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IMF Working Paper

Financial Development and Inclusion in the Caribbean

by Chuan Li and Joyce Cheng Wong

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I N T E R N A T I O N A L M O N E T A R Y F U N D

IMF Working Paper

Western Hemisphere Department

Financial Development and Inclusion in the Caribbean

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Authorized for distribution by Uma Ramakrishnan

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Abstract

Many Caribbean financial systems are relatively well developed for their size but benefits are concentrated in a small part of the population. In several large countries, the financial development levels are below what is warranted by that country's own macroeconomic fundamentals. SMEs, in particular, remain severely credit constrained, and data to inform better analysis remains scarce. Using available data, this paper takes stock of the current state of financial development and inclusion in the Caribbean region and, based on a quantitative general equilibrium model, examines potential trade-offs between growth, inequality, and financial stability—all critical considerations when policies are designed. A case study for Jamaica is examined in detail.

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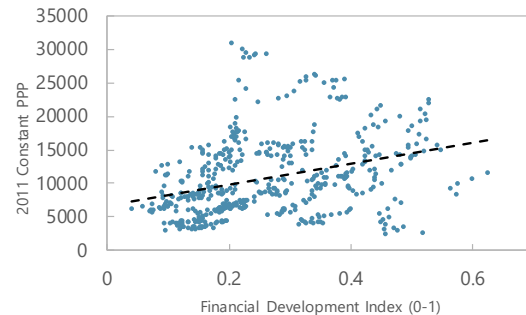
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I. INTRODUCTION

Financial development has the potential to unleash new growth sources, help countries reap the benefits of globalization, and make the transition to higher income levels. Although Figure 1 shows a correlation, an extensive literature has documented the mostly positive impact from financial development on countries' income levels and growth. Efficient financial systems help channel funds to productive uses, provide insurance against shocks, reduce information asymmetries, and can potentially alleviate poverty and inequality (Beck, Demirgüç-Kunt, and Levine 2004). Sound financial systems can also foster innovation and entrepreneurship through risk diversification (King and Levine 1993).

Figure 1. Financial Development and PPP GDP per cap
(EM Asia and LAC countries, 1995-2013)



Source: World Development Indicators and author's calculations.

The Caribbean region has many characteristics that could potentially pose barriers to financial development and inclusion¹: the countries' small size and scale, prolonged low growth, high debt, and vulnerability to external, including natural disasters and the recent loss of correspondent banking relations (CBR). While small scale does not appear to directly hamper growth in the short term (Easterly and Kraay 2000), it could potentially foster relatively concentrated and small banking sectors, with weak competition and poor service delivery. At the same time, measures to counter the loss in CBRs could also exacerbate some of these problems through pooling of services and consolidation, which could then further reduce competition.

Given the region's² challenges of high debt and exposure to external shocks, both of which hinder development prospects, a careful deepening of financial systems and expansion of financial inclusion could help generate sustained and inclusive growth. Such deepening could also bring insurance benefits by helping the countries (at the aggregate level) and households (at the micro level) cope with shocks.

Against this background, this paper uses the framework of Dabla-Norris and others (2015a) to examine the current state of financial deepening and inclusion in the Caribbean from several different perspectives:

- Using the financial development index developed in Heng and others (2016), we examine the financial market and financial institution development in four countries in the Caribbean region (due to data availability) compared with Latin America. This is a new approach for the region using a broad-based index that improves upon the previous narrower measures of financial deepening such as the private-credit-to-GDP ratio, the ratio of liquid liabilities of the financial system to GDP, stock market capitalization as a share of GDP, and the market turnover ratio (Levine 1997, 2005).

¹ Financial development is typically measured as the size or depth of the financial sector while financial inclusion refers to the breadth of the financial sector and relates to how widespread is the access to and use of financial services by firms and individuals.

² Caribbean countries included are Antigua and Barbuda (ATG), The Bahamas (BHS), Barbados (BRB), Belize (BLZ), Dominica (DMA), the Dominican Republic (DOM), Grenada (GRE), Guyana (GUY), Haiti (HTI), Jamaica (JAM), St. Kitts and Nevis (KNA), St. Lucia (LCA), St. Vincent and the Grenadines (VCT), Suriname (SUR), and Trinidad and Tobago (TTO).

- Next, the paper examines the region's level of financial inclusion for households and small and medium enterprises (SMEs), which are significant drivers of growth and employment. Data availability, however, constrains the analysis for the Caribbean to a narrower set of indicators and years, which may differ across countries.
- We then employ the quantitative model based on Dabla-Norris and others (2015a, b), calibrated for several Caribbean countries, to examine the trade-offs between inequality and growth when constraints to financial inclusion are loosened for enterprises.

The multiplicity of methodologies used highlights the importance of examining financial deepening and inclusion from different angles. Furthermore, data and knowledge gaps are quite severe in the Caribbean region, making it necessary to patch a full picture from several different indicators. For the reasons above, the paper also includes an in-depth case study of Jamaica (chosen for its data availability) to illustrate areas where particular attention should be paid and to discuss policy priorities.

The paper is organized as follows: section II provides a review of the literature on financial deepening and inclusion while section III provides an overview of the levels of financial development for four larger Caribbean countries using a broad-base index. Section IV examines where the region stands in terms of financial inclusion by presenting both empirical facts and tapping into the results from a calibrated quantitative general equilibrium model for several Caribbean countries. Section V presents a holistic case-study for Jamaica, highlighting the importance of taking a broad approach when analyzing financial inclusion/development issues, and section VI concludes.

II. LITERATURE REVIEW

The increased interest in financial inclusion and deepening and their potential to foster inclusive growth has fostered a multiplicity of financial deepening and inclusion indicators and studies. In terms of measurement, a typical proxy for financial development in the literature is the ratio of private credit to GDP (Cavallo and Scartascini, 2012, Hansen and Sulla, 2013, Arcand, Berkes, and Panizza, 2015), stock market capitalization (Yartley, 2008) and market turnover ratio (Levine 1997, Levine 2005). However, these indicators are too narrow to capture the full spectrum of financial sector activities including non-bank financial institutions (e.g. pension and mutual funds, insurance companies, etc.) which have grown significantly in recent years. These services provide opportunities for consumption smoothing, investment funding, and risk diversification across households and firms which are not captured in the "traditional" financial development measures. At the same time, access to market finance has become more widespread with the growth and diversification of financial markets.

With regards to financial development and inclusion's link to growth and stability, while several of the above mentioned studies examined the link between growth and financial deepening, others have asked whether there is such a thing as "too much" finance and potential implications for stability (Arcand, Berkes, and Panizza, 2015, Sahay and others, 2015). Another line of research has instead focused on "benchmarking" financial development with respect to country's fundamentals (Feyen, Kibuuka, and Sourrouille 2014). With regards to financial inclusion, it has been linked to both reductions in poverty and improved income inequality (Beck et al., 2007 and Clarke et al., 2006). For firms, access to finance has been positively linked with job creation, growth, and innovation (Beck et al., 2005 and Aiyagari et al., 2008).

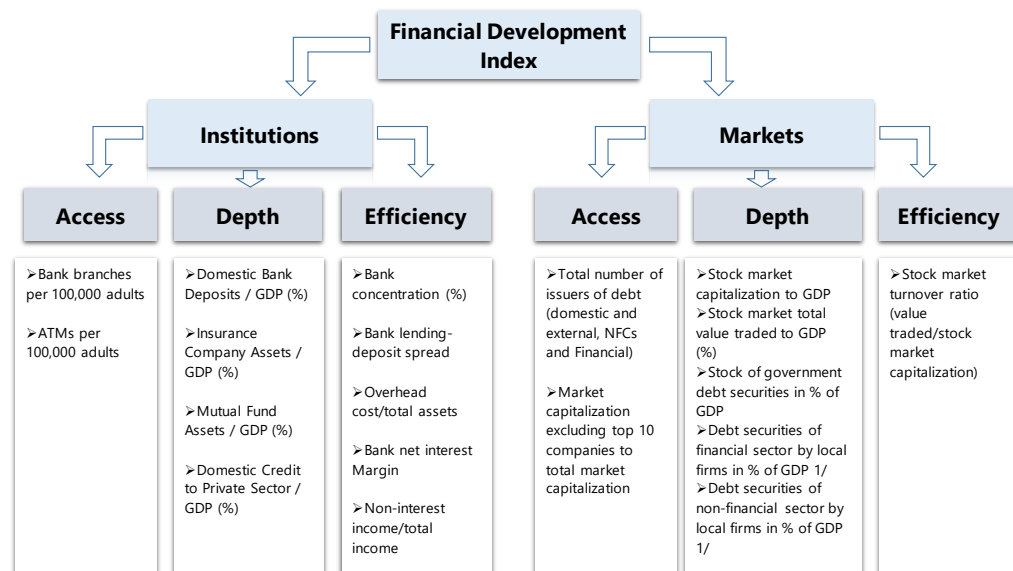
Zooming in on the region, many have examined the drivers of (low) growth in the Caribbean. Studies have found that while the small size of the island economies does not directly hamper growth in the short term (Easterly and Kraay, 2000), their vulnerability to natural disasters could harm long-term growth prospects (Armstrong and Read, 2004; Charveriat, 2000). The high levels of public debt have also been found to be detrimental for growth (Greenidge, Craigwell, Thomas, and Drakes, 2012;

Thacker and Acevedo, 2010) but these effects could be ameliorated by strong governance and economic policies including better market regulations combined with more liberalized trade policies, supported by stronger fiscal discipline (Calderon and Fuentes, 2013; Loayza et al., 2005; Chang et al., 2009). Panel data studies have found that a weak macroeconomic environment, low quality of institutions, and high levels of inefficiency (which lowered total factor productivity) were the main drawbacks for growth during the 1990s in the region (Kida, 2005). For the Caribbean region, there are only a few studies examining the specific relationship between financial development and inclusion. While some have looked at the effect of financial development on Caribbean growth (Holden, Howell, 2009; Aghion et al., 2005), financial inclusion in the region (and its effects) has not been systematically examined.

III. STYLIZED FACTS ON CARIBBEAN FINANCIAL DEVELOPMENT

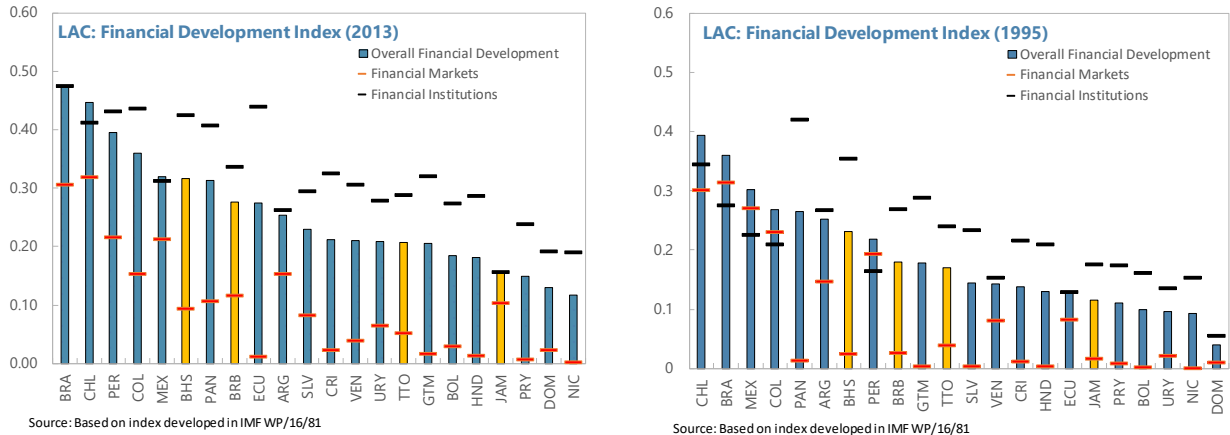
Using the broad-based index developed in Heng and others (2016), the analysis examines the financial development of four Caribbean countries for which there was enough data available to construct the index: The Bahamas, Barbados, Jamaica, and Trinidad and Tobago. The index contains two major components: financial institutions and financial markets. Each component is broken down into access, depth, and efficiency subcomponents (Figure 2). These subcomponents, in turn, are constructed based on several underlying variables that track development in each area. Given data constraints, many of these variables were chosen due to their wide availability for the Latin America and Caribbean (LAC) region. While the measure constructed is significantly broader than other single-dimensional indicators in the literature noted above, the challenge remains that even this broader measure only partially captures the various functions of finance, such as its ability to facilitate risk management, exert corporate control, pool savings, and others (Levine 2005). This should be kept in mind when interpreting all results.

Figure 2. Financial Development Index

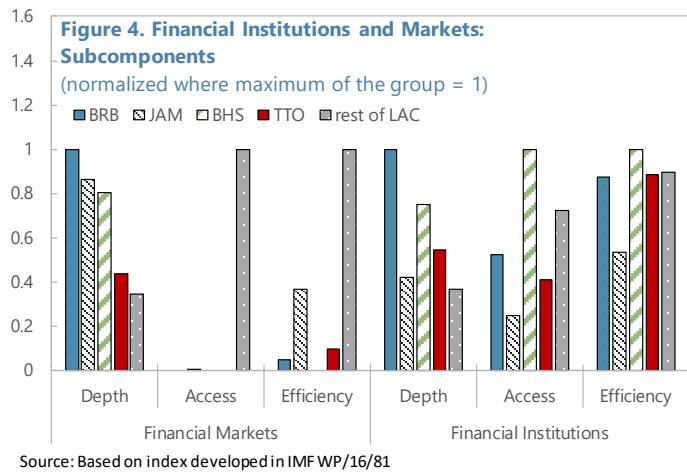


The overall financial development index shows that all four Caribbean countries—The Bahamas, Barbados, Jamaica, and Trinidad and Tobago—improved between 1995 and 2013, and their relative order remained unchanged (Figure 3).

Figure 3. Financial Development Index 2013 vs 1995



- Overall financial market development in these Caribbean countries is driven by strong performance of the depth subcomponent (Figure 4). In fact, Barbados, Jamaica, and The Bahamas all figure in the top four in financial market depth in the LAC region, ahead of much more financially developed countries such as Chile, Brazil, and Peru. This strong performance is driven by debt issuances from several sectors: international issuances of the public sector (Jamaica is in third position for



- LAC), the financial sector (Barbados and The Bahamas are in the top three), and the corporate nonfinancial sector (where The Bahamas, Barbados, and Jamaica are the top three). While the development of government debt markets contributes positively to financial deepening, one should note that any positive effects from market development must balance against the risks to debt sustainability that excessive levels of government debt may pose. On the other hand, Caribbean countries severely lag the rest of LAC in financial market access and efficiency, driven by relatively shallow equity markets with only a few issuers.

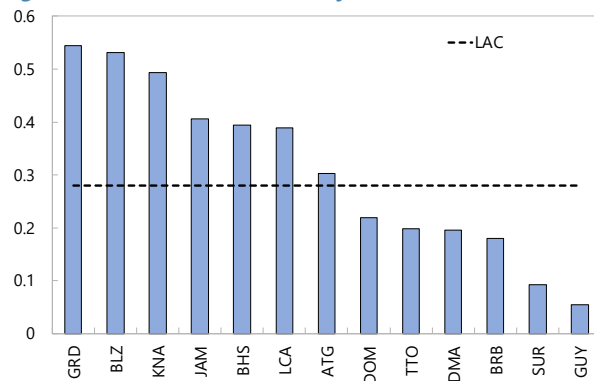
- As for financial institutions, these countries broadly compare favorably with Latin America. Barbados has relatively deep markets, with a high deposits-to-GDP ratio and a significant nonbank financial sector. The Bahamas surpasses the LAC average in both access and efficiency, thanks to strong performance in the number of automated teller machines (ATMs) and bank branches per capita and high levels of credit to GDP. Trinidad and Tobago is broadly on par with Latin American countries in depth and efficiency although it lags in physical access, potentially reflecting a higher focus on mobile/electronic structures. In all, these three countries have relatively good financial institutions, although with room for improvement. However, Jamaica lags behind its Caribbean neighbors in overall financial institution development, driven by low ratios of deposits and credit to GDP, high interest rate spreads, high operating costs, and a concentrated banking market.

A. Zooming in: Households and SMEs

The three key determinants of access to finance for households that we examine are (1) physical barriers (for example, long distance to a bank branch, poor transportation), (2) eligibility barriers (for instance, documentation requirements, literacy), and (3) affordability (such as minimum balances and fees). Although the last two determinants are at least as important as physical access, access itself is a precursor to the other factors, especially in a region where mobile banking remains underdeveloped. Furthermore, data for the Caribbean on physical and eligibility barriers remain scarce and not comparable across countries. Thus, to maximize the sample of Caribbean countries, this section examines a measure of physical access to financial services (see Dabla-Norris and others 2016) constructed as a composite index that aggregates information on the presence of both ATMs and branches by geographical and population units.

Data suggest that about half of the Caribbean countries in this larger sample compare favorably the LAC average (Figure 5). For the Eastern Caribbean Currency Union, small country size helps generate a higher level of measured access to financial services. The strong performance of Jamaica and The Bahamas could potentially be linked to proliferation of banking access points in tourism areas, illustrating a potential weakness with the measurement of physical access: ATMs and branches could be highly concentrated in some areas, leading to high measured access that does not necessarily reach everyone in the population. In contrast, commodity exporters like Trinidad and Tobago, Suriname, and Guyana exhibit levels of physical access that are lower than the LAC average.

Figure 5. Caribbean: Index of Physical Access to Finance



Sources: World Bank Enterprise Survey and IMF staff calculations

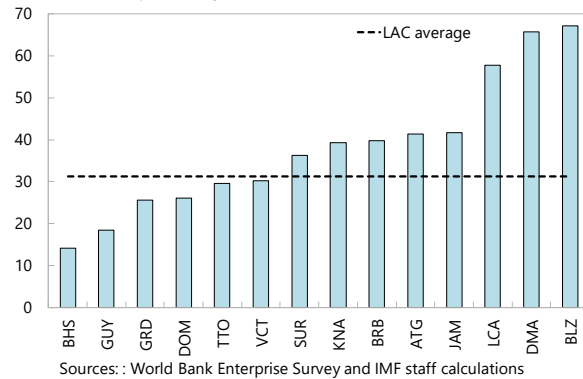
The World Bank's Enterprise Surveys show that the proportion of SMEs that identify access to credit as a major constraint is much larger in the Caribbean than in the rest of LAC (Figure 6). Even in larger Caribbean countries such as Jamaica and Barbados, nearly 40 percent of SMEs cite credit access as a major issue. However, the difference in the proportion of firms with credit access between these two countries is striking—only 26 percent in Jamaica versus over 55 percent in Barbados. This difference likely reflects domestic constraints (as discussed in section "Case Study: Jamaica"), combined with a history of support for SMEs in Barbados, including through programs such as the Barbados Investment Fund and the Export Rediscount Facility, which have supported microenterprises and SMEs in the tourism and export sectors.

Some Caribbean countries have made significant progress on easing these constraints. For example, the central bank in Suriname has classes for the proprietors of SMEs to educate them on basic accounting and knowledge transfer. The country has also been quite innovative in using television series to promote financial inclusion (similar to South Africa). In Trinidad and Tobago, where SMEs have relatively good access to finance, the central bank offers booklets on money management, home ownership, budgeting, insurance, and consumer protection services, all of which are available to the wider public.

Figure 6. Access to Credit in the Caribbean

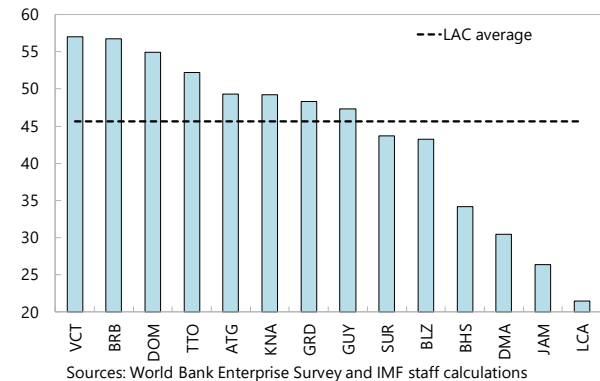
Caribbean: Access to Credit as Major Constraint

(% SMEs that responded "yes")



Caribbean: Firms with a Loan or Credit Line

(% SMEs)



An extensive menu of policies for fostering financial inclusion and development is widely available in the literature. However, what should guide policymakers when determining the right combination and sequencing of policies for their own countries? Given the risks of financial sector development happening “too fast” (see Heng and others 2016 for a discussion of these risks), how can policymakers ensure that policies that help one outcome (growth, for instance) do not generate negative outcomes (such as inequality or instability) in other areas? The next section uses a structural framework to provide a better understanding of some of these trade-offs.

IV. QUANTITATIVE MODEL: GROWTH-INEQUALITY TRADE-OFFS

This section uses a micro-founded structural model borrowed from Dabla-Norris and others (2015a, b) to examine the implications for growth and inequality of relaxing various constraints to firms’ financial inclusion. The model features an economy where economic agents differ in their talent and wealth. Each person has to decide whether to become a worker (earn wages) or an entrepreneur (earn profits) and whether to pay a fixed participation cost to be able to borrow from the banking system. Entrepreneurs then decide on how much of their wealth to invest in their business, whether and how much to borrow at the going interest rate, and how many workers to employ at the going wage rate. The output from business projects depends on the amount of capital invested, the amount of labor hired, as well as on the entrepreneur’s talent. In the model, the magnitude of the participation cost represents the cost of financial contracting. The higher is this cost, the more agents are prevented from borrowing and investing. Moreover, it tends to disproportionately exclude poor but talented individuals from the financial system as the fixed cost amounts to a larger fraction of their wealth.

Once in the banking system, the amount of credit available is constrained by other financial frictions. If an entrepreneur has paid the participation cost, he or she can borrow from the banking system at the going interest rate. The model assumes that a business can fail for external reasons (“bad luck”), with some probability. Given imperfect enforceability of contracts, entrepreneurs have to post personal wealth as collateral for the loan. Since banks run the risk that entrepreneurs can defraud them, this constrains the amount that can be borrowed. Therefore, the weaker is contract enforceability the lower is the amount of leverage possible, imposing borrowing constraints on entrepreneurs. A second friction is modeled as arising from asymmetric information between the bank and the borrower. The underlying intuition is that if the entrepreneur does not pay back the loan, the bank cannot be sure whether the business actually failed. Banks have to pay an audit or monitoring cost to find out. Otherwise, entrepreneurs could benefit from claiming failure and keep the profits. These costs—measure of the degree of intermediation costs in

the economy—are recuperated by banks through interest rates and high overhead fees charged on highly-leveraged entrepreneurs.^{3, 4}

The model is separately calibrated for three Eastern Caribbean Currency Union countries (Antigua and Barbuda, St. Lucia, St. Kitts and Nevis), The Bahamas, Barbados, Dominican Republic, Jamaica, Trinidad and Tobago. In the model, constraints to firms' financial inclusion are grouped into three categories:⁵

- *Participation costs* typically reflect banks' high documentation requirements, which impede access to finance (for example, for opening, maintaining, and closing accounts, and for loan applications). Other barriers, such as red tape and the need for guarantors, can also be captured. These costs are modeled as fixed costs, capturing the fact that documentation requirements, while they might be somewhat more onerous for very large scale projects, do not directly grow with loan or firm size.
- *Borrowing constraints* are proxied by collateral requirements that regulate the leverage of firms in the credit system. These collateral requirements depend on factors such as creditors' rights, information disclosure requirements, and contract enforcement procedures.
- *Intermediation costs* (for example, high interest rates and fees) can reflect information asymmetries between banks and borrowers and limited competition in the banking system.

The model's key parameters for each country are calibrated to simultaneously match the moments of firm distribution, such as the percentage of firms with credit and the firm employment distribution, as well as the economy-wide nonperforming loan ratio and interest rate spread.

As seen in Figure 7, when compared with advanced economies (which serve as proxies for the frontier), most countries in the Caribbean lag in these indicators. For example, only 48 percent of firms, on average, have access to credit in the Caribbean, about half of the best in the sample of 95 percent.⁶ There are also significant differences across countries:

- Constraints are especially severe in Jamaica, which has the highest intermediation cost and collateral requirements and the lowest proportion of firms with access to credit.
- Two notable cases are those of Trinidad and Tobago and the Dominican Republic, with the lowest collateral requirements in the region and the most firms with access to credit. Nevertheless, interest rate spreads are high in both countries, reflecting inefficiencies such as the lack of a unified and modern asset registry, which exacerbates information costs for the lender. Thus, intuitively, firms can access credit and leverage up, but must pay dearly for it: price is used as a differentiating tool.

³ In the model, the bank's optimal verification strategy follows Townsend (1979), whereby verification only occurs if the entrepreneur cannot pay the face value of the loan. This happens when the entrepreneur is highly leveraged and also faces a production failure. As a result, banks only monitor if a production failure is reported and the loan contract is highly-leveraged. A low-leveraged loan implies that entrepreneurs are not borrowing much from the bank and therefore the required repayment is small.

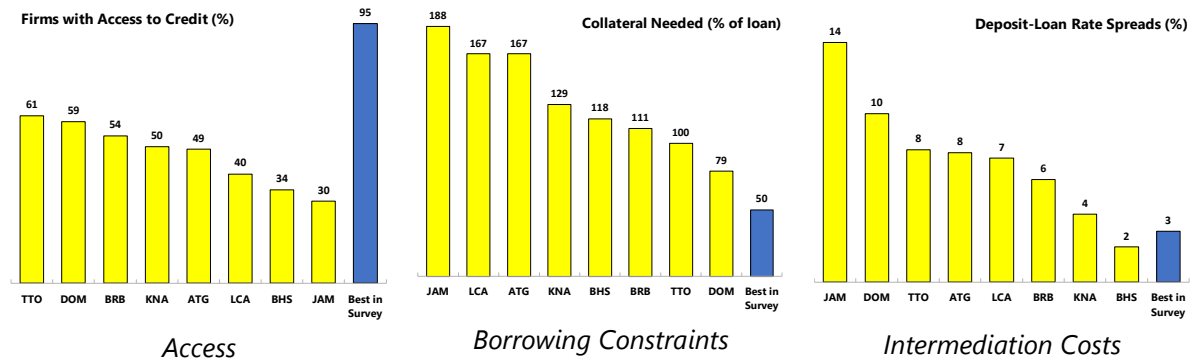
⁴ For more details, please see Dabla-Norris and others (2015).

⁵ Note that although each constraint is described separately, the equilibrium outcome for each of them is endogenously determined in the model.

⁶ Note that Figure 7 plots the proportion of all firms with access to credit, which differs from Figure 6, which includes only SMEs.

- By contrast, The Bahamas has higher collateral requirements and very few firms with access to credit, but very low interest rate spreads. In this case, credit market entry costs are high—but leverage is kept at low rates, so funding is relatively cheap for those that can access it.

Figure 7. Country-Specific Financial Constraints



Source: World Bank Enterprise Surveys and IMF Staff Reports.

What are the effects on GDP and inequality of “removing” each of these constraints? To answer this question, three policy experiments are conducted:⁷

- Relaxing collateral requirements to the world minimum
- Reducing participation costs to zero
- Reducing interest rate spreads to zero.

These policy changes are significant and would take time to phase in. The lowering of spreads and participation costs to zero should be interpreted as an idealized frontier used strictly for ease of comparison. In practice, it is highly unlikely that all barriers to credit could be eliminated or that there would be a zero margin to financial intermediation services. Thus, the simulations should be viewed as illustrative.

For ease of comparison, each of the economies is modeled before and after the full transition, that is, we examine “steady states.” The numbers presented should thus be interpreted as cumulative changes to GDP levels and the Gini coefficient across several years, driven by the implementation of each of these policies alone. Across all countries for which the model is calibrated, the loosening of any of the three constraints generates positive effects on GDP (Figures 8–10), while only the loosening of participation costs generates lower inequality. Each of these constraints is discussed in detail below.

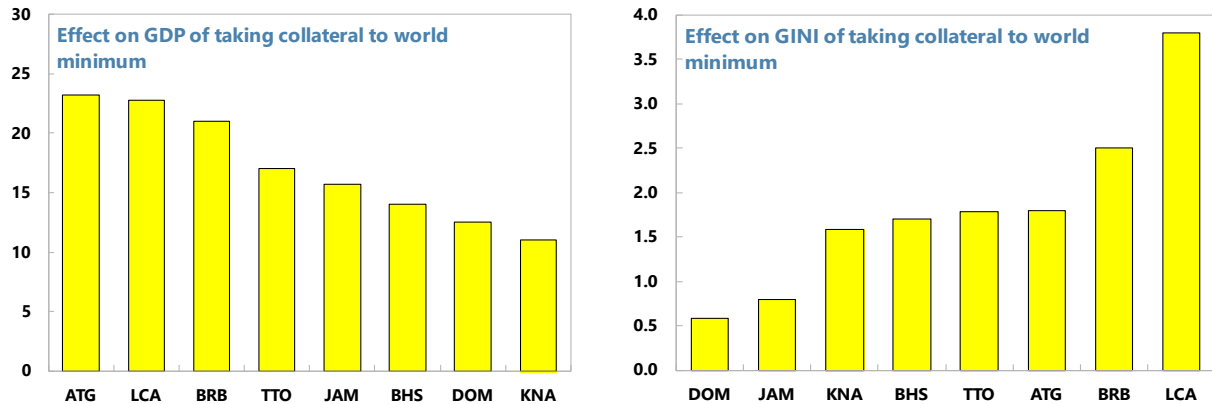
A. Relaxing Collateral Requirements

The largest GDP gains accrue from lowering collateral requirements (Figure 8). The model predicts that total cumulative expansion of the Caribbean countries’ GDP could range between 10 and 20 percent if all collateral requirements were lowered to 50 percent, which is the lowest level of collateral across countries in the World Enterprise Surveys. The magnitude of the GDP gain across countries, however, depends on the levels of other constraints. For instance, Antigua and Barbuda and St. Lucia are the biggest gainers in the sample, driven by a combination of currently high levels of

⁷ The model, due to its design, allows only for constraints to be loosened across the board and does not allow for policy experiments where constraints are relaxed for only one part of the population (e.g. to model the impact of a partial credit guarantee to smaller firms). This is an important question and remains open for future research.

collateral and moderate constraints in other areas. Thus, when collateral constraints are loosened in these economies, firms can take full advantage since the other constraints are relatively benign. This is not the case in Jamaica, for example, because even after collateral requirements are lowered, firms still face high spreads and high participation costs.

Figure 8. Relaxing Collateral Requirements
(cumulative percent change to GDP levels)



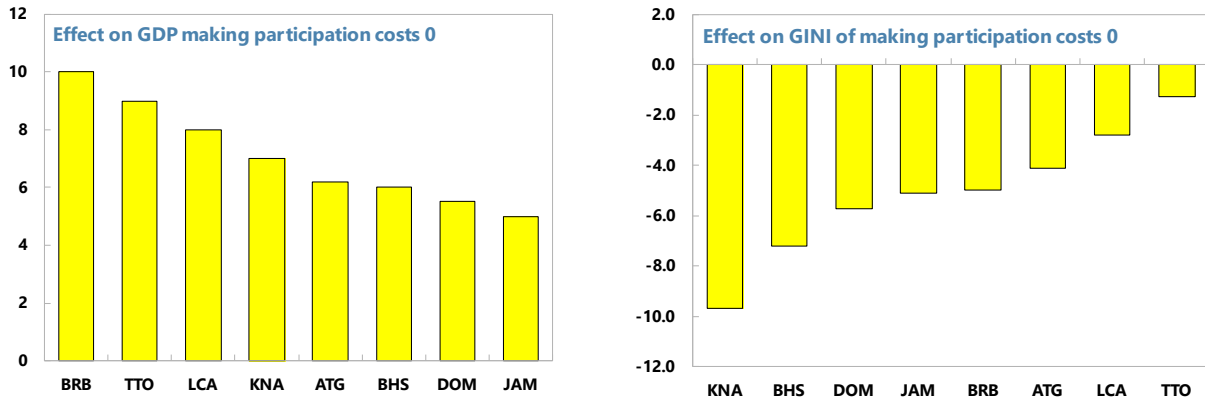
Source: IMF Staff Calculations.

Lowering collateral requirements will, however, exacerbate inequality. Although everybody benefits from borrowing more against the same level of collateral, productive firms in the economy benefit more because they have the most to gain from expanding the scale of their operations. Higher leverage leads to more investment for larger companies, which generates a higher scale of production, thereby boosting growth. These gains, however, accrue more to the top of the distribution (larger firms), thereby worsening inequality.

B. Lowering Participation Costs

Reducing participation costs to zero also has a significant positive effect on GDP for all Caribbean countries, with average gains of about 7 percent (Figure 9). These gains are higher for countries where small enterprises account for a larger portion of the economy. For example, Barbados, where the largest 5 percent of firms employ only 22 percent of total labor (compared with an average of 39 percent of total labor in the other countries), reaps the highest GDP benefits from loosening participation costs. Moreover, these gains are also supported by low spreads and collateral requirements prevailing in the country, which allows the smaller firms to take full advantage of the credit market once they enter.

Figure 9. Lowering Participation Costs
(cumulative percent change to GDP levels)



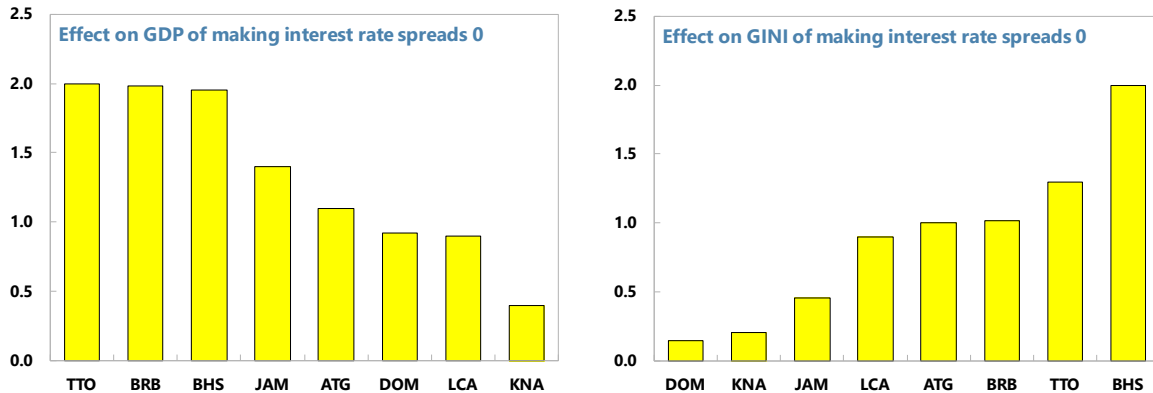
Source: IMF Staff Calculations.

The participation cost, which is a fixed cost reflecting regulatory requirements, documentation, and red tape, is a more binding constraint for smaller firms (Krešić, Milatović, and Sanfey 2017), and therefore unambiguously improves inequality when lowered. In a sense, this is the most binding constraint on an extensive margin because it largely determines how many firms have credit access but not directly how much credit. The size of the impact on inequality, once again, depends on the way in which country-specific factors interact with financial sector characteristics. For example, the large reduction in inequality for St. Kitts and Nevis is driven partly by the dominance in the country of small firms (the largest 5 percent of firms employ 32 percent of labor) whereas the strong effect for The Bahamas comes from its current low levels of participation.

C. Lowering Intermediation Costs

In this sample of countries, growth and inequality both are the least responsive to lowering the interest rate spread (Figure 10). Just as for collateral requirements, loosening this constraint mostly benefits those firms that already have access to credit, generating a positive impact on growth but a worsening of inequality. Contrary to collateral requirements, however, lower spreads make credit cheaper without directly expanding the amount of leverage; the impact is strongest among medium-sized firms for which these costs were a larger proportion of their profits. Thus, loosening this constraint does little to help the smallest firms that are currently outside the credit market for other reasons (for example, participation constraints)—hence worsening inequality—and does not significantly affect the most productive firms in the economy (which were already bearing the higher spreads), resulting in a smaller impact on growth.

Figure 10. Lowering Intermediation Costs
(cumulative percent change to GDP levels)



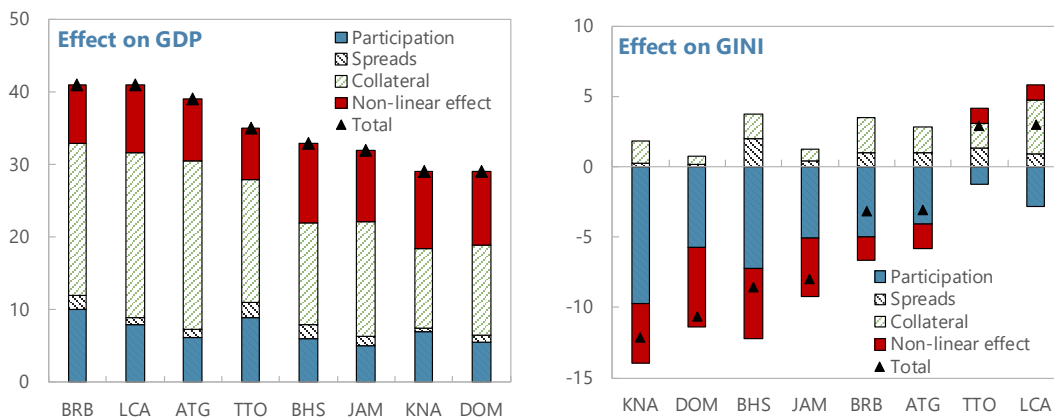
Source: IMF Staff Calculations.

D. Combined Effect of All Constraints

The analysis above, based on relaxing individual constraints, shows that the benefits come with trade-offs. Although the model suggests that relaxation of the collateral requirement will generate the highest increase in growth, it could also *exacerbate* inequality; lowering participation costs will also boost growth, but by a little less, and will *reduce* inequality.

So, what happens when all three constraints are loosened concurrently? The various constraints interact such that the joint effect on GDP is more than the additive effect of loosening each constraint in isolation (Figure 11, panel 1). Inequality also declines, on net, for most of the countries in the sample (Figure 11, panel b). Note, however, that in this case the nonlinear effect may help exacerbate inequality (that is, loosening collateral constraints and spreads both exacerbate inequality, and their joint effect is stronger than the sum of their isolated effects).

Figure 11. Loosening all three constraints



Source: IMF Staff Calculations.

While not directly included in the model, stability factors should inform the decision about which constraints to loosen. Policies which would lead to a reduction in collateral constraints and a lowering participation costs (e.g. streamlined regulations, improve supervisory regimes), while beneficial for

growth and inequality, could also expose the economy to instability. For example, high leverage levels and entry of lower productivity/higher risk firms into the credit market could increase nonperforming loans, which are already at relatively high levels in some countries. Thus, a strong regulatory and supervisory environment will be paramount to ensure continued financial stability as inclusion policies unfold.

V. CASE STUDY: JAMAICA

A. Facts

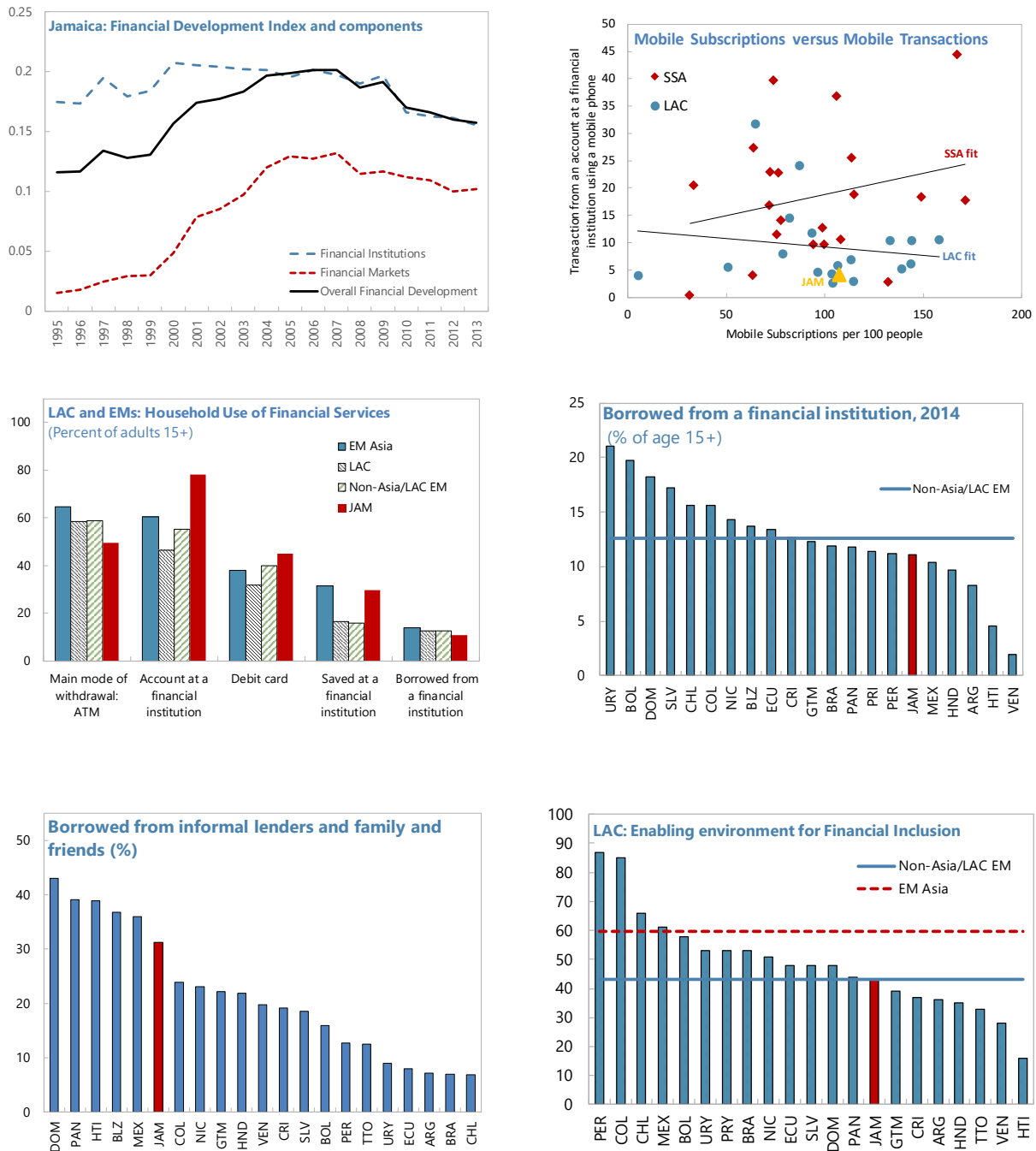
As discussed in the previous section, there is no “one-size-fits-all” solution to financial inclusion; the most binding constraints and drivers vary by country. This section takes an in-depth look at Jamaica and several of its constraints to examine potential policies. This case study could serve as a template for examining constraints to financial development and inclusion, and could be applied to other Caribbean countries as data become available.

As shown in Figure 12, Jamaica’s financial development has been broadly stable albeit declining since the mid-2000s. Although development of financial institutions has been sluggish since 1995, financial market development improved until the 2008–09 global financial crisis. The stagnation of financial institution development in Jamaica is likely linked to the crisis experienced by the country in the early 1990s. The crisis had a severe impact on the country’s public debt, which in turn encumbered private sector balance sheets and crowded out private credit. The financial system, which had more than 100 institutions in 1995, by 2015, the two largest banks accounted for three-quarters of the banking system’s assets.

Despite this history, financial inclusion indicators, especially for household usage of financial services, point to significant potential that could be tapped in Jamaica. Almost 78 percent of households report having an account at a financial institution, one of the highest rates in the world, versus only 47 percent in LAC. Furthermore, Jamaica is also a leader in the number of people who report saving at a financial institution and the proportion of households that use a debit card. There is also significant potential for mobile banking with a large proportion of mobile subscription coverage but relatively non-existent use of mobile banking services.

Nevertheless, this significant coverage blurs weaknesses in the provision of credit by the formal financial system. Only 11 of households surveyed report borrowing from a financial institution, compared to 13 and 14 percent in LAC and EM Asia, respectively. While access to credit is an endogenous decision by households, these low levels of access to credit from financial institutions do not appear to be driven by lack of demand, as more than 30 percent of households report borrowing through informal channels (friends, family, or informal lenders)—one of the highest proportions in a region where informal borrowing is already high. A significant number of households and SMEs also rely on microfinance institutions and credit unions.

Figure 12. Financial Development and Inclusion in Jamaica



Source: FINDEX, Global Microscope, and IMF Staff Calculations.

According to the 2014 Global Microscope Survey, reforms have helped improve Jamaica’s environment for financial inclusion but results will take time to be realized. For example, the still nascent credit bureau system will help lower intermediation costs, but weaknesses in information sharing between bureaus and other entities (such as tax administration, banks, and other lenders) implies significant gaps in use of the system. A registry for movable collateral has been established,

and the new framework for electronic retail payment services will provide a boost to mobile payments. In addition, the regulatory framework has been recently changed to facilitate banking agents.

B. Quantitative Model

From the discussion in the previous section, it is evident that access to credit is a multi-faceted problem in Jamaica given its severely binding constraints in terms of the fewest firms with access to credit, the highest levels of collateral constraints and the highest spreads. Using the same model discussed in section IV, we next turn to examining in detail the quantitative effects of relaxing each one of these constraints on several different outcome variables: GDP, TFP, GINI, interest rate spread, percent of firms with credit, and number of entrepreneurs in the economy.

Table 1. Effects from Loosening Constraints

Effect of loosening...	On each of the variables...					
	GDP	TFP	GINI	Spreads	Firms with credit	Number of Entrepreneurs
Participation Cost	↑	↓	↓	↑	↑	↑
Borrowing Constraints	↑	↑	↑	↑	↑	↓
Intermediation costs	↑	0	↑	↓	↑	0

Table 1 summarizes the outcomes for each of the abovementioned variables when each of the three constraints (participation costs, borrowing constraints, and intermediation efficiency) is loosened. A few dynamics in the model warrant attention:

- Lowering participation costs (first row of Table 1) will lower the economy's average productivity level as smaller (and less productive) firms enter the market.
- Lower collateral constraints (second row) will increase average TFP (as productive firms become even larger), but with negative consequences for competition as the number of firms (proxied by entrepreneurs in the model) drops.
- The loosening of both participation and borrowing constraints endogenously increases spreads (fourth column). In the first case, this increase is driven by the entry of less talented entrepreneurs whose firms are riskier. In the second case, the increased leverage of large firms concentrates credit risk in the economy; if any of these large firms fail, the lender will incur significant losses. These endogenous changes in spreads illustrate the need to combine various financial inclusion policies to achieve the desired final outcomes.

We next discuss each of these effects in detail.

Reducing participation costs

Reducing participation cost to 0 boosts the economy through two channels: (i) more firms enter the borrowing market and thus there will be more entrepreneurs and (ii) fewer funds are "wasted" on paying participation costs and more is invested into productive activities. A notable effect from the first channel, however, is that more small (and less productive) firms enter into production thus lowering average TFP for the economy. Nevertheless, the "gains" in the economy are now more spread out, as shown by the decline in the GINI.

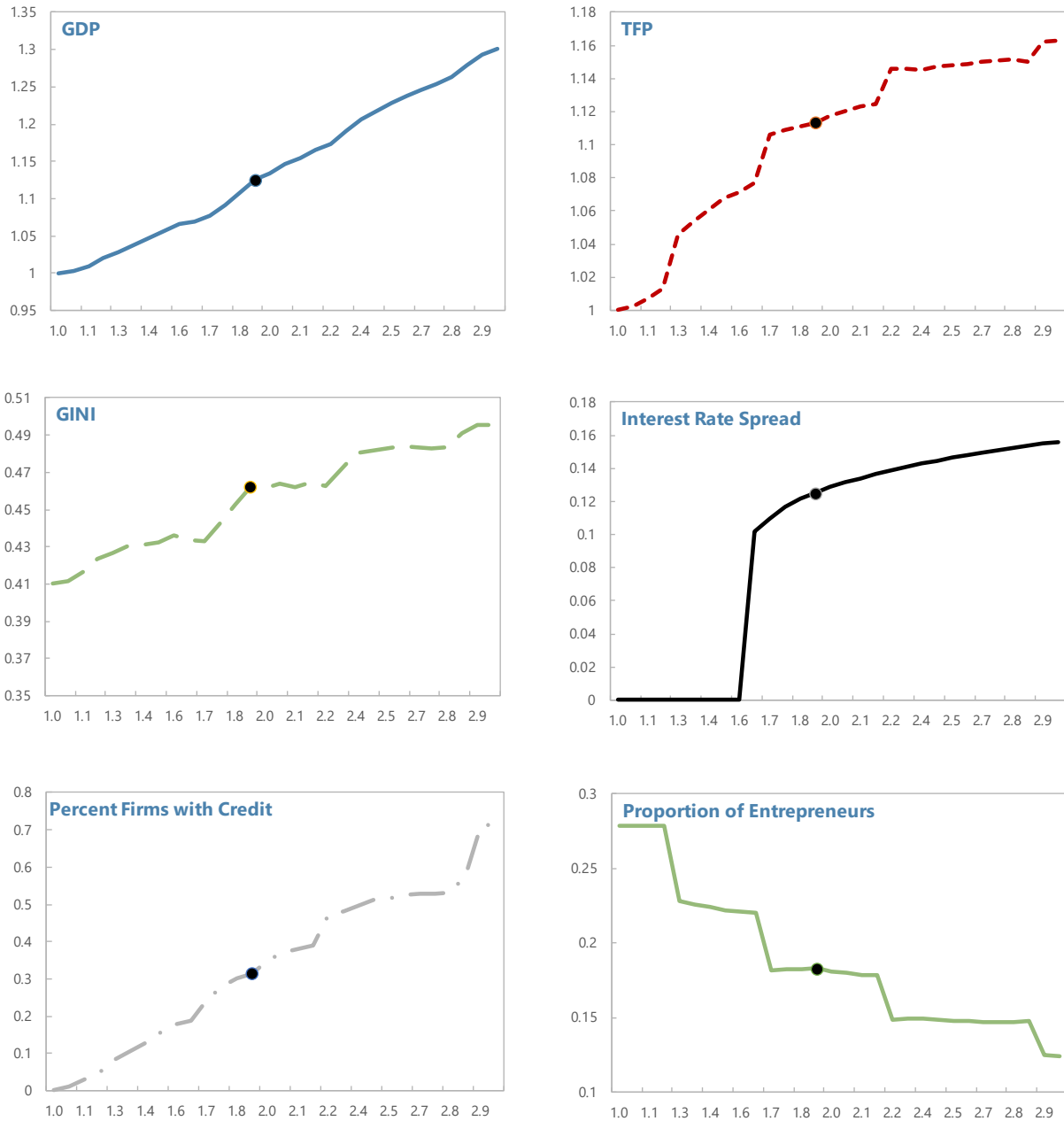
Figure 13. Comparative Statics: Relaxing Participation Costs



In the model, the effects of lowering participation costs have countervailing effects on the interest rate spread. On the one hand, the lower participation costs and the entry of smaller, less wealthy and more constrained entrepreneurs will increase interest rate spreads as leverage ratios go up in the overall economy. On the other hand, entrepreneurs who were already in the credit market in the baseline will deleverage when facing lower participation costs (since they have more money available) and thus bring down the interest rate spread. In the case of Jamaica, the first effect dominates (albeit only slightly) and thus interest rate spreads go up. Why does the first effect dominate? Because the proportion of entrepreneurs who are in the credit market in the baseline is relatively small, making the deleveraging effect also relatively small.

The decrease in GINI is driven by the significant growth in the proportion of firms that have access to credit. As participation costs approach 0, all firms who want credit will get (some) credit although they remain constrained by collateral constraints and interest rate spreads.

Figure 14. Comparative Statics: Relaxing Borrowing Constraints

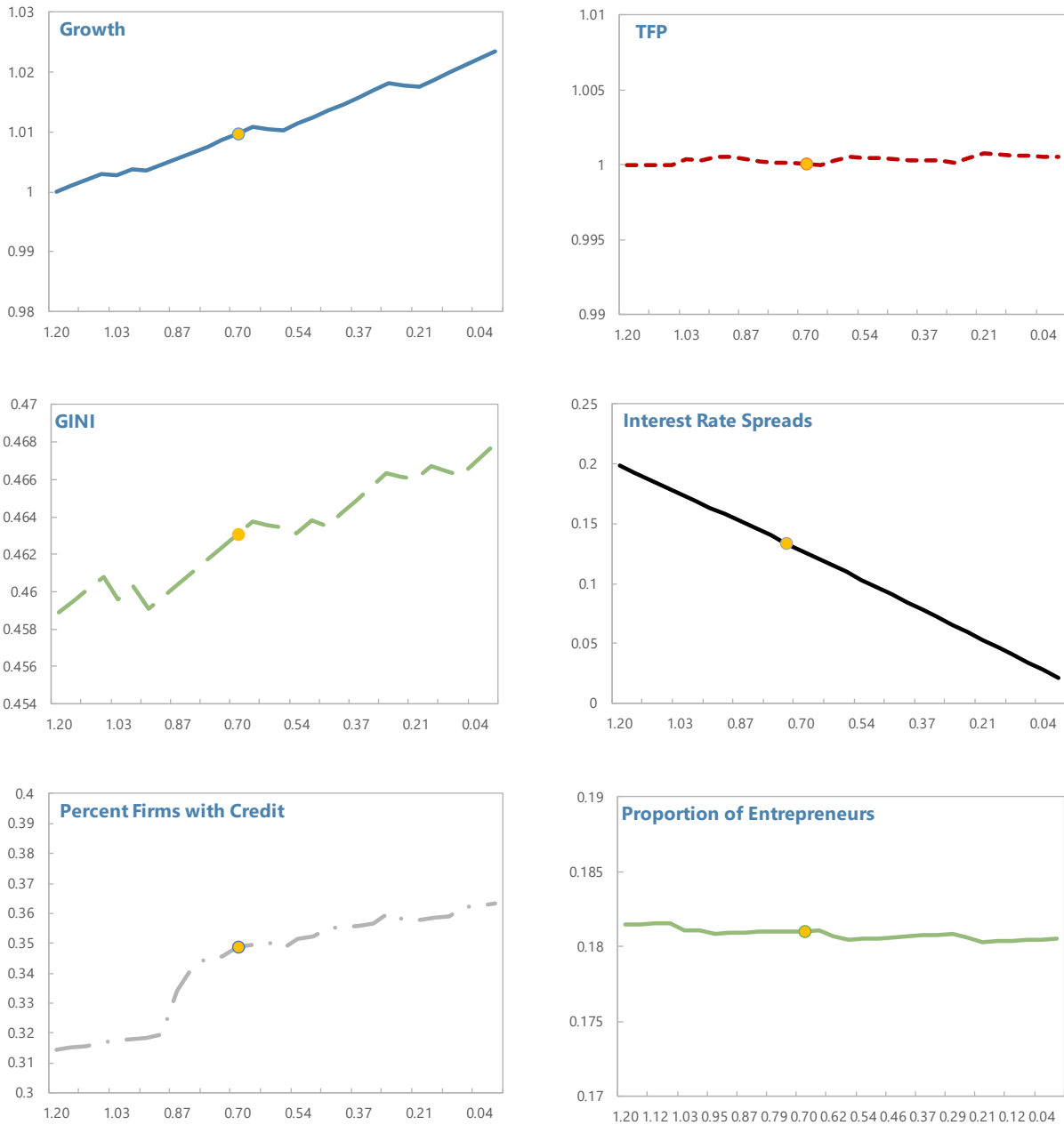


Reducing borrowing constraints

Contrary to participation costs, the relaxation of borrowing constraints has positive effects on *both* GDP and TFP but at a cost of increased inequality. The increase in GDP is significantly higher than in the previous experiment, and as shown in IV, this pattern holds for all countries. Intuitively, relaxing borrowing constraints benefits the high productivity firms (who were already borrowing) who can significantly increase their leverage and scale up production, thus driving up overall TFP levels in the economy. This effect, however, has two negative consequences: (i) it worsens inequality, by making

the top firms better off, and (ii) it also endogenously drives up interest rate spreads due to the higher leverage ratios of these large entrepreneurs.

Figure 15. Comparative Statics: Increasing Intermediation Efficiency



Nevertheless, there are some extensive margin benefits as the proportion of firms with credit access grows somewhat. However, and quite interestingly, the proportion of people who choose to open firms (i.e. become entrepreneurs) actually drops, likely due to the endogenously higher spreads.

Increasing Intermediation Efficiency

Increasing intermediation efficiency has the same effects on GDP and inequality as reducing borrowing constraints but at a much smaller magnitude. The benefits from smaller intermediation

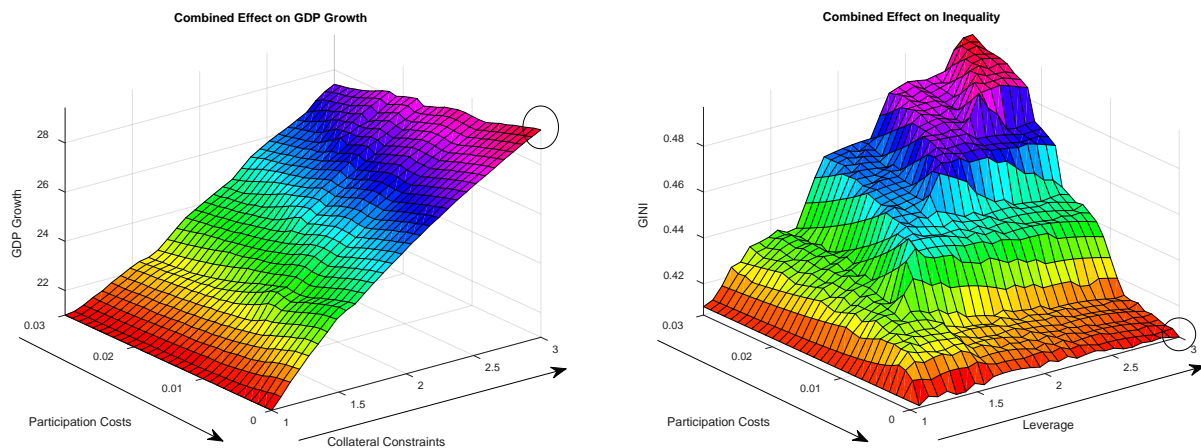
costs again mostly incur to the already highly leveraged firms – which are few since collateral constraints and participation costs are high in Jamaica.

On net, interest rate spreads drop, as direct effect of increasing intermediation efficiency outweighs the upward pressure put on interest rates by the higher leverage of these large firms. In the case of Jamaica, partly due to the high collateral constraints, the direct effect dominates and interest rate spreads drop.⁸ Lower interest rate spreads also generate a slight increase in the proportion of firms that have access to credit, but the effect is only marginal.

Combining Policies

Recall from section IV that the effect of joint loosening of constraints is larger than the additive effect of loosening each in isolation. However, the path to this final effect may not be monotonic. To illustrate this, Figure 16 plots the combined effect of reducing both collateral constraints and participation costs for Jamaica, and how the final values previously shown in Figure 11 are derived. GDP increases monotonically in every direction on the surface (panel a). However, for inequality (panel b), if participation costs remain above a certain level, any further loosening of collateral constraints could worsen inequality. Thus, policies to loosen collateral constraints should be phased in tandem with steps to ease participation constraints

Figure 16. Lower Participation Costs and Collateral Requirements



The combined relaxation of participation and borrowing constraints ameliorates the latter's effect on increasing inequality and produces an outcome that generates higher GDP (nearly 30 percent) with a decrease in the Gini coefficient of 0.06 (the circles in each panel indicate the point at which both constraints are fully loosened). The reason for this more-than-additive increase is that while relaxing participation constraints allows more firms to enter the credit market, many of the new entrants have very low wealth and thus remain borrowing constrained. Thus, the combined relaxation of the two constraints, not only allows more firms to access credit, but it allows for increased leverage for the new (wealth-constrained) entrants.

⁸ If collateral constraints were looser, when intermediation efficiency improves, some firms (the very productive ones) would want to significantly increase leverage, generating high levels of concentrated risk.

VI. CONCLUSIONS AND POLICY RECOMMENDATIONS

Caribbean financial systems are relatively well developed for their size, but financial inclusion could be improved. Some countries have deep markets as a result of government debt while others have developed offshore financial centers with some positive—but limited—spillovers to domestic markets and smaller clients.

Financial development could be improved. The financial development levels of The Bahamas, Barbados, Jamaica, and Trinidad and Tobago remain in the mid range of LAC. There is scope for further financial development, but care should be taken to safeguard financial stability. Policies that may be pertinent for these countries include strengthening institutional and legal frameworks related to property rights and collateral registries, as well as improving the credibility of financial systems and deposit insurance, enhancing capital and liquidity buffers, and addressing balance sheet mismatches.

Policies to support SMEs are warranted. Key supporting measures include understanding the determinants of banks' fees and charges, examining the existence of and eliminating predatory practices, and reviewing the adequacy of banking sector competition (including the framework for entry). As financial inclusion improves and more users enter the market, measures to reduce information costs (strong credit bureaus), efforts to reduce operational costs (using mobile networks and correspondent banking), and measures to improve the efficiency of courts and collateral recovery systems are necessary.

There is no silver bullet solution to easing financial constraints. There are trade-offs between growth, inequality, and financial stability; all should be considered when policies are designed. For example, even though policies aimed at lowering collateral requirements (such as strengthening the legal framework for managing and seizing collateral, reducing the size of collateral requirements, and creating modern collateral registries) are mostly beneficial for growth, they may also lead to higher inequality as marginal benefits accrue to the top of the distribution. In contrast, policies aimed at reducing participation costs (for example, lowering documentation requirements and reducing red tape and the need for informal guarantors to access finance) could help reduce inequality but may not yield comparable growth benefits.

Synergies from a multipronged approach. The joint loosening of multiple constraints is likely to yield larger returns (higher growth and lower inequality) than the sum of loosening several constraints sequentially. However, the transition to that final state may also entail temporary increases in inequality. Hence, tailored policies require a clear understanding of country-specific constraints, priorities, and timelines. Last, significant care should also be taken to ensure that a strong framework for financial regulation and consumer protection is in place to safeguard the benefits of expanded financial inclusion without jeopardizing financial stability.

Significant data gaps hamper analysis for most countries in the region. Good data are key to understanding the met and unmet needs of the users of financial services, their socioeconomic and demographic characteristics, and how financial constraints affect them. As an immediate first step, the Caribbean could focus on the collection of demand-side data to help diagnose problems, identify constraints, design targeted policies, and then monitor their impact.

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