cdot nps_{scy}>0}$) that takes the value of 1 when the number of noun phrases on reforms is greater than zero. Finally, columns (5) and (6) show that no statistically significant differences are found in the number of noun phrases due to regional effects.

In summary, these results suggests that the discussion about reforms gains importance in the IMF Staff Reports, measured as the number of noun phrases captured. In addition, reform topics are discussed in a broader context. This means that even when there is no explicit mention of the word reform (or synonyms), the discussion of reform issues is amplified in the IMF's reports.

4 From Discussion to Action

The Reform Talk Index captures the reform interest of a country in a particular area. However, there are multiple reasons behind an increase in interest the index. It could be the result of a surge in the recommendations for reform made by the IMF, a description of reform initiatives, or

the discussion of approvals.

To compare with existing indices, the question arises: When does the index precisely reflect the reform approval process? This section analyzes when the discussion transforms into specific reform actions. For this purpose, two complementary exercises are presented. First, approved reforms in a subset of countries are identified using the narrative approach, and then these events are compared with those that come directly from the index. This exercise makes it possible to assess the accuracy with which the methodology presented captures reform episodes. Moreover, it allows for analyzing the proportion of events that correspond directly to approvals versus those that correspond to other aspects of the reform process.

The second exercise assesses the ability of the Talk Index and the Reform Talk Index to predict the likelihood of reforms that emerge from [Alesina et al. \(2020\)](#). Using lineal probability and complementary logistic models, we examine whether changes in the indices built using NLP are correlated with the probability of a reform in the areas of: domestic finance, product markets, labor markets and trade.

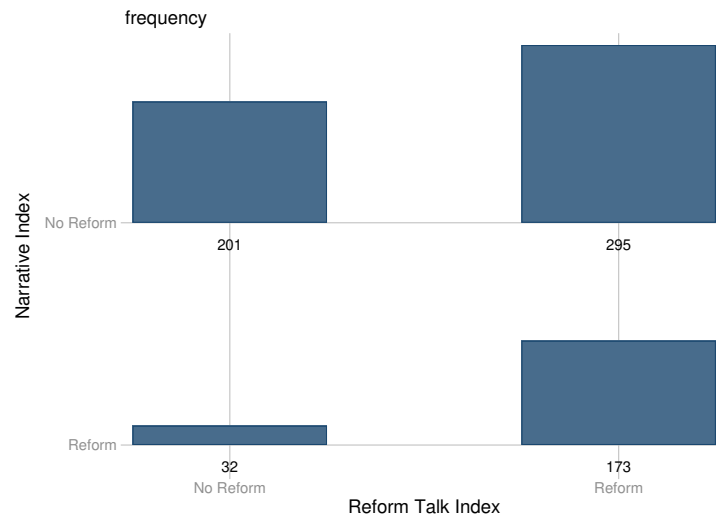
4.1 Reform Frequency: Lessons from a Narrative Approach

The narrative approach is an identification methodology that is an alternative to the one presented in this document. Following [Furceri et al. \(2018\)](#), the identification of specific reforms results from a reading of the IMF Staff Reports and a review of events involving legislative and regulatory changes in the policy stance. All recorded legislative and regulatory changes that directly or indirectly affect the objectives pursued by structural reforms are identified. More specifically, they refer to changes in the policy stance that impact: economic efficiency, competition, business environment, the quality of public institutions, promotion of fairness and equity, economic and financial stability, and the overall quality of life in accordance with the objectives highlighted in [IMF \(2015\)](#) and [Swaroop \(2016\)](#).

Although this methodology provides greater detail on the implementation status of the reforms, it is significantly more time-intensive than NLP. Therefore, this analysis has been carried out for a small group of Latin American and Caribbean countries from 2010 to 2017.¹⁰ Appendix E presents a more detailed description of the methodology, its implementation, and the reform areas analyzed using the narrative approach.

¹⁰Our sample consists of Argentina, Brazil, Guyana, Haiti, Honduras, Jamaica, Nicaragua, Panama, Paraguay, Suriname, Trinidad and Tobago, and Uruguay.

Figure 1: The Reform Talk Index and the Narrative Approach



Source. Authors' analysis of the narrative approach and the natural language processing methodology.

Using this methodology, we dated various regulatory changes in the sample countries. These changes are classified within the categories presented in Table 3 and compared directly with the Reform Talk Index. To facilitate comparison, the Reform Talk Index is converted into an indicator variable that takes the value of 1 if the index captured any reform discussion in the respective country, category, and year during the period analyzed.

The results are reported in Figure 1, which compares the frequency with which the two methodologies coincide (or do not coincide) in identifying reform episodes. We use this information to validate the accuracy of the NLP algorithm. In total, 205 reforms were identified from the narrative approach, and the Reform Talk Index captured 84 percent (173 events) of those. However, this suggests that there is still room for improvement in how noun phrases involving reform are captured.

The share of events that correspond directly to approvals can also be calculated. By transforming the Reform Talk Index into a binary variable, 468 episodes of discussion about reforms were identified in the sample. Of these, 37 percent (173 events) correspond to reforms approved directly in the study period.

What episodes does the index explicitly capture when those are not approvals? Although it is difficult to present a general answer to this question, it is possible to give some indications from the sample. According to the reading and classification of the IMF Staff Reports, most episodes

correspond to discussions about the same set of reforms. Several Article IV cycles highlight advances or setbacks in achieving the same reform. Of course, these results might be influenced by the sample's representativeness, but they share significant similarities with the idea that reforms take time to implement, as discussed in [OECD \(2010\)](#).

In summary, from a qualitative point of view, the methodology behind the Reform Talk Index is well suited to capture episodes of approval in a country/sector when they occur. These episodes correspond to 37 percent of the total number of events captured. The remaining share mostly corresponds to discussions accompanying the conception and transformation of reforms before their approval.

4.2 A Comparison with Existing Indices

The previous section related a qualitative version of the Reform Talk Index to the reforms that emerge from a narrative analysis of IMF Staff Reports. However, the index can capture other discussion as well. Therefore, this section analyzes whether a quantitative version of the indices can provide hints about the approval of reforms. More specifically, we evaluate how useful the index built in this paper is to predict reforms resulting from the [Alesina et al. \(2020\)](#) database.

Toward this end, this section maps areas between the categories of talk and the Reform Talk Index with the study areas of [Alesina et al. \(2020\)](#). Thus, variations in the Talk Index in the financial sector are associated with domestic finance reforms; reforms in the labor market with the same reforms [Alesina et al. \(2020\)](#); reforms in the energy, telecommunications, and utility sectors with product market reforms. Trade reforms are directly compared with the same reforms in [Alesina et al. \(2020\)](#).

With this information, a balanced panel at the country, sector, and year levels is constructed. The reforms are obtained using the criterion of variation greater than two standard deviations unless otherwise indicated. The results of a simple linear regression model (LPM) and a complementary logarithmic (Cloglog) model are reported. Following [Forbes & Warnock \(2012\)](#), the Cloglog model assumes an asymmetric distribution of reforms, which allows for accounting for the presence of many non-reform years in the sample.

Table 5 summarizes the main results. Columns (1) to (6) present the correlation between the change between the indices that arise from NLP with those obtained under the [Alesina et al. \(2020\)](#) methodology. Columns (7) and (8) present the results for reversal as defined in section 2.

Table 5: Correlation with Existing Indices

	Talk Index		Reform Talk Index					
			Reforms				Reversals	
	LPM (1)	Cloglog (2)	One std		Two std		LPM (7)	Cloglog (8)
			LPM (3)	Cloglog (4)	LPM (5)	Cloglog (6)		
NLP Index	0.002 (0.002)	0.073 (0.09)	0.054* (0.03)	1.687*** (0.538)	0.045** (0.022)	1.889*** (0.71)	0.008 (0.007)	1.295 (1.091)
Observations	4,151	1,108	4,151	1,751	4,151	1,108	4,151	611
Country-Sector Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Source: Author's calculations.

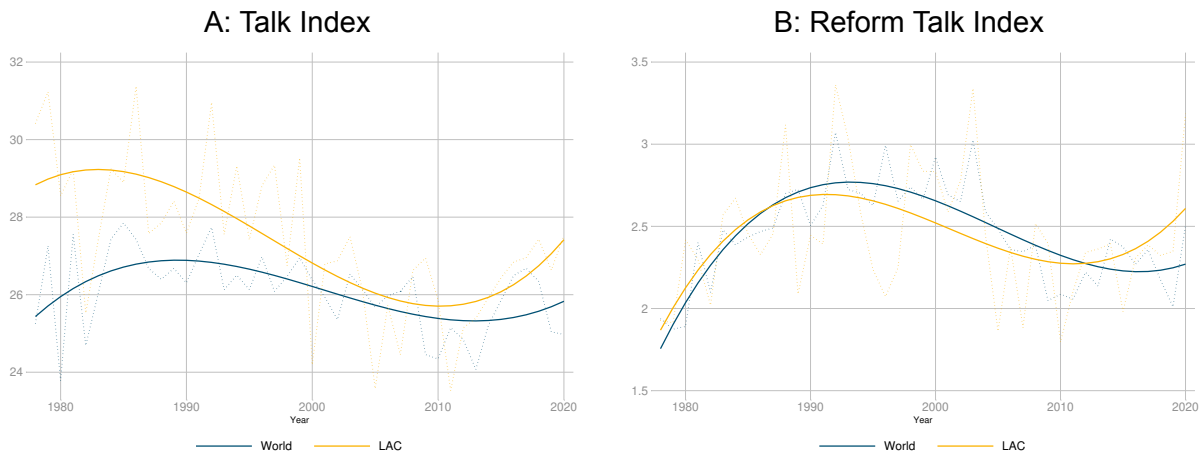
Note: LPM=linear probability model. Cloglog=complementary logarithmic model. NLP=natural language processing. Std=standard deviations. Standard errors in parentheses, and clustered at the country-sector level. ***,**, and [*] denotes significance at the 1,(5), and [10] percent levels.

Columns (1) and (2) report the results for the Talk Index. Generally, there is no correlation between this index and the probability of reforms. However, in columns (3) to (6), there is a positive and statistically significant correlation between the Reform Talk Index and the probability of reform. These results are independent of how restrictive the assumptions are to identify reforms. Columns (3) and (4), present reforms obtained as a one standard deviation metric and find that a one basis point change in the Reform Talk Index is associated with an increase in the probability of reform of 5.4 percent. This result remains statistically significant using a Cloglog model. Columns (5) and (6) present the results when the reform criterion is adjusted to two standard deviations. A one basis point change in the Reform Talk Index is associated with an increase of 4.5 percent in the probability of reform. Similarly to the previous case, this remains statistically significant in the Cloglog model.

Finally, columns (7) and (8) explore the relationship between the Reform Talk Index and reform reversals. Contrary to the reform exercise, no association is found between the Reform Talk Index and the probability of reversal. Similarly, there is no relationship between the Talk Index and the probability of reversal (results not tabulated).

In summary, the Talk Index allows for identifying with what preponderance multiple topics are discussed in IMF Staff Reports. Still, it does not allow for associating changes in the index with reforms. In contrast, the Reform Talk Index allows for relating increases in discussion with increases in the probability of reform: a rise of one basis point in the reform discussion is correlated with a 4.5 percent increase in the likelihood of reform. However, the predictive power of the Reform Talk Index does not extend to the identification of reversal episodes.

Figure 2: Talk Indices, 1978-2020



Source. Authors' calculations based on the repository from [Bétin & Collodel \(2021\)](#).

Note: LAC= Latin American and the Caribbean.

5 General Trends in Policy Discussion

This section presents the evolution in the dynamics of discussions for the nine thematic areas reported in Table 3: environment, financial, fiscal, governance, labor market, monetary, productive capacity, social, and trade. The focus is on comparing the aggregate behavior of the indices for Latin America and the Caribbean and the rest of the world. This allows for assessing how certain reforms have permeated the region and for uncovering reform patterns between those specific to the region and those that respond to a more global movement.¹¹

The potential applications of the indices are also explored, first by assessing how the business cycle, particularly booms and busts, affects the intensity of the reform discussion, and by comparing the discussion mix at the subcategory level.

5.1 Policy Discussion and Reforms

Figure 2 depicts the discussion dynamics of reforms comparing Latin American and Caribbean countries with the rest of the world. Panel A presents the historical evolution of the Talk Index, and Panel B presents the evolution of the Reform Talk Index. These aggregate indices are built by adding all noun phrases cataloged for Latin America and the world. In both figures, the solid yellow lines correspond to smoothed trends of the indices for Latin America and the Caribbean,

¹¹The following regional groupings are used for the indicators for the world: East Asia and Pacific, North America, Sub-Saharan Africa, Europe and Central Asia, Middle East, and North Africa, and South Asia.

and the solid blue lines correspond to smoothed trends worldwide.

Panel A shows that discussions in Latin America and the Caribbean about the nine core areas of study occupied a more significant portion of IMF Articles IV Staff Reports than did such discussions for the rest of the world. This gap closed between 2000 and 2010 before widening again. Since 1990 the overall discussions on these nine areas have been falling both for both regions analyzed. Even though this behavior seems to revert starting in 2010, the indices are far from reaching their previous values.

This gap between the region and the world is not present when the Reform Talk Index is analyzed in panel B, where the magnitudes remain similar throughout the entire sample. However, there are two critical periods to highlight when analyzing these trends.

First, the Reform Talk Index reached its highest point in the early 1990s for both Latin America and the Caribbean and the world. These results are consistent with the argument in Section 2 that the 1990s was prolific for the rise of reforms in Latin America and the Caribbean. However, this pattern extends to other regions as well. For example, that decade saw the opening of economies to international trade and capital flows in South and East Asia, the partial liberalization of the financial sector in sub-Saharan Africa, and progress in fiscal reforms in Central And Eastern Europe and the former Soviet Union.

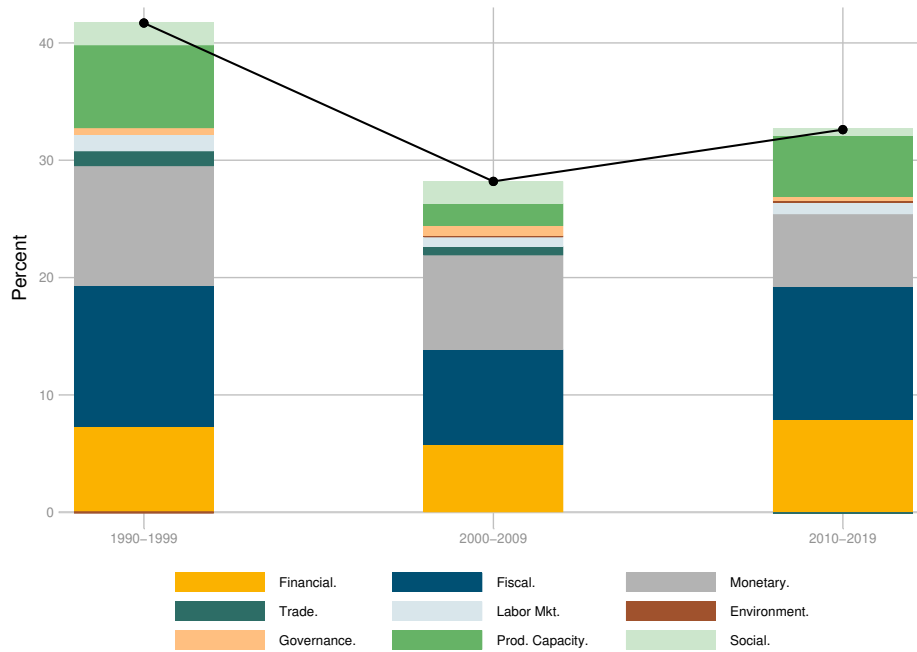
The second critical period to highlight was the slowdown in the discussion about reforms, starting from the peak of the 1990s and ending in the 2010s. This is also consistent with the argument presented in the section 2. However, the index also captures a renewed interest, particularly in Latin America and the Caribbean, in discussing reforms starting in 2010. That decade started with the lagging effects of the 2007-2008 Great Recession, the worst financial crisis since 1929. That crisis gave rise to reforms of the global financial system to reduce the risk of future crises.

5.2 Trends in the Areas of Reform

Before presenting a description of the reform areas worldwide, it is important to take into account the characteristics of the information source. Figure 3 shows how much each area of reform in Table 3 contributes to the overall discussion in IMF Staff Reports.

Mainly, fiscal, monetary and financial topics dominate the intensity of the discussion, and this result may stem from the IMF's interest in these specific areas. Given the critical importance of these sectors within IMF documents, it is necessary to focus on the relative changes of each series

Figure 3: Contribution to Index Growth by Decade



Source. Authors' calculations based on the repository from [Bétin & Collodel \(2021\)](#).

over time; that is, how the relative intensity of each topic has increased or decreased compared to the past. Thus, the assessment of other reform areas here is based on historical trends rather than the exact intensity of the IMF's discussion.

In what areas are the discussions concentrated at the global level? Let's initially analyze what topics the countries discuss. As mentioned previously, the largest share of IMF Article IV Staff Reports deals with topics related to fiscal policy, monetary policy, and financial issues. Although discussions on governance, social policy, and the environment have a lower discussion share, they have gained ground over the years.

What is the discussion around reforms? Pro-market reform talk is still present. However, the discussion on financial, labor, and trade reforms exhibits a behavior similar to that discussed in Section 2. These reforms had a significant presence in the debate in the 1990s followed, by a decline from that point onward. In contrast, governance reforms and social issues have increased in recent years. The governance reforms have pursued the promotion of greater transparency and an improvement in institutional quality, while social reforms have focused on advances in education, health, and the development of safety nets.

The subsections that follow present a more detailed analysis of the general trends of discussion

on the areas of reform, including a comparative analysis of the differences between Latin America and the Caribbean and the rest of the world.

5.2.1 Environment

Discussions on environmental topics have a low incidence within IMF Staff Reports (Figure 4(a)). For Latin America and the Caribbean and the rest of the world, the trend of the discussion is U-shaped, although this is less pronounced for Latin America and the Caribbean. As of 2010, a rebound in the discussion trend appears. However, while discussions tend to be more frequent, this increase is still minimal relative to historical levels. The correlation between the discussion trends between Latin America and the Caribbean and the rest of the world is barely 0.22.

Behind the rebound in the environmental discussion is a greater interest in environmental sustainability issues. As seen in Appendix G.1, these topics gain the discussion space that climate change has lost. However, in the last decade, the analysis of natural disasters has received most of the attention. Argentina is the country that most discusses climate change issues among countries in the region. The Bahamas has the most discussions on natural disasters, and Chile has the most on environmental sustainability.

Except for sporadic spikes, discussion of environmental reforms has remained constant over time (Figure 4(b)). Since 2010, the intensity of discussions on environmental reforms has been greater in Latin America and the Caribbean than in the rest of the World.

5.2.2 Financial

Financial discussions encompass a significant proportion of IMF Staff Reports: 18 percent of the labeled noun phrases and 11 percent of the reform discussions correspond to this category. Discussions about the financial sector have steadily increased over time for the rest of the world and Latin America and the Caribbean (Figure 4(c)), with a correlation of 0.72 between the two groups. On the other hand, discussions about reforms in the financial sector increased until they reached a peak in the late 1980s. Since then there has been a moderate decrease in the reform discussion, with an all-time low around 2010, after which they resumed their relevance worldwide (Figure 4(d)).

Reviewing the subcategories of the financial category, the banking and capital markets sectors account for the vast majority of the discussion. There is a drop in the proportion that Staff Reports

dedicated to the banking sector, particularly in Latin America and the Caribbean. While at the same time, an interest in financial regulation issues has emerged, and to a lesser extent, financial inclusion. In the region, Belize and Haiti have the largest share of discussions about the banking sector, while Chile and Argentina have the largest share of discussions about capital markets. Additionally, areas such as financial inclusion are becoming essential in policy discussions in countries such as Bolivia, The Bahamas, Suriname, and El Salvador (Section G.2 in Appendix G).

5.2.3 Fiscal

Fiscal policy is the topic with the most significant share of discussion in IMF Staff Reports: 27 percent of the labeled discussions and 32 percent of the reform discussions correspond to this category. The Talk Index is marked by three specific periods. The first covers the beginning of the sample up to the mid-to-late 1980s. This period is characterized by a sustained increase in discussion, particularly in Latin America and the Caribbean, which has much more discussion of the topic than in the rest of the world. The second period runs from 1990 to early 2010. A slight decline in the discussion in Latin America and the Caribbean and a flattening of the discussion in the rest of the world characterizes this period. Finally, the third period starts in 2010. There is a sharp increase in the LAC discussion, which contrasts with the rest of the world, where the increase in discussion is much more moderate (Figure 4(e)).

The discussion of fiscal reforms has remained consistent over time for Latin America and the Caribbean, whereas in the rest of the world, there has been a slight downward trend in recent years. The correlation in the discussion of reforms in both groups of countries is 0.5 (Figure 4(f)).

In general, the fiscal deficit occupies most of the fiscal discussion. However, during the last decade in Latin America and the Caribbean, the increase in the discussion about debt stands out. At a global level, the discussions on tax regulation have gained importance. In the case of Latin America and the Caribbean countries, Haiti and Argentina are the countries with more discussions about revenues, while Brazil and Chile have a more significant proportion of discussion about the fiscal deficit (Section G.3 in Appendix G).

5.2.4 Governance

Despite a marked increased trend in discussion of governance for Latin America and the Caribbean, the category still has a low share in IMF Staff Reports. However, the greater discussion of governance in the region contrasts with the decline of interest in the topic in the rest of the world (Figure 4(g)). This trend also carries over to the discussion of reforms. While for the rest of the world, the reform discussion remains constant, in Latin America and the Caribbean, it has re-emerged strongly in recent years (Figure 4(h)). Thus, the correlation in the reform discussion is only 0.3.

Topics such as the institutional framework and transparency dominate the discussion about governance. Also noteworthy in Latin America and the Caribbean are the discussions about decentralization processes. Although most of the discussion in the region has been about the institutional framework, the relative importance of other topics in certain countries is worth noting. For example, fiscal, administrative, and political decentralization discussions are relevant in Argentina, Brazil, Mexico, Paraguay, and Nicaragua, while Chile, The Bahamas, and Ecuador have the largest numbers of discussions about transparency (Section G.4 in Appendix G).

5.2.5 Labor Markets

Discussions about the labor market have decreased over time in both Latin America and the Caribbean and the world. However, the speed at which the discussion in the region has declined has been more accentuated. On average, labor market issues are discussed in the region today with less intensity than in the past (Figure 4(i)). There were more discussions in the region about reforms until the mid-1990s and as recently as 2015. There is a slight negative correlation between the discussion of reforms in Latin America and the Caribbean and the rest of the world of -0.01. For example, during the decline in reform discussions in the region from 1990 to 2010, discussions on labor reforms reached their historical maximum in the rest of the world (Figure 4(j)).

Three areas constitute most of the discussion: employment, wages, and pensions. Although their share in the total is still small, topics such as social security, quality of the labor force, and informality are becoming more critical. In Latin America and the Caribbean, The Bahamas is the country with the most discussion about employment, while Mexico, Peru, and Colombia have the highest share of discussions about informality, Chile about the pension system, and Argentina about social security (Section G.5 in Appendix G)

5.2.6 Monetary

Given the general nature of the IMF and its reports, monetary topics are the discussion area with the second highest amount of discussion. For Latin America and the Caribbean, these topics are discussed with greater intensity than in the rest of the world, and this difference in intensity is the highest among the nine study areas. However, there is a declining trend in monetary discussion among both groups of countries (Figure 4(k)). Most monetary discussions revolve around the exchange market, inflation, and policy rates. In the region, Colombia and Mexico have the largest share of discussion about the exchange market, while Guyana, Jamaica, and Suriname have the largest share about inflation (Figure G.6 in Appendix G).

Discussions on monetary reform issues remain constant in Latin America and the Caribbean countries. For the rest of the world, the reform discussion went through stages of growth until the mid-1990s and then stages of decline until after 2010. The amount of discussion has resumed a positive growth path since then (Figure 4(l)).

5.2.7 Productive Capacity

Productive capacity encompasses multiple areas of potential importance for productivity. However, what stands out is how these discussions have progressively decreased, though the decline is much less pronounced for Latin America and the Caribbean, where it reached its historical minimum around 2010. Since then, there has been a renewed interest in the topic in the region, but not in the rest of the world (Figure 4(m)).

Behind the recent upward trend in the discussions in Latin America and the Caribbean are issues such as energy, investment, tourism, and utilities. At the same time, discussions about the role of the public sector are on the decline, although they continue to occupy most of the discussion. It is also important to highlight that while the business environment increased its discussion share in the rest of the world, it has declined among discussions in Latin America and the Caribbean. Argentina, The Bahamas, and Costa Rica are the countries with the most discussions about the business environment. Discussions about investment are more prominent in Trinidad and Tobago, Ecuador, and Jamaica. The Dominican Republic leads in discussions about utilities, while a large share of discussion for Brazil and Argentina is about investment in general, and Chile about mining (Section G.7 in Appendix G).

5.2.8 Social

Social policy has become a topic of greater importance in policy discussions. The conversation has increased over time worldwide, with a peak in the late 2000s (Figure 4(o)). Behind this trend in Latin America and the Caribbean is more discussion of safety nets (poverty) and education, while for the rest of the world, it is more vigorous discussion of safety nets and health. In recent years, discussions of equality (which includes gender and income equality) have increased in Latin America and the Caribbean. Argentina, Guyana, and Trinidad and Tobago have the most discussion about safety nets, while The Bahamas, Belize, and Chile have a higher share of discussion about education. The Dominican Republic and Ecuador lead in discussions about health (Section G.8 in Appendix G).

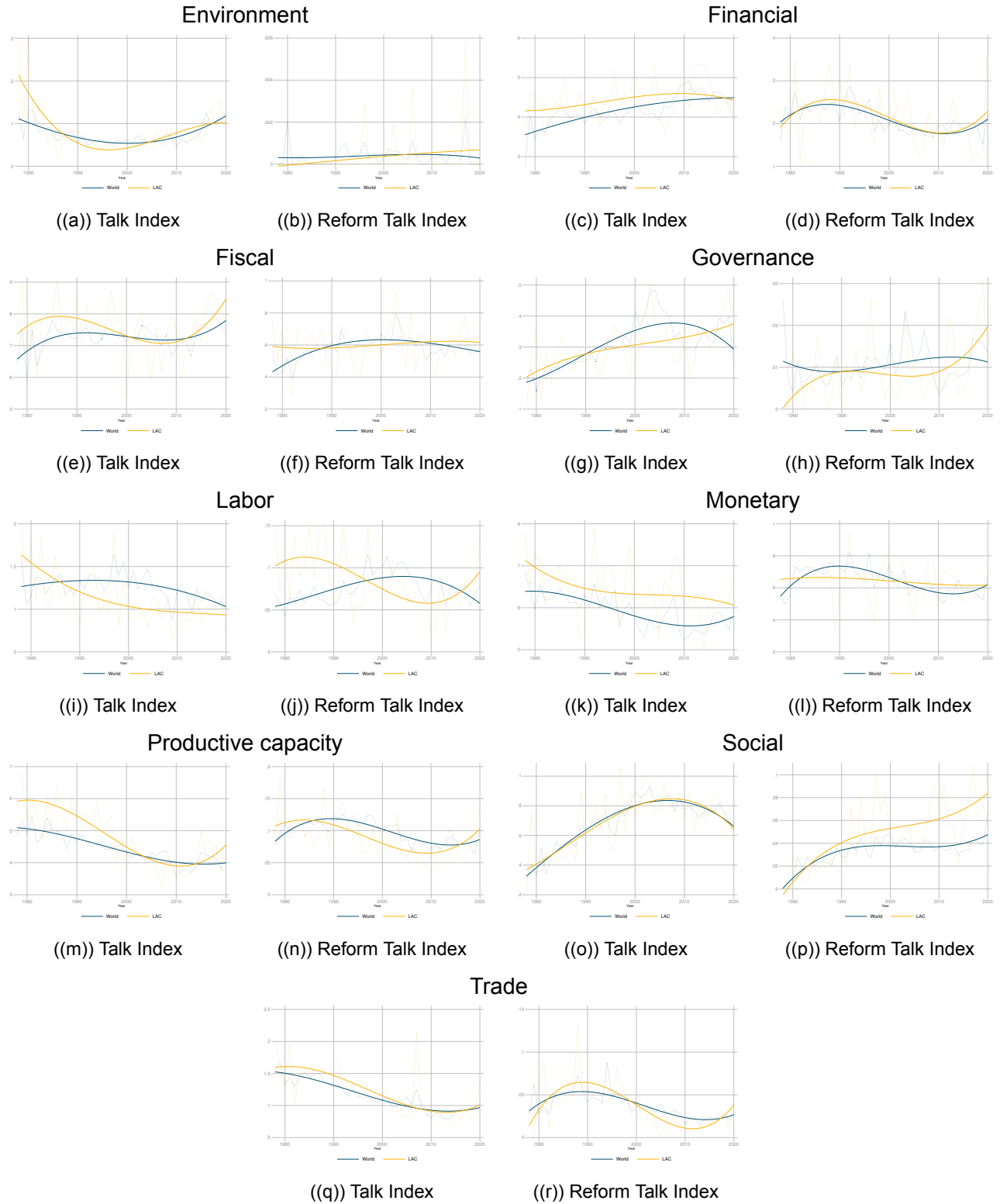
Discussion of reforms in the social sector has continued to grow, and this trend is more robust in Latin America and the Caribbean than in the rest of the world. After the flattening period of growth between 1990 and 2010, there was a sharp acceleration in discussion about the social sector in Latin America and the Caribbean, including conversations on safety nets, education, and health. Regarding equality and migration no discussion about incorporating reforms was observed (Figure 4(p)).

5.2.9 Trade

Trade discussions are a significant topic in Latin America and the Caribbean. Although they only represent 5 percent of the discussion topics, this share for the region is much higher than in the rest of the world. Despite its relevance, there was a downward trend in discussion of trade until the 2010s (Figure 4(q)). In contrast, conversation about trade reform increased until reaching a peak in the late 1990s, explained mainly by discussions about tariffs and export market reforms (Figure 4(r)).

Behind the uptick in discussions about trade over the past few years is a rebound in export market development. In the region, The Bahamas and Bolivia have the highest proportion of discussions about export markets, Jamaica and Argentina have the largest share of talks on tariffs, and Suriname and Costa Rica have the highest share on trade agreements (Section G.9 in Appendix G).

Figure 4: Talk Indices by Category (1978-2020)



Source: Authors' calculations.
 Note: LAC= Latin America and the Caribbean.

6 Applications of the Talk and Reform Talk Indices

This section presents two simple applications for the use of indices. Toward this end, we present a first approximation to two questions of general interest. Are there differences in the discussion depending on the state of the economic cycle? And are there significant historical differences in the topics of discussion at the regional level? <https://www.overleaf.com/project/62434cfa5366cbb47bbdb906>

The exercises presented serve to exemplify the potential use of the indices. The character of this section is therefore purely descriptive, and does not aim to provide explanations about the determinants behind the described results.

6.1 Discussion around the Cycle

Does the intensity of discussion change during the course of the business cycle? Are there topics that are discussed more during booms or busts? The idea of crises creating an adequate scenario for the development of reforms has permeated the economic literature (Drazen & Grilli (1993)). This section approaches these questions by comparing the average intensity with which each reform category is discussed during booms and busts.

Using the Hodrick-Prescott filter, the boom and bust scenarios are constructed from the cyclical component of real annual GDP. For each country, we identify the 75th and 25th percentiles and boom periods are defined as those in the upper quartile and bust periods in the lower quartile.

Table 6 summarizes the findings. Panel A assesses differences during the cycle in the Talk Index, while panel B does the same for the Reform Talk Index. Results should be interpreted as differences from normal times (when the cyclical variable is between the 25th and 75th percentile). In general, there are no significant differences in the intensity of discussion for most of the areas analyzed, with some exceptions.

Regarding general discussions, these tend to occur to a lesser degree for labor markets during booms, while discussions about social issues decrease as a proportion of the total during busts. The differences in the reform discussion tend to be negligible. At 10 percent significance, during booms more discussion of currency reforms is found, and less of trade reforms. During busts, the share of discussions about environmental and social reforms decreases.

Table 6: Discussion during Booms and Busts

	Environment	Financial	Fiscal	Governance	Labor Market	Monetary	Productive Capacity	Social	Trade
<i>Panel A</i>									
<i>Variable: Talk Index (TI_{scy})</i>									
Boom	0.611 (0.416)	-0.097 (0.135)	-0.031 (0.177)	0.048 (0.437)	-0.842** (0.347)	0.006 (0.33)	0.046 (0.157)	-0.339 (0.346)	-0.223 (0.266)
Bust	-0.175 (0.331)	0.088 (0.164)	0.092 (0.165)	0.272 (0.474)	0.275 (0.368)	0.14 (0.367)	0.067 (0.138)	-0.703** (0.319)	-0.375 (0.277)
<i>Panel B</i>									
<i>Variable: Reform Talk Index (RTI_{scy})</i>									
Boom	0.000 (0.000)	-0.004 (0.007)	0.017 (0.017)	0.000 (0.001)	-0.008 (0.005)	0.033* (0.019)	0.001 (0.005)	0.000 (0.003)	-0.005* (0.003)
Bust	-0.000** (0.000)	-0.002 (0.008)	0.014 (0.016)	0.001 (0.001)	-0.005 (0.006)	0.003 (0.019)	0.000 (0.005)	-0.005* (0.003)	-0.003 (0.005)
Observations	3,487	3,487	3,487	3,487	3,487	3,487	3,487	3,487	3,487
Country Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Source: Author's calculations.

Note: Standard errors in parentheses, and clustered at the country level. ***, (**), and [*] denotes significance at the 1,(5), and [10] percent level.

6.2 Historical Policy Discussion Mix

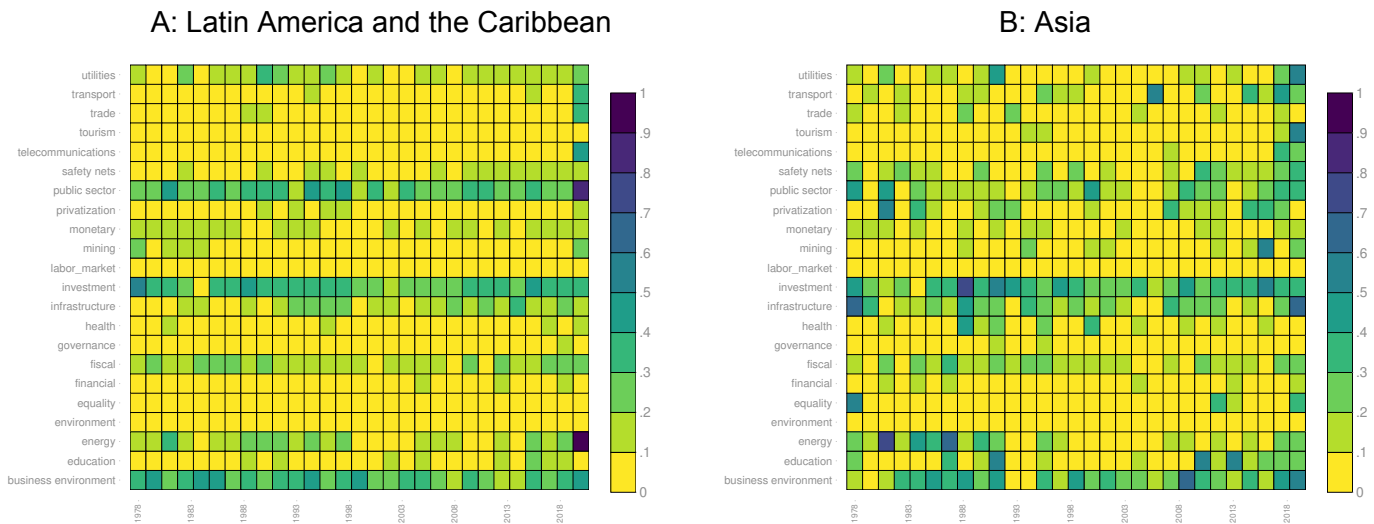
Asian countries such as Korea and Singapore have become mandatory benchmarks for development analysis in Latin America and the Caribbean countries. By the 1960s, these economies shared multiple similarities with countries in the region, but today, those similarities have disappeared, and Korea and Singapore are among the largest economies in the world.

Multiple studies have attempted to characterize the elements that have led to success in these countries, particularly identifying the mix of policies to achieve sustained development. For example, [KIEP \(2015\)](#) highlights how trade and investment were important drivers of Korea's outstanding economic development. According to the authors, heavy government intervention and the business environment drove export-led growth during the second half of the 20th century.

How did the intensity of discussion in these areas evolve over time? Were there regional differences between Latin America and the Caribbean and Asia? To answer these questions, regional discussion averages at the subcategory level are compared. The indices are normalized to the maximum value the discussion took worldwide for a given year. Thus, the index reflects the intensity of discussion relative to the world rather than within each country. This information is presented in [Figure 5](#). The right panel presents the average for Latin America and the Caribbean; the left panel, the average for Korea and Singapore. In this heat map, the greater intensity of the color reflects a greater intensity in the discussion.

There are significant differences to highlight, particularly in areas where the intensity of discussions has been greater in Asia. First, the discussion on transport topics is sporadic but always

Figure 5: Talk Indices, 1978-2020



Source. Authors' calculations based on the repository from [Bétin & Collodel \(2021\)](#).

Note: The greater intensity of the color reflects greater intensity in the discussion, with light yellow being the lowest intensity and dark purple being the highest intensity, as shown in the keys.

much higher in Asia than in LAC; particularly after the 2010s. Second, there is little discussion of trade topics in Latin America and the Caribbean; in Asia, although the intensity is somewhat higher around 1980, it does not seem to have been such a determining factor in the discussion, as [KIEP \(2015\)](#) suggests. Third, the discussion about the public sector is persistent and more significant in Latin America and the Caribbean than in Asia; The opposite occurs with discussions about privatization, which are more intense in Asia than in the region.

Fourth, discussions about investment are similar between both groups of countries, but the intensity of the discussion in Asia is much higher. Discussions on infrastructure are closely related to this point; these are much more intense and persistent over time in Asia than in Latin America and the Caribbean, particularly before 1993. Fifth, energy issues occupied an essential part of the discussion in Asia in the 1980s, while their incidence was relatively lower in Latin America and the Caribbean. Sixth, education is a key topic of discussion for Asia, while its historical participation has been minimal in Latin America and the Caribbean. Finally, although the development of a business environment has been critical in both regions, the intensity of this discussion has historically been higher in Asia.

7 Final Remarks

The reform recipe for countries to strengthen economic growth and welfare seems to include new ingredients. Gone are the significant paradigm shifts of the 1990s, giving way to a set of reforms of a more granular nature.

While reform discussions on topics like financial, labor, and trade have declined in Latin America and the Caribbean countries, topics like governance reforms and social issues have been favored in recent years. These reforms have pursued the construction of greater transparency and improved institutional quality in the case of governance and advances in education, health, and the construction of safety nets, in the case of social reforms.

Behind these trends is a response to disenchantment with market-oriented reforms, a renewed focus on equity, and the capacity for adaptation to new environments and challenges on the part of the countries. But a potentially more intricate political process for the implementation of reforms is also a factor. This is an avenue worth exploring in future research.

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Appendix

A Countries Worldwide in the Analysis

Table A1: Countries Included in the Analysis

Continent	Country	Continent	Country	Continent	Country
Africa	Algeria	Americas	Colombia	Asia	Thailand
Africa	Angola	Americas	Costa Rica	Asia	Turkey
Africa	Benin	Americas	Dominica	Asia	Turkmenistan
Africa	Botswana	Americas	Dominican Republic	Asia	United Arab Emirates
Africa	Burkina Faso	Americas	Ecuador	Asia	Uzbekistan
Africa	Burundi	Americas	El Salvador	Asia	Vietnam
Africa	Cabo Verde	Americas	Grenada	Asia	Yemen, Rep.
Africa	Cameroon	Americas	Guatemala	Europe	Albania
Africa	Central African Republic	Americas	Guyana	Europe	Austria
Africa	Chad	Americas	Haiti	Europe	Belarus
Africa	Comoros	Americas	Honduras	Europe	Belgium
Africa	Congo, Dem. Rep.	Americas	Jamaica	Europe	Bosnia and Herzegovina
Africa	Congo, Rep.	Americas	Mexico	Europe	Bulgaria
Africa	Cote d'Ivoire	Americas	Nicaragua	Europe	Croatia
Africa	Djibouti	Americas	Panama	Europe	Czech Republic
Africa	Egypt, Arab Rep.	Americas	Paraguay	Europe	Denmark
Africa	Equatorial Guinea	Americas	Peru	Europe	Estonia
Africa	Eritrea	Americas	St. Kitts and Nevis	Europe	Finland
Africa	Eswatini	Americas	St. Lucia	Europe	France
Africa	Ethiopia	Americas	St. Vincent and the Grenadines	Europe	Germany
Africa	Gabon	Americas	Suriname	Europe	Greece
Africa	Gambia, The	Americas	Trinidad and Tobago	Europe	Hungary
Africa	Ghana	Americas	United States	Europe	Iceland
Africa	Guinea	Americas	Uruguay	Europe	Ireland
Africa	Kenya	Asia	Afghanistan	Europe	Italy
Africa	Lesotho	Asia	Armenia	Europe	Latvia
Africa	Liberia	Asia	Azerbaijan	Europe	Lithuania
Africa	Libya	Asia	Bahrain	Europe	Luxembourg
Africa	Madagascar	Asia	Bangladesh	Europe	Malta
Africa	Malawi	Asia	Bhutan	Europe	Moldova
Africa	Mali	Asia	Brunei Darussalam	Europe	Montenegro
Africa	Mauritania	Asia	Cambodia	Europe	Netherlands
Africa	Mauritius	Asia	China	Europe	North Macedonia
Africa	Morocco	Asia	Cyprus	Europe	Norway
Africa	Mozambique	Asia	Georgia	Europe	Poland
Africa	Namibia	Asia	India	Europe	Portugal
Africa	Niger	Asia	Indonesia	Europe	Romania
Africa	Nigeria	Asia	Iran, Islamic Rep.	Europe	Russian Federation
Africa	Rwanda	Asia	Iraq	Europe	San Marino
Africa	Sao Tome and Principe	Asia	Israel	Europe	Serbia
Africa	Senegal	Asia	Japan	Europe	Slovak Republic
Africa	Seychelles	Asia	Jordan	Europe	Slovenia
Africa	Sierra Leone	Asia	Kazakhstan	Europe	Spain
Africa	Somalia	Asia	Korea, Rep.	Europe	Sweden
Africa	South Africa	Asia	Kuwait	Europe	Switzerland
Africa	South Sudan	Asia	Kyrgyz Republic	Europe	Ukraine
Africa	Sudan	Asia	Lao PDR	Europe	United Kingdom
Africa	Tanzania	Asia	Lebanon	Oceania	Australia
Africa	Togo	Asia	Malaysia	Oceania	Fiji
Africa	Tunisia	Asia	Maldives	Oceania	Kiribati
Africa	Uganda	Asia	Mongolia	Oceania	Marshall Islands
Africa	Zambia	Asia	Myanmar	Oceania	Micronesia, Fed. Sts.
Africa	Zimbabwe	Asia	Nepal	Oceania	Nauru
Americas	Antigua and Barbuda	Asia	Oman	Oceania	New Zealand
Americas	Argentina	Asia	Pakistan	Oceania	Palau
Americas	Bahamas, The	Asia	Philippines	Oceania	Papua New Guinea
Americas	Barbados	Asia	Qatar	Oceania	Samoa
Americas	Belize	Asia	Saudi Arabia	Oceania	Solomon Islands
Americas	Bolivia	Asia	Singapore	Oceania	Tonga
Americas	Brazil	Asia	Sri Lanka	Oceania	Tuvalu
Americas	Canada	Asia	Syrian Arab Republic	Oceania	Vanuatu
Americas	Chile	Asia	Tajikistan		

B Latin America and Caribbean Countries in the Analysis

Table B1: Countries Included in the Analysis

Continent	Region	Income group	Country
Americas	Latin America and the Caribbean	Lower middle income	Belize
Americas	Latin America and the Caribbean	Lower middle income	Bolivia
Americas	Latin America and the Caribbean	Lower middle income	Honduras
Americas	Latin America and the Caribbean	Lower middle income	Haiti
Americas	Latin America and the Caribbean	Lower middle income	Nicaragua
Americas	Latin America and the Caribbean	Lower middle income	El Salvador
Americas	Latin America and the Caribbean	Upper middle income	Argentina
Americas	Latin America and the Caribbean	Upper middle income	Brazil
Americas	Latin America and the Caribbean	Upper middle income	Colombia
Americas	Latin America and the Caribbean	Upper middle income	Costa Rica
Americas	Latin America and the Caribbean	Upper middle income	Dominican Republic
Americas	Latin America and the Caribbean	Upper middle income	Ecuador
Americas	Latin America and the Caribbean	Upper middle income	Guatemala
Americas	Latin America and the Caribbean	Upper middle income	Guyana
Americas	Latin America and the Caribbean	Upper middle income	Jamaica
Americas	Latin America and the Caribbean	Upper middle income	Mexico
Americas	Latin America and the Caribbean	Upper middle income	Panama
Americas	Latin America and the Caribbean	Upper middle income	Peru
Americas	Latin America and the Caribbean	Upper middle income	Paraguay
Americas	Latin America and the Caribbean	Upper middle income	Suriname
Americas	Latin America and the Caribbean	High income	Bahamas, The
Americas	Latin America and the Caribbean	High income	Barbados
Americas	Latin America and the Caribbean	High income	Chile
Americas	Latin America and the Caribbean	High income	Trinidad and Tobago
Americas	Latin America and the Caribbean	High income	Uruguay

C Construction of the Category Counts Database

C.1 Introduction

Using the repository of IMF Article IV Staff Reports from [Bétin & Collodel \(2021\)](#), we produced a Category Count Database that represents the number of times a noun phrase category/subcategory found in Table 3 in the main document is present within the text of a country-year report. One observation represents counts of a category and subcategory within a country-year set. Each observation contains the following values:

- **country:** Country three-letter ISO code
- **year:** Year
- **no words:** Number of words for the country-year text

- **no sentences:** Number of sentences for the country-year text
- **category:** Category name
- **subcategory:** Subcategory name
- **Inp count:** Number of labeled noun phrases found for the category and subcategory within the given country and year.
- **Inp reform count:** Number of labeled noun phrases for the category and subcategory which are also classified as reform, for given the country and year.
- **no Inps:** Number of labeled noun phrases for the given country and year.
- **no nps:** Number of noun phrases for the given country and year.
- **no scanned sentences:** Expected to be the same value as no sentences and is left for validation purposes.

To facilitate regional analysis, country information is expanded to also include:

- **continent:** Two-letter ISO code
- **region:** Classification of countries by regions.

For example, the entry shown in Table C1 shows that for Egypt in 2010 there were 56 mentions for the monetary (inflation) category and two of those mentions regarded reforms. For that country in that year, there were 17,253 words, 630 sentences, 2,160 noun phrases, of which 637 were found to be labeled.

Table C1: Database Example

Country	Year	Category	Subcategory	Inp_count	Inp_reform_count	No words	No sentences	No Inps	No nps
EGY	2010	monetary	inflation	56	2	17,253	630	637	2,160

Source: Authors' calculations.

C.2 Processing of the repository

The repository from [Bétin & Collodel \(2021\)](#) comes in the form of RDS (R) files. These were parsed and dumped into plain txt files, so that there is one file per country-year. This process aggregated all of the content pertaining to a country and a year into a single file. It also did some validation in

order to discard some mislabeled content, as some Article IV Staff Reports had been mislabeled into the wrong country. Very short documents (less than 2000 words) were also identified and not included in the analysis.

C.3 Noun Phrase Classification Table

The Category Count Database is first constructed by having a noun phrase classification table first. This table was built using a combined manual and automated process. The source of the noun phrases is the extraction of all of the noun phrases within all documents. Noun phrases were then sorted by number of occurrences in order to classify those that occurred most often. The top 2,700 entries with more than 300 observations were manually classified by labeling them with a category and a subcategory. The remaining noun phrases, with a frequency higher than 10 observations, were then labeled using a partial-match algorithm. Table C2 shows a sample of a table where the category and subcategory values were tabulated manually:

Table C2: Noun Phrase Classification

Noun_phrase	Count	Category	Subcategory
Central bank	31,398	Monetary	Central bank
Private sector	29,510	Productive_capacity	Private sector
Monetary policy	25,272	Monetary	
Exchange rate	21,616	Monetary	Exchange market
...
Social policies	300	Social	
Full employment	300	Labor_market	Employment
Fiscal plan	300	Fiscal	

Source: Authors' calculations.

C.4 Identification of Reform and Structural Reform

Using a rules-based approach, a noun phrase was counted as reform if it contains one of the following words: reform, policy, measure, adjustment, program, law, act, legislation, regulation, regulatory, decree. Note that the plural form is also captured by at this stage.

D Definition of Discussion Areas

Table 3 in the main text presented the main categories and subcategories corresponding to the policy discussions in the Latin America and the Caribbean countries during the 2010-2021 period. The categories are documented as follows.

- *Environment* refers to governments' actions to protect the environment. In particular, it identifies discussions about how to mitigate climate change, reduce the impact of natural disasters, and promote environmental sustainability.
- *Financial* is the government's regulations fostering financial stability. It includes discussions about commercial banks, such as credit, deposits, loans, and savings; about the non-banking sector, including discussion identified through noun phrases with the word "non-banking" (for example, non-banking deposits and non-bank institutions); and about capital market talks; and capital formation, funds market, the domestic stock market, security markets, and equity markets. We created a subcategory of financial regulations, including discussions about financial supervision, financial stability, financial management, and international assessments such as Basel II. Finally, a subcategory of financial inclusion was created.
- *Fiscal* refers to measures that can support equitable growth. On the one hand, it covers discussions about the fiscal budget, debt, and deficit, which we identify by including the exact words. On the other hand, there are revenue discussions, including tax administration, collection, and evasion; expenditure policy discussions on education, health, infrastructure, defense, etc.; and fiscal regulation discussions.
- *Governance* entails government transformation. We identify the following subcategories: crime, which includes discussions about crime, violence, security situations, corruption, war events, money laundering, and drugs; decentralization, which includes conversations about fiscal, political, and administrative decentralization; the institutional framework, which includes discussions about institutions in general, property rights, good governance, and national development plans; and transparency, which includes discussions on fiscal, monetary, and governance transparency and open data access and dissemination.
- *Labor market* refers to discussions about improving employment, wages, female participation, informality, labor force quality, pensions, and social security. However, first, we must clarify that although pensions are part of social security, they are categorized separately, given the magnitude of pension reforms worldwide.
- *Monetary* is comprised of conversations about central banks, exchange market, inflation, liquidity, policy rate, and the monetary framework.

- *Productive capacity* covers discussions of how to impact productivity growth by sector. It therefore includes different subcategories related to those sectors: the business environment, which includes conversations about innovation, private sector, business climate, competitiveness, and diversification; goods and services, which includes consumer goods and services such as tradable goods, luxury goods, and essential goods, among others; energy, which includes topics related to petroleum and gas; the traditional sector, which includes all agricultural activities and crops; and utilities, which includes water and sanitation, electricity, waste management, and sewerage. Other subcategories include infrastructure, investment, mining, privatization, the public sector, telecommunications, tourism, and transport.
- *Social* encompasses discussions about how to support equity through policies that impact education, gender equality, health, housing, migrant support, and safety nets.
- *Trade* includes liberalization policy debates as well as procedures and aspects that can improve growth and stability. Therefore, it has subcategories on export markets, which are comprised of exports and imports, diversification and competition, tariffs, and trade agreements.

E Latin America and the Caribbean Reforms Using the Narrative Approach

E.1 Overcoming Limitations

The narrative approach has emerged as an alternative to identify reforms. This arises in response to the difficulties in mapping the indices to specific reforms. For example, some proposed indices might suffer from measurement errors. One example is the privatization index in [Morley et al. \(1999\)](#), which is described as sensitive to inflation and to exogenous primary product price trends. Moreover, indices are not necessarily unique; multiple indicators might aim to capture the same specific reform, yielding different results. This scenario might have contributed to the lack of conclusive results on the impact of reforms on growth ([Campos et al., 2018](#)).¹²

In addition, we identify reforms through sizable variations in indices, which involve certain

¹²[Babecký & Campos \(2011\)](#) compare the t-values for 43 econometric studies assessing the impact of reforms on growth. The authors find that the coefficients of these studies follow a normal distribution with a mean of zero, with measurement playing a significant role in the dispersion of these results.

degrees of subjectivity. This subjectivity appears in the weights given to multiple indicators when considering that one reform might be the product of combining numerous indices. There is also subjectivity when we define the criteria to determine the size of index variation to count as a reform.¹³ This can be problematic when different methodologies (standard deviations or break points (Bai & Perron, 2003)) yield alternative dates for episodes of reforms.¹⁴

The narrative approach introduces significant advantages to characterize reforms. It gives the researcher a much more active role and overcomes some limitations of using existing indices. Unlike indices that capture *de jure* regulation, the narrative approach allows us to identify the *de facto* changes in legislation. As a result, it enables us to document the exact dates of reform without resorting to ad-hoc approximations.

E.2 Reforms in Latin America and the Caribbean: An Approximation via the Narrative Approach

Following the narrative approach in Furceri et al. (2018), this section identifies a set of reforms undertaken in 12 Latin American and Caribbean countries from 2010 to 2021. The sample consists of Argentina, Brazil, Guyana, Haiti, Honduras, Jamaica, Nicaragua, Panama, Paraguay, Suriname, Trinidad and Tobago, and Uruguay.¹⁵

The main source of data is (publicly available) IMF's Article IV Staff Reports. For each country in the sample, we carefully read and reviewed all recorded legislative and regulatory changes in those reports, that directly or indirectly affect the objectives pursued by structural reforms. More specifically, we identified changes in the policy stance that impact economic efficiency, competition, the business environment, the quality of public institutions, the promotion of fairness and equity, economic and financial stability, and the overall quality of life, in accordance with the objectives highlighted in IMF (2015) and Swaroop (2016).

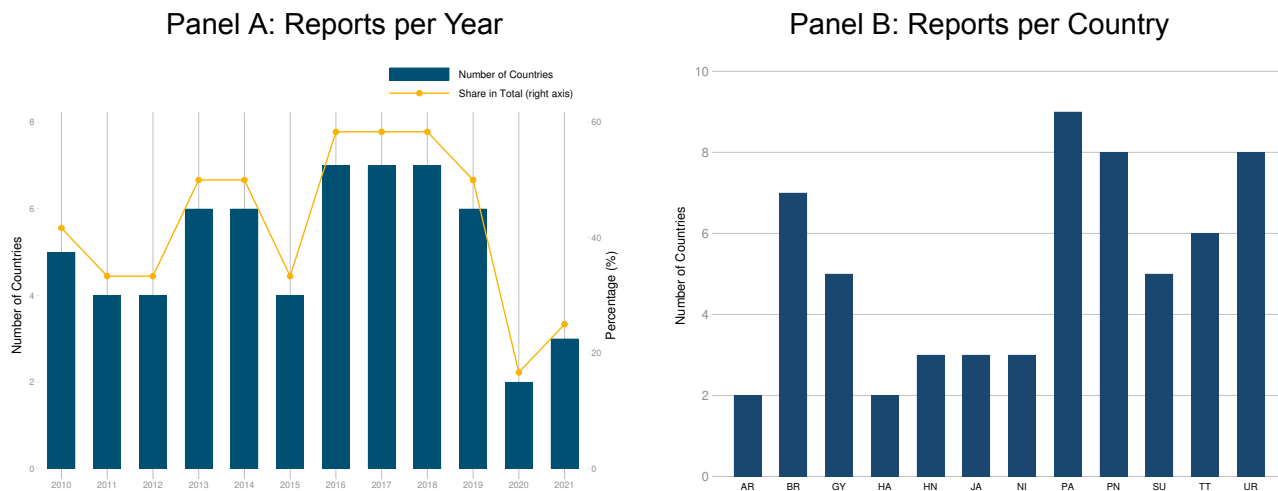
Panel A in Figure E1 shows the number of Article IV Staff Reports presented by each country during the 12 years studied. In total, we reviewed 61 Articles IV Staff Reports, with an average of five countries with a report each year. One important limitation is that these documents are

¹³It is becoming the standard in this literature to capture reforms through variations greater than two standard deviations in the index considered.

¹⁴According to Furceri et al. (2018) indices are primarily conceived to measure and compare policy stances across countries in a particular point in time, rather than to document in detail the change of those stances (i.e., reforms).

¹⁵This dataset is a work in progress. The number of countries in the sample is expanding as more information becomes available.

Figure E1: Article IV Staff Report Sample



Source. Authors' calculations based on publicly available IMF Reports.

Note: The nomenclature of countries is as follows: AR=Argentina; BR=Brazil; GY=Guyana; HA=Haiti; HN=Honduras; JA=Jamaica; NI=Nicaragua; PA=Panama; PR=Paraguay; SU=Suriname; TT=Trinidad and Tobago; UR=Uruguay.

not always available for all countries in all years.¹⁶ From 2016 to 2018, we observed the most significant number of reports in a year, while during 2020, we only collected two reports in our sample. However, there is no direct relationship between the number of documents with the number of reforms, as we will discuss later.

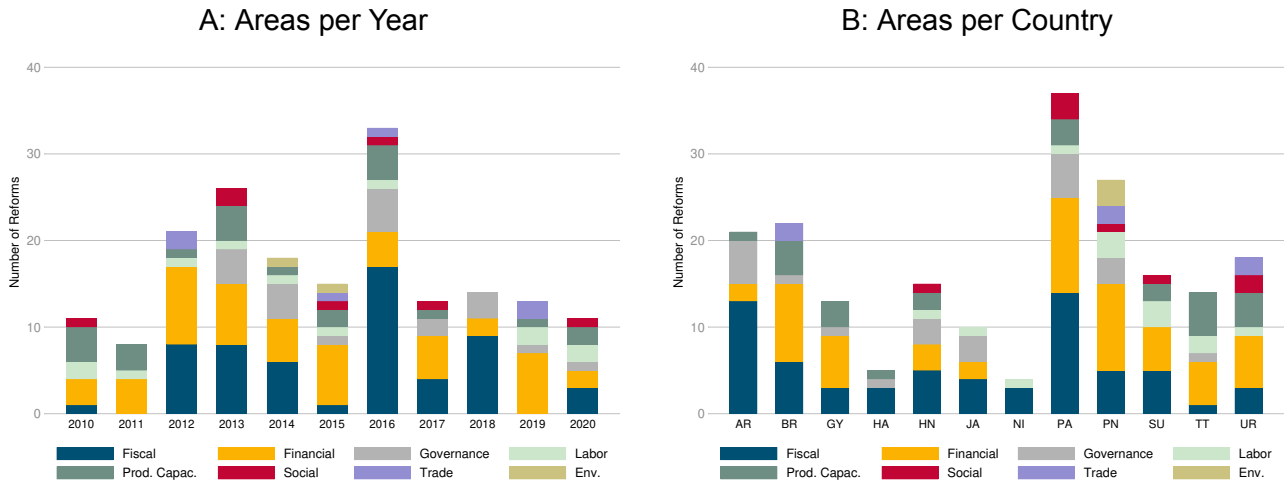
Panel B in Figure E1 depicts the distribution across countries. The following features can be highlighted: First, Paraguay, with nine, is the country with the largest number of reports, followed by Panama with eight. Second, Otherwise, for Venezuela we do not have documents during this period. In the case of Argentina we have two Articles IV Staff Report, while for Honduras, Jamaica, and Haiti we have three each.

E.2.1 Classification of Reform Areas

Having detailed the sources of information, we describe how the data are recorded and processed. We build the database in three steps. First, we identify all discussions about legislative and regulatory actions that directly or indirectly affect the objectives pursued by structural reforms. Some of the events involve specific changes in the laws. In contrast, others reflect a policy change

¹⁶This could be due to various reasons. For example, for some countries, the Article IV Staff Report cycle could be longer than 12 months. There could also be delays in the Article IV Staff Report, pushing its publication to the following year. Furthermore, even if a report is prepared on time, the authorities may choose not to publish it.

Figure E2: Reform Areas in Latin American and Caribbean Countries



Source. Authors' calculations based on publicly available IMF Article IV Staff Reports.

that, although not validated through regulations or laws, does directly permeate the economic environment in terms of efficiency or equity.¹⁷

Second, from all actions in the regulatory and legislative framework, we identify and date those describing approved events. Usually, the language adopted in the documents is clear enough to identify the dates of interest and the status among reforms approved, on track to be approved, or suggested. For other cases for which this information is unavailable, or there is some ambiguity, we complement our database with additional sources. In particular, we use news reports, official gazettes, and other official documents to assess the approval status of reforms and to identify their specific dates.

And third, we proceed to classify the reforms within the categories presented in the Table 3 in the main text. Many reforms may impact several sectors simultaneously, so classifying each action within a specific sector can be subjective.

E.2.2 Some Stylized Facts

Table E1 provides an illustrative example of the policy and regulatory changes captured. The first two columns present information about the country and the year of reform approval. Since the reports are not published every year, there are multiple mentions of reforms that were not included

¹⁷An example of this may be those policy changes where some social programs previously implemented are extended or terminated.

Table E1: Structural Reforms Examples

Country	Year	Category	Subcategory	Main Measures
Argentina	2016	Financial	Capital Markets	Restrictions on insurance companies (that compelled them to invest in infrastructure projects approved by a political committee and limited foreign investment) were removed. (p41)
Brazil	2020	Monetary		Congress passed legislation allowing the BCB to purchase public and private assets for financial stability purposes while a state of public calamity is in force, an option that has not yet been used. (p14)
Guyana	2010	Productive Capacity	Traditional Sectors	Staff emphasized that, while the process of modernization of the sugar sector remains critical to growth, it has been protracted in recent years.. In that context, staff suggested ramping up mechanization plans while continuing to engage workers toward resolving the ongoing issues. (p15)
Guyana	2010	Fiscal	Revenue	Staff welcomed the recent VAT reform and the authorities' focus on strengthening tax administration. The VAT reform (based on CARTAC's recommendations) broadened the tax base to include electricity and water consumption, reclassified zero-rated items as tax exempt, and reduced the rate from 16 to 14 percent. Other measures include lowering the personal income tax rate by about 2 percentage points (varying by income brackets), and the corporate tax rate (non-commercial firms) from 30 to 27.5 percent. (p14)
Honduras	2018	Governance	Transparency	Sustained anti-corruption efforts are crucial to enhance the rule of law. A recent setback in anti-corruption efforts highlights the deep-rooted nature of corruption. Specifically, last January, Congress approved a law that gives investigative powers to the court of accounts and potentially prevents the criminal prosecution of embezzlement cases. (p23)
Jamaica	2015	Labor Market		Labor market reforms are progressing. In the context of the recently launched Comprehensive Labour Market Reform Agenda, a Labour Market Reform Commission and Secretariat was established and became operational on April 1, 2015. The commission has been reviewing policies and practices in the five thematic areas of education and training; productivity, technology and innovation; labor policies and legislation; social protection; and industrial relations. (p94)
Panama	2021	Fiscal	Revenue	Panama has made important efforts to comply with international standards on business taxation. These include the recent ratification of the Multilateral Instrument on Base Erosion and Profit Shifting (MLI), and the implementation of the Common Reporting Standard (CRS) for automatic exchange of information... The government has also amended various special regimes which were considered harmful by the EU. (p20)
Paraguay	2013	Fiscal	Expenditure	Expansion of conditional cash transfers (CCT) programs. Increase the number of beneficiary families under the Tekopora program from currently 83,000 to 100,000 to expand access to education, health care and food security for up to six years. (p23)
Suriname	2018	Governance	Transparency	To improve budget planning and execution, the authorities have introduced a new public financial management law to the National Assembly. They have introduced a new procurement law harmonized with the Caribbean Community (CARICOM) that will improve competition and transparency in public contracting. Besides upgrading the legal framework, the Ministry of Finance intends to improve its business model for budget planning, bolster the medium-term fiscal framework, strengthen treasury operations, and improve internal controls. (p14)

Source: Prepared by the authors.

in the previous Article IV Staff Report cycle; therefore, the year of approval might not necessarily coincide with the year of publication of the report. The third and fourth columns correspond to the categories and subcategories of the reforms reported. The fifth column identifies the context and the complete discussion of the reform as presented in the source.

Figure E2 presents how areas of reform are distributed across time and countries. In total, we document 205 regulatory or legislative changes in the sample. The region's primary area of consolidated reforms is the fiscal area, with 31 percent, followed by the financial sector, with 27 percent. The small increases observed in the labor market and productive capacity topics also stand out. Although environmental issues highlighted the agenda in Panama in 2014-2015, they have not appeared recently.

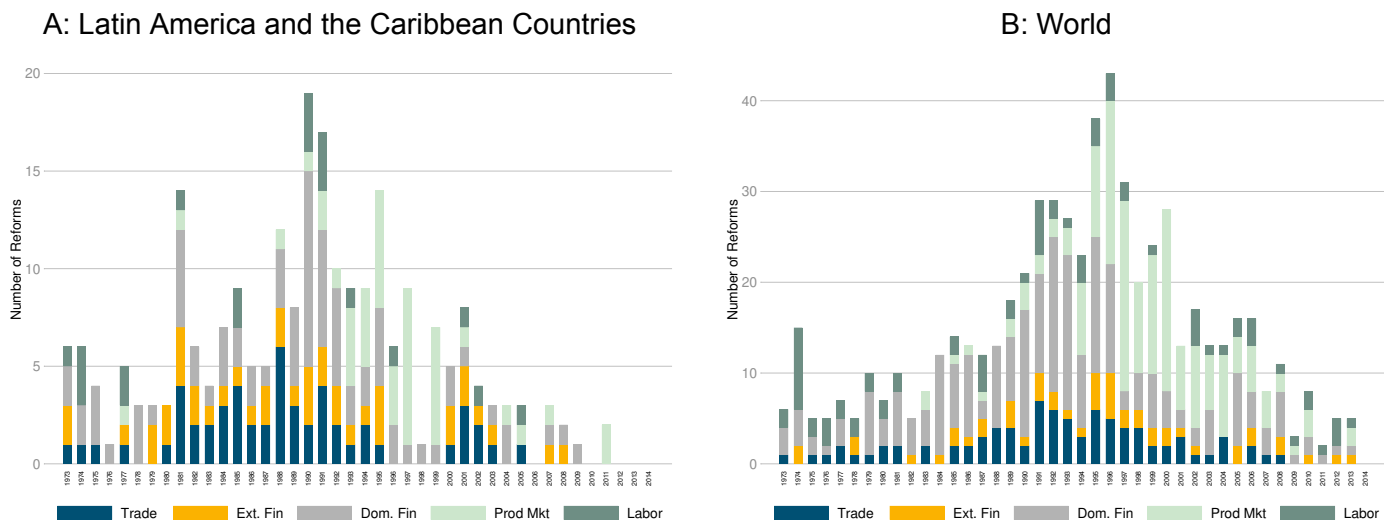
Fiscal reforms are the most critical issue for Argentina, Haiti, Honduras, Jamaica, Nicaragua, Paraguay, and Suriname. In comparison, financial reforms are the most critical for Brazil, Guyana, Panama, Trinidad and Tobago, and Uruguay.

Finally, there is a distinctive character in the number and type of reforms undertaken by each country. Panel A in Figure E2 shows that the largest number of reforms documented in the sample occurred in 2016, with 32 percent of the total. Although this is one of the years with the largest number of IMF Staff Reports available, this might not be the main reason it contains a greater number of reforms. For example, we have the same number of reports for 2017 and 2018, but there was a considerably lower number of reforms.

The reforms in Paraguay and Panama represent 30 percent of the total number of reforms, these being the countries for which we have the most Article IV Staff Reports in the sample. However, the association between the number of reports is sometimes indirect. For example, Uruguay has the same number of reports as Panama but a more limited number of reforms. Argentina, for which we have few Article IV Staff Reports, accounts for 10 percent of the captured reforms.

F Structural Reforms: A Time Perspective

Figure F1: Structural Reforms, Breaks over Time



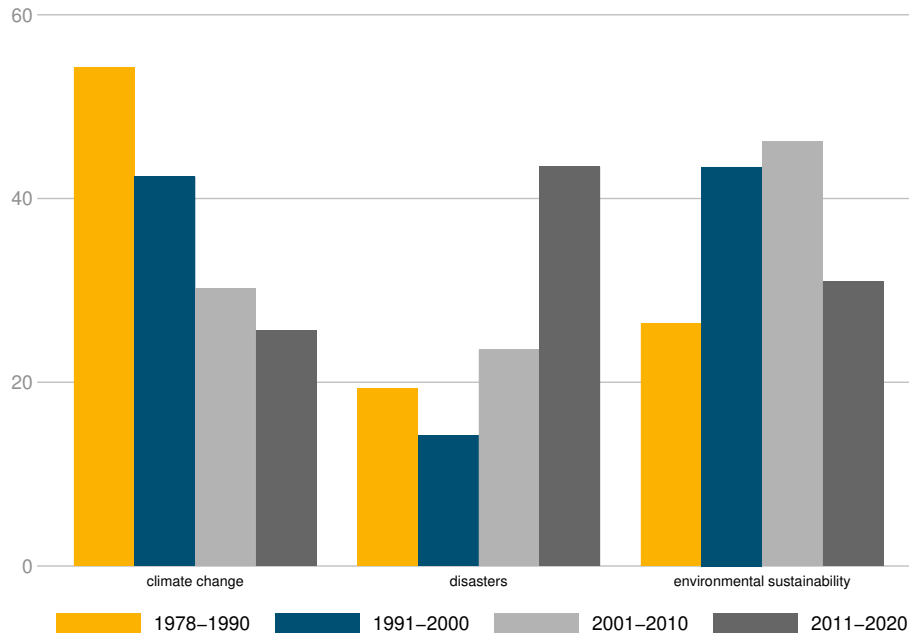
Notes. Authors' calculations based on [Alesina et al. \(2020\)](#). Figures reflect the number of reforms in specific sectors.

G Talk Index by Category, 1978-2020

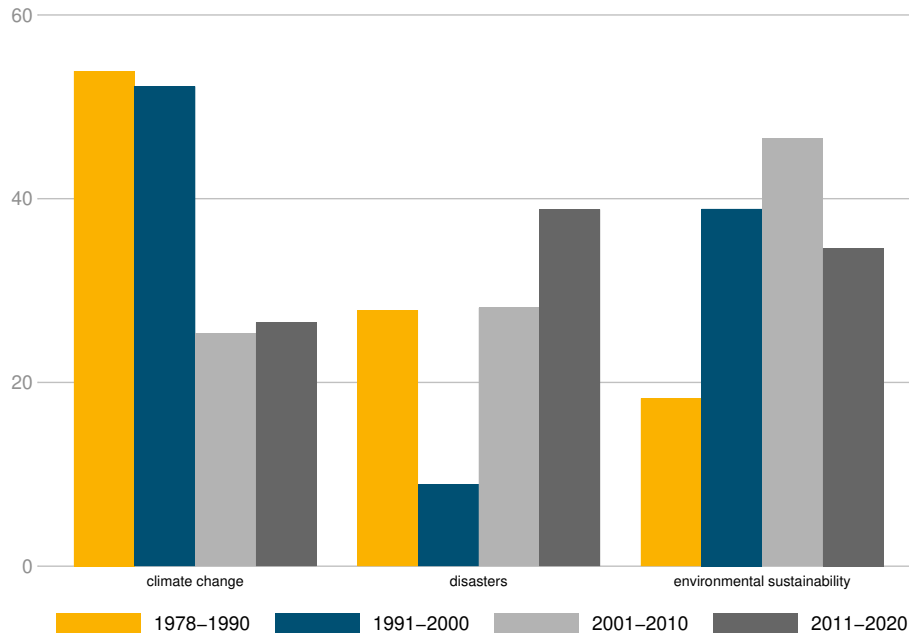
G.1 Environment

Figure G1: Distribution of Discussion by Subcategory and Decade

A: World

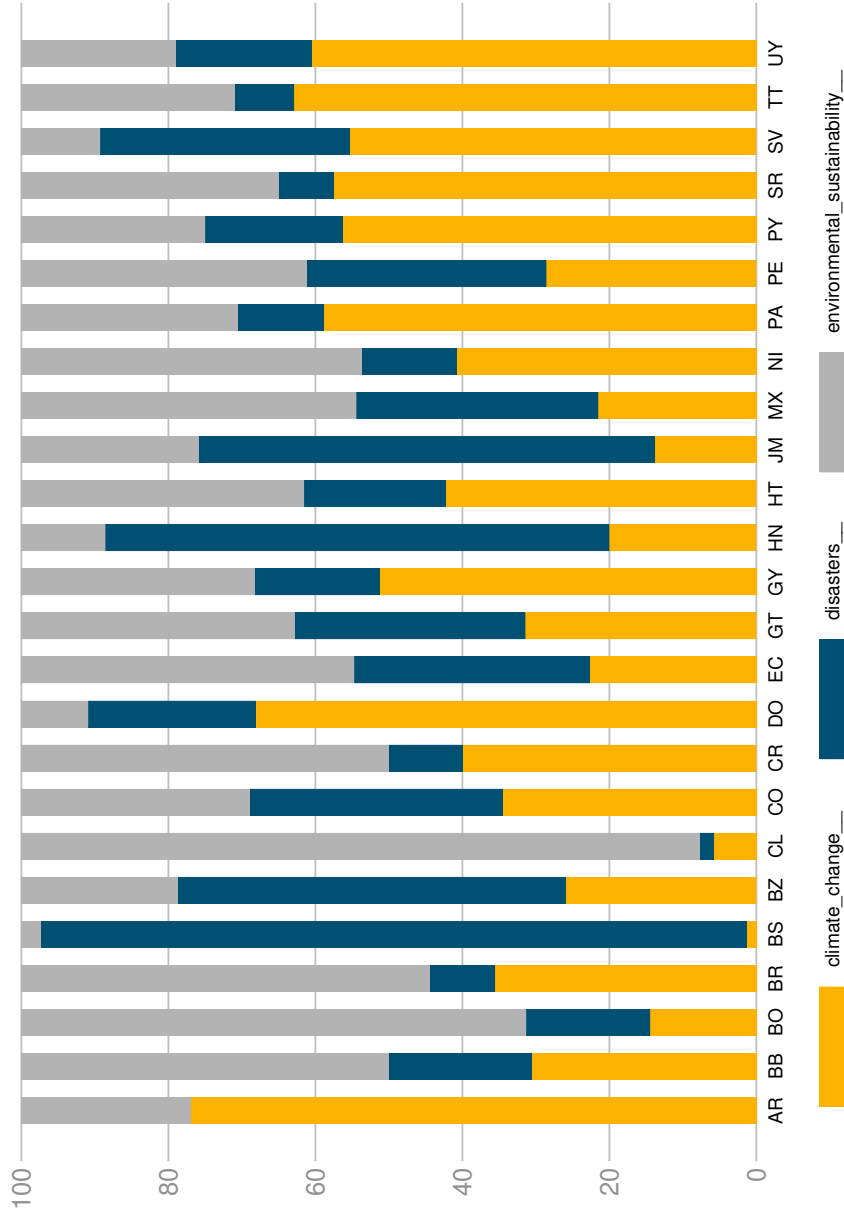


B: Latin America and the Caribbean



Source. Authors' calculations based on the repository from [Bétin & Collodel \(2021\)](#).

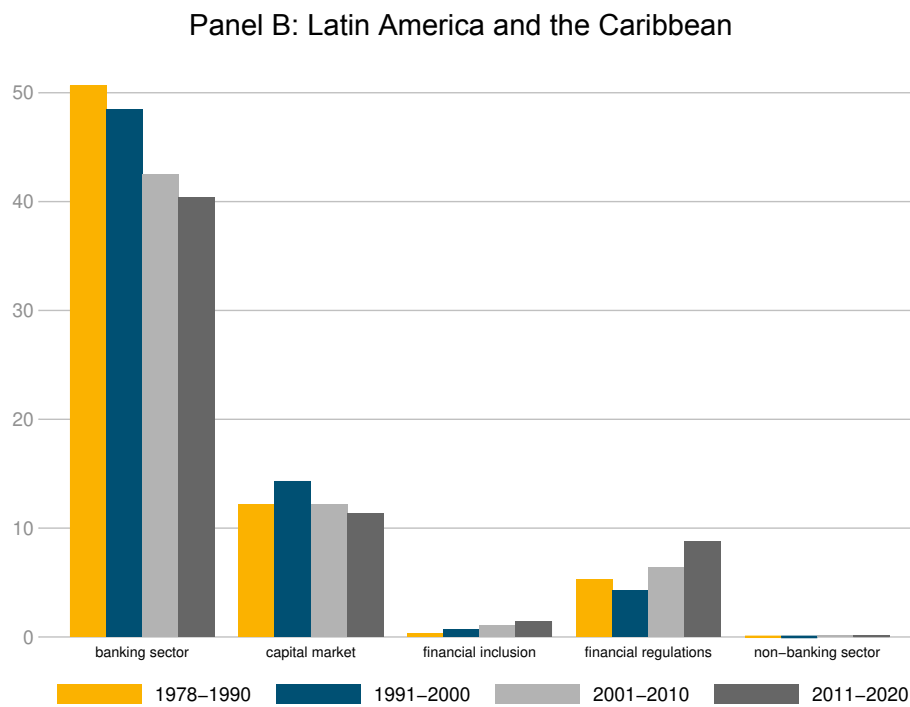
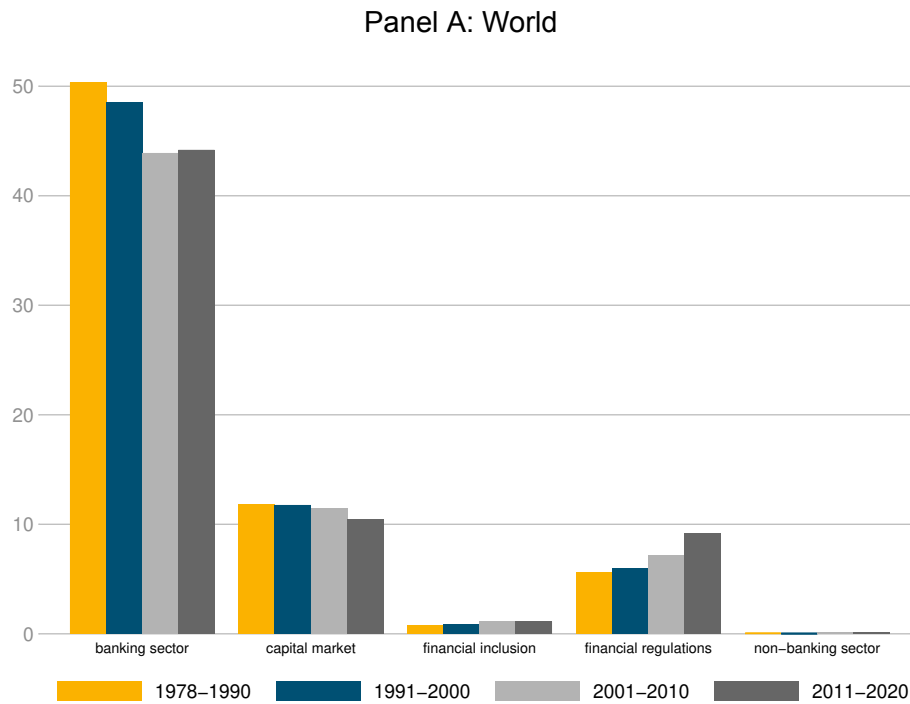
Figure G2: Distribution of Discussions by Subcategory and Country, 1978-2020



Source. Authors' calculations based on IMF Staff Reports publicly available. The nomenclature of countries is as follows: AR=Argentina; BB=Barbados; BO=Bolivia; BR=Brazil; BS=Bahamas; BZ=Belize; CL=Chile; CO=Colombia; CR=Costa Rica; DO=Dominican Republic; EC=Ecuador; GT=Guatemala; GY=Guyana; HN=Honduras; HT=Haiti; JM=Jamaica; MX=Mexico; NI=Nicaragua; PA=Panama; PE=Peru; PY=Paraguay; SR=Suriname; SV=El Salvador; TT=Trinidad and Tobago; and UY=Uruguay.

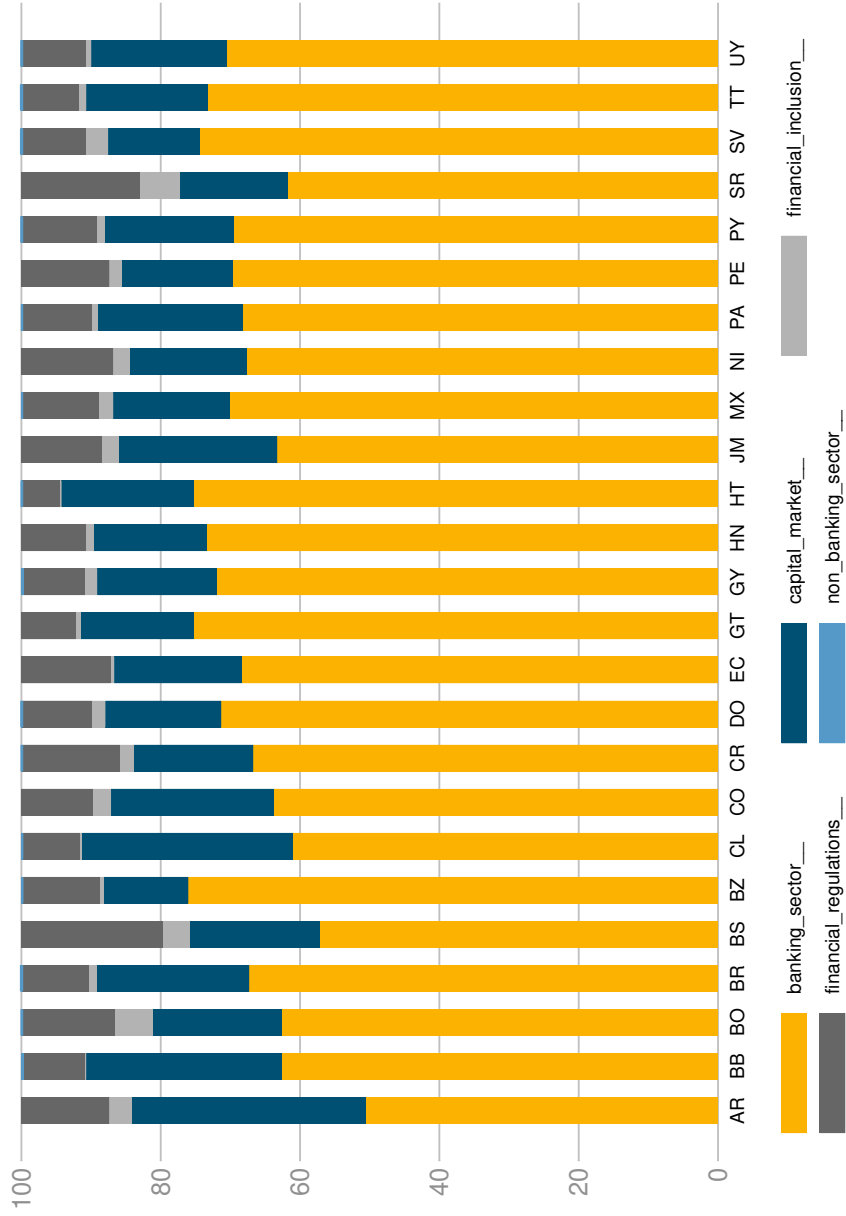
G.2 Financial

Figure G3: Distribution of Discussions by Subcategory and Decade, 1978-2020



Source. Authors' calculations based on the repository from [Bétin & Collodel \(2021\)](#).

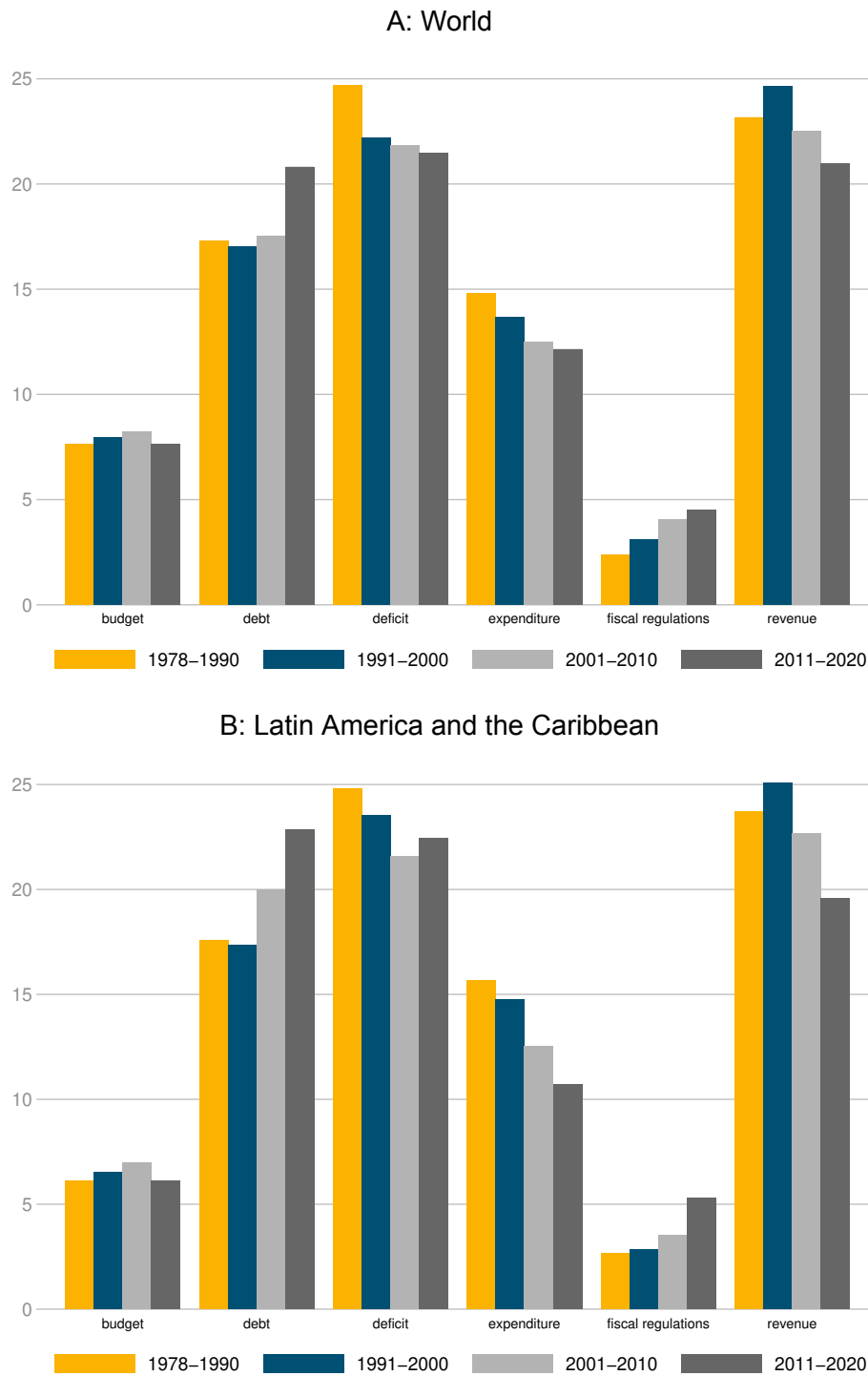
Figure G4: Distribution of Discussions by Subcategory and Country, 1978-2020



Source. Authors' calculations based on publicly available IMF Staff Reports. The nomenclature of countries is as follows: AR=Argentina; BB=Barbados; BO=Bolivia; BR=Brazil; BS=Bahamas; BZ=Belize; CL=Chile; CO=Colombia; CR=Costa Rica; DO=Dominican Republic; EC=Ecuador; GT=Guatemala; GY=Guyana; HN=Honduras; HT=Haiti; JM=Jamaica; MX=Mexico; NI=Nicaragua; PA=Panama; PE=Peru; PY=Paraguay; SR=Suriname; SV=El Salvador; TT=Trinidad and Tobago; and UY=Uruguay.

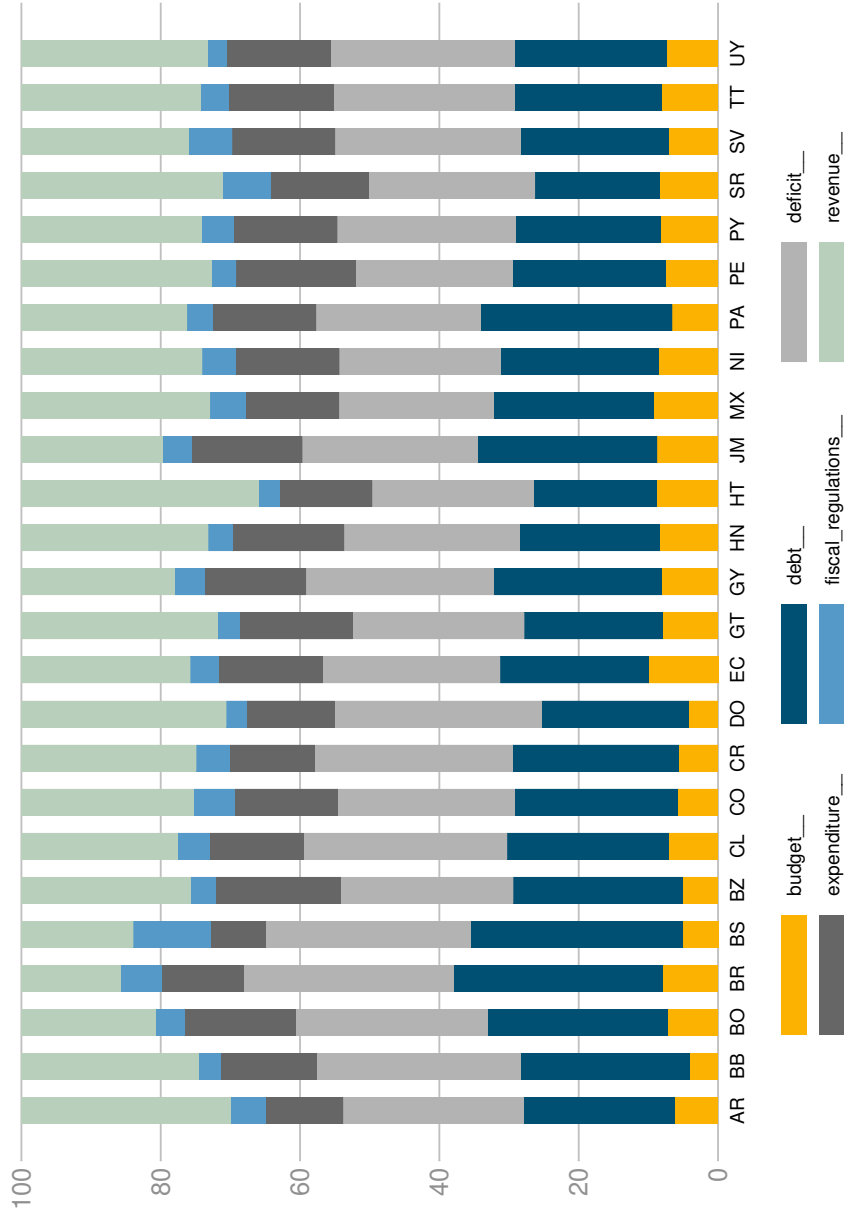
G.3 Fiscal

Figure G5: Distribution of Discussion by Subcategory and Decade



Source. Authors' calculations based on the repository from [Bétin & Collodel \(2021\)](#).

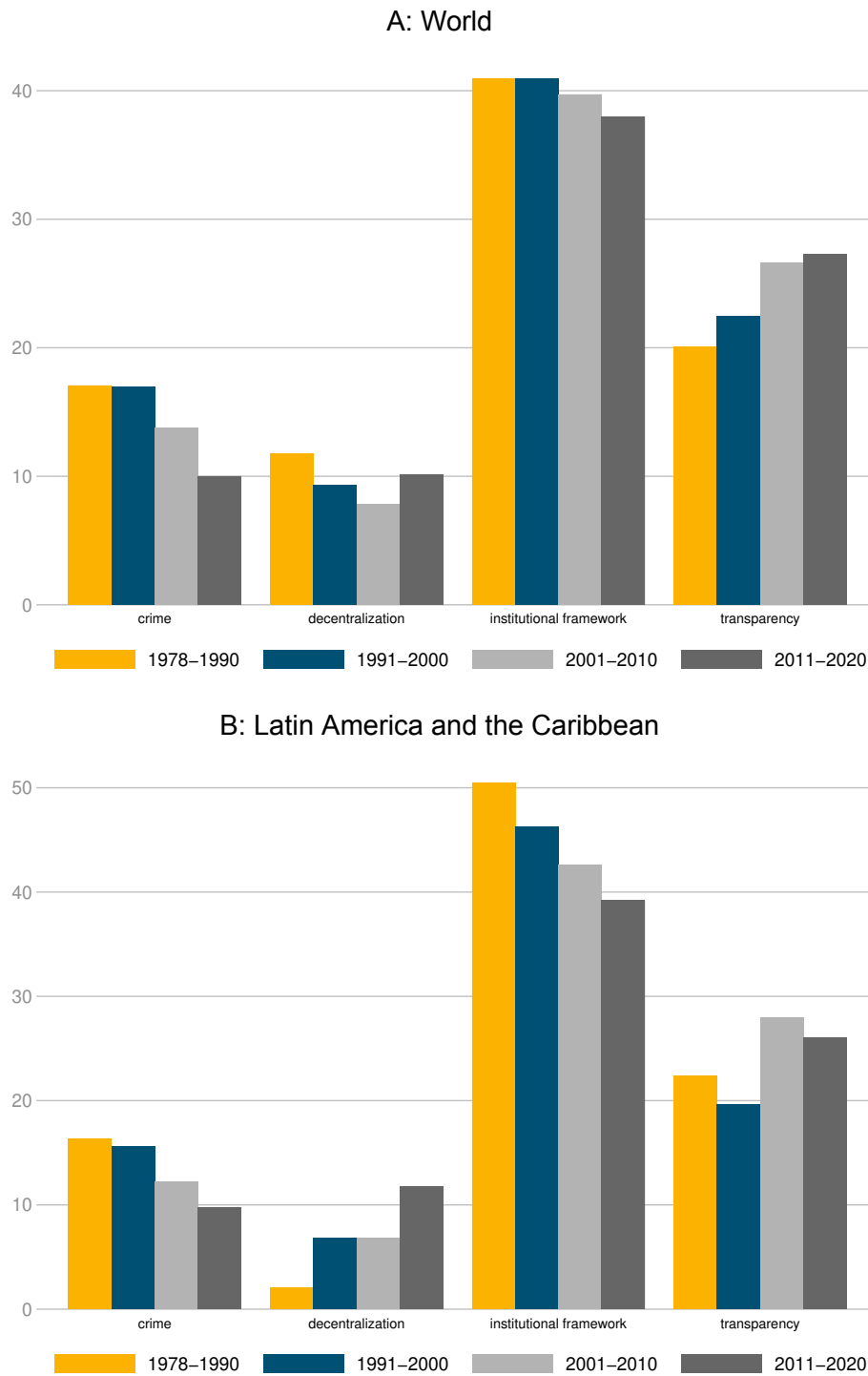
Figure G6: Distribution of Discussions by Subcategory and Country, 1978-2020



Source. Authors' calculations based on publicly available IMF Staff Reports. The nomenclature of countries is as follows: AR=Argentina; BB=Barbados; BO=Bolivia; BR=Brazil; BS=Bahamas; BZ=Belize; CL=Chile; CO=Colombia; CR=Costa Rica; DO=Dominican Republic; EC=Ecuador; GT=Guatemala; GY=Guyana; HN=Honduras; HT=Haiti; JM=Jamaica; MX=Mexico; NI=Nicaragua; PA=Panama; PE=Peru; PY=Paraguay; SR=Suriname; SV=El Salvador; TT=Trinidad and Tobago; and UY=Uruguay.

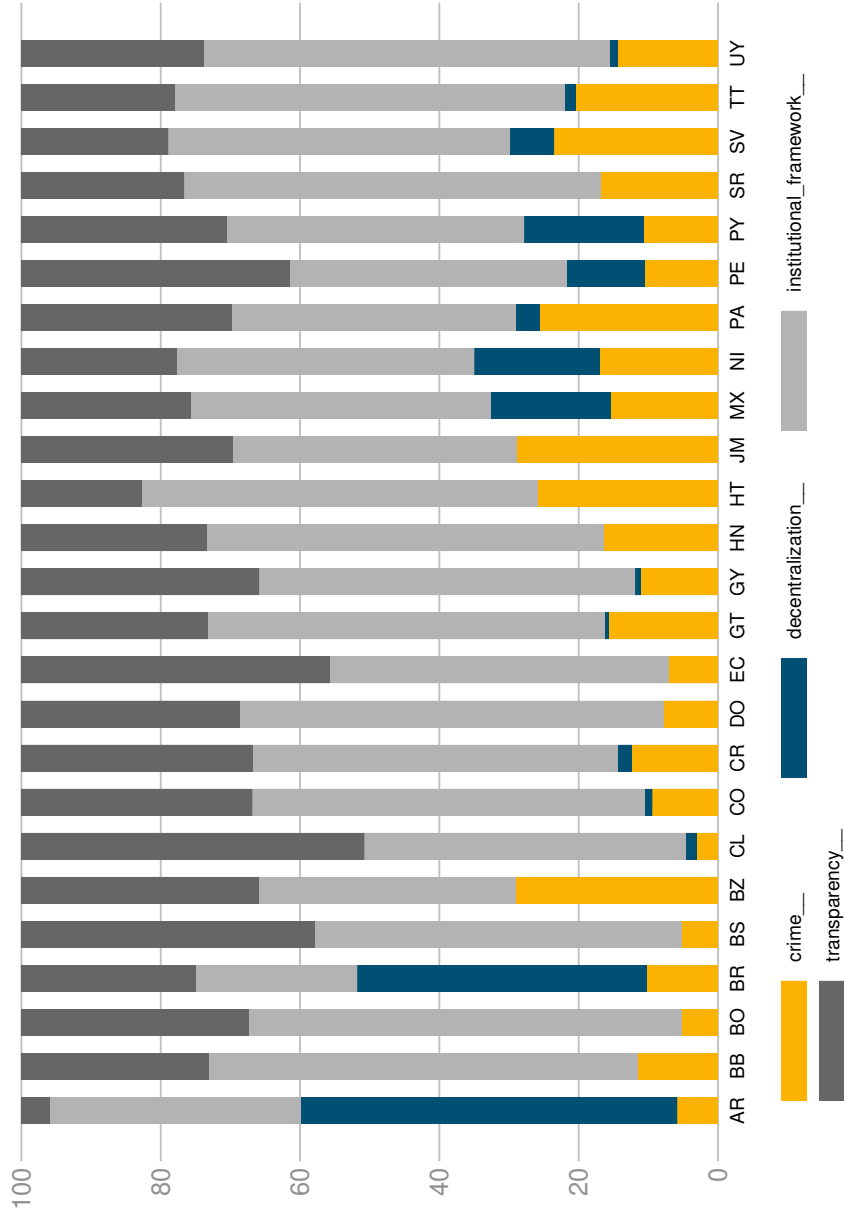
G.4 Governance

Figure G7: Distribution of Discussion by Subcategory and Decade



Source. Authors' calculations based on the repository from [Bétin & Collodel \(2021\)](#).

Figure G8: Distribution of Discussions by Subcategory and Country, 1978-2020

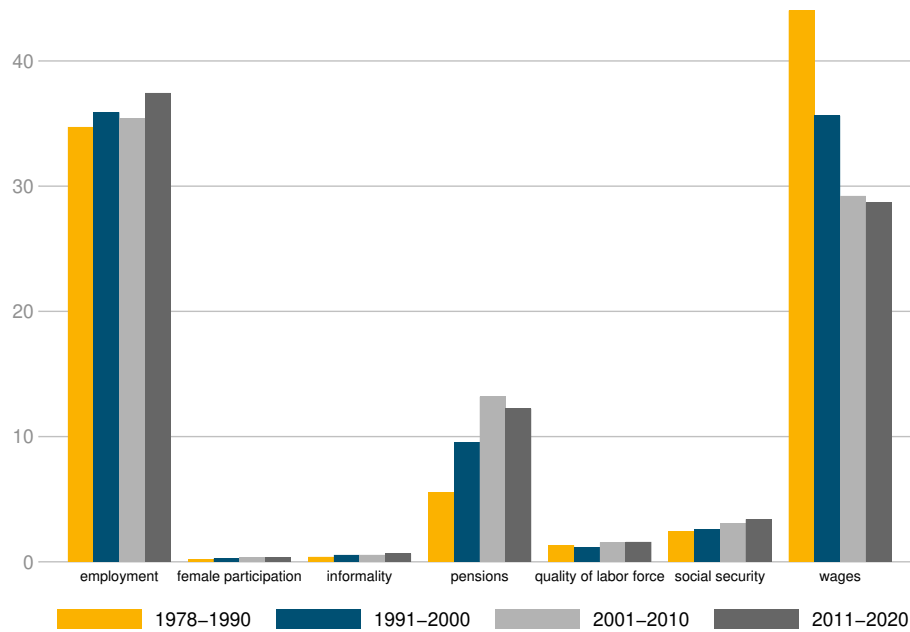


Source. Authors' calculations based on publicly available IMF Staff Reports. The nomenclature of countries is as follows: AR=Argentina; BB=Barbados; BO=Bolivia; BR=Brazil; BS=Bahamas; BZ=Belize; CL=Chile; CO=Colombia; CR=Costa Rica; DO=Dominican Republic; EC=Ecuador; GT=Guatemala; GY=Guyana; HN=Honduras; HT=Haiti; JM=Jamaica; MX=Mexico; NI=Nicaragua; PA=Panama; PE=Peru; PY=Paraguay; SR=Suriname; SV=El Salvador; TT=Trinidad and Tobago; and UY=Uruguay.

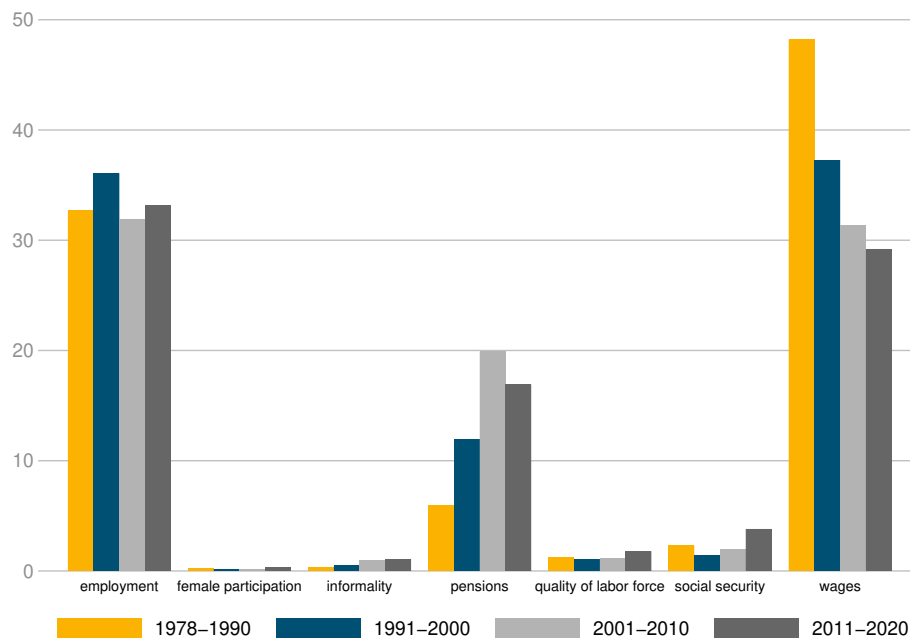
G.5 Labor Market

Figure G9: Distribution of Discussion by Subcategory and Decade

A: World

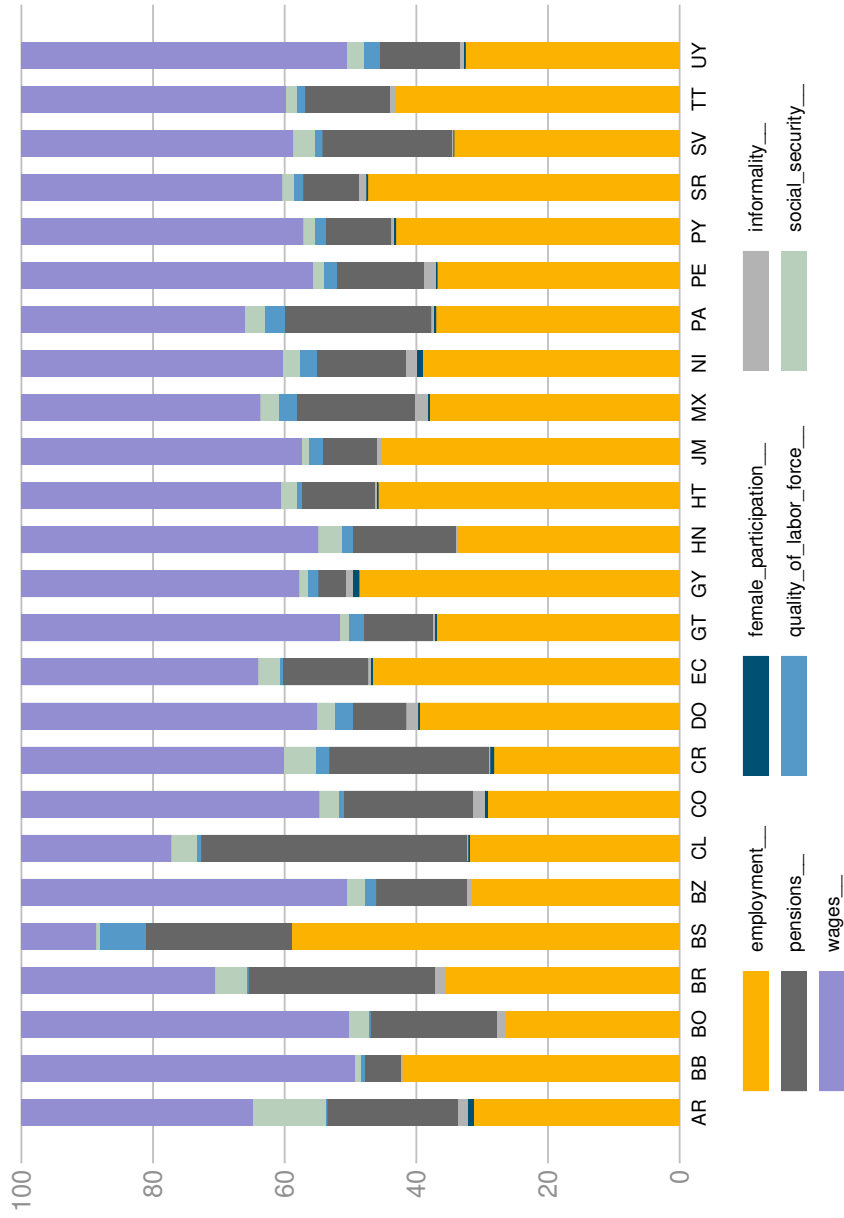


B: Latin America and the Caribbean



Source. Authors' calculations based on the repository from [Bétin & Collodel \(2021\)](#).

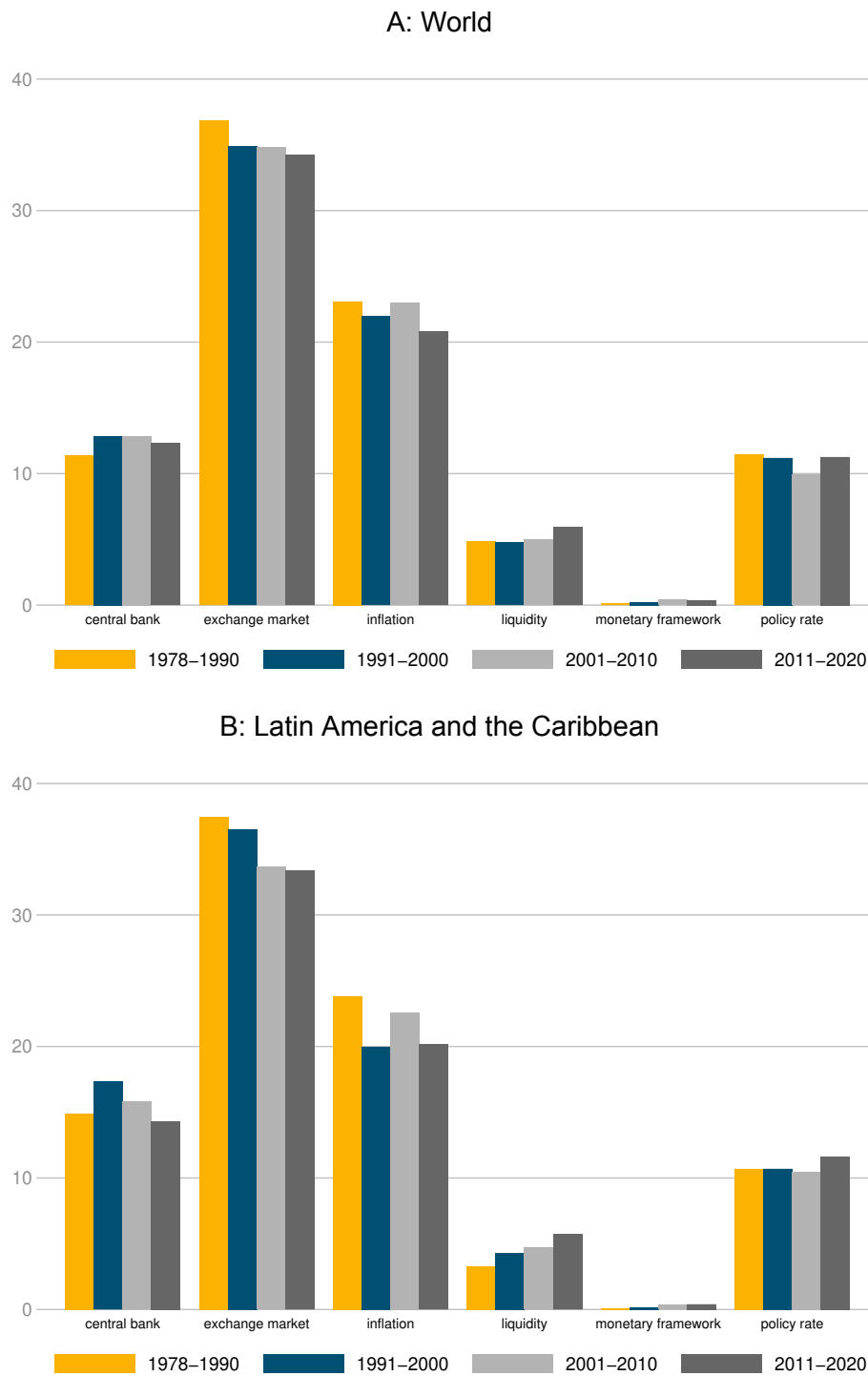
Figure G10: Distribution of Discussions by Subcategory and Country, 1978-2020



Source. Authors' calculations based on publicly available IMF Staff Reports. The nomenclature of countries is as follows: AR=Argentina; BB=Barbados; BO=Bolivia; BR=Brazil; BS=Bahamas; BZ=Belize; CL=Chile; CO=Colombia; CR=Costa Rica; DO=Dominican Republic; EC=Ecuador; GT=Guatemala; GY=Guyana; HN=Honduras; HT=Haiti; JM=Jamaica; MX=Mexico; NI=Nicaragua; PA=Panama; PE=Peru; PY=Paraguay; SR=Suriname; SV=El Salvador; TT=Trinidad and Tobago; and UY=Uruguay.

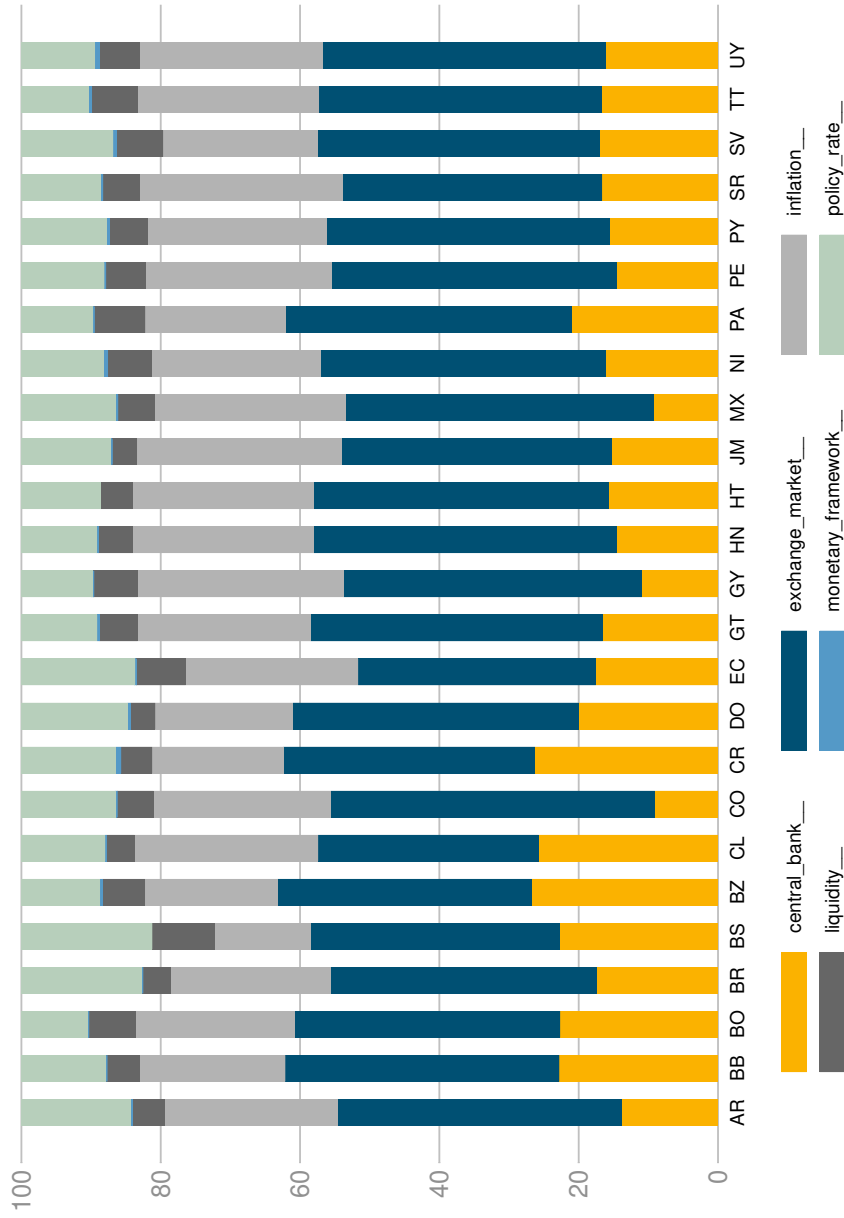
G.6 Monetary

Figure G11: Distribution of Discussion by Subcategory and Decade



Source. Authors' calculations based on the repository from [Bétin & Collodel \(2021\)](#).

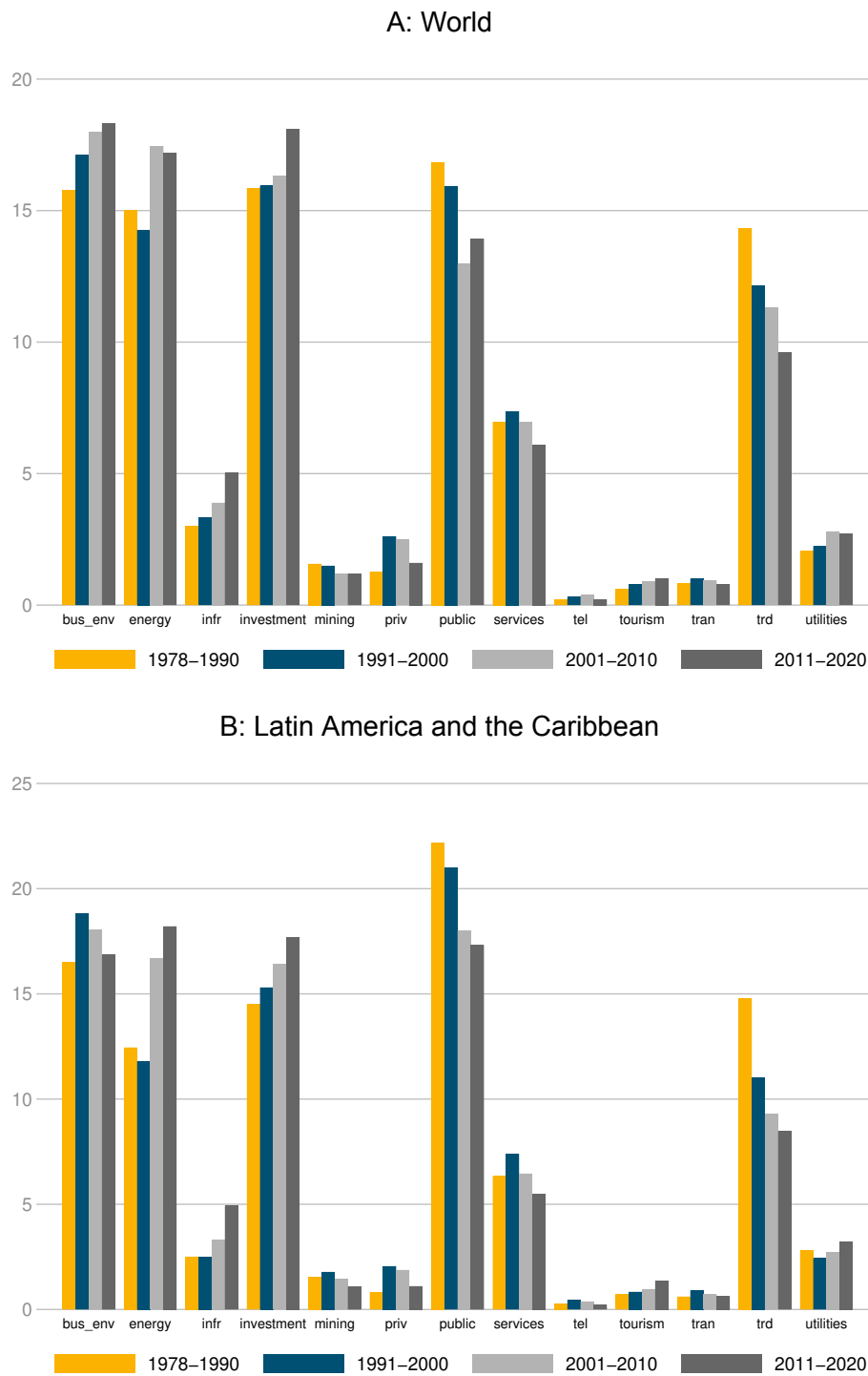
Figure G12: Distribution of Discussions by Subcategory and Country, 1978-2020



Source. Authors' calculations based on publicly available IMF Staff Reports. The nomenclature of countries is as follows: AR=Argentina; BB=Barbados; BO=Bolivia; BR=Brazil; BS=Bahamas; BZ=Belize; CL=Chile; CO=Colombia; CR=Costa Rica; DO=Dominican Republic; EC=Ecuador; GT=Guatemala; GY=Guyana; HN=Honduras; HT=Haiti; JM=Jamaica; MX=Mexico; NI=Nicaragua; PA=Panama; PE=Peru; PY=Paraguay; SR=Suriname; SV=El Salvador; TT=Trinidad and Tobago; and UY=Uruguay.

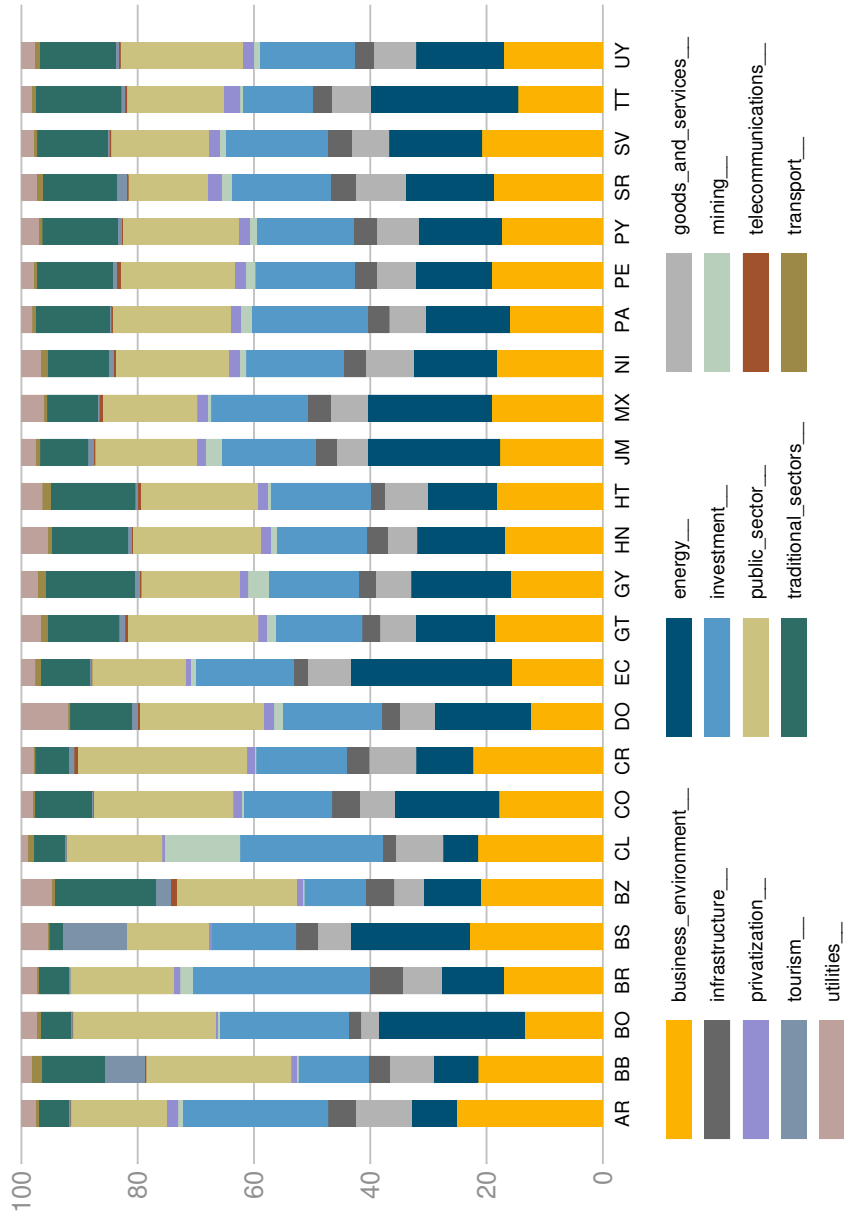
G.7 Productive Capacity

Figure G13: Distribution of Discussion by Subcategory and Decade



Source. Authors' calculations based on the repository from [Bétin & Collodel \(2021\)](#).

Figure G14: Distribution of Discussions by Subcategory and Country, 1978-2020

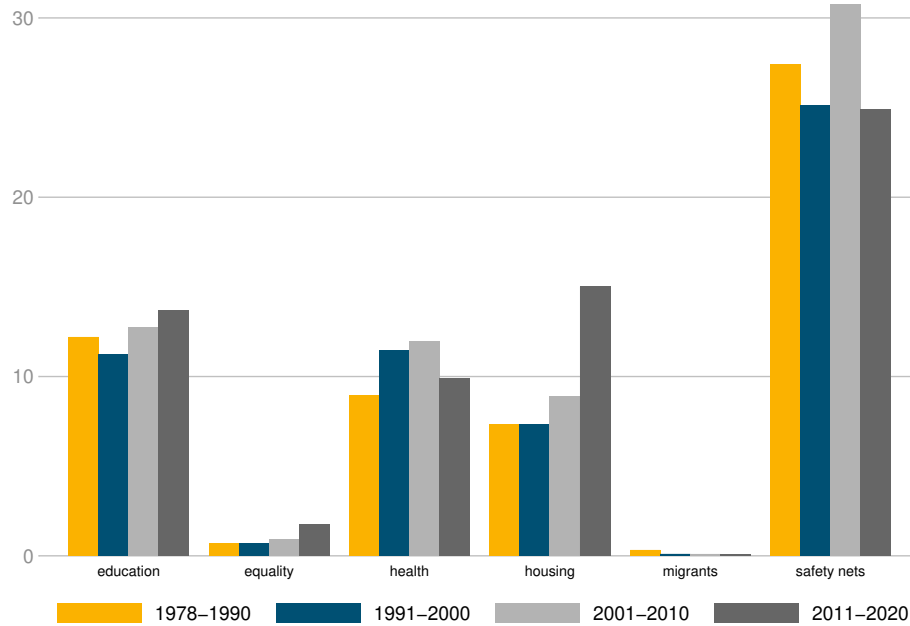


Source. Authors' calculations based on publicly available IMF Staff Reports. The nomenclature of countries is as follows: AR=Argentina; BB=Barbados; BO=Bolivia; BR=Brazil; BS=Bahamas; BZ=Belize; CL=Chile; CO=Colombia; CR=Costa Rica; DO=Dominican Republic; EC=Ecuador; GT=Guatemala; GY=Guyana; HN=Honduras; HT=Haiti; JM=Jamaica; MX=Mexico; NI=Nicaragua; PA=Panama; PE=Peru; PY=Paraguay; SR=Suriname; SV=El Salvador; TT=Trinidad and Tobago; and UY=Uruguay.

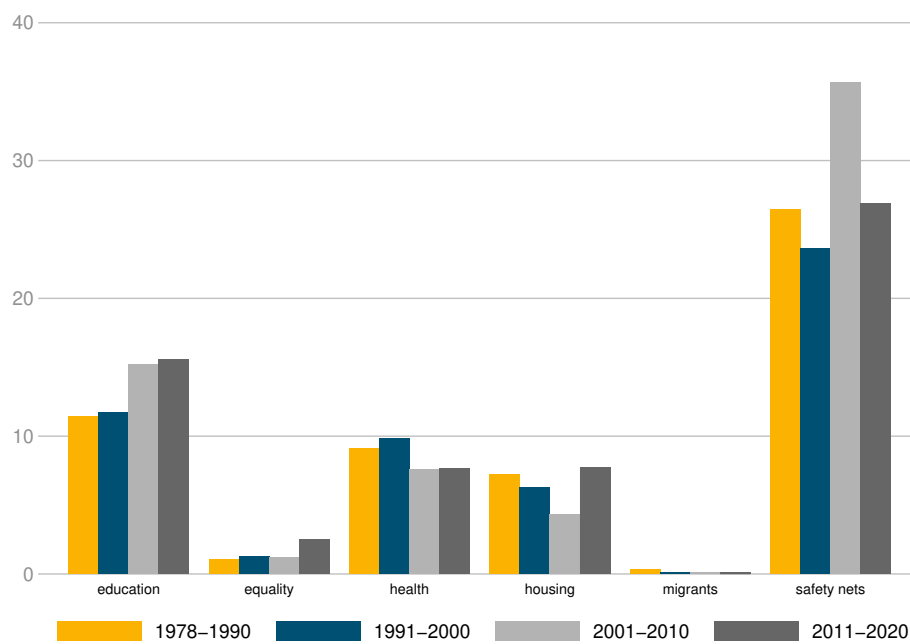
G.8 Social

Figure G15: Distribution of Discussion by Subcategory and Decade

A: World

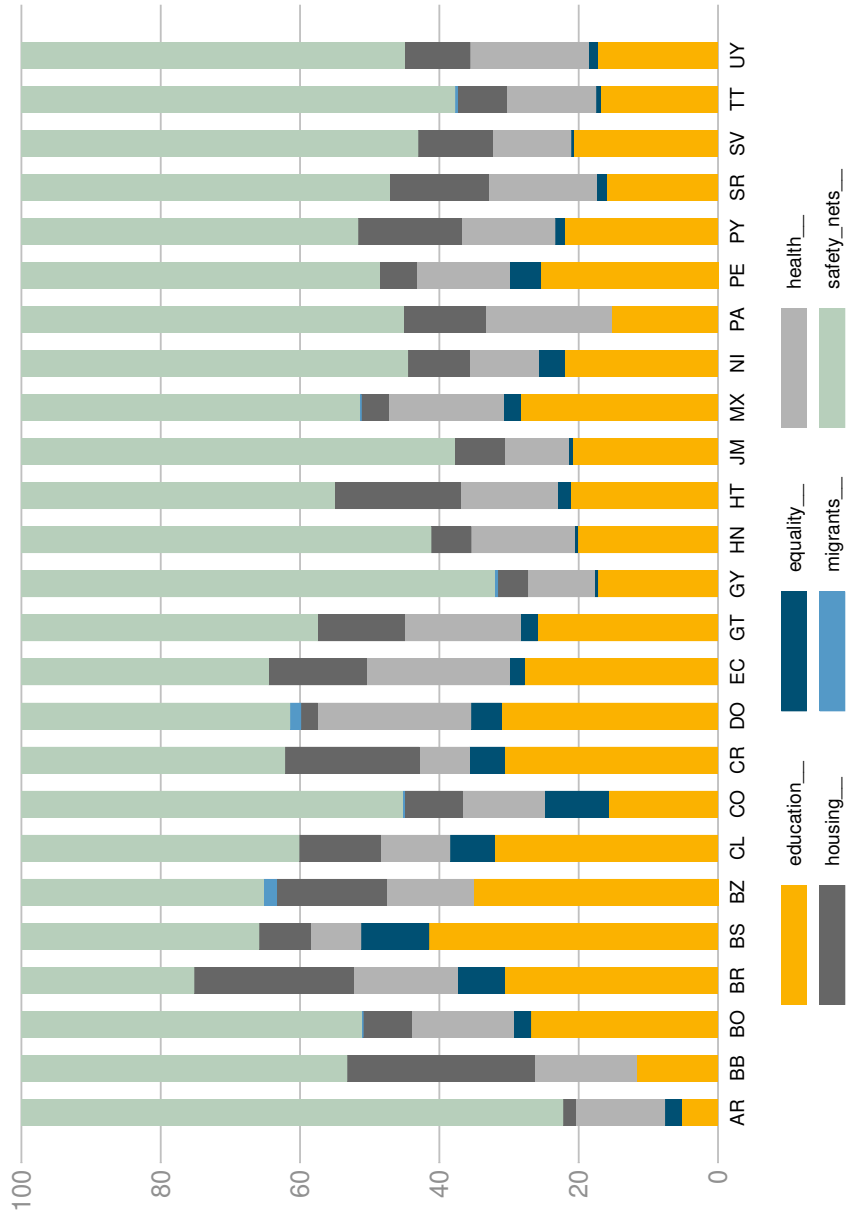


B: Latin America and the Caribbean



Source. Authors' calculations based on the repository from [Bétin & Collodel \(2021\)](#).

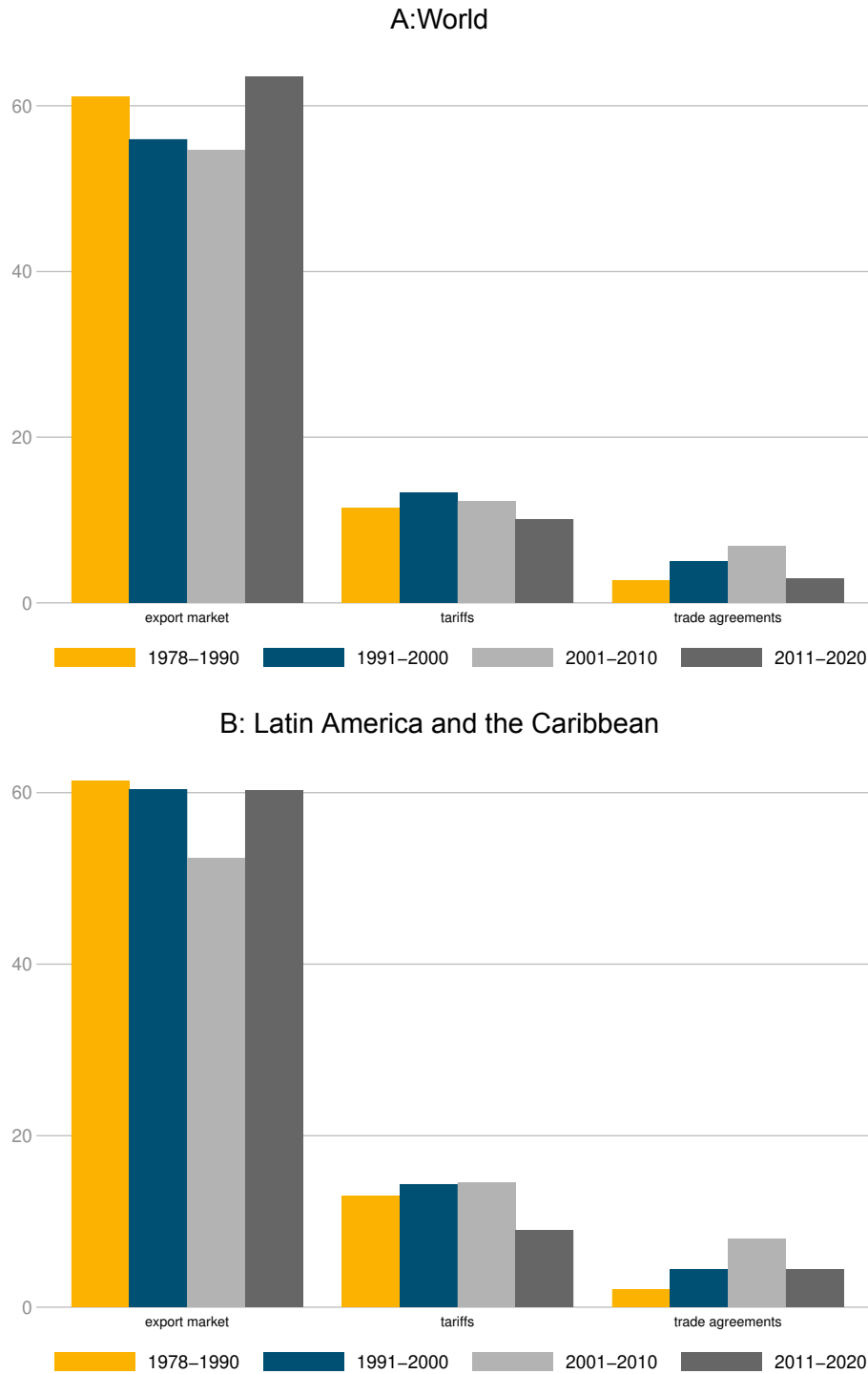
Figure G16: Distribution of Discussions by Subcategory and Country, 1978-2020



Source. Authors' calculations based on publicly available IMF Staff Reports. The nomenclature of countries is as follows: AR=Argentina; BB=Barbados; BO=Bolivia; BR=Brazil; BS=Bahamas; BZ=Belize; CL=Chile; CO=Colombia; CR=Costa Rica; DO=Dominican Republic; EC=Ecuador; GT=Guatemala; GY=Guyana; HN=Honduras; HT=Haiti; JM=Jamaica; MX=Mexico; NI=Nicaragua; PA=Panama; PE=Peru; PY=Paraguay; SR=Suriname; SV=El Salvador; TT=Trinidad and Tobago; and UY=Uruguay.

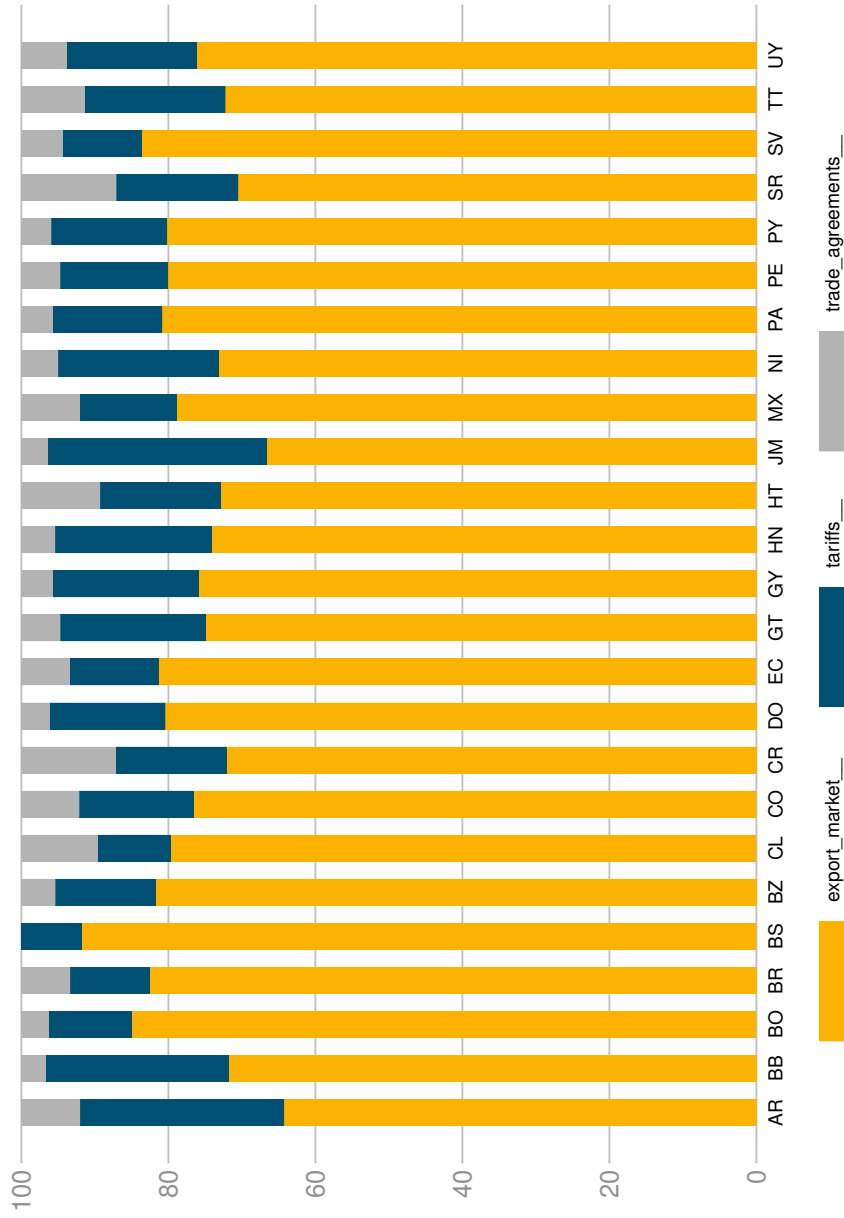
G.9 Trade

Figure G17: Distribution of Discussion by Subcategory and Decade



Source. Authors' calculations based on the repository from [Bétin & Collodel \(2021\)](#).

Figure G18: Distribution of Discussions by Subcategory and Country, 1978-2020



Source. Authors' calculations based on publicly available IMF Staff Reports. The nomenclature of countries is as follows: AR=Argentina; BB=Barbados; BO=Bolivia; BR=Brazil; BS=Bahamas; BZ=Belize; CL=Chile; CO=Colombia; CR=Costa Rica; DO=Dominican Republic; EC=Ecuador; GT=Guatemala; GY=Guyana; HN=Honduras; HT=Haiti; JM=Jamaica; MX=Mexico; NI=Nicaragua; PA=Panama; PE=Peru; PY=Paraguay; SR=Suriname; SV=El Salvador; TT=Trinidad and Tobago; and UY=Uruguay.