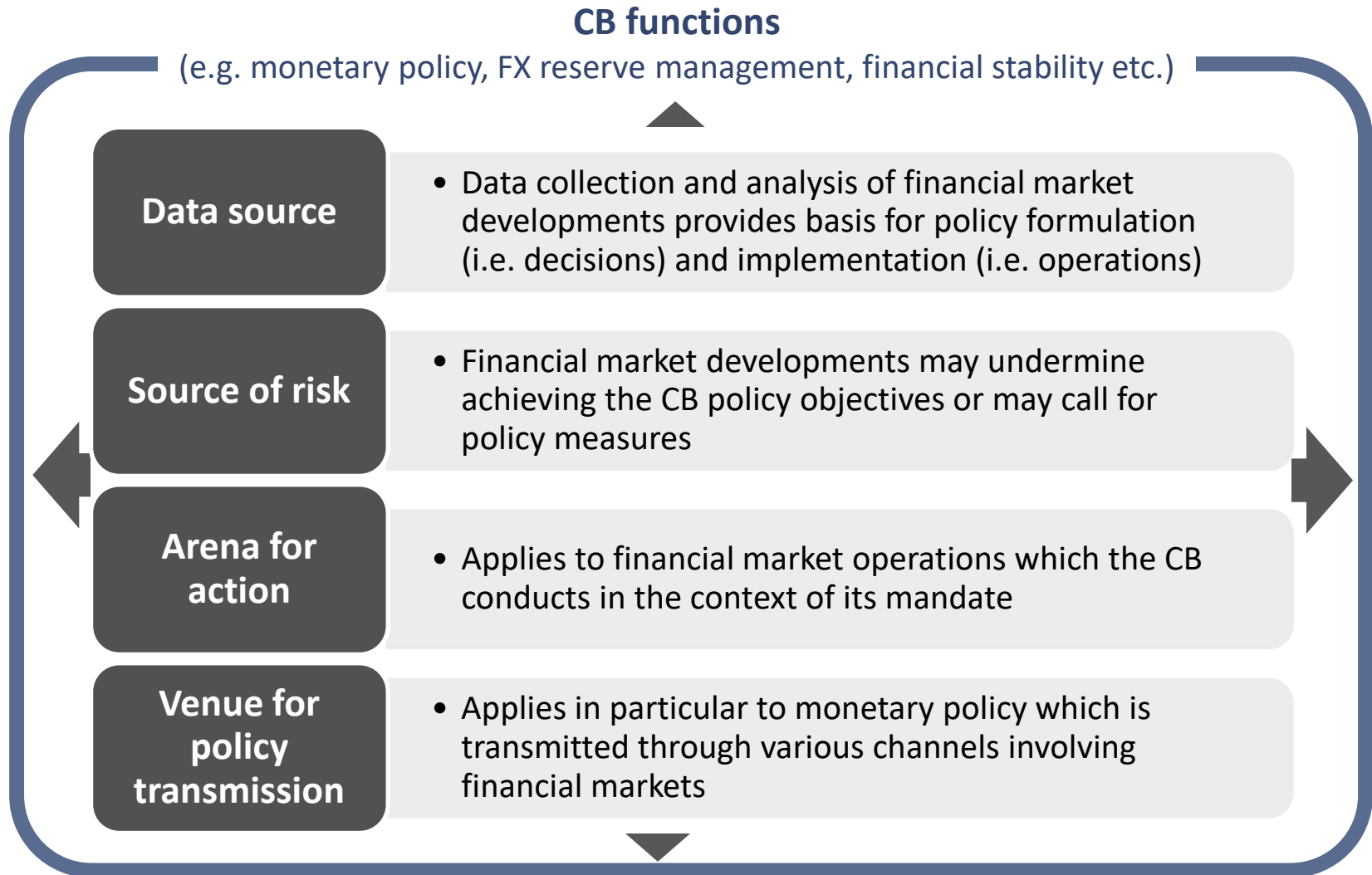# Monitoring & assessing financial market development
A bird's eye view

Sonja Juko, Senior Advisor for Monetary Policy and Financial Markets, Center for International Central Bank Dialogue

Motivation: Role of financial market for CB (RECAP)

CB functions
(e.g. monetary policy, FX reserve management, financial stability etc.)

Data source	• Data collection and analysis of financial market developments provides basis for policy formulation (i.e. decisions) and implementation (i.e. operations)
Source of risk	• Financial market developments may undermine achieving the CB policy objectives or may call for policy measures
Arena for action	• Applies to financial market operations which the CB conducts in the context of its mandate
Venue for policy transmission	• Applies in particular to monetary policy which is transmitted through various channels involving financial markets

Motivation: Benefits of financial markets (RECAP)

▌ **Achievement of general economic objectives (that are relevant for CBs) depend on financial market development**
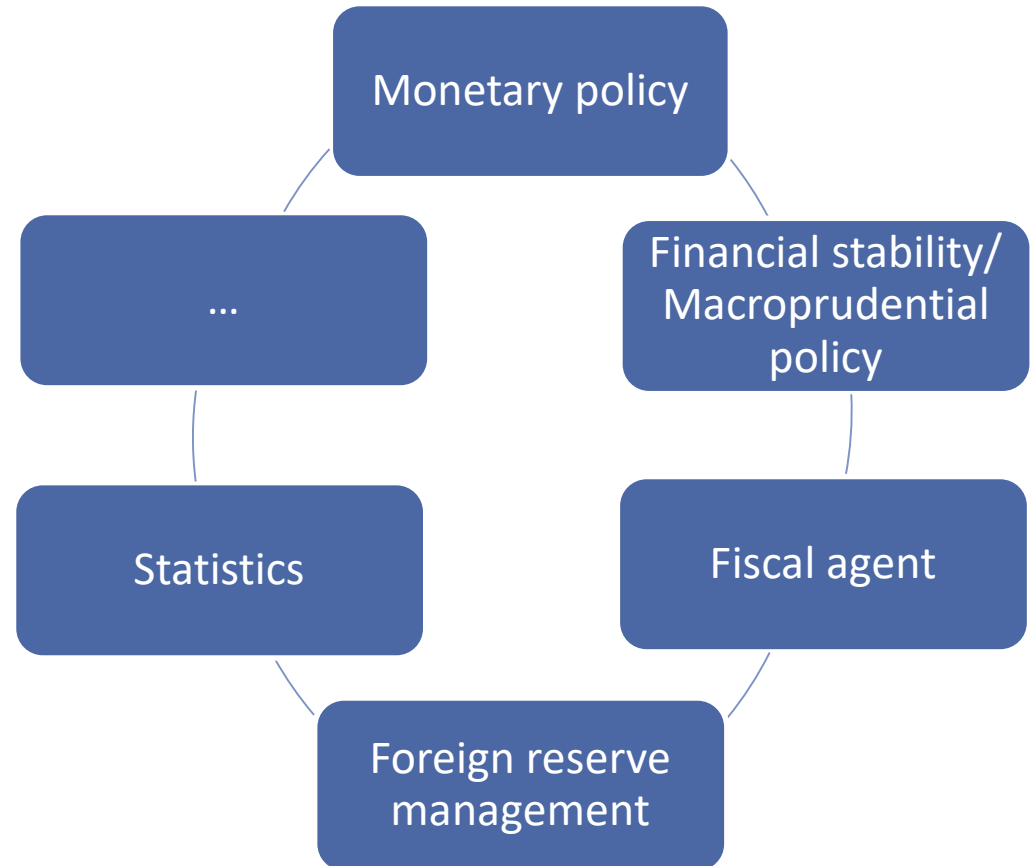
Contribute to efficient allocation of economic resources

Support economic growth

Promote poverty reduction

Aim of presentation

▎ **Reflect on the motivation of CBs to monitor and assess financial markets (and their development)**

▎ **Reflect on conceptual approaches how financial market characteristics and developments can be assessed**

▎ **Reflect on stage of financial market development of LAC countries and identify basic issues in financial market development of individual countries**

Monitoring & assessing financial market development
Motivation

For what purposes do CBs monitor financial market developments?

Which functions/areas of CBs require a continuous monitoring and assessment of financial market developments/ conditions and why?

– Which financial market segments are you monitoring with regards to your tasks at the CB and why?

Monetary policy

Financial stability/ Macroprudential policy

…

Fiscal agent

Statistics

Foreign reserve management

Monitoring & assessing financial market development
Motivation: Depends on CB function

▎**Motivation by CBs to monitor and assess financial market development differs depending on function**

Monetary policy	• Analyse policy transmission • Assess effectiveness and weaknesses of policy implementation • Identify policy measures which strengthen market related channels
Financial stability	• Analyse (systemtic) risks to financial stability (incl. market frictions) • Identify and assess need for macroprudential measures to mitigate risks to financial stability caused by financial market developments
FX reserve management	• Analyse and assess universe of assets for investments • Analyse risks of FX portfolio • Prepare asset allocation decisions
Other	• Statistics: Collect data & monitor developments in financial markets to update reporting requirements in order to incorporate important changes in financial markets in official statistics

To access the survey please open the weblink below

https://sonjajuko9053.survey.fm/assessing-financial-market-development-1

Link for moderator: https://crowdsignal.com

How do you assess the stage of financial market development in your country? Rank your country on a scale from 0 to 1.

Note: 0 is lowest possible value, 1 is highest possible value

Conceptual approach to financial market monitoring

❙ **How can financial markets and market developments be monitored, assessed & benchmarked?**

❙ **Which aspects (indicators) can/should be monitored in order to assess financial market developments?**

   − … in broad terms?

   − … with a view to different financial market functions?

Monitoring and assessing financial market development: A bird's eye view
Sonja Juko, Deutsche Bundesbank

Conceptual approach to financial market monitoring
Financial sector assessment: Comprehensive approach (World Bank)

Indicators of financial structure, development and soundness (Chapter 2)

Framework for financial stability analysis and assessment (Chapter 3)

Assessing financial structure and financial development

Evaluating securities markets supervision (Chapter 5)

Assessing the legal infrastructure (Chapter 9)

Assessing information and governance infrastructure (Chapter 10)

Assessing systemic liquidity infrastructure (Chapter 11)

Sequencing financial sector reform (Chapter 12)

Data sources for financial sector assessment (Appendix C)

Conceptual approach to financial market monitoring
Aspects to monitor relating to notion of market functions/functioning

▌ …highlighted in the literature

- … with a view to financial markets in general/as a whole (→ broad measures) or specific market segments (→ narrow measures)

Structure	**Depth (size)**	**Access (inclusion)**
Efficiency	**Liquidity**	**Soundness (stability)**
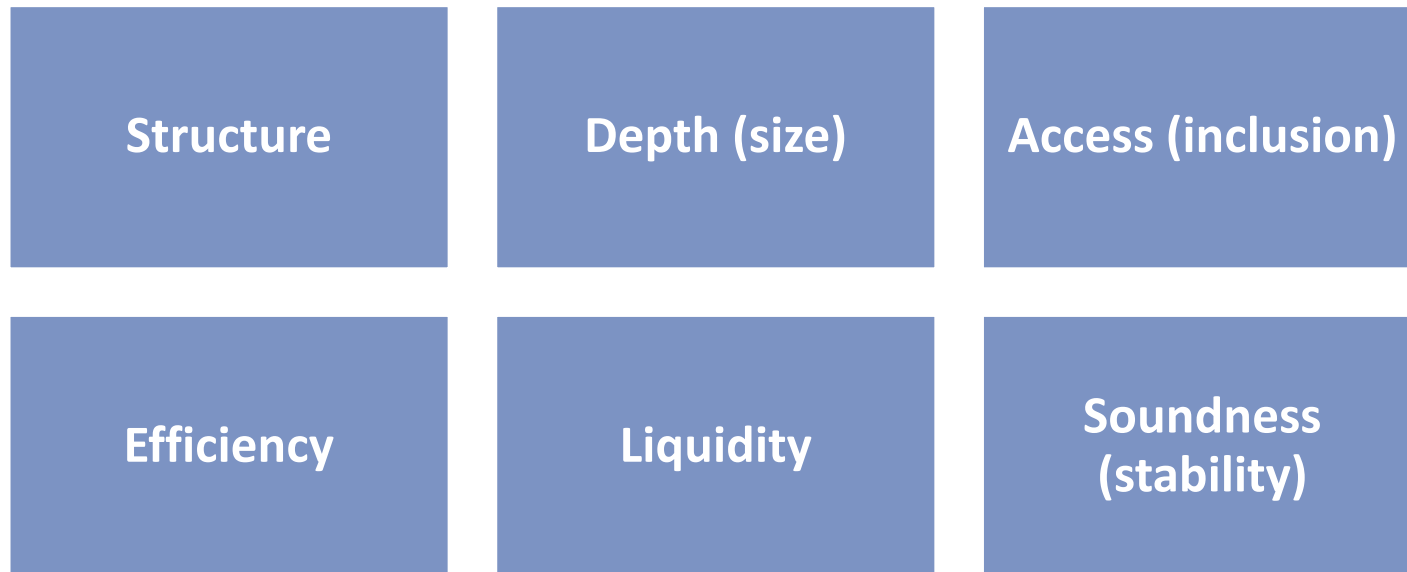
Conceptual approach to financial market monitoring
Broad indicators (Svirydzenka 2016)

I Financial development is multidimensional: A wide range of financial institutions and markets facilitates the provision of financial services

– Financial markets allow individuals and firms to diversify their savings, and firms can now raise money through stocks, bonds, and wholesale money markets, by-passing traditional bank lending

I An important feature of financial systems (incl. financial markets) is access and efficiency

– Large financial systems (incl. financial markets) are of limited use if they are not accessible to a sufficiently large proportion of the population and firms or inefficient

I One needs to look at multiple indicators to measure financial development more comprehensively to capture various functions

– Single indicators as proxies for financial market development have clear shortcomings!

Conceptual approach to financial market monitoring
Broad indicators (based on Cihak et al 2012)

Motivation

– Provide empirical shape and substance to the complex, multifaceted and amorphous concept of the —functioning of financial systems (i.e. institutions and markets)

– Characterize and compare financial systems across countries and over time

– Assess the relationship between measures of the financial system and key financial sector policies

Guiding questions

– How can one (empirically) characterize financial systems (i.e. institutions and markets)?

– How can one compare financial systems across countries and regions and through time?

Conceptual approach to financial market monitoring
Broad indicators (Cihak et al 2012): Matrix of indicators

Four characteristics of financial markets

(a) the size (**depth**) of financial markets,

(b) the degree to which individuals can and do use (**access**) financial markets,

(c) the **efficiency** of financial markets in providing financial services,

(d) the **stability** of financial markets

Table 1. The 4x2 Matrix of Financial System Characteristics
(with examples of candidate variables in each 'bin')

	FINANCIAL INSTITUTIONS	FINANCIAL MARKETS
DEPTH	Private sector credit to GDP Financial institutions' assets to GDP M2 to GDP Deposits to GDP Gross value-added of the financial sector to GDP	Stock market capitalization plus outstanding domestic private debt securities to GDP Private debt securities to GDP Public debt securities to GDP International debt securities to GDP Stock market capitalization to GDP Stocks traded to GDP
ACCESS	Accounts per thousand adults (commercial banks) Branches per 100,000 adults (commercial banks) % of people with a bank account % of firms with line of credit (all firms) % of firms with line of credit (small firms)	Percent of market capitalization outside of top 10 largest companies Percent of value traded outside of top 10 traded companies Government bond yields (3 month and 10 years) Ratio of domestic to total debt securities Ratio of private to total debt securities (domestic) Ratio of new corporate bond issues to GDP
EFFICIENCY	Net interest margin Lending-deposits spread Non-interest income to total income Overhead costs (% of total assets) Profitability (return on assets, return on equity) Boone indicator (or Herfindahl or H-statistics)	Turnover ratio (turnover/capitalization) for stock market Price synchronicity (co-movement) Private information trading Price impact Liquidity/transaction costs Quoted bid-ask spread for government bonds Turnover of bonds (private, public) on securities exchange Settlement efficiency
STABILITY	Z-score (or distance to default) capital adequacy ratios asset quality ratios liquidity ratios other (net foreign exchange position to capital etc)	Volatility (standard deviation / average) of stock price index, sovereign bond index Skewness of the index (stock price, sovereign bond) Vulnerability to earnings manipulation Price/earnings ratio Duration Ratio of short-term to total bonds (domestic, int'l) Correlation with major bond returns (German, US)

Conceptual approach to financial market monitoring
Broad indicators (Cihak et al 2012): Background

Depth (size)
- To approximate the size of stock markets, the most common choice is stock **market capitalization to GDP**. For bond markets, the mostly commonly used proxy for size is the **outstanding volume of debt securities (private and public) to GDP**.
- Ratio of the size indicators for banks and financial markets can be used to gauge the degree to which a financial system is bank-based or market-based.

Access (inclusion)
- A well-functioning financial system that overcomes market frictions will more effectively provide financial services to a wide range of firms and households
- To approximate access to stock and bond markets, **measures of market concentration** are used, the idea being that a higher degree of concentration reflects greater difficulties for access for newer or smaller issuers.

Efficiency
- For financial markets, efficiency measures focus on **measuring transaction costs**

Soundness (stability)
- For financial markets, the most commonly used proxy variable for stability is **market volatility**

Conceptual approach to financial market monitoring
IMF Financial development index (Svirydzenka 2016)

Index approximates financial development in general with a view to basic functions that financial institutions and markets (should) provide

Figure 1. Financial Development Index Pyramid
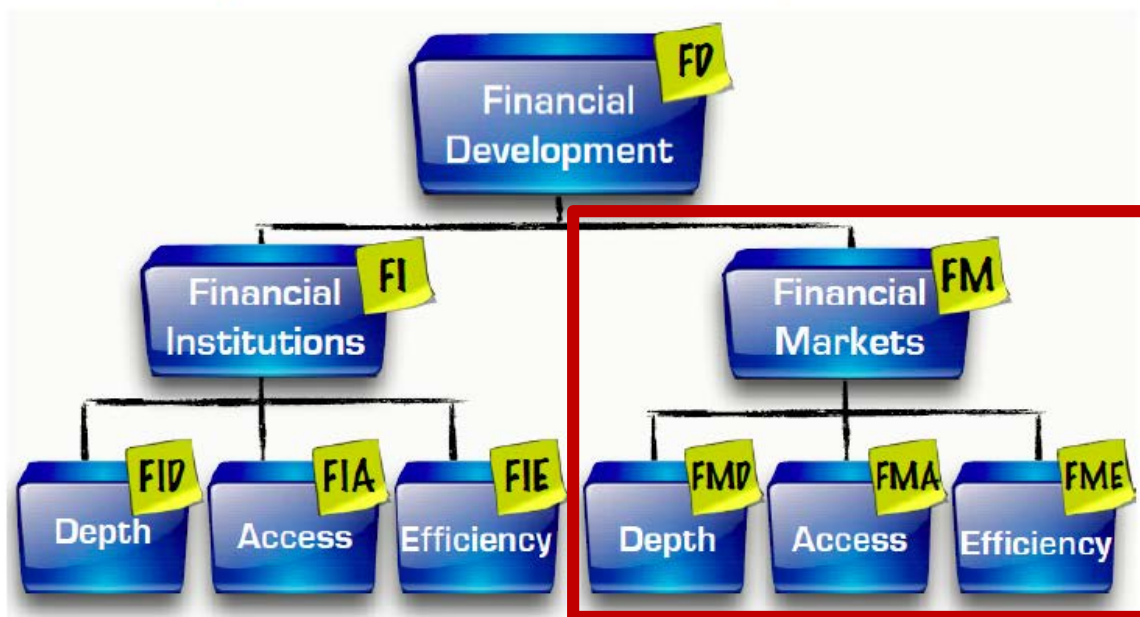
Source: IMF staff, based on Čihák and et al. (2012)

Conceptual approach to financial market monitoring
Broad indicators: Data sources of financial development index

- **Selection focuses on well established key proxy variables that cover a sufficiently wide range of countries across a sufficiently long time period**

- **Financial market indicators mainly relate to equity (stock) market which are less relevant for central banks**

→ Methodological details

Table 1. Data Sources

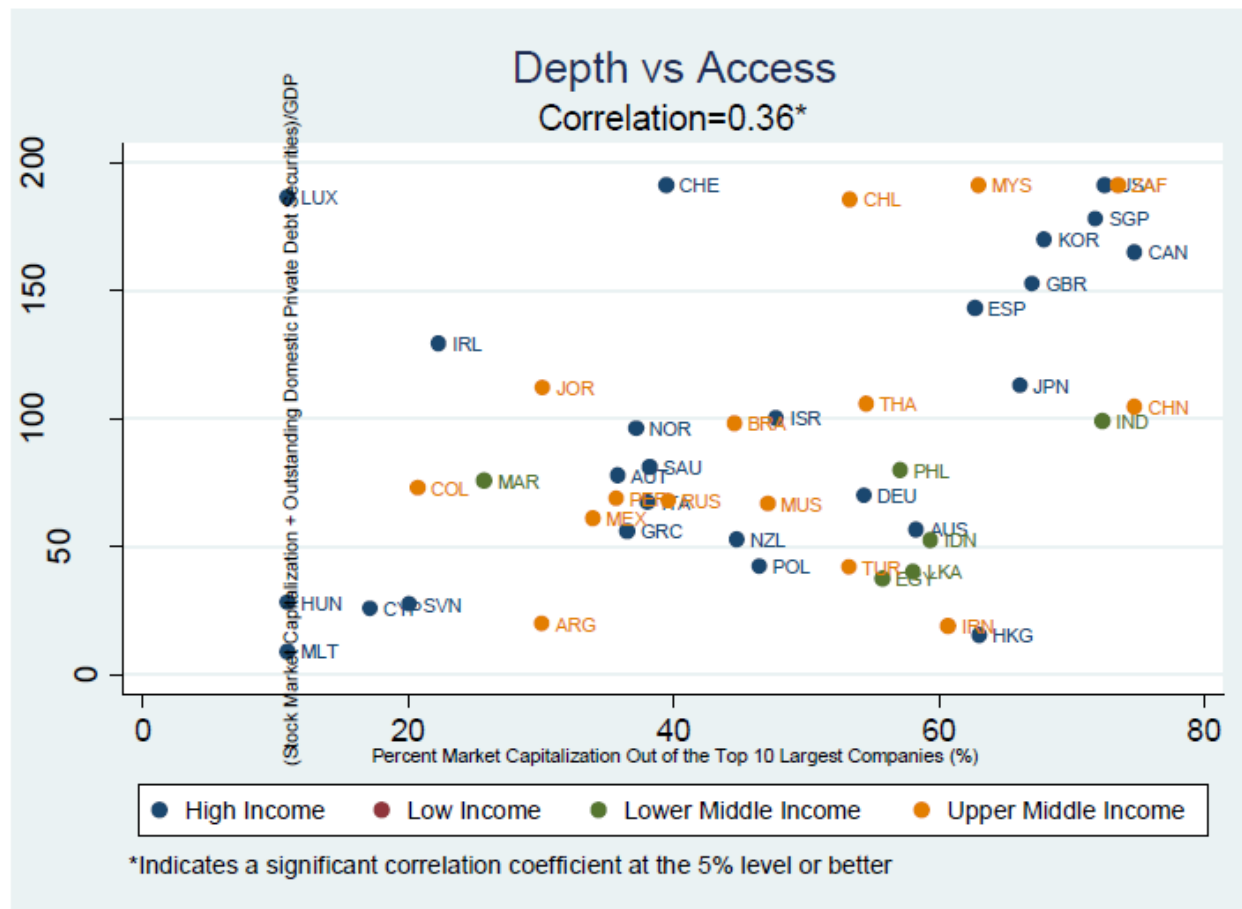| CATEGORY	INDICATOR	DATA SOURCE
Financial Institutions		
Depth	Private-sector credit to GDP	FinStats 2015
	Pension fund assets to GDP	FinStats 2015
	Mutual fund assets to GDP	FinStats 2015
	Insurance premiums, life and non-life to GDP	FinStats 2015
Access	Bank branches per 100,000 adults	FinStats 2015
	ATMs per 100,000 adults	IMF Financial Access Survey
Efficiency	Net interest margin	FinStats 2015
	Lending-deposits spread	FinStats 2015
	Non-interest income to total income	FinStats 2015
	Overhead costs to total assets	FinStats 2015
	Return on assets	FinStats 2015
	Return on equity	FinStats 2015
Financial Markets		
Depth	Stock market capitalization to GDP	FinStats 2015
	Stocks traded to GDP	FinStats 2015
	International debt securities of government to GDP	BIS debt securities database
	Total debt securities of financial corporations to GDP	Dealogic corporate debt database
	Total debt securities of nonfinancial corporations to GDP	Dealogic corporate debt database
Access	Percent of market capitalization outside of top 10 largest companies	FinStats 2015
	Total number of issuers of debt (domestic and external, nonfinancial and financial corporations)	FinStats 2015
Efficiency	Stock market turnover ratio (stocks traded to capitalization)	FinStats 2015

Monitoring and assessing financial market development: A bird's eye view
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Assessing characteristics of financial market development

Correlations (Cihak et al 2012): Depth vs access

Positive relationship between market depth and access

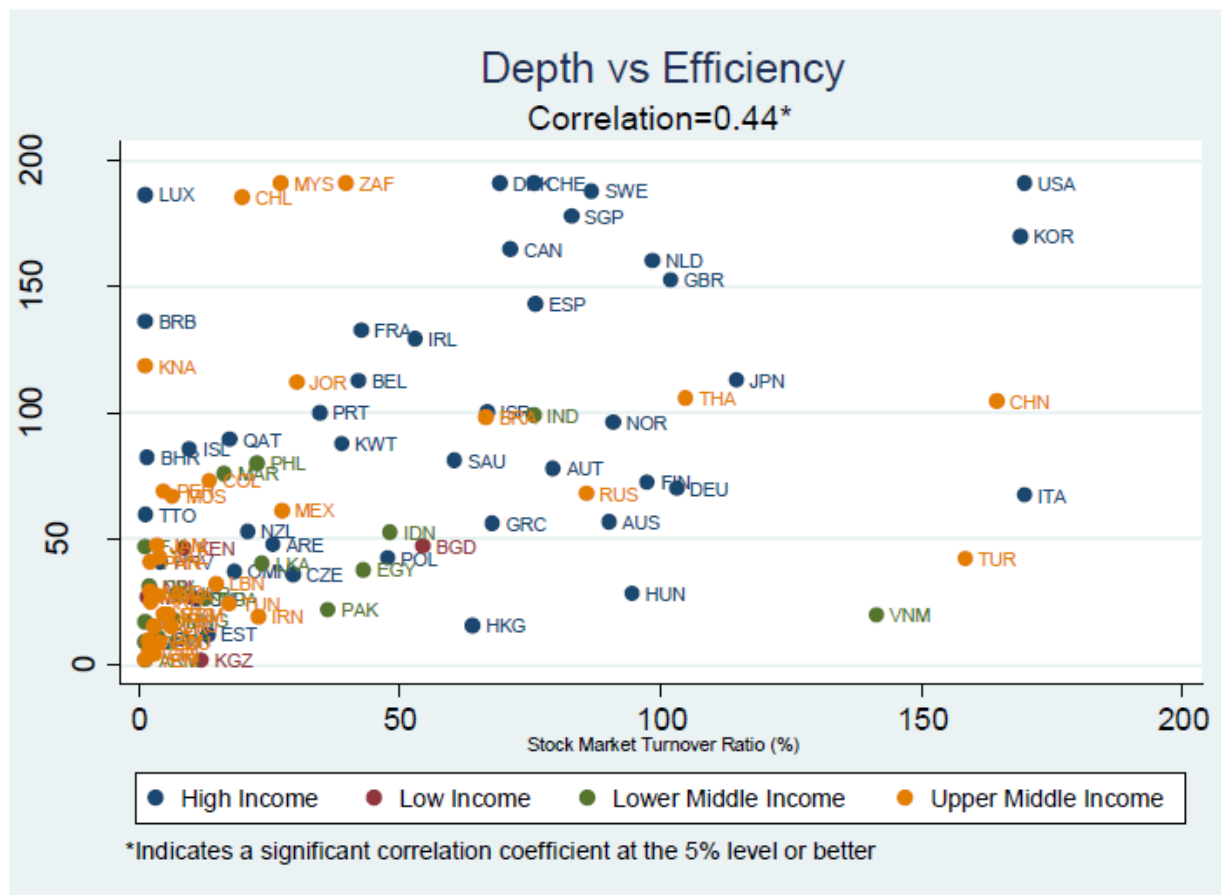– Depth (size & liquidity) of financial markets increases with rise in market access

Depth vs Access
Correlation=0.36*

*Indicates a significant correlation coefficient at the 5% level or better

Monitoring and assessing financial market development: A bird's eye view
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Assessing characteristics of financial market development
Correlations (Cihak et al 2012): Depth vs efficiency

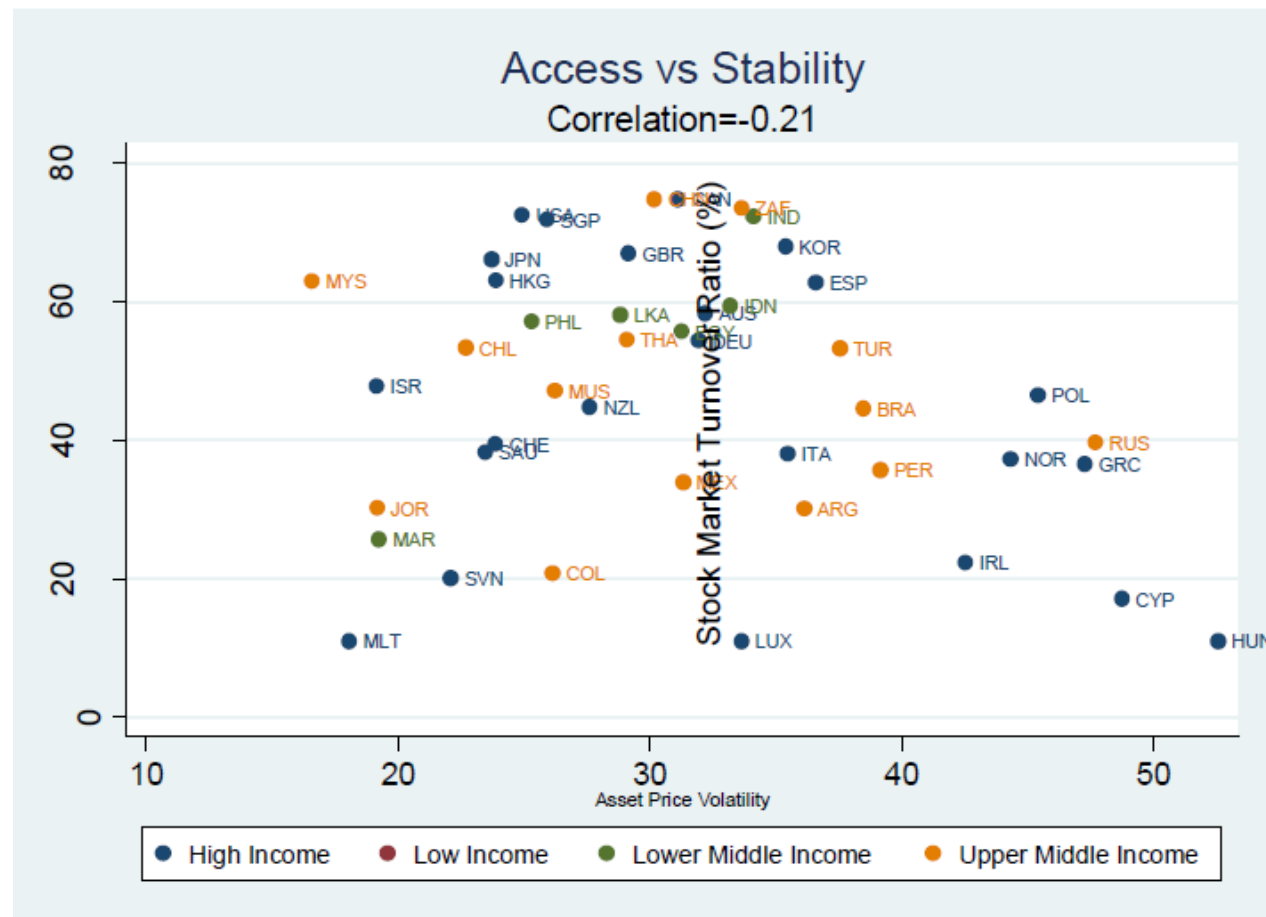**Positive relationship between market depth and efficiency**

- Depth (size & liquidity) of financial markets increases with rise in market efficiency

- **No clear relationship between market depth and stability**
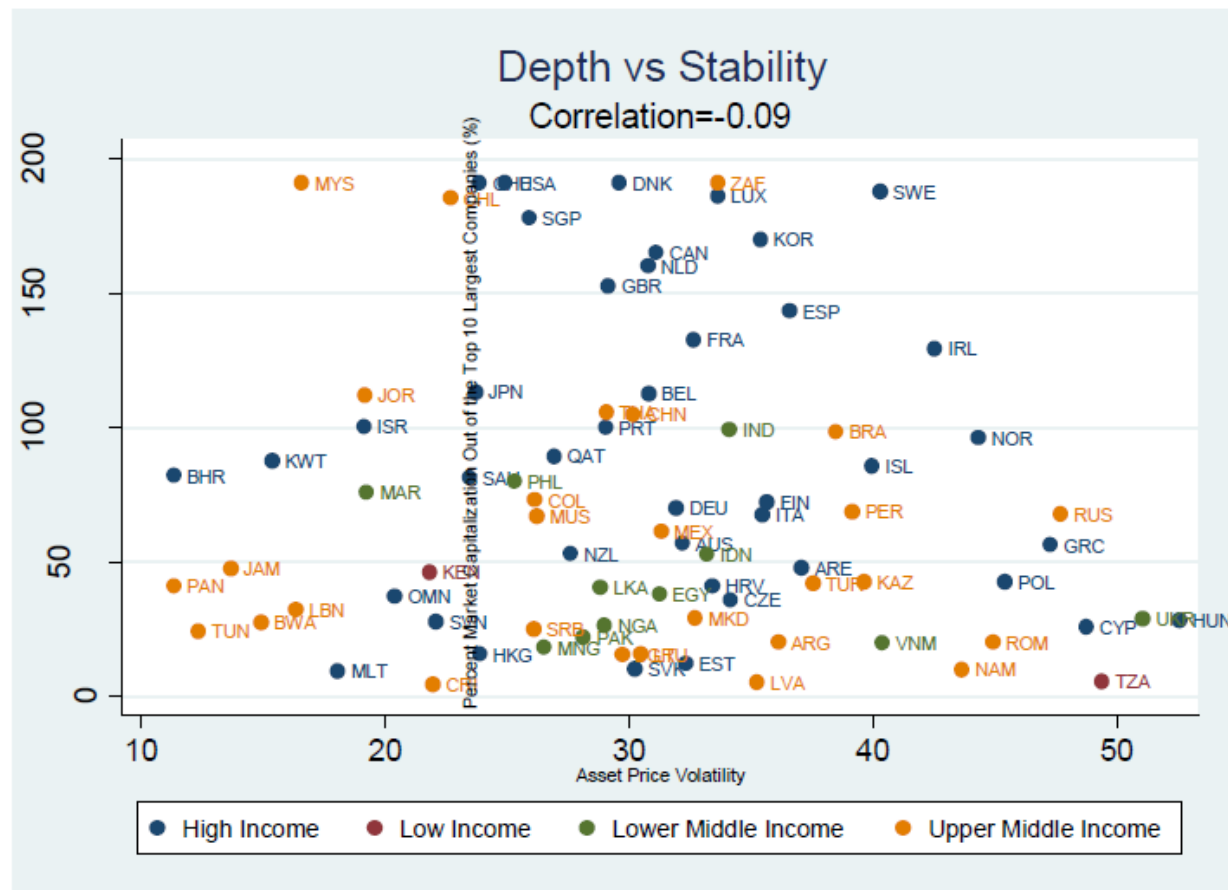
Assessing characteristics of financial market development
Correlations (Cihak et al 2012): Access vs efficiency

Positive relationship between market access and efficiency

- Access to financial markets increases with higher market efficiency
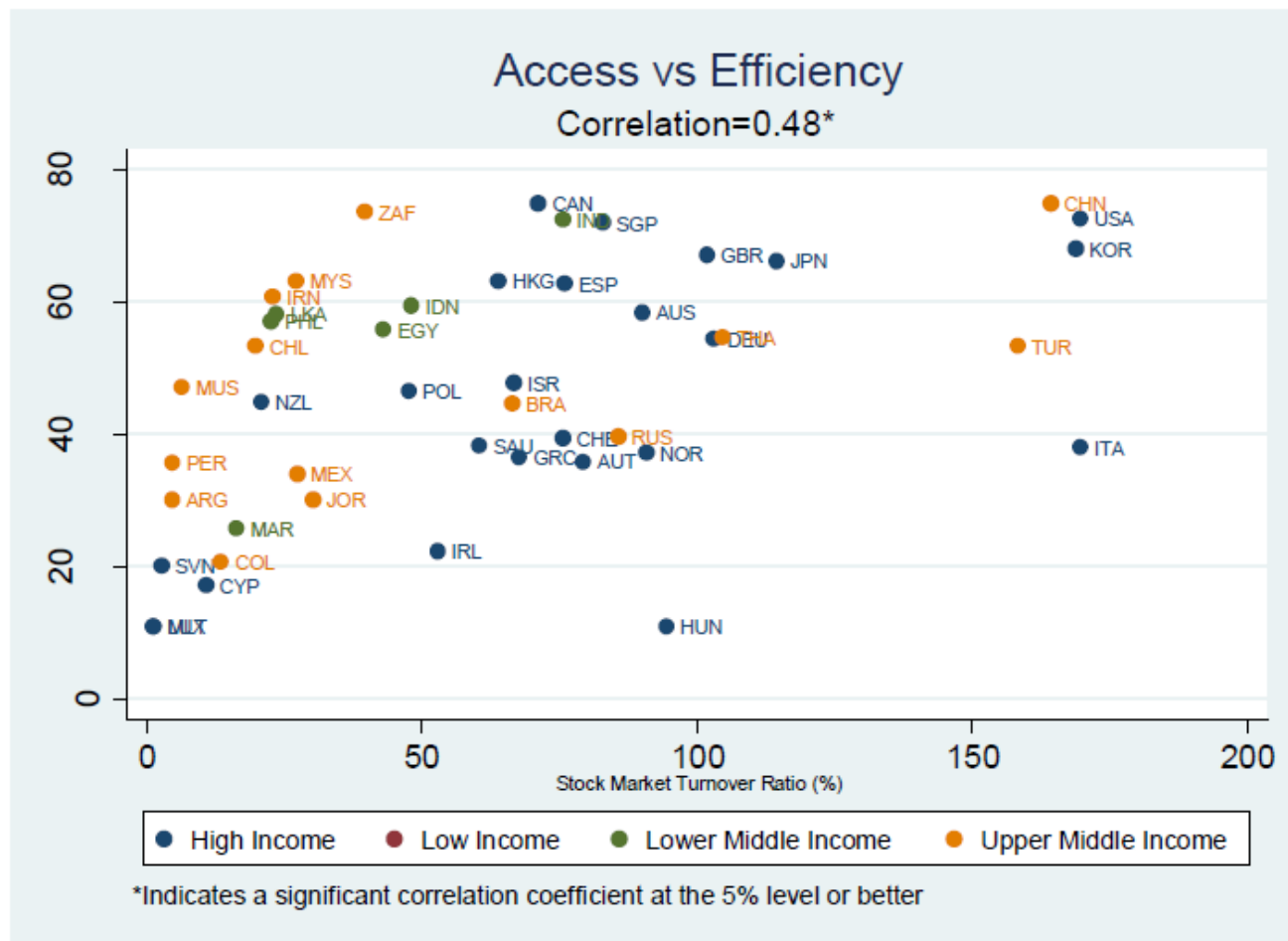
Assessing characteristics of financial market development
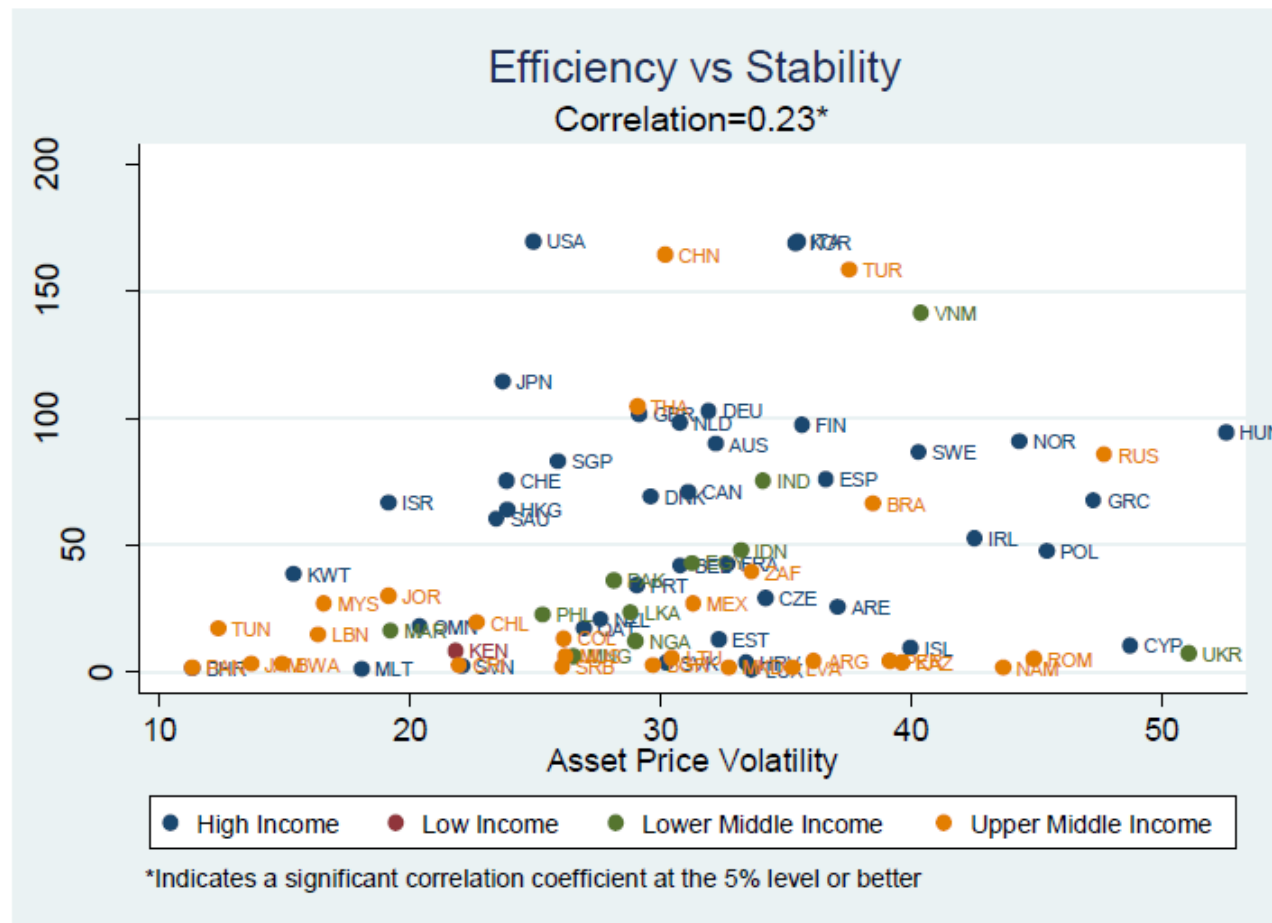## Correlations (Cihak et al 2012): Access vs stability

- **No significant relationship between market access and stability**

Weak, yet positive relationship between market efficiency and stability

Efficiency vs Stability
Correlation=0.23*

*Indicates a significant correlation coefficient at the 5% level or better

Benchmarking financial market development in LAC countries

Benchmarking financial market development
Data sources: Global Financial Development Database (World Bank)

| Key facts about GFDD

— Dataset of financial system characteristics capturing various aspects of financial markets

— 214 economies

— 109 indicators

— Annual data

— Time series: from 1960 through 2016 for 109 indicators

— Last update: July 2018

| Weblink to GFDD

https://www.worldbank.org/en/publication/gfdr/data/global-financial-development-database

High income countries score higher levels for financial market depth and efficiency, but not in terms of access and stability

- Implies that financial stability and access is not guaranteed by higher levels of depth and efficiency

Benchmarking financial markets by income group

Financial Institutions (Mean)	High income	Upper middle income	Lower middle income	Low income
Depth	84	44	28	13
Access	55	32	19	5
Efficiency	86	75	61	42
Stability	35	38	40	35

Financial Markets (Mean)	High income	Upper middle income	Lower middle income	Low income
Depth	51	27	16	10
Access	53	58	69	29
Efficiency	45	19	20	21
Stability	53	60	53	44

❙ Financial markets in LAC score among the lowest with a view to access and efficiency but high in terms of stability

❙ Benchmarking financial markets by region

Table 3. Financial System Characteristics: Summary

Financial Institutions (Mean)	High income	East Asia and Pacific	Europe and Central Asia	Latin America and the Caribbean	Middle East and North Africa	South Asia	Sub-Saharan Africa
Depth	69	43	37	37	33	32	17
Access	43	23	35	30	14	16	10
Efficiency	80	70	65	62	83	81	51
Stability	42	52	20	35	57	38	32

Financial Markets (Mean)	High income	East Asia and Pacific	Europe and Central Asia	Latin America and the Caribbean	Middle East and North Africa	South Asia	Sub-Saharan Africa
Depth	43	38	12	21	24	17	20
Access	46	80	56	40	50	85	77
Efficiency	29	40	17	8	24	49	7
Stability	66	60	43	64	81	56	54

❙ Financial market in LAC countries are little developed

Distribution Across Institutions and Markets, 2013[1]
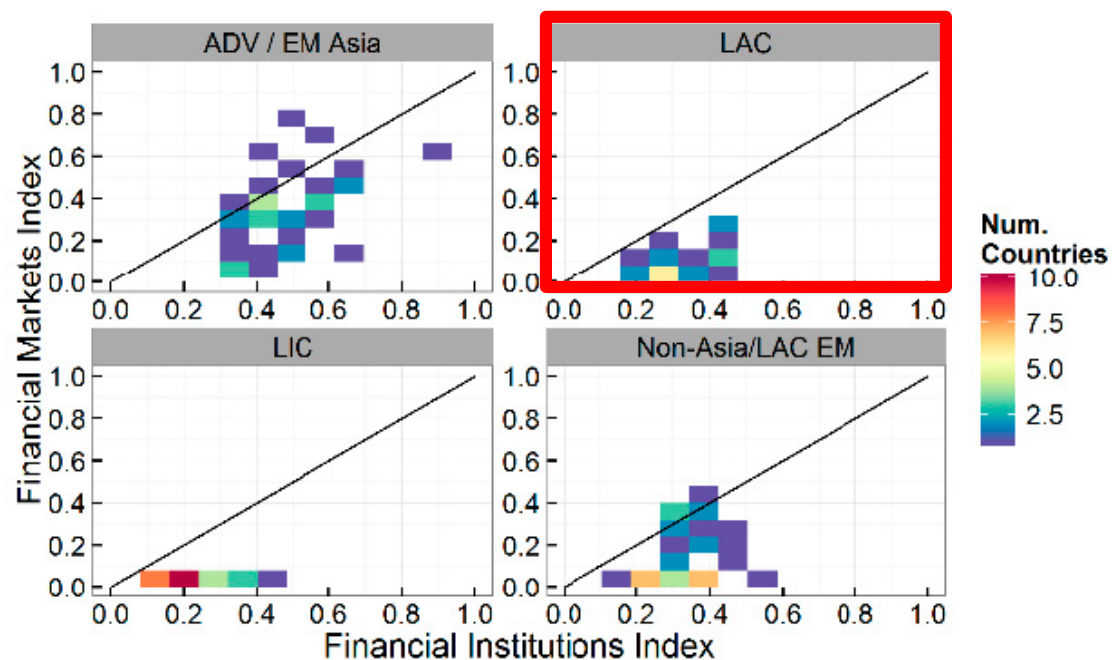
Financial Development by Region, 2004 and 2013
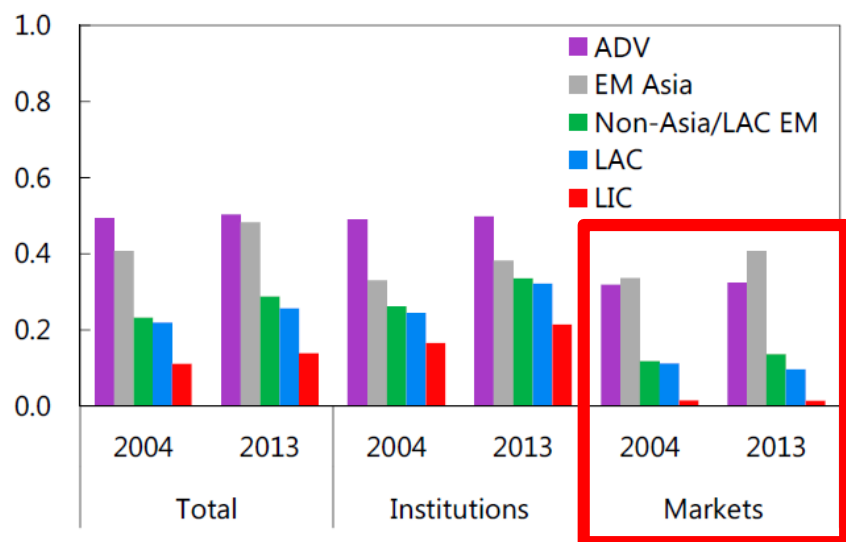
Components of the Financial Development Index by Region, 2013
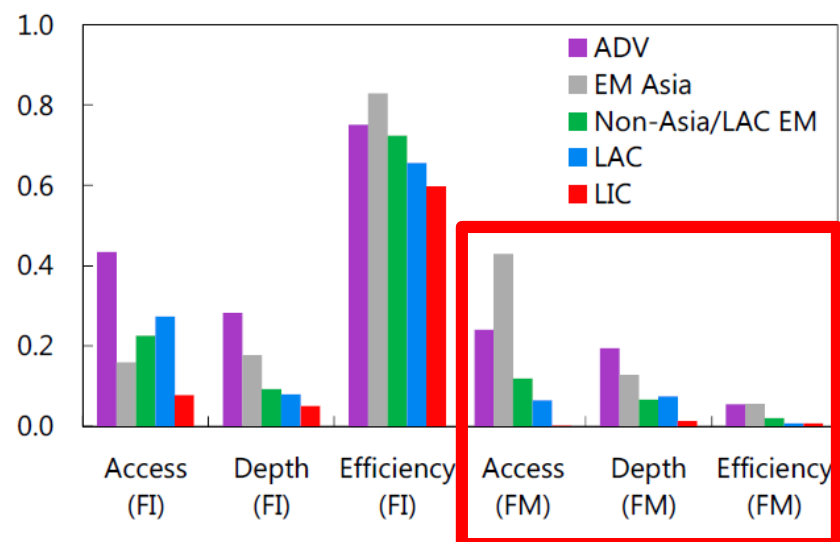
Benchmarking financial market development
GAP-Analysis (Deng et al 2016)

▌**Simple cross-country comparison does not account for differences in underlying macroeconomic conditions**

▌**Deviations of the financial development index from a prediction based on economic fundamentals can help identify under- or overdevelopment compared to countries with similar fundamentals**

    – Predicted norms are computed using the following equation: $FI_{it} = \delta'_1 X_{it}^{FI} + \delta'_2 Z_{it} + h_t^{FI} + e_{it}^{FI}$

    – Gaps are the difference between the actual values of the index and the calculated norms

Benchmarking financial market development
GAP-Analysis (Deng et al 2016): LAC countries

❙ Consistent with previous studies, Deng et al find that shortfalls in market access and efficiency are common in LAC

LAC: Financial Development Gaps w.r.t. Country's Own Fundamentals, 2013[1]
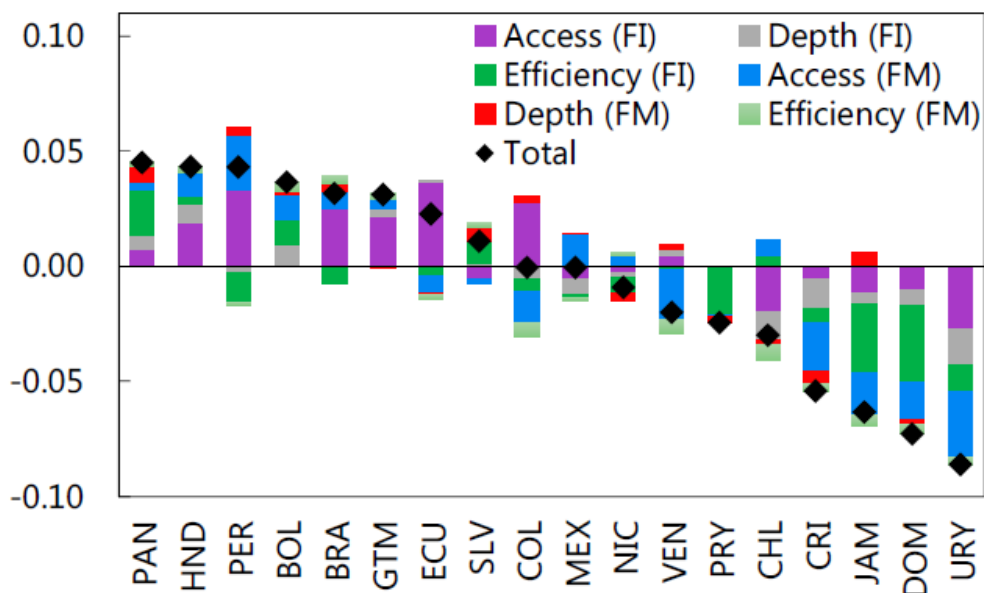
Benchmarking financial market development
## GAP-Analysis (Deng et al 2016): LAC countries (cont.)

▌**Countries in LAC should explore the causes behind financial development gaps**

– Deeper analysis allows to identify gaps in greater detail

▌**Policy implications**

– Given that macroeconomic fundamentals are often difficult to change in the short-term, policies to alleviate gaps in financial development should be tailored to address country-specific distortions

Figure A2-2: Costa Rica's Financial Development Gaps

Source: IMF Staff estimates.
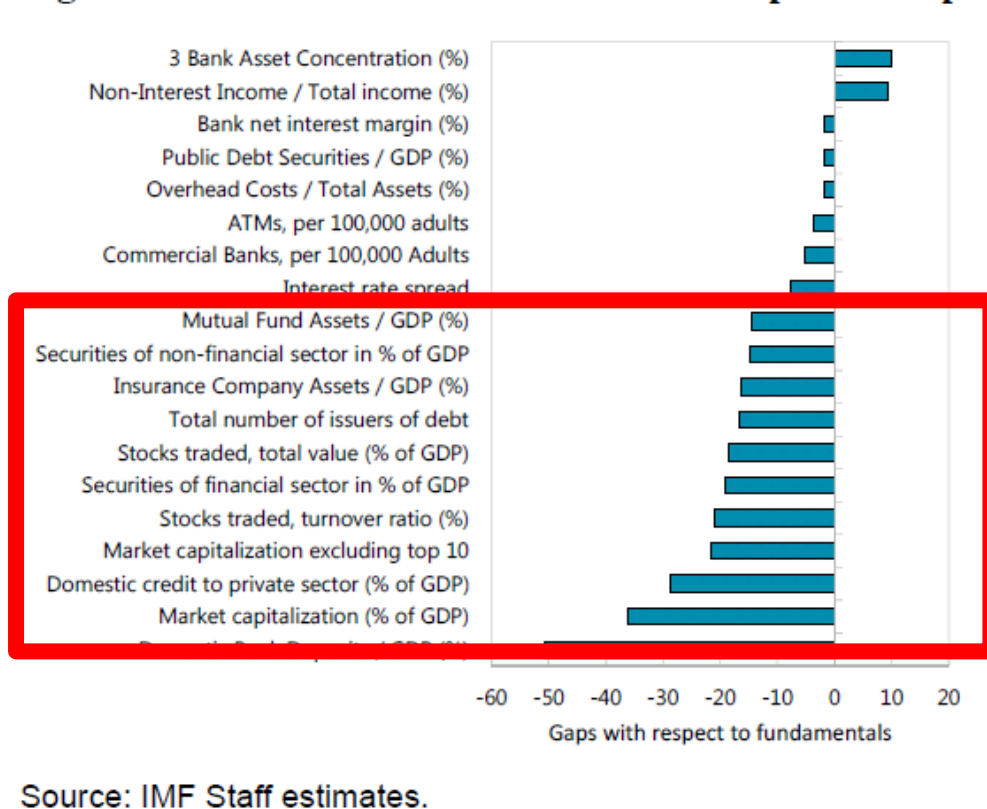
Benchmarking financial market development
Data sources: Financial development index (IMF)

▌ Key facts

- Index summarizes how developed financial institutions and financial markets are in terms of depth (size & liquidity), access and efficiency

- Index database provides 9 indices for over 180 countries with annual frequency from 1980 onwards
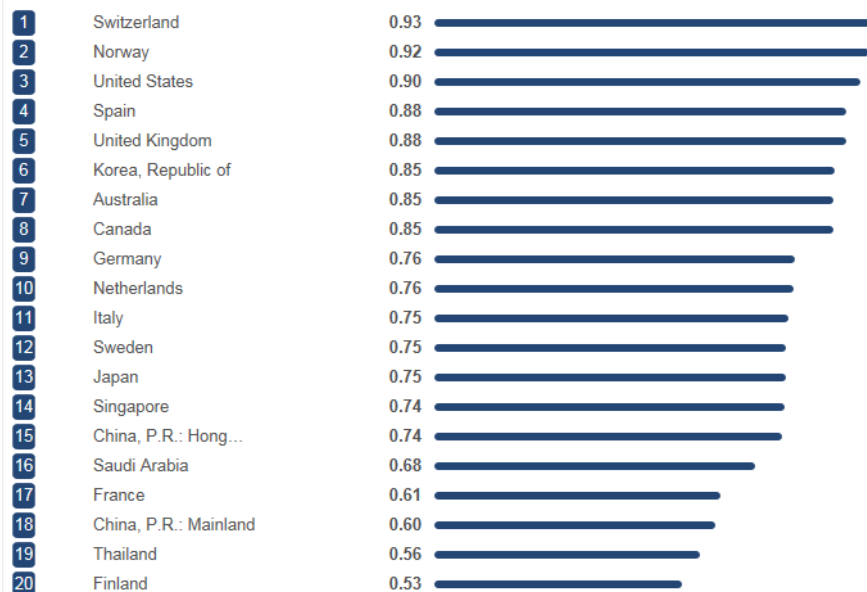
▌ Weblink to database

- http://data.imf.org/?sk=F8032E80-B36C-43B1-AC26-493C5B1CD33B&sId=1481127141475

Benchmarking financial market development
Financial development index (IMF): Financial markets in Top 20 countries

2009

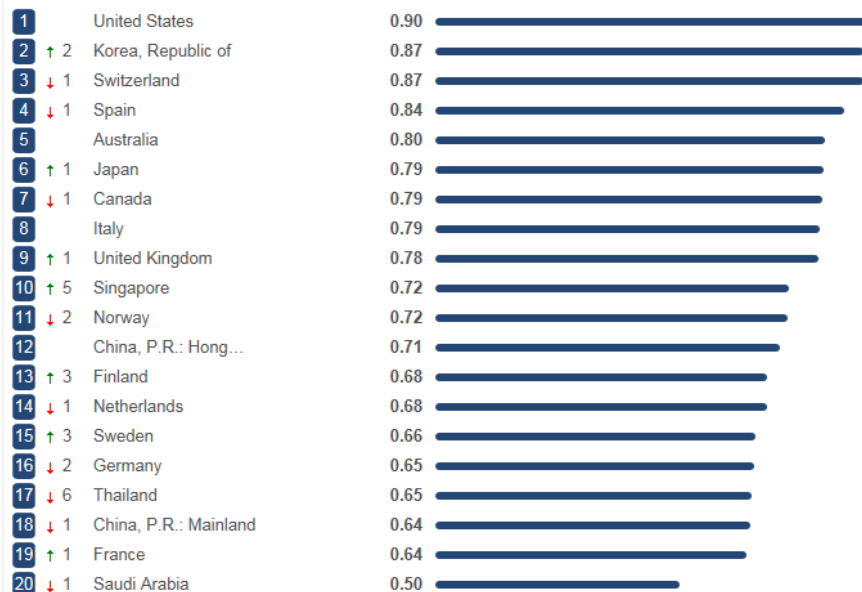**Financial Markets, Top Twenty Countries**

#	Country	Value
1	Switzerland	0.93
2	Norway	0.92
3	United States	0.90
4	Spain	0.88
5	United Kingdom	0.88
6	Korea, Republic of	0.85
7	Australia	0.85
8	Canada	0.85
9	Germany	0.76
10	Netherlands	0.76
11	Italy	0.75
12	Sweden	0.75
13	Japan	0.75
14	Singapore	0.74
15	China, P.R.: Hong…	0.74
16	Saudi Arabia	0.68
17	France	0.61
18	China, P.R.: Mainland	0.60
19	Thailand	0.56
20	Finland	0.53

2009 2010 2011 2012 2013 2014 2015 2016 2017

2017

Financial Markets, Top Twenty Countries

#	Change	Country	Value
1		United States	0.90
2	↑ 2	Korea, Republic of	0.87
3	↓ 1	Switzerland	0.87
4	↓ 1	Spain	0.84
5		Australia	0.80
6	↑ 1	Japan	0.79
7	↓ 1	Canada	0.79
8		Italy	0.79
9	↑ 1	United Kingdom	0.78
10	↑ 5	Singapore	0.72
11	↓ 2	Norway	0.72
12		China, P.R.: Hong…	0.71
13	↑ 3	Finland	0.68
14	↓ 1	Netherlands	0.68
15	↑ 3	Sweden	0.66
16	↓ 2	Germany	0.65
17	↓ 6	Thailand	0.65
18	↓ 1	China, P.R.: Mainland	0.64
19	↑ 1	France	0.64
20	↓ 1	Saudi Arabia	0.50

2009 2010 2011 2012 2013 2014 2015 2016 2017

Monitoring and assessing financial market development: A bird's eye view
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Benchmarking financial market development
Financial development index (IMF): US & GER

▌ **US (1982 – 2017):** Very deep and highly efficient markets, after problems with market access in earlier stage of market development

▌ **Germany (1982-2017):** Market depth and efficiency significantly improved, most notably following the introdcution of the euro
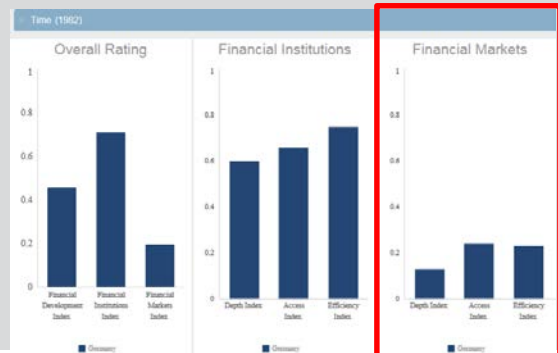
Benchmarking financial market development
Financial development index (IMF): PT & ES

Portugal (1982-2017): Financial market development improved siginificantly

Spain (1982 -2017): Financial market development improved siginificantly

To access the survey please open the weblink below

https://sonjajuko9053.survey.fm/assessing-financial-market-development-2

Link for moderator: https://crowdsignal.com

How do you assess the depth, access and efficiency of financial markets in your country? Rank each characteristic on a scale from 0 to 1.

Note: 0 is lowest possible value, 1 is highest possible value

Benchmarking financial market development
Financial development index (IMF): Map

▌Financial market development appears quite heterogeneous in LAC countries

Benchmarking financial market development
Financial development index (IMF): LAC countries

FD Markets

FD Markets, Depth

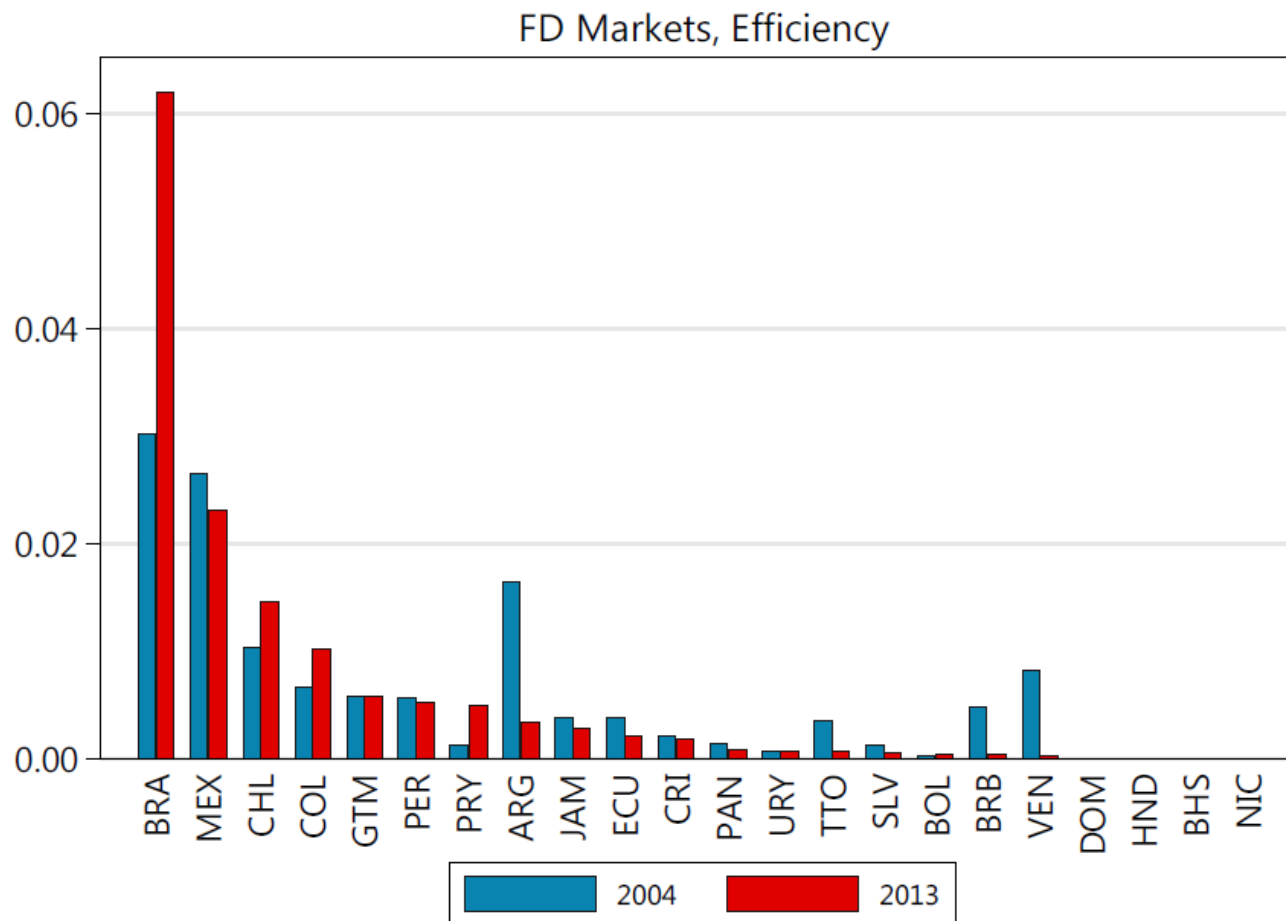Monitoring and assessing financial market development: A bird's eye view
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FD Markets, Access
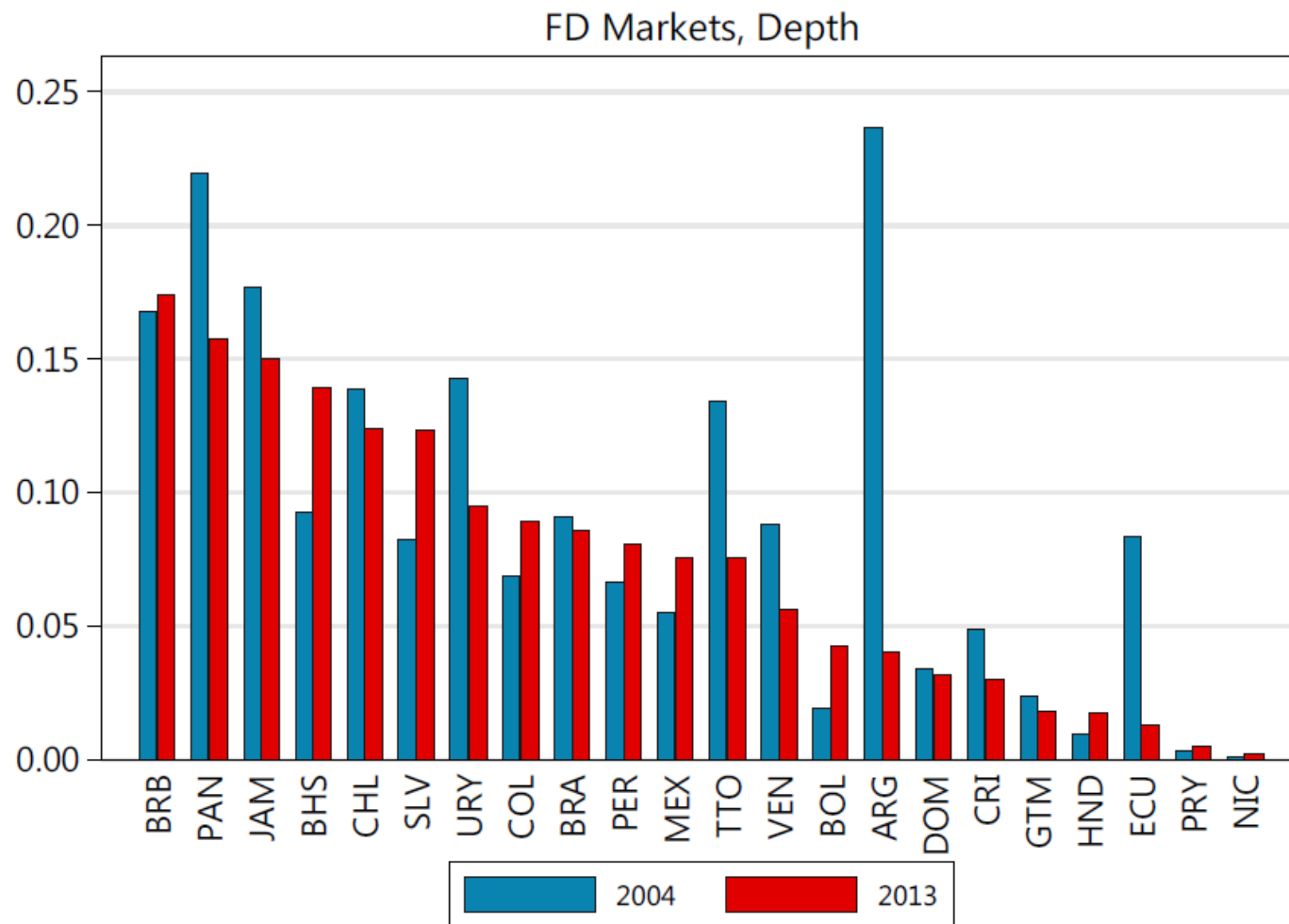
FD Markets, Efficiency

Benchmarking financial market development
Financial development index (IMF): Institutions vs markets in LAC

▌ **Bahamas (1982 – 2017):** Levels of market depth and efficiency remain extremely low, access declined
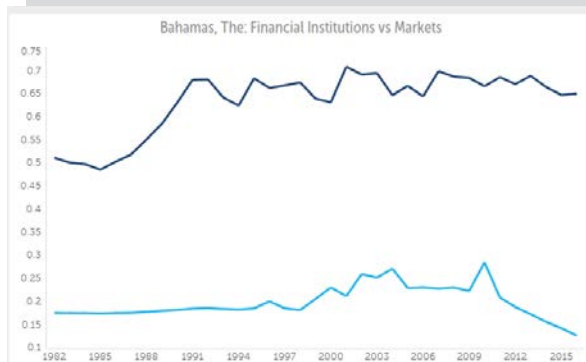
▌ **Barbados (1982 – 2017):** Small improvement due to increased market depth

Brazil (1982-2017): Significant increase across all dimensions. Market efficiency has reached high level

Chile (1982-2017): Market depth and access increased substantially

Financial development index (IMF): Institutions vs markets in LAC

Colombia (1982-2017): Market depth and access increased visibly, efficiency stays weak
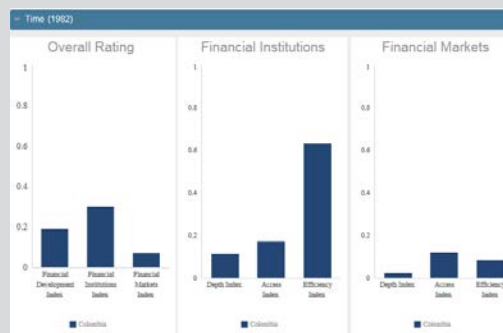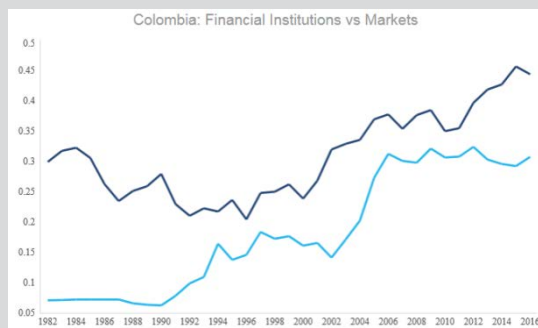
Dominian Republic (1982-2017): Market depth, access and efficiency remain almost unchanged at extremely low levels

Financial development index (IMF): Institutions vs markets in LAC – cont.

Guatemala (1982-2017): Market depth, access and efficiency remain almost unchanged at low levels

Honduras (1982-2017): Market depth increased somewhat, access and efficiency remain unchanged at extremely low levels
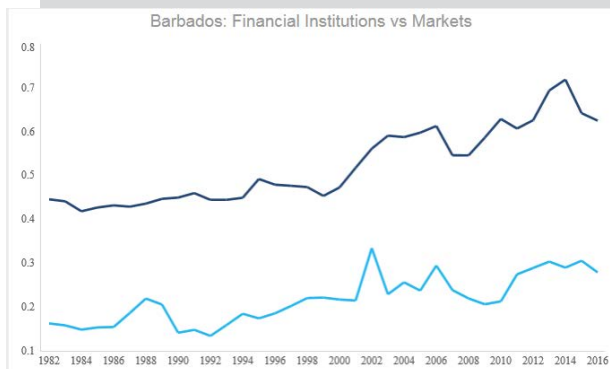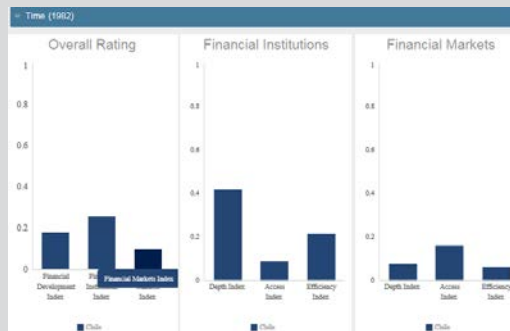
Benchmarking financial market development
Financial development index (IMF): Institutions vs markets in LAC – cont.

Jamaica (1982-2017): Market depth increased visibly, access and efficiency remain unchanged at low levels
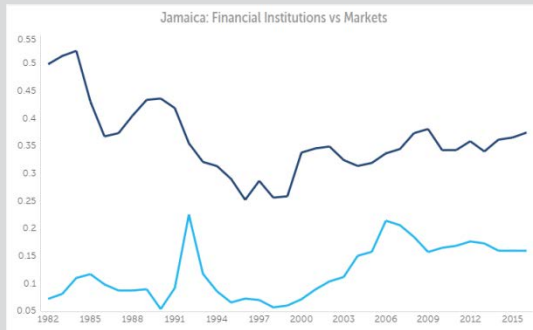
Mexico: (1982-2017): Market depth and access increased substantially

Monitoring and assessing financial market development: A bird's eye view
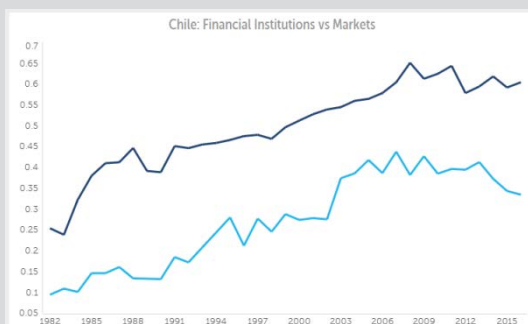Sonja Juko, Deutsche Bundesbank

Benchmarking financial market development
Financial development index (IMF): Institutions vs markets in LAC – cont.

▍ **Nicaragua (1982-2017):** Market depth, access and efficiency remain almost unchanged at extremely low levels
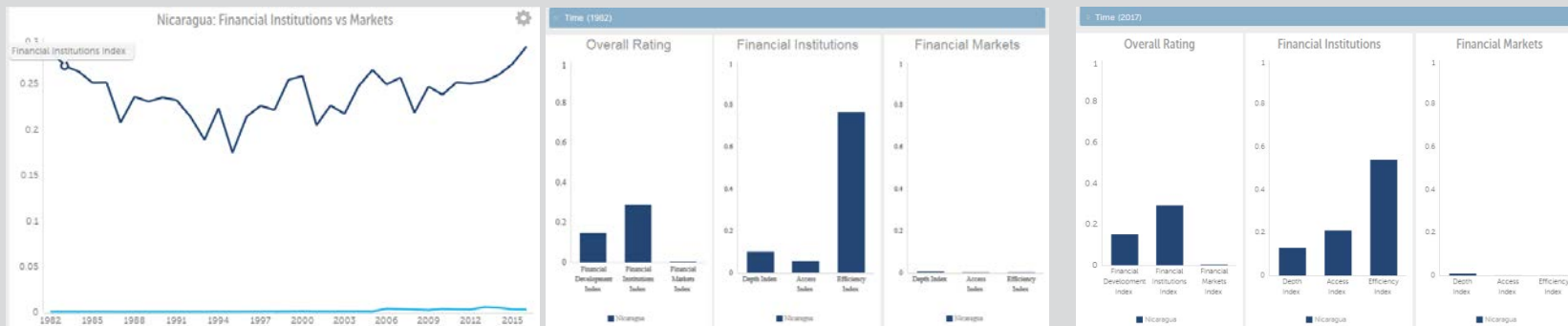
▍ **Trinidad (1982-2017):** Market depth has improved but access and efficiency stay very weak
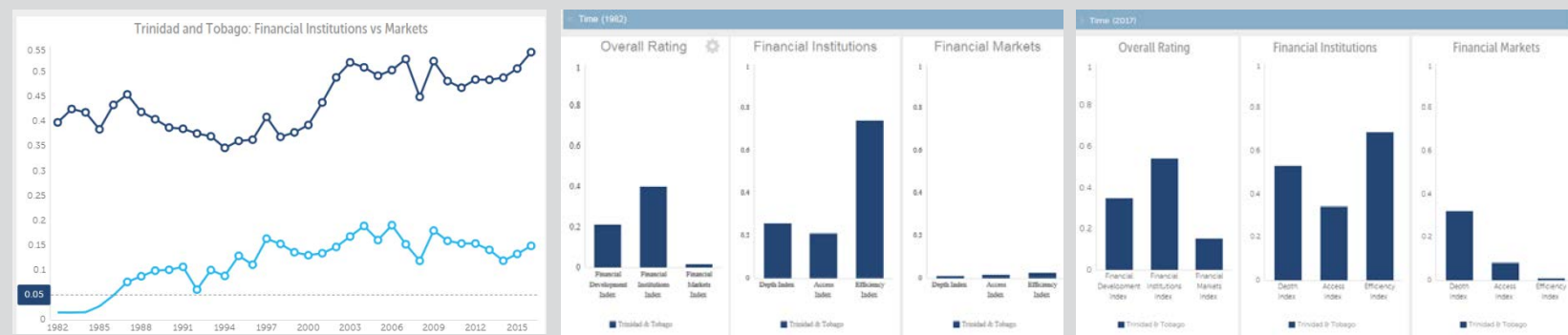
Monitoring and assessing financial market development: A bird's eye view
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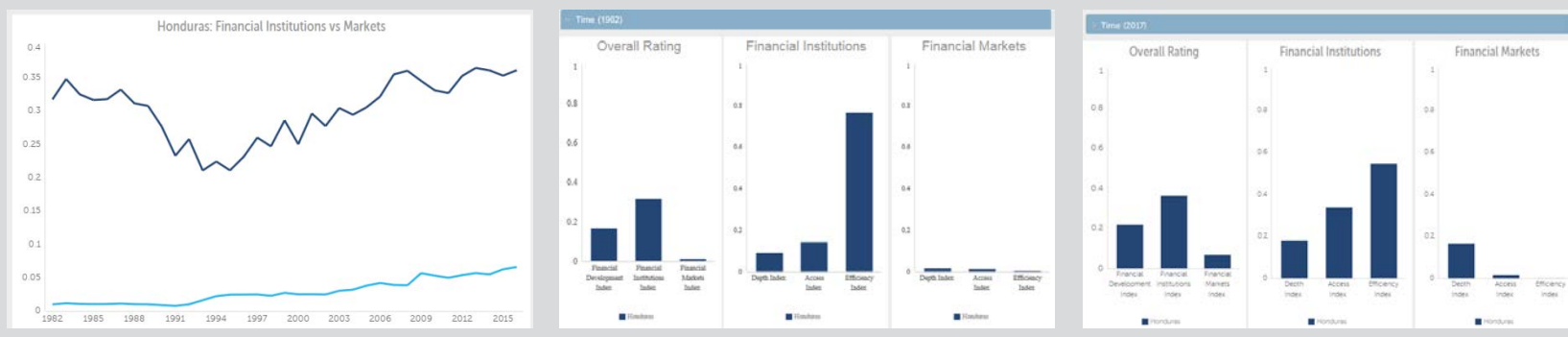
Benchmarking financial market development
Financial development index (IMF): Institutions vs markets in LAC

Argentina (1982 – 2017): Highly unstable development, access overall improved, while efficiency declined
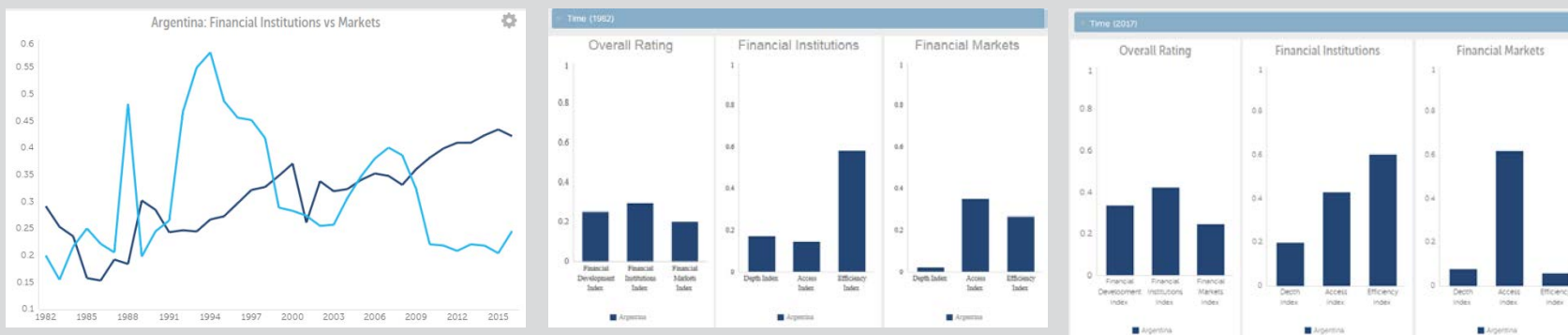
Peru (1982 – 2017): No clear improvement, depth and access improved, while efficiency declined
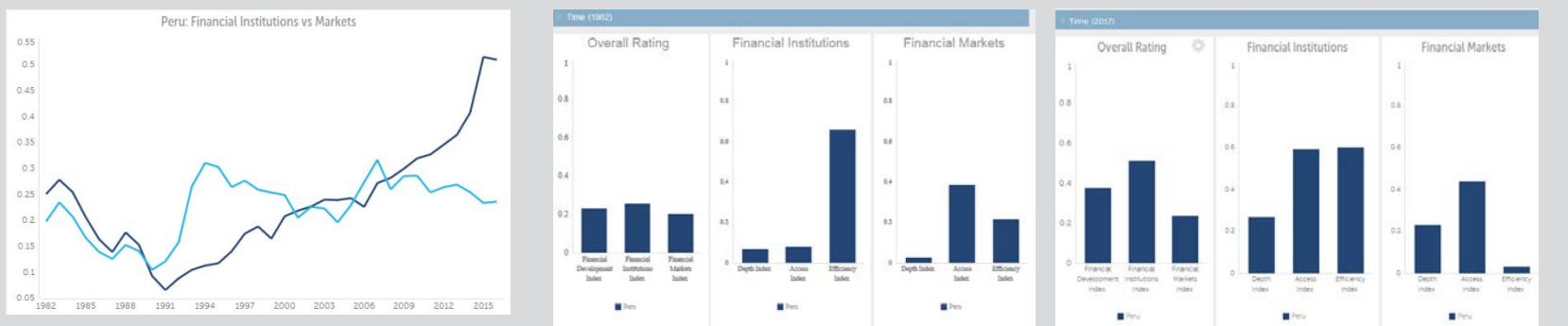
Where to look for more country-specific insights
Financial sector assessment program (FSAP)

❚ **The Financial Sector Assessment Program (FSAP) provides a comprehensive and in-depth analysis of a country's financial sector**

❚ **FSAP assessments are a joint responsibility of IMF and World Bank in developing economies and emerging markets and of the IMF alone in advanced economies**

– Financial stability assessment, which is the responsibility of the IMF

– Financial development assessment, the responsibility of the World Bank

❚ **Goal of FSAP assessments is twofold: to gauge the stability and soundness of the financial sector and to assess its potential contribution to growth and development.**

– Assess development aspects: FSAPs examine institutions, markets, infrastructure, and inclusiveness; the quality of the legal framework and of payments and settlements systems; obstacles to competitiveness and efficiency; progress in financial inclusion; and access to retail payment digital technology

– Examine the financial sector's contribution to economic growth and development

– Issues related to the deepening of domestic capital markets are particularly important in developing and low-income countries

Monitoring and assessing financial market development: A bird's eye view
Sonja Juko, Deutsche Bundesbank

Benchmarking financial market development
Summary evidence from LAC

▌ **In LAC countries, average financial market development measured with a view to depth, access and efficiency is well below levels reached in advanced economies and has little improved over time**

▌ **Behind regional averages are differences among individual countries and with respect to the different dimensions of market development**

– As regards financial market development over time: Improvements most notable in BRA, CHI, MEX

– As regards specific characteristics of financial market development: Access and efficiency score generally lower than depth

▌ **Financial market development improved in some countries during specific periods (in particular 1980s-1990s)**

Key takeaways

I **In light of their mandate (objectives) and related functions, CBs have a particular interest in monitoring and assessing financial market developments**

I **Broad analytical approaches to monitor and assess financial market development capture different aspects of functioning markets: Depth, access and efficiency**

I **Based on broad measures, financial market development in most LAC countries stands at low levels leaving ample scope for improvement in particular with a view to market access and efficiency**

I **Question: What can countries do to encourage financial market development?**

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▌**The financial development index is constructed using a standard three-step approach found in the literature on reducing multidimensional data into one summary index**

(i) normalization of variables;

(ii) aggregation of normalized variables into the sub-indices representing a particular functional dimension;

(iii) (iii) aggregation of the sub-indices into the final index

▌**The procedure follows the OECD Handbook on Constructing Composite Indicators (OECD, 2008)**

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Benchmarking financial market development
Financial development index (IMF): LAC countries – Index components

Table A2-1 Index Components

Variable[1]	ARG	BHS	BOL	BRA	BRB	CHL	COL	CRI	DOM	ECU	GTM	HND	JAM	MEX	NIC	PAN	PER	PRY	SLV	TTO	URY	VEN
2013																						
Automated teller machines (ATMs) (per 100,000 adults)	51.4	74.4	27.9	118.6	36.5	67.3	35.8	54.7	30.7	43.6	28.7	23.6	26.7	47.3	11.9	53.5	35.6	19.8	30.7	35.6	42.7	41.4
Number of Branches Per 100,000 Adults, Commercial Banks	13.5	34.6	11.7	47.7	19.2	17.2	72.2	22.3	11.7	80.1	38.0	24.0	6.1	15.3	7.6	24.7	88.4	10.3	9.8	12.6	12.7	16.8
Domestic credit to private sector / GDP (percent)	15.8	77.4	47.0	70.7	80.6	105.9	50.2	50.4	24.0	26.7	32.6	55.2	29.6	30.6	28.8	70.7	31.4	45.8	42.7	31.1	26.8	25.3
Mutual Fund Assets / GDP (percent)	2.3	-	4.5	49.7	22.3	13.8	0.1	3.9	-	0.2	-	-	-	10.1	-	2.9	3.0	-	2.9	27.0	0.0	-
Insurance Company Assets / GDP (percent)	3.1	17.4	3.1	10.4	26.9	20.2	6.0	6.6	1.5	1.6	1.7	3.1	19.5	5.8	0.6	5.3	5.2	1.7	2.6	26.7	5.5	3.2
Domestic Bank Deposits / GDP (percent)	23.3	72.1	49.7	57.9	113.8	49.8	24.4	22.5	22.7	30.3	40.4	47.5	41.3	28.4	31.6	78.7	35.4	29.2	41.3	55.0	41.7	41.1
Interest rate spread (lending rate minus deposit rate, percent)	2.3	3.1	9.3	14.1	6.2	4.1	6.8	11.3	7.6	5.6	8.1	8.4	14.1	2.9	14.0	4.5	14.1	14.1	4.6	6.0	7.8	1.4
Bank net interest margin (percent)	7.1	3.5	5.1	5.0	4.6	3.6	6.1	5.7	10.1	6.8	7.6	8.8	10.1	3.0	5.8	3.2	6.2	8.2	5.9	5.1	4.9	7.8
Non-Interest Income / Total income (percent)	50.9	20.7	36.1	27.7	33.0	32.1	31.7	20.7	28.4	30.1	20.7	25.8	27.9	53.2	34.5	22.3	33.9	24.1	20.7	26.2	30.9	25.3
Overhead Costs / Total Assets (percent)	6.5	2.2	5.0	2.8	0.8	2.3	3.9	4.0	6.5	5.2	4.0	6.0	6.5	2.5	4.1	1.6	3.5	4.2	3.6	3.8	4.3	4.4
3 Bank Asset Concentration (percent)	36.0	86.0	51.1	54.4	94.6	43.0	52.8	62.0	70.8	55.9	67.0	42.9	89.1	55.2	83.7	60.3	74.2	51.4	56.5	78.7	67.3	45.3
Total number of issuers of debt (domestic and external, NFCs and Financial)	25.0	-	-	141.0	-	36.0	20.0	3.0	2.0	-	3.0	1.0	2.0	65.0	-	2.0	17.0	-	-	-	-	2.0
Market capitalization excluding top 10 companies to total market capitalization (percent)	29.9	-	-	46.9	-	55.0	20.9	-	-	-	-	-	-	34.1	-	-	38.4	-	-	-	-	-
Market capitalization of listed companies (percent of GDP)	5.7	35.6	16.4	54.7	106.4	117.7	70.8	4.4	0.7	6.7	0.9	8.8	43.2	44.3	-	33.0	50.3	3.9	45.1	64.7	0.4	6.6
Stocks traded, total value (percent of GDP)	0.2	0.2	0.1	37.1	0.4	17.6	7.0	0.1	-	0.2	0.1	-	1.4	10.0	-	0.3	2.6	0.2	0.2	0.5	0.0	0.0
Outstanding International Public Debt Securities / GDP (percent)	7.4	10.7	6.5	2.6	12.8	1.6	5.7	5.0	5.9	1.6	3.2	-	20.4	4.3	-	23.1	7.1	-	20.0	3.9	20.7	8.0
Debt securities of financial sector by local firms in percent of GDP[1]	0.4	14.8	0.0	5.0	20.7	5.2	4.5	0.4	0.0	0.4	1.5	15.4	-	3.3	-	8.0	6.0	1.4	2.9	0.6	-	4.4
Debt securities of non-financial sector by local firms in percent of GDP[1]	3.7	65.2	2.1	13.1	36.2	22.9	9.2	4.7	5.9	1.2	2.5	5.2	31.3	19.8	2.2	30.9	11.0	1.4	3.0	13.2	4.2	15.6
Stock market turnover ratio (value traded/stock market capitalization)	3.8	-	0.5	67.9	0.4	16.0	11.2	1.9	-	2.3	6.4	-	3.0	25.3	-	1.0	5.7	5.5	0.6	0.8	0.8	0.2
2004																						
Automated teller machines (ATMs) (per 100,000 adults)	21.8	63.6	13.3	105.2	34.9	33.2	27.0	26.2	18.8	3.1	21.1	4.7	18.3	27.7	3.4	33.7	10.7	12.5	20.7	31.2	27.8	21.9
Number of Branches Per 100,000 Adults, Commercial Banks	13.4	39.7	4.5	40.9	19.3	12.5	13.4	16.1	9.8	12.8	18.8	16.3	7.3	10.6	5.0	22.6	4.3	4.1	11.7	12.6	12.8	15.4
Domestic credit to private sector / GDP (percent)	8.8	61.2	42.7	29.0	66.0	75.6	27.3	32.0	25.2	19.2	26.2	38.4	20.0	15.0	19.6	85.1	18.2	14.7	41.8	36.0	24.2	11.0
Mutual Fund Assets / GDP (percent)	1.5	-	2.9	31.6	16.2	11.0	0.2	5.7	-	0.9	-	-	-	4.5	-	2.9	2.4	-	2.9	20.1	0.1	-
Insurance Company Assets / GDP (percent)	3.0	10.8	4.8	5.7	16.5	20.3	3.5	1.2	1.8	0.5	1.4	2.9	14.7	3.5	0.4	5.4	3.0	1.0	1.9	31.4	3.6	2.1
Domestic Bank Deposits / GDP (percent)	23.1	57.1	38.0	47.3	96.6	45.8	14.9	21.0	17.7	20.1	35.2	41.3	42.5	21.0	38.3	73.9	20.8	17.2	40.1	33.3	43.2	17.2
Interest rate spread (lending rate minus deposit rate, percent)	4.2	2.2	7.1	19.2	5.8	3.2	7.3	13.9	11.5	5.8	9.6	8.8	10.2	4.7	8.8	6.6	19.2	19.2	4.6	6.5	17.5	5.9
Bank net interest margin (percent)	2.4	1.1	4.4	7.5	4.7	4.4	4.4	7.2	9.8	6.0	6.6	6.6	7.7	7.7	8.1	3.4	6.2	7.7	5.5	4.9	5.6	9.8
Non-Interest Income / Total income (percent)	65.2	49.9	50.6	30.3	46.6	28.9	59.7	30.6	53.1	65.2	19.9	30.4	22.7	32.2	24.3	37.1	33.8	65.2	19.9	41.9	64.8	33.3
Overhead Costs / Total Assets (percent)	3.9	1.0	6.8	6.1	4.3	2.9	7.0	6.0	8.9	7.4	4.6	5.5	5.6	5.2	5.2	2.6	5.5	8.9	2.9	4.6	8.9	7.0
3 Bank Asset Concentration (percent)	45.7	70.2	48.9	47.1	100.0	53.5	34.6	55.2	66.1	48.6	45.4	53.4	79.6	62.3	72.1	37.4	76.7	43.6	68.8	79.8	54.9	39.4
Total number of issuers of debt (domestic and external, NFCs and Financial)	53.0	-	-	51.0	1.0	26.0	-	1.0	-	-	-	-	-	45.0	-	-	-	-	-	-	-	2.0
Market capitalization excluding top 10 companies to total market capitalization (percent)	20.7	-	-	51.0	-	55.5	45.7	-	-	-	-	-	-	38.0	-	-	45.4	-	-	-	-	-
Market capitalization of listed companies (percent of GDP)	25.3	33.7	22.7	49.8	149.0	116.3	21.5	7.6	0.7	7.1	0.9	8.8	103.9	22.3	-	24.0	30.1	3.1	16.7	132.3	0.6	5.4
Stocks traded, total value (percent of GDP)	4.2	0.5	0.1	14.1	6.6	11.5	1.2	0.2	-	0.3	0.1	-	4.7	5.6	-	0.4	1.7	0.0	0.2	4.1	0.0	0.4
Outstanding International Public Debt Securities / GDP (percent)	47.3	2.8	-	9.1	8.8	3.8	10.8	9.4	6.9	17.1	4.6	-	22.6	5.9	-	40.5	9.1	-	14.7	5.3	31.7	17.0
Debt securities of financial sector by local firms in percent of GDP[2]	2.3	-	-	3.1	5.7	0.4	0.5	0.1	-	0.9	-	5.3	-	1.5	-	5.1	0.4	-	2.8	2.3	2.3	4.2
Debt securities of non-financial sector by local firms in percent of GDP[2]	8.4	59.4	3.3	7.1	18.6	35.1	5.9	2.2	3.2	2.9	2.8	1.4	2.0	10.0	0.9	24.1	4.3	0.9	5.3	14.8	2.2	8.2
Stock market turnover ratio (value traded/stock market capitalization)	17.9	-	0.3	33.1	5.3	11.4	7.4	2.3	-	4.2	6.4	-	4.2	29.1	-	1.6	6.2	1.4	1.4	3.8	0.8	9.1

Source: IMF staff calculations.

Note: ARG = Argentina, BHS = Bahamas, BOL = Bolivia, BRA = Brazil, BRB = Barbados, CHL = Chile, COL = Colombia, CRI = Costa Rica, DOM = Dominican Republic, ECU = Ecuador, GTM = Guatemala, HND = Honduras, JAM = Jamaica, MEX = Mexico, NIC = Nicaragua, PAN = Panama, PER = Peru, PRY = Paraguay, SLV = El Salvador, TTO = Trinidad and Tobago, URY = Uruguay, VEN = Venezuela.

[1] For index construction missing values were replaced with imputed values using procedures described in Appendix 1.

[2] Stock of debt by local firms based on residency concept.

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