REGIONAL ECONOMIC OUTLOOK

WESTERN HEMISPHERE

WESTERN HEMISPHERE DEPARTMENT

Fostering Growth Through Business Dynamism

MAKING REFORMS HAPPEN IN LATIN AMERICA

MONTEVIDEO, 17-18 NOVEMBER 2025

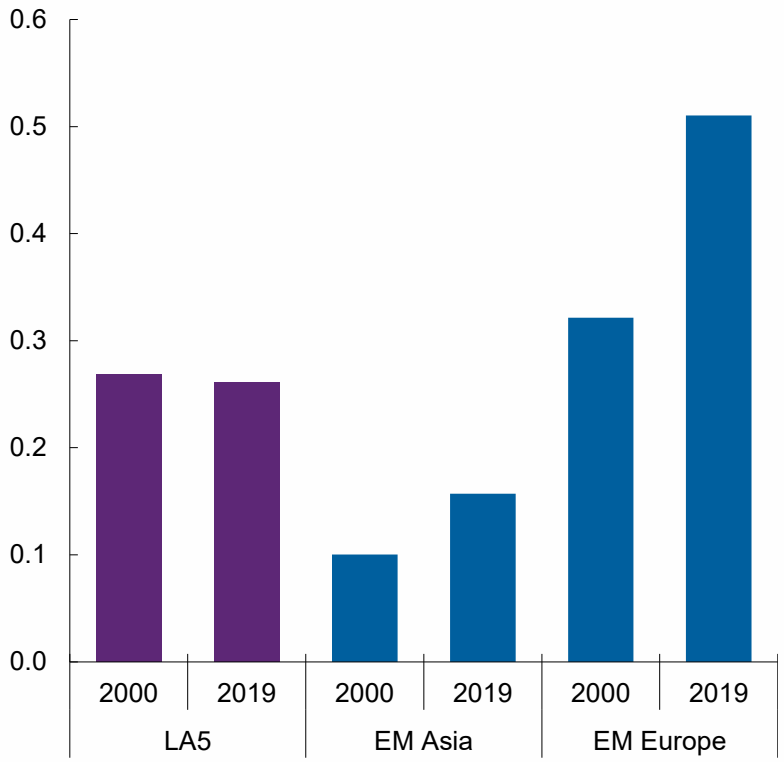
Presented by Armine Khachatryan

Regional Studies Division

TFP gaps explain lack of convergence despite input growth

Latin America's income per capita is not converging toward US levels as in other EMs …

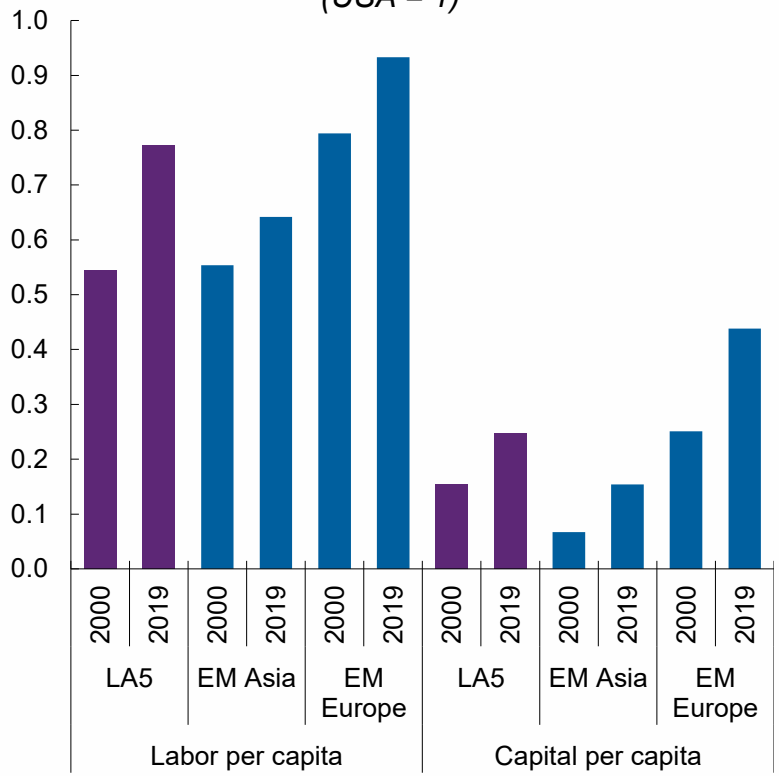
GDP per Capita Relative to the United States
(USA = 1)



Sources: WEO; PWT; and IMF staff calculations.
Note: Aggregates are PPP-GDP-weighted averages. Regional groupings use 2005 WEO classification. AEs = advanced economies (AUT, BEL, DEU, DNK, FIN, FRA, GRC, ITA, JPN, LUX, NLD, NOR, ESP, SWE, GBR, USA); EM = emerging markets; EM Asia = IDN, IND, MYS, PHL, THA; EM Europe = CZE, EST, LTU, LVA, SVK, SVN, POL, ROU; LA5 = Latin America 5 (BRA, CHL, COL, MEX, PER).

… despite significant convergence in capital stocks and human capital supply…

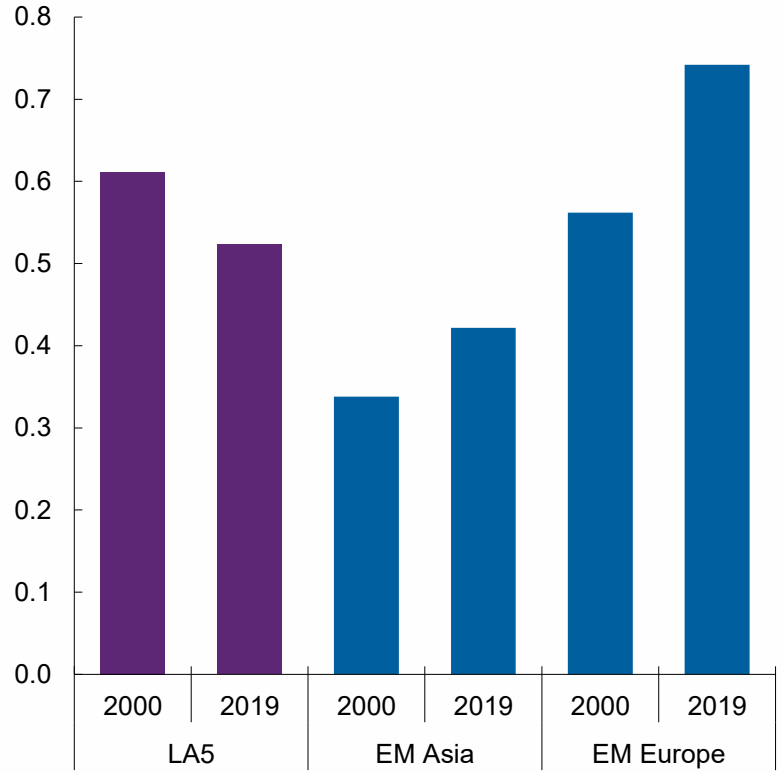
Labor and Capital Inputs Relative to the United States
(USA = 1)



Sources: WEO; PWT; and IMF staff calculations.
Note: Aggregates are PPP-GDP-weighted averages. Regional groupings use 2005 WEO classification. AEs = advanced economies (AUT, BEL, DEU, DNK, FIN, FRA, GRC, ITA, JPN, LUX, NLD, NOR, ESP, SWE, GBR, USA); EM = emerging markets; EM Asia = IDN, IND, MYS, PHL, THA; EM Europe = CZE, EST, LTU, LVA, SVK, SVN, POL, ROU; LA5 = Latin America 5 (BRA, CHL, COL, MEX, PER).

… leaving diverging productivity as only explanation.

TFP Relative to the United States
(2019 USA =1)



Sources: WEO; PWT; and IMF staff calculations.
Note: Aggregates are PPP-GDP-weighted averages. Regional groupings use 2005 WEO classification. AEs = advanced economies (AUT, BEL, DEU, DNK, FIN, FRA, GRC, ITA, JPN, LUX, NLD, NOR, ESP, SWE, GBR, USA); EM = emerging markets; EM Asia = IDN, IND, MYS, PHL, THA; EM Europe = CZE, EST, LTU, LVA, SVK, SVN, POL, ROU; LA5 = Latin America 5 (BRA, CHL, COL, MEX, PER).

Questions and findings

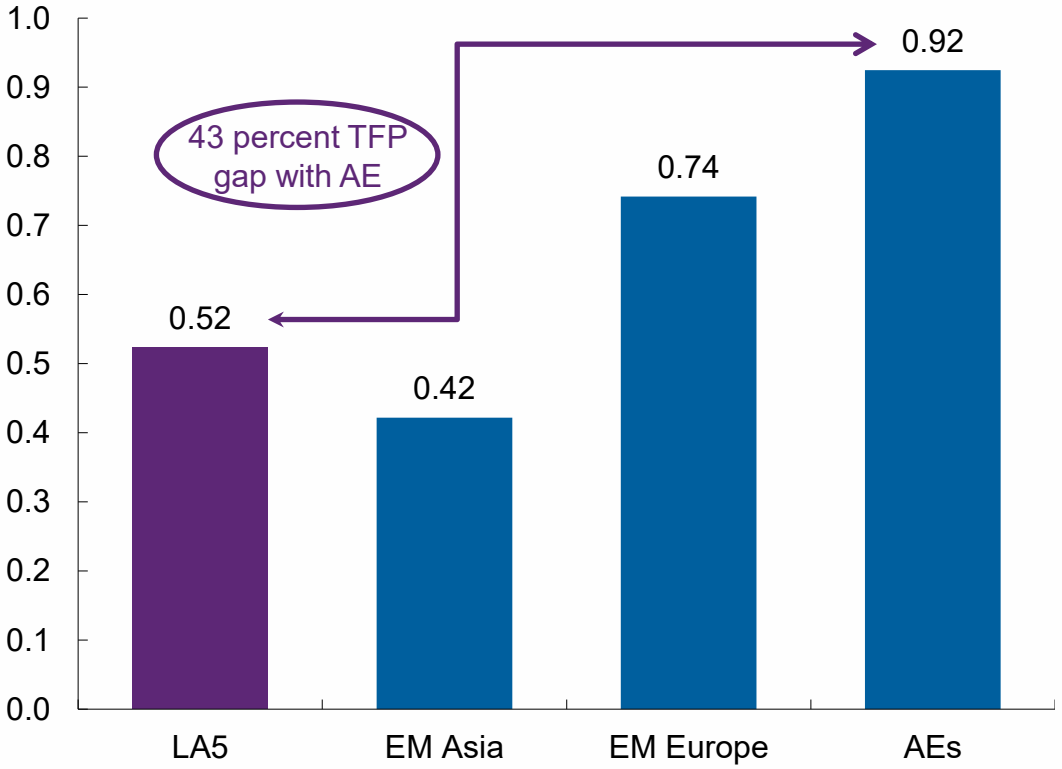
- Why is productivity so low in Latin America?
  - It is both high misallocation and low firm productivity.
- Which margins are holding back productivity growth?
  - Surviving firms' TFP growth slower in Latin America.
- What policies could unlock productivity in Latin America?
  - Reforms should target key distortions …
    - size-based disincentives,
    - easing financial constraints, and
    - competition bottlenecks

  … to unlock firm-level productivity and drive TFP growth.

Latin America's productivity is low and growing slow

Latin America's productivity is low …

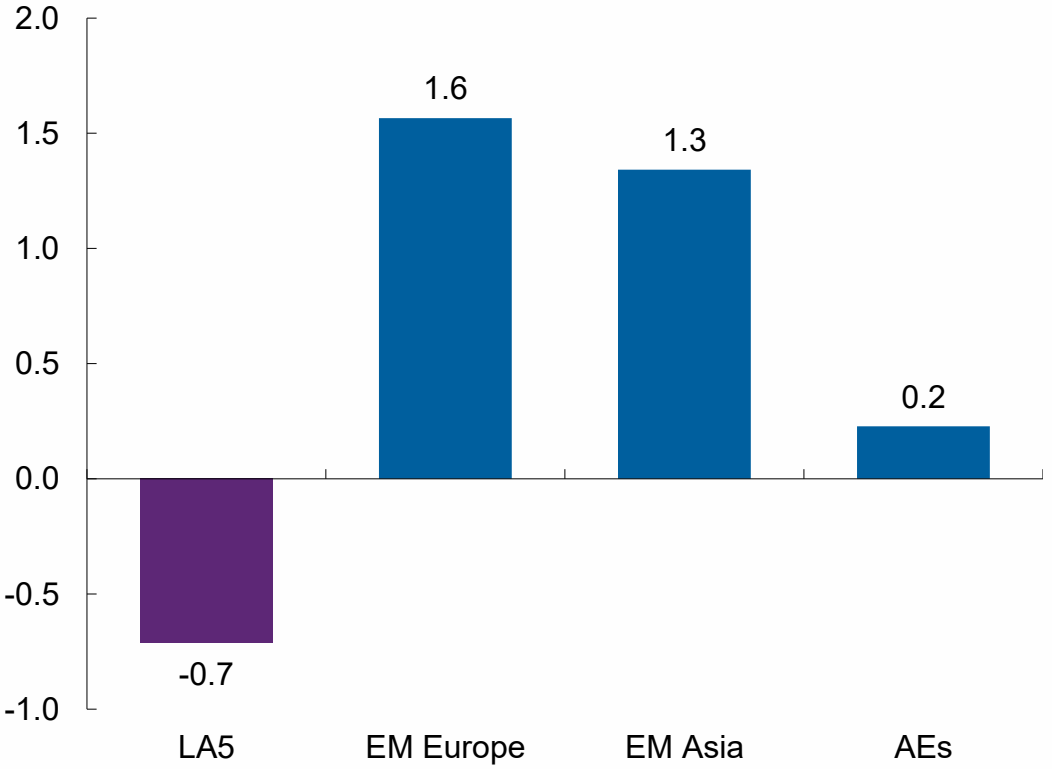
TFP Relative to the United States, 2019
(USA=1)



Sources: WEO; EU KLEMS (Bontadini and others 2023); LA KLEMS (Gu and Hofman 2021); national authorities; PWT; and IMF staff calculations.
Note: Aggregates are PPP-GDP-weighted averages. Regional groupings use 2005 WEO classification. AEs = advanced economies (AUT, BEL, DEU, DNK, FIN, FRA, GRC, ITA, JPN, LUX, NLD, NOR, ESP, SWE, GBR, USA); EM = emerging markets; EM Asia = IDN, IND, MYS, PHL, THA; EM Europe = CZE, EST, LTU, LVA, SVK, SVN, POL, ROU; LA5 = Latin America 5 (BRA, CHL, COL, MEX, PER); TFP = total factor productivity.

… and growing slower than other emerging markets or advanced economies.

TFP Growth, 2000–19
(Percent; annual averages)



Sources: WEO; EU KLEMS (Bontadini and others 2023); LA KLEMS (Gu and Hofman 2021); national authorities; PWT; and IMF staff calculations.
Note: Aggregates are PPP-GDP-weighted averages. Regional groupings use 2005 WEO classification. AEs = advanced economies (AUT, BEL, DEU, DNK, FIN, FRA, GRC, ITA, JPN, LUX, NLD, NOR, ESP, SWE, GBR, USA); EM = emerging markets; EM Asia = IDN, IND, MYS, PHL, THA; EM Europe = CZE, EST, LTU, LVA, SVK, SVN, POL, ROU; LA5 = Latin America 5 (BRA, CHL, COL, MEX, PER); TFP = total factor productivity.

Diagnosis: Underlying Drivers of Dual Productivity Challenge

Does low TFP reflect firm-level productivity or misallocation?

TFP can be low because firms are unproductive or because production resources are misallocated:

$$\text{TFP} = \text{Firm Productivity} \times \textbf{Allocation Efficiency}$$

Frictionless resource allocation is **efficient:**

Efficient resource allocation

Marginal Benefit = Marginal Cost

Frictions distort the allocation of resources:

Resource **mis**allocation

$$\text{Marginal Benefit} = \text{Marginal Cost} \times \underbrace{\text{"}\textbf{Wedge}\text{"}}_{\neq 1}$$

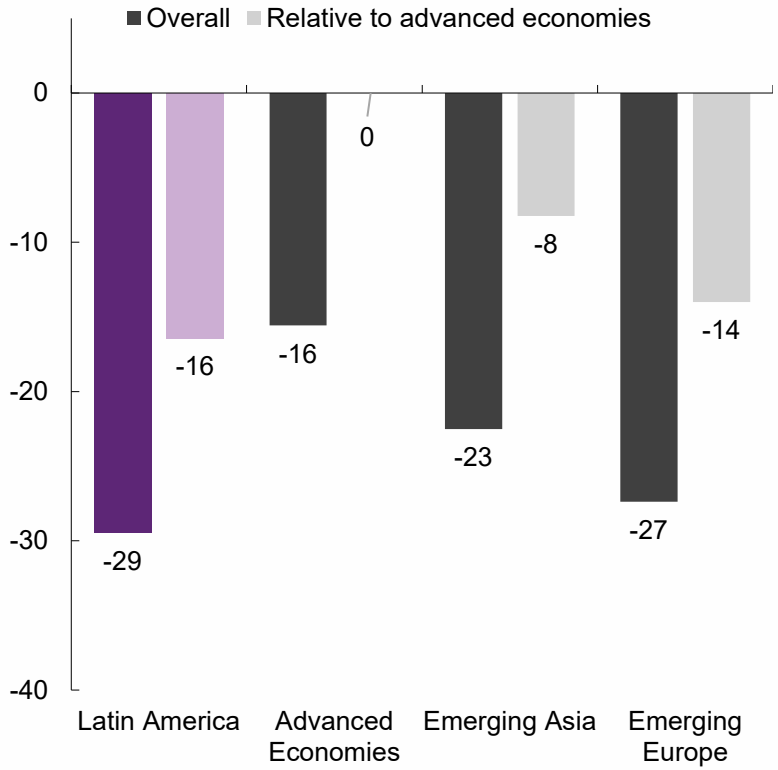
Diagnostic tool 1: Measure TFP cost of (resource) misallocation (Hsieh & Klenow, 2009):

$$\text{Cost of Misallocation} \equiv \frac{\text{TFP}}{\text{TFP at Efficient Allocation}} - 1$$

Misallocation contributes significantly to the TFP gap to Advanced Economies

Resource misallocation in more pronounced in Latin America than in Advanced Economies resulting in significant TFP losses for the entire economy.

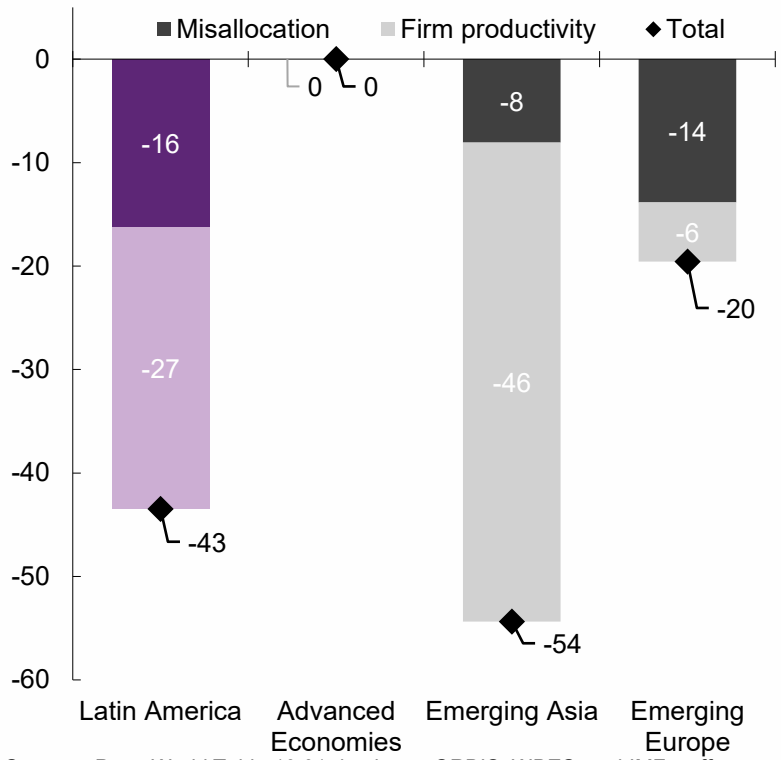
TFP Losses from Misallocation: Full Economy
(Percent)



Sources: WEO; PWT; Orbis; WBES; and IMF staff calculations.
Note: Estimates from applying the Hsieh and Klenow (2009) framework from 2005 to 2021. Aggregates are PPP-GDP-weighted averages. Regional groupings use 2005 WEO classification. Estimates relative to AEs report gains from achieving AEs' level of misallocation. Observations are weighed to match the size distribution in the WBES. Advanced economies = DEU, FRA, ESP; Emerging Asia = MYS, THA, VNM; Emerging Europe = SVN, SVK, LVA, LTU, ROU; Latin America = BRA, COL, MEX; TFP = total factor productivity.

Large losses in TFP due to misallocation in Latin America contribute significantly to TFP gap to Advanced Economies.

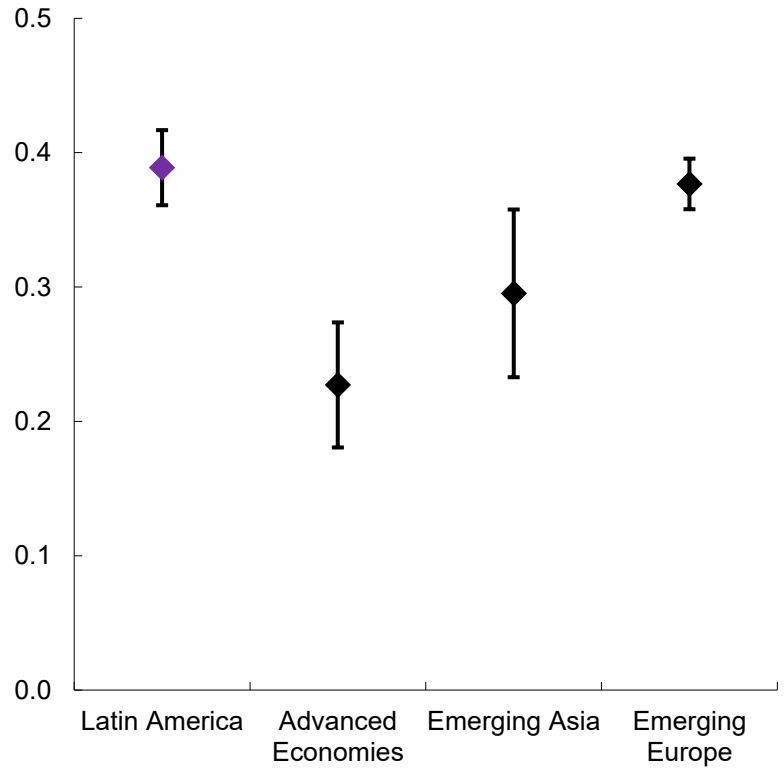
Productivity Gap to Advanced Economies
(Percentage points)



Sources: Penn World Table 10.01 database; ORBIS; WBES; and IMF staff calculations.
Notes: Hsieh and Klenow (2009) estimates for the productivity gap in 2019. Misallocation component uses average estimates relative to AEs for manufacturing sector from 2005 to 2021. Technology component calculated as residual. LA includes BR, CO, and MX. EA includes MY, TH, and VN. EE includes PL, SI, SK, LV, LT, and RO. AEs include DE, FR, EE, and ES. Observations in ORBIS are reweighted to match the size distribution in the WBES.

Frictions are particularly severe for high productivity firms.

Elasticity of Frictions to Firm-level Productivity
(Elasticity)



Sources: WEO; PWT; Orbis; WBES; and IMF staff calculations.
Note: Regression coefficients for regressing the Hsieh and Klenow (2009) measure of frictions on firm-level productivity. A positive coefficient suggests that more productive firms are greater constrained by frictions with the effect increasing in the magnitude of the coefficient. Regressions control for year-country-four-digit industry fixed effects. Standard errors clustered at the industry and country level.

What is holding back TFP growth?

Diagnostic Tool 2: We decompose sources of TFP growth following large decomposition literature:
(Olley and Pakes, 1996; Griliches and Regev,1995; Foster, Haltiwanger, and Kirzan, 2001; Melitz and Polanec, 2015)

Are startups more productive than established firms?

$$\text{TFP growth} = \underbrace{\text{TFP growth from surviving firms}} + \text{Entry \& exit of firms}$$

Are low productivity firms exiting the market?

$$\overbrace{\text{TFP growth from surviving firms}} = \text{Within firm improvement} + \text{Across firm reallocation}$$

Are surviving firms becoming more productive?

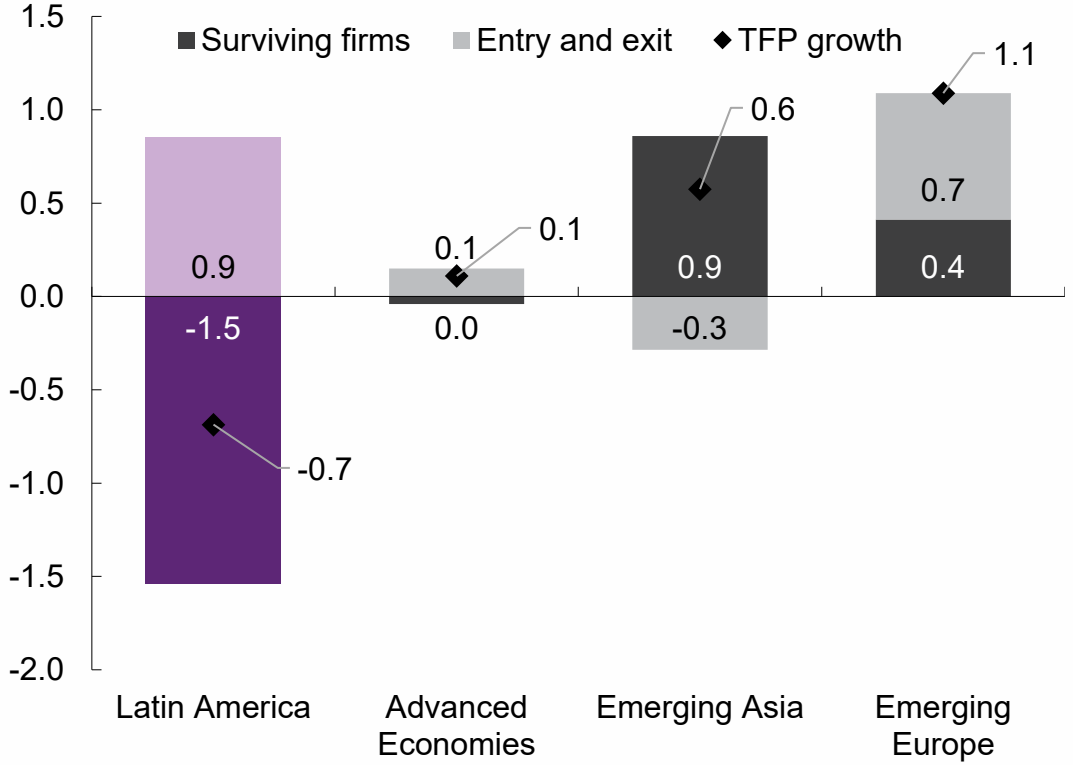
Are resources moving towards productive firms?

Output elasticities Melitz & Polanec (2015)

Weak firm performance undermines TFP growth in Latin America

Surviving firms contribute less to TFP growth in Latin America…

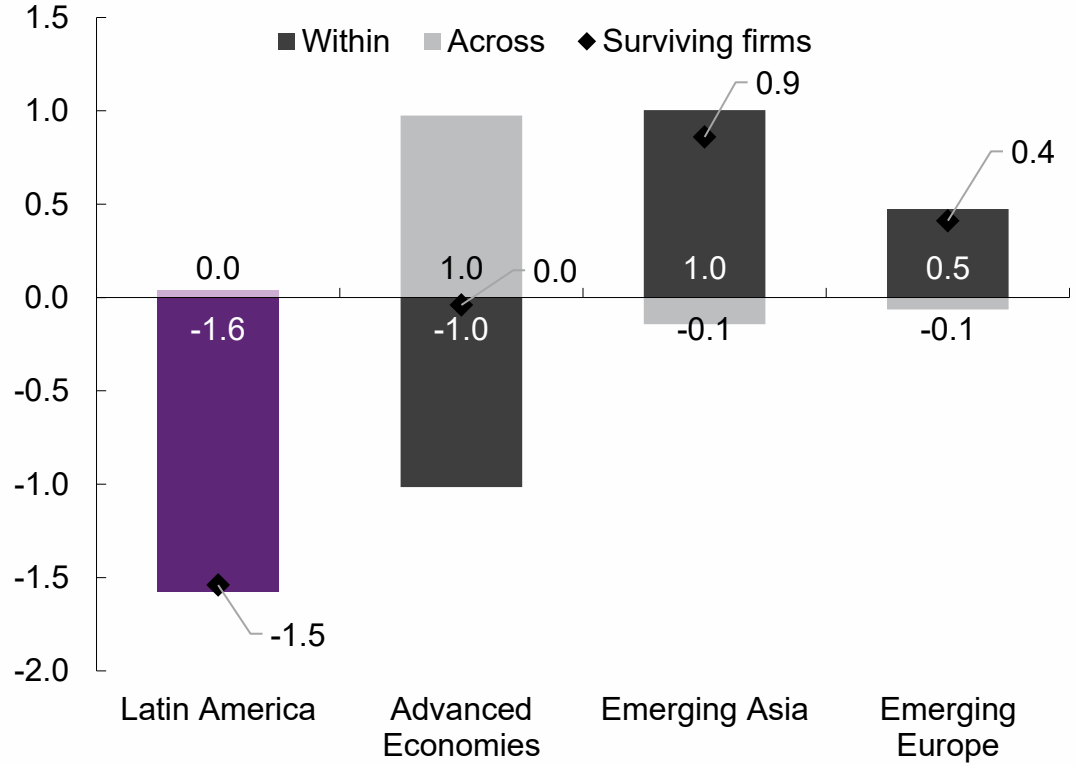
TFP Growth Rates Decomposition by Margins
(Percentage points)



Sources: WEO; PWT; Orbis; WBES; and IMF staff calculations.
Note: Melitz and Polanec's (2015) decomposition of growth rates and contributions. Aggregates are PPP-GDP-weighted averages. Regional groupings use 2005 WEO classification. Observations are weighed to match the size distribution in the WBES. Advanced economies = DEU, FRA, ESP; Emerging Asia = MYS, THA, VNM; Emerging Europe = SVN, SVK, LVA, LTU, ROU; Latin America = BRA, COL, MEX.

…driven by particularly low internal productivity growth.

Margins behind Surviving Firm Contribution
(Percentage points)

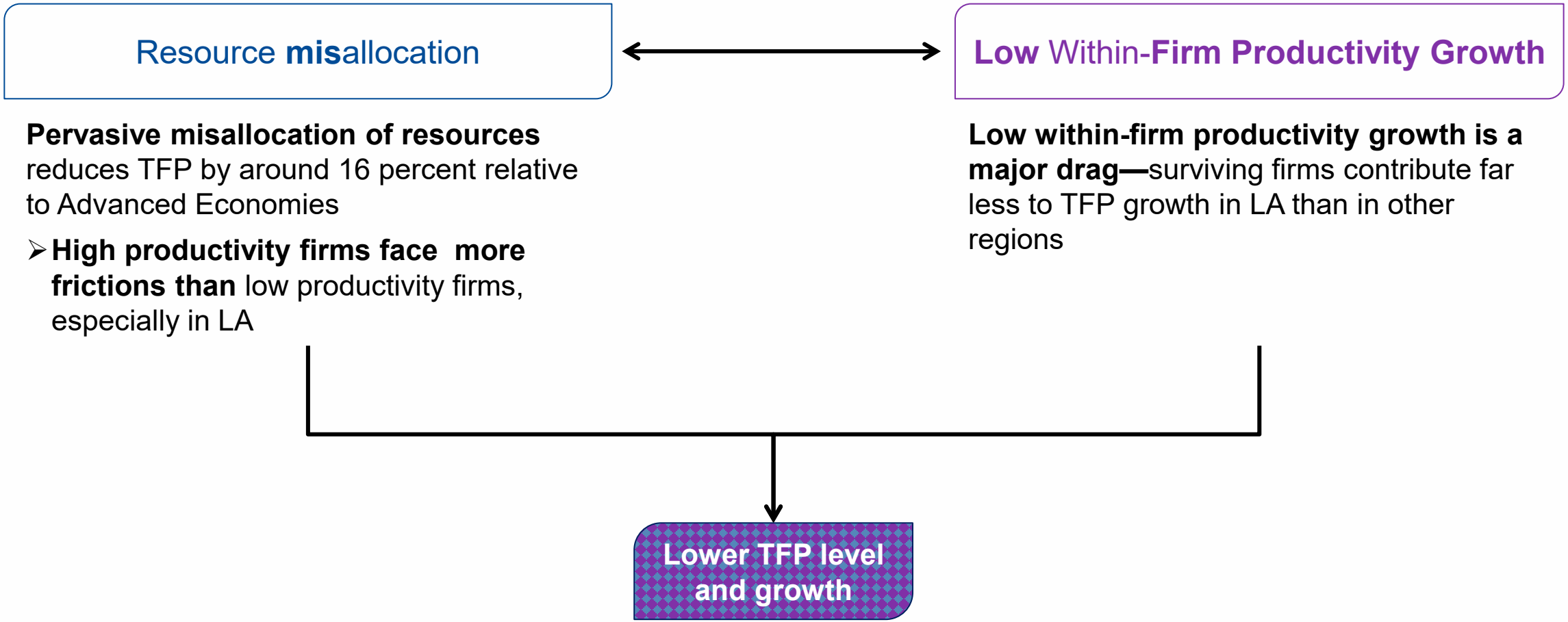


Sources: WEO; PWT; Orbis; WBES; and IMF staff calculations.
Note: Melitz and Polanec's (2015) decomposition of growth rates and contributions. Aggregates are PPP-GDP-weighted averages. Regional groupings use 2005 WEO classification. Observations are weighed to match the size distribution in the WBES. Advanced economies = DEU, FRA, ESP; Emerging Asia = MYS, THA, VNM; Emerging Europe = SVN, SVK, LVA, LTU, ROU; Latin America = BRA, COL, MEX.

What is Behind Productivity Challenges: Frictions and Policies to Address Them

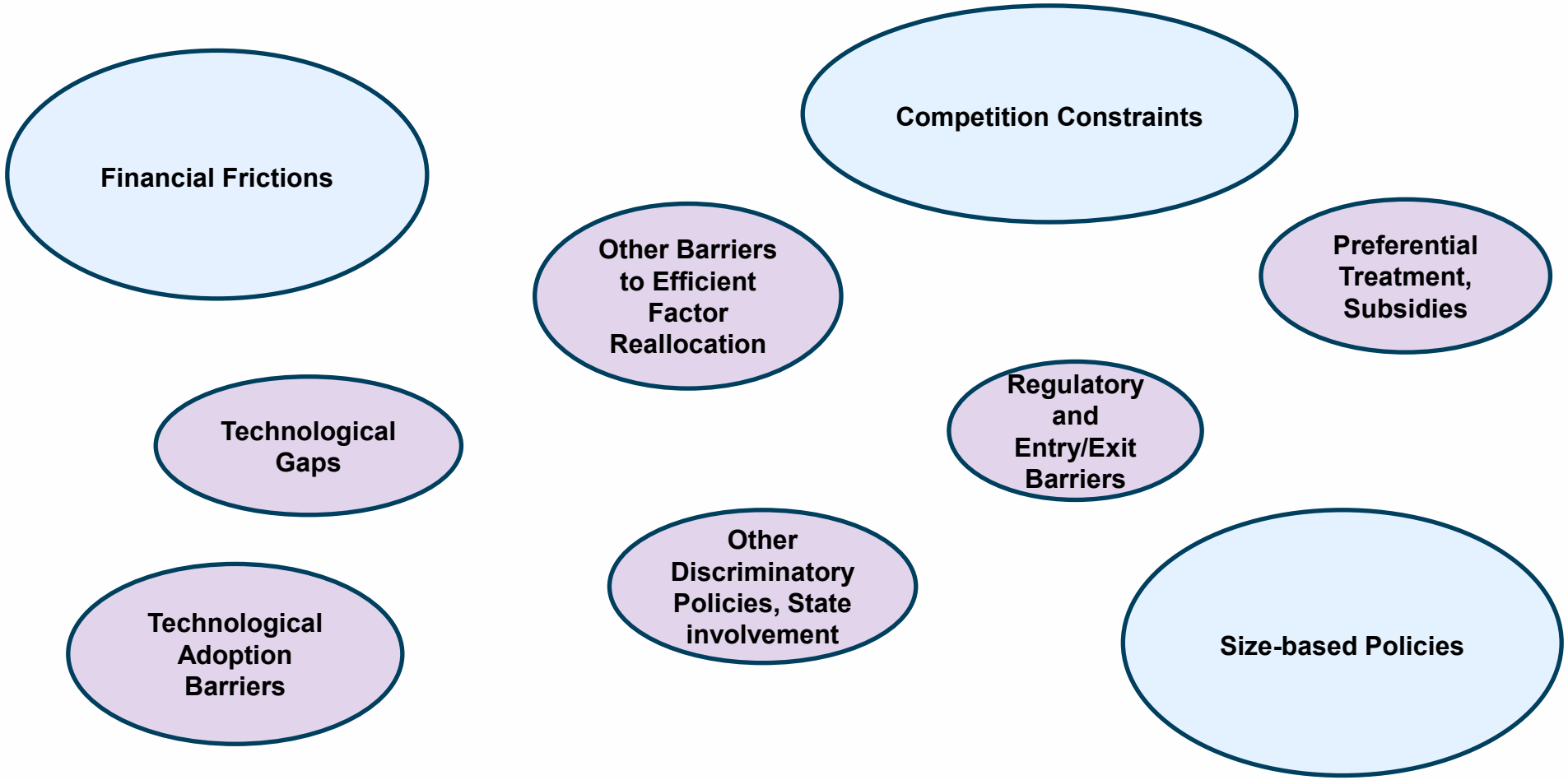
What drives Latin America's productivity challenge?

Misallocation and low within-firm productivity growth drive Latin America's productivity challenge



Understanding the frictions behind misallocation and low growth in Latin America

Our focus is on three key policy-relevant frictions that have a primarily role in misallocation and low growth in Latin America

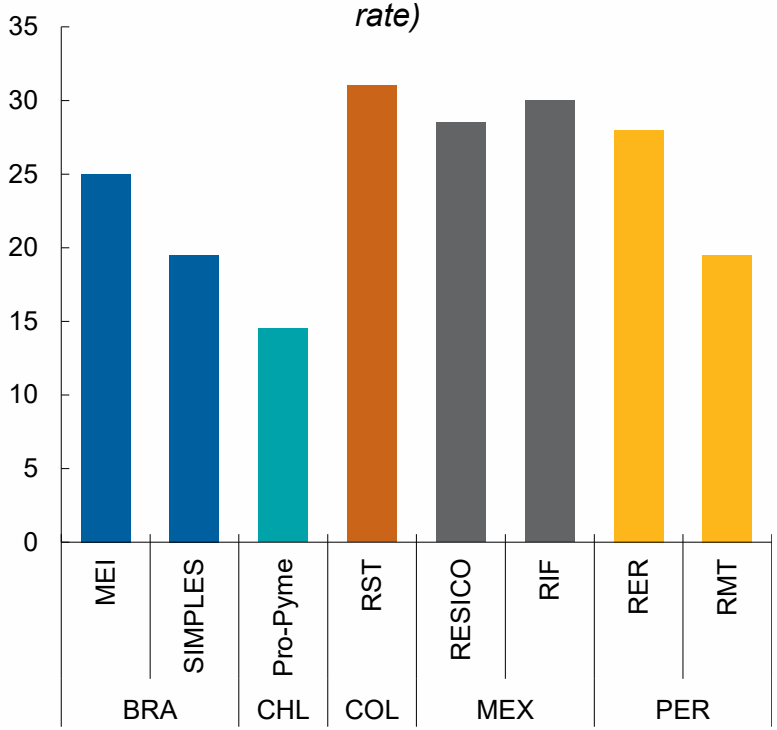


Distortive policies skew resources towards less productive firms

Size-based tax policies offer large incentives to remain small, discouraging firm growth

LA5: Incentive Gap in Corporate Income Tax

(Percentage points; statutory minus simplified tax rate)

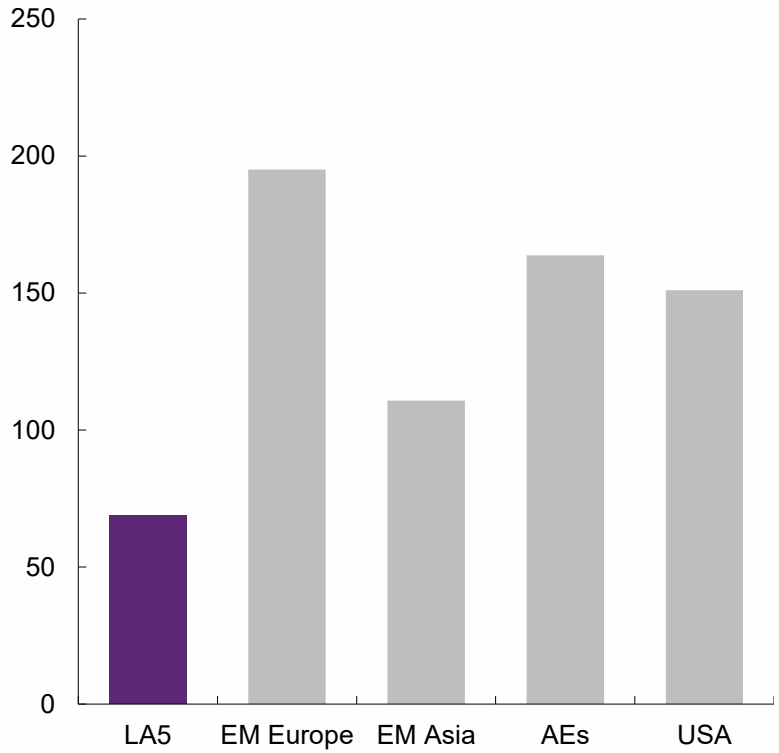


Sources: national authorities; and IMF staff calculations.
Note: For BRA - SIMPLES, COL - RST, and MEX - RESICO, the median statutory CIT within each STR schedule by revenue bracket and/or sector is used to illustrate the presence of incentive gaps. BRA - SIMPLES rates bundle multiple taxes, including CIT and social security contributions. For comparability with the general regime's CIT of 25 percent, after surtax, the SIMPLES CIT is proxied by subtracting the 9 percent social contribution from the median SIMPLES nominal rate across revenue brackets and sector. For MEX- RIF, the year-1 schedule (CIT full exemptions) is used to reflect entry incentives; the discount decreases by 10 percent each year over 10 years. For PER-RER, there is no annual CIT, but a statutory monthly revenue-based quota of 1.5 percent.

Limited availability and high cost of credit starve firms from resources for internal growth …

Total Credit to Non-Financial Sector, 2022–24

(Percent of GDP; quarterly average)

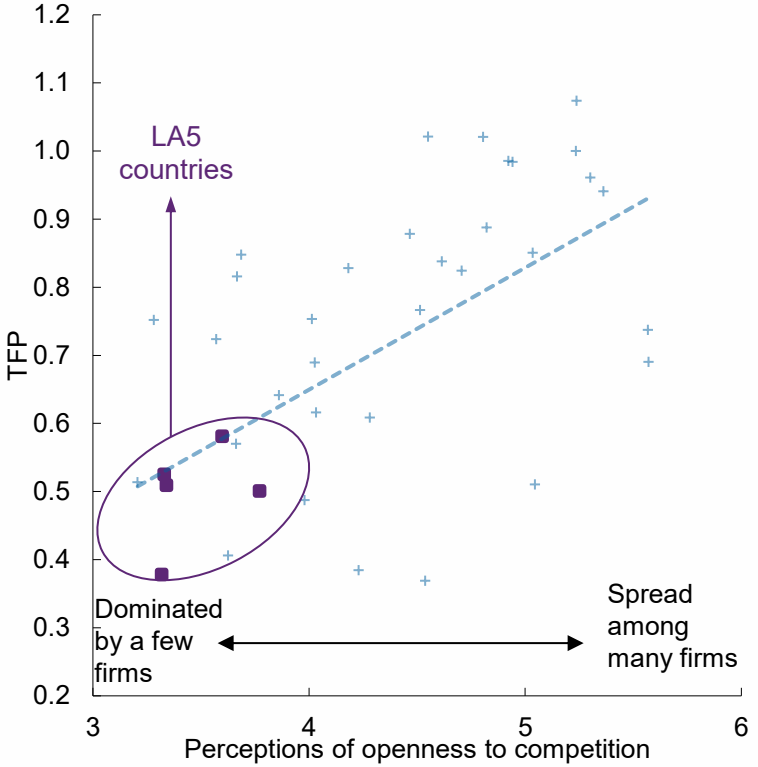


Source: BIS; and IMF staff calculations.
Aggregates are PPP-GDP-weighted averages. AEs = advanced economies (AUT, BEL, DEU, DNK, ESP, FIN, FRA, GBR, GRC, ITA, JPN, LUX, SWE); EM = emerging markets; EM Asia = CHN, IDN, IND, MYS, THA; EM Europe = CZE, EST, HUN, LVA, LTU, NLD, SVK, SVN; LA5 = Latin America 5 (BRA, CHL, COL, MEX, PER).

… while market dominance of surviving firms reduces pressure to grow and ability to enter new markets.

TFP and Competition, 2019

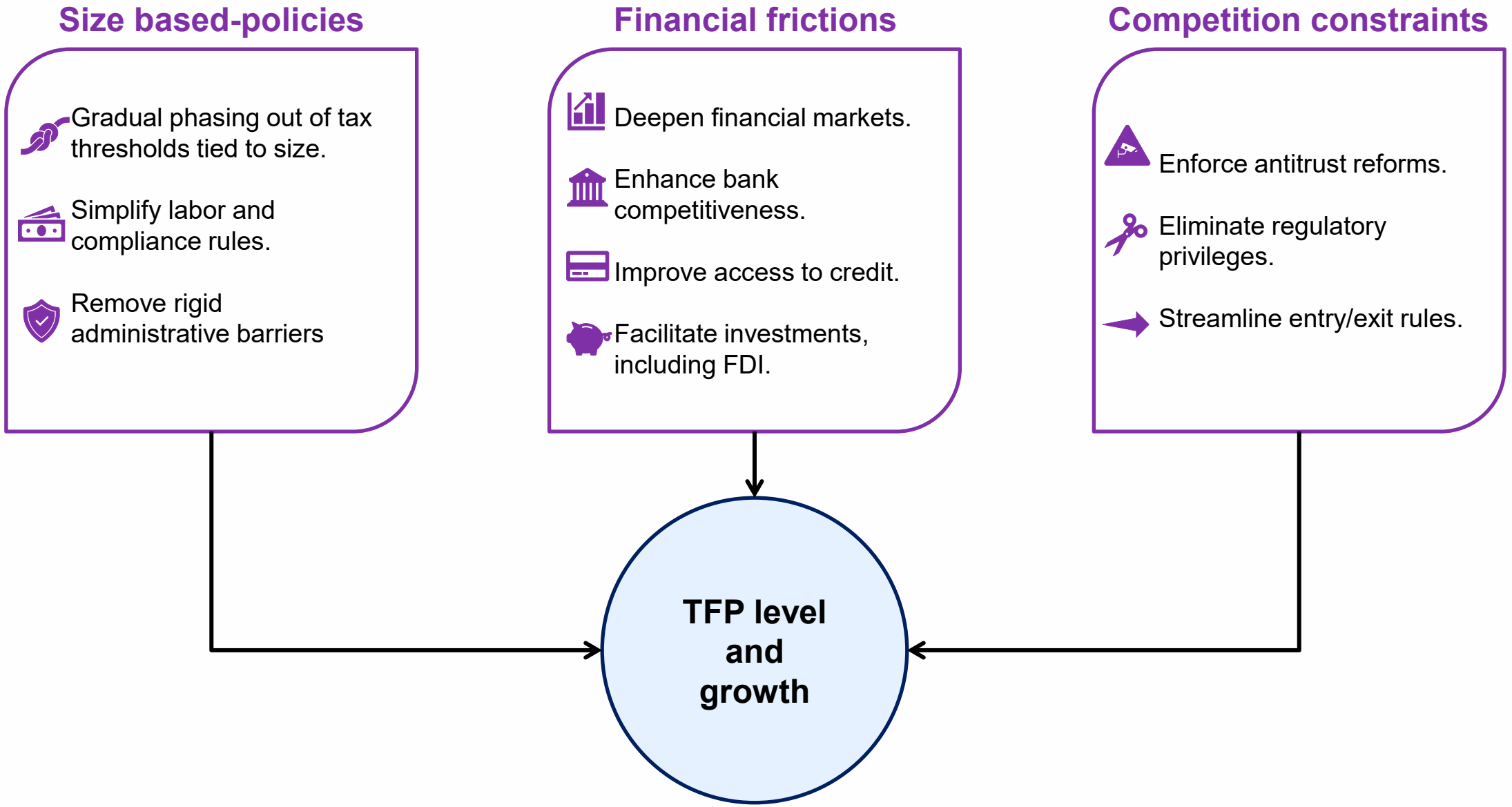
(y-axis: USA=1; x-axis: index)



Source: WEO; PWT; WEF; and IMF staff calculations.
Note: The 2019 market dominance index reflects the responses to the following survey question: "In your country, how do you characterize corporate activity?" in the Global Competitiveness Index (WEF 2019). This indicator is based on a perception survey of business executives and should be interpreted with caution. Perception-based indicators may reflect respondents' views at the time of the survey and can be affected by sampling biases, framing, and changes in sentiment.

Key Takeaways

Targeted reforms are required to address these frictions



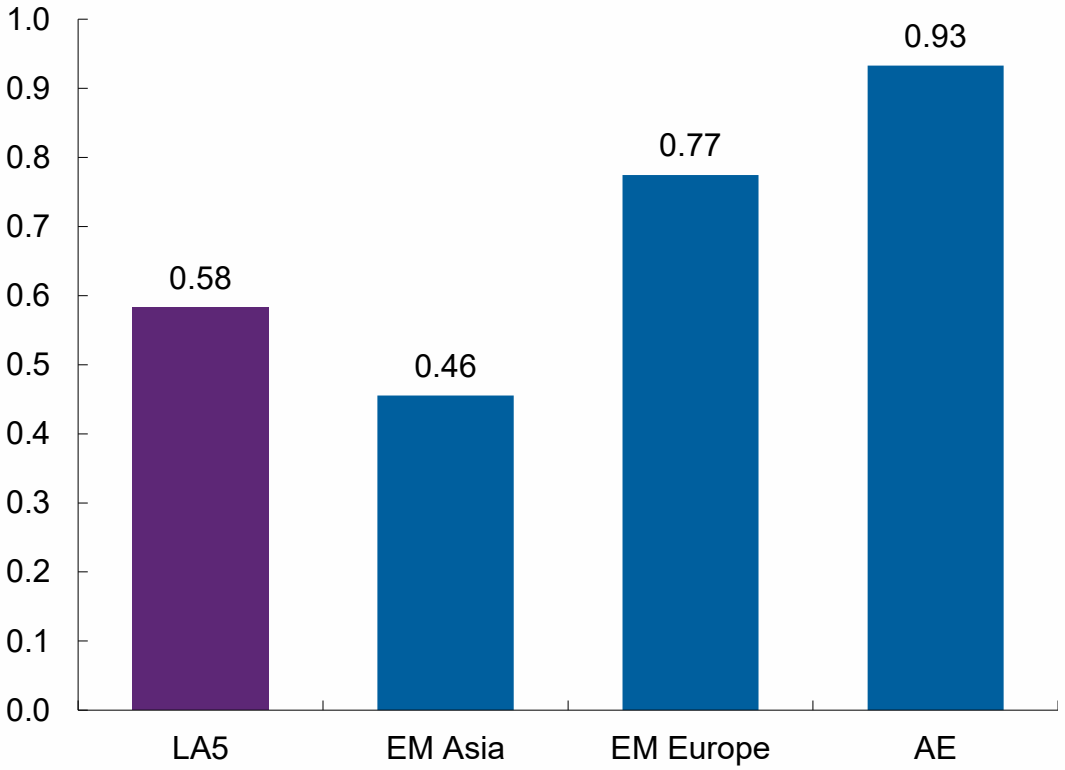
Thank You

Appendix: Growth Accounting

LA productivity level is low (challenge 1)

Productivity levels remain low in LA when ignoring human capital and the intensive margin of labor supply …

TFP Relative to the US, 2019
(2019 US =1)



Sources: WEO; PWT; and IMF staff calculations.
Note: Aggregates are PPP-GDP-weighted averages. Regional groupings use 2005 WEO classification. AEs = advanced economies (AUT, BEL, DEU, DNK, FIN, FRA, GRC, ITA, JPN, LUX, NLD, NOR, ESP, SWE, GBR, USA); EM = emerging markets; EM Asia = IDN, IND, MYS, PHL, THA; EM Europe = CZE, EST, LTU, LVA, SVK, SVN, POL, ROU; LA5 = Latin America 5 (BRA, CHL, COL, MEX, PER).

…. or when accounting for fixed resources as in Bakker (2024)

TFP Relative to the US, 2019
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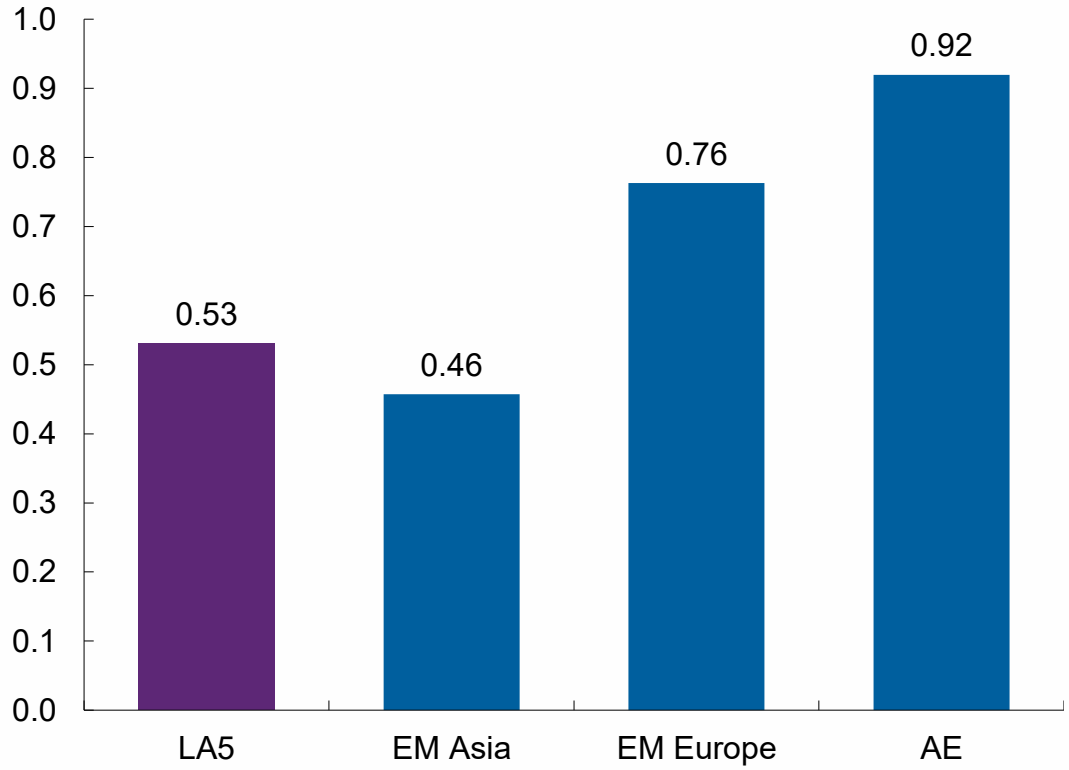
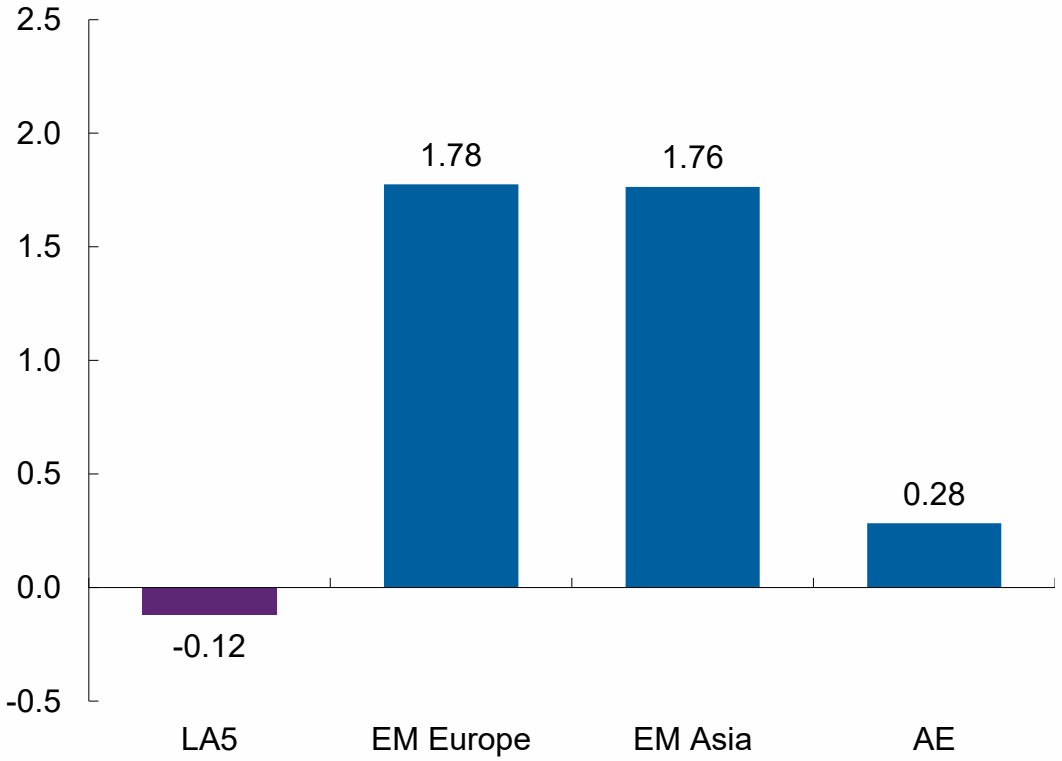


Sources: WEO; PWT; and IMF staff calculations.
Note: Aggregates are PPP-GDP-weighted averages. Regional groupings use 2005 WEO classification. AEs = advanced economies (AUT, BEL, DEU, DNK, FIN, FRA, GRC, ITA, JPN, LUX, NLD, NOR, ESP, SWE, GBR, USA); EM = emerging markets; EM Asia = IDN, IND, MYS, PHL, THA; EM Europe = CZE, EST, LTU, LVA, SVK, SVN, POL, ROU; LA5 = Latin America 5 (BRA, CHL, COL, MEX, PER).

LA productivity growth is low (challenge 2)

Productivity growth remains low in LA when ignoring human capital and the intensive margin of labor supply …

Contribution of TFP to Real GDP growth, 2000-19
(Percentage points)



Sources: WEO; PWT; and IMF staff calculations.
Note: Aggregates are PPP-GDP-weighted averages. Regional groupings use 2005 WEO classification. AEs = advanced economies (AUT, BEL, DEU, DNK, FIN, FRA, GRC, ITA, JPN, LUX, NLD, NOR, ESP, SWE, GBR, USA); EM = emerging markets; EM Asia = IDN, IND, MYS, PHL, THA; EM Europe = CZE, EST, LTU, LVA, SVK, SVN, POL, ROU; LA5 = Latin America 5 (BRA, CHL, COL, MEX, PER).

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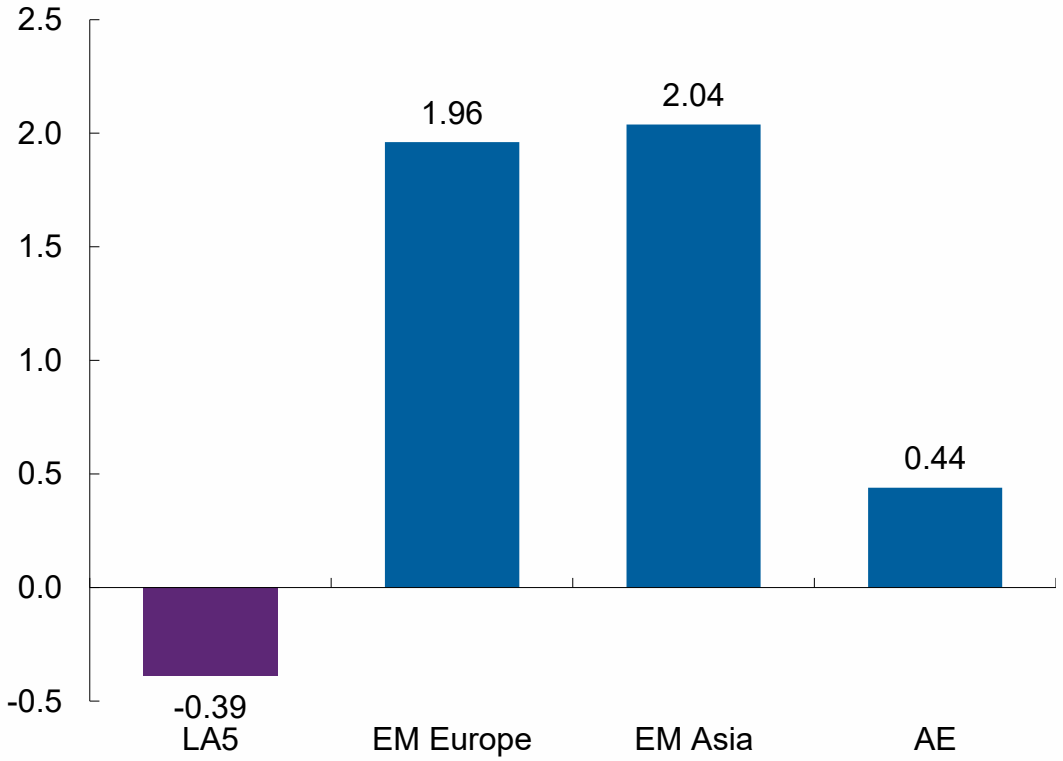


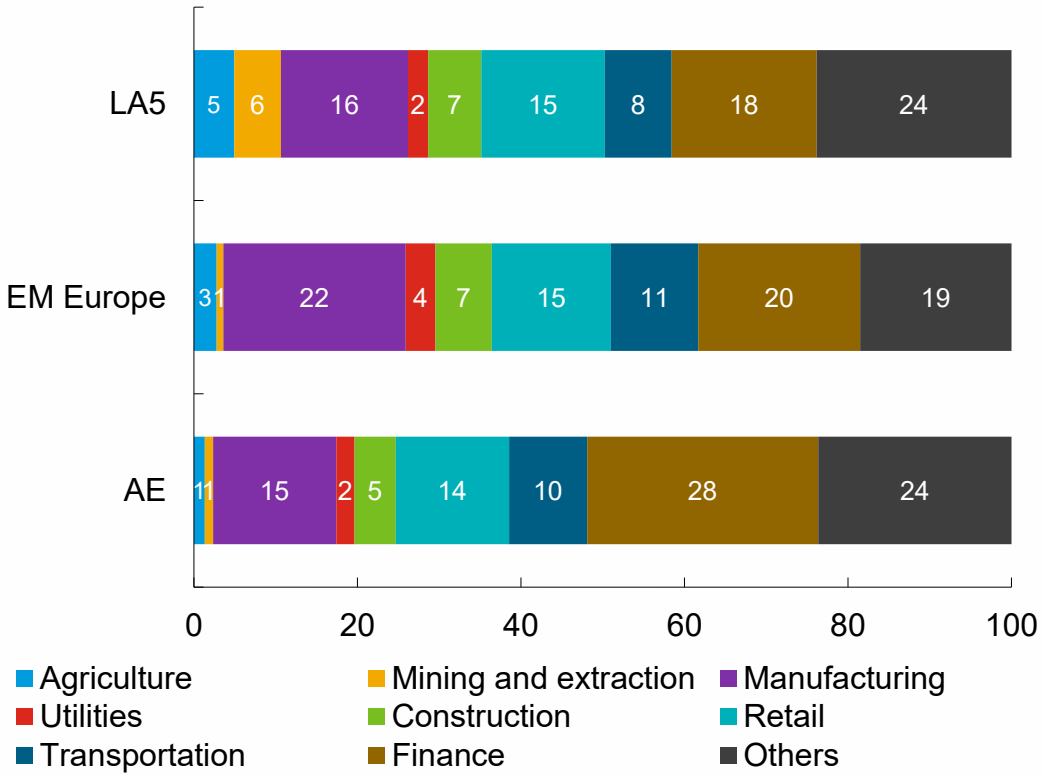
Sources: WEO; PWT; and IMF staff calculations.
Note: Aggregates are PPP-GDP-weighted averages. Regional groupings use 2005 WEO classification. AEs = advanced economies (AUT, BEL, DEU, DNK, FIN, FRA, GRC, ITA, JPN, LUX, NLD, NOR, ESP, SWE, GBR, USA); EM = emerging markets; EM Asia = IDN, IND, MYS, PHL, THA; EM Europe = CZE, EST, LTU, LVA, SVK, SVN, POL, ROU; LA5 = Latin America 5 (BRA, CHL, COL, MEX, PER).

Back

Low TFP growth not driven by sectoral specialization

Latin America's sectoral specialization has similarities with peers, despite larger extractive industries

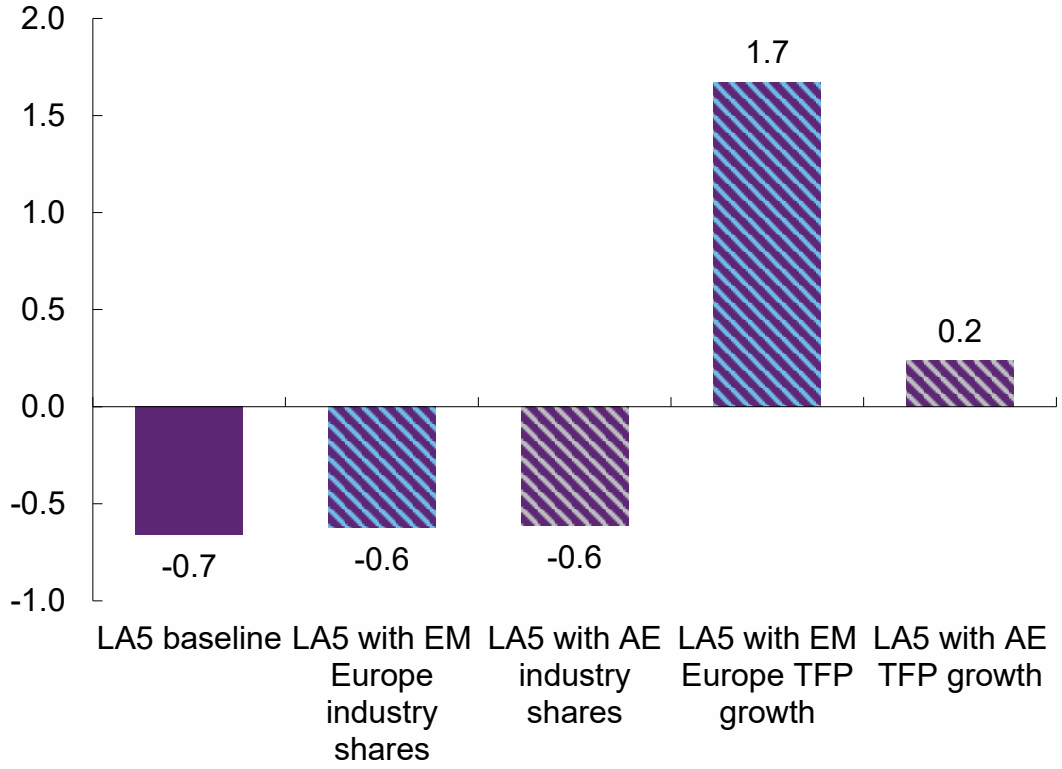
Sectoral Composition of GDP, 2000-18
(Percentage; annual averages)



Sources: Penn World Table 10.01 database; KLEMS; and IMF staff calculations.
Note: Aggregates are purchasing-power-parity GDP-weighted averages Agriculture=agriculture, hunting, forestry and fishing. Finance= finance, insurance, real state and business services. Other services = social, community, and personal services. Latest update June 24th, 2025.

… and does not drive slow TFP growth

LA5: Counterfactual TFP Growth, 2000-18
(Percentage points; annual averages)



Sources: Penn World Table 10.01 database; KLEMS; and IMF staff calculations.
Note: Aggregates are purchasing-power-parity GDP-weighted averages. Last update June 24th, 2025.

Growth accounting implementation details

Combine **Penn World Tables** and **KLEMS** accounts (LA & EU) for the 2000–19 period for LA5 (Brazil, Chile, Colombia, Mexico, and Peru), Emerging Europe and Advanced Economies

- From the PWT, we use Real GDP (in mil. 2017 USD), labor inputs (Average annual hours worked by persons engaged; Number of persons engaged; Human capital index), the capital stock (in mil. 2017 USD), and the labor share of GDP.
- We integrate this data with KLEMS data on sectoral value-added and factor compensation.
  - Sectoral values are adjusted to "match" PWT for GDP, capital stock, labor inputs, and labor share of compensation.
  - Methodology "distributes" aggregate factor inputs and compensation based on industry shares in KLEMS accounts.
- For selected countries, we construct sectoral data from national accounts:
  - For Brazil, we constructed a new dataset for the period 2000–2020 using Supply Use Tables from IBGE
  - For Chile, we filled the gaps in LA KLEMS for 2018 and one of the sectors using Supply Use Tables.

Baseline - Our baseline growth accounting exercise decomposes long-term growth (from year t to t+1) in the region into the contributions of productivity, capital, and labor using the familiar approach:

$$\Delta\% \, A_{t+1} = \Delta\% \, Y_{t+1} - (\alpha_t \cdot \Delta\% \, L_{t+1} + \beta_t \cdot \Delta\% K_{t+1})$$

Sectoral - We can derive the aggregate growth rate from the sectoral data as the value-added weighted average:

$$\Delta\% \, A_{t+1} = \sum_i \omega_{it} \cdot \Delta\% \, A_{it+1} \quad \text{with} \quad \omega_{it} = \frac{Y_{it}}{Y_t}.$$

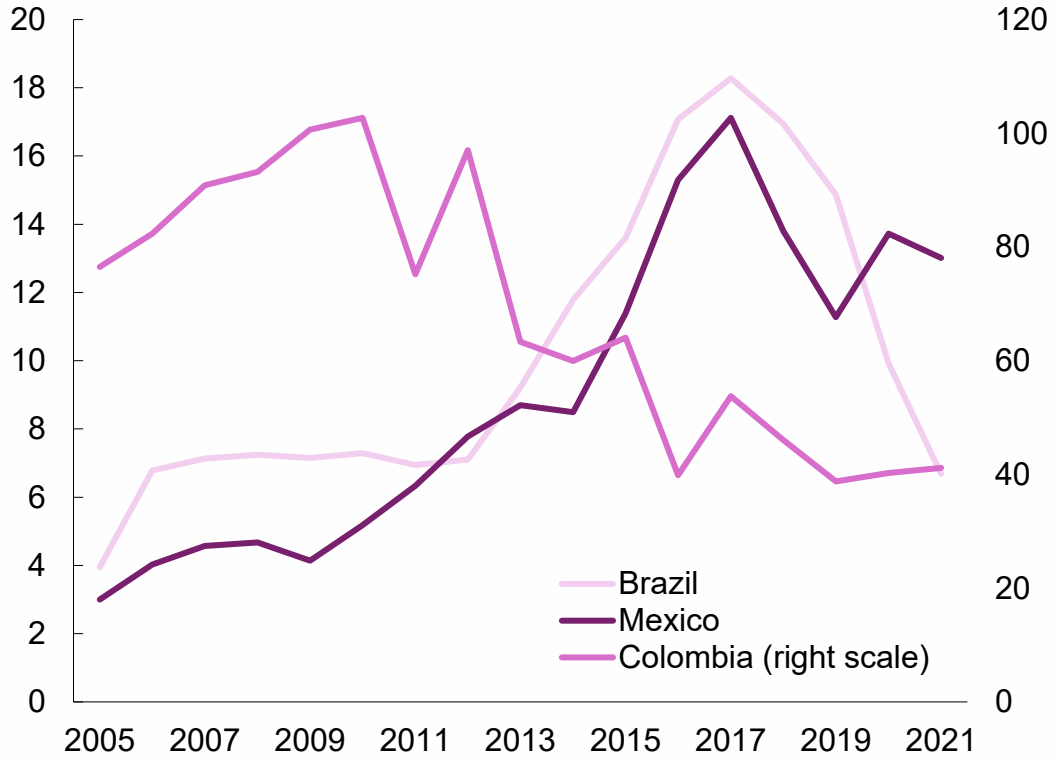
Back

Appendix: Elasticity Estimates and Summary Statistics

Summary Statistics for Latin America Sample

Our sample captures a large number of firms in Latin America …

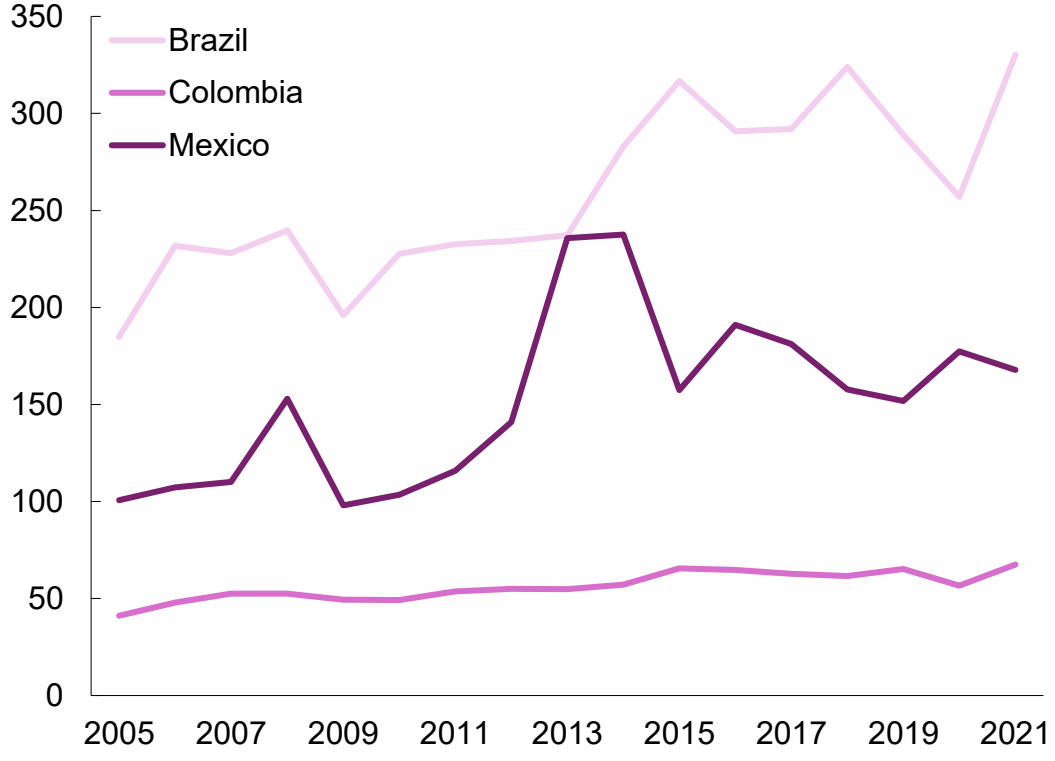
Firms in Sample for LA3
(Number; hundreds)



Sources: ORBIS; and IMF Staff calculations
Notes: Number of firms in final sample for full economy for countries in Latin America. All observations have non-missing sales, cost of goods sold, and capital.

… and a significant amount of sales.

Total Sales for Firm in Sample
(2015 USD; billions)



Sources: ORBIS; and IMF Staff calculations
Notes: Total sales of firms in final sample for full economy for countries in Latin America. All observations have non-missing sales, cost of goods sold, and capital.

Elasticity of substitution

Estimates for Elasticity of Substitution within Sectors
(Elasticity)

	Mean	Std. Dev
World	**3.5**	**0.23**
Advanced Economies	3.1	0.17
Latin America	3.2	0.17
LA3	***3.0***	***0.19***
Argentina	*3.4*	*0.16*
Brazil	*2.9*	*0.16*
Chile	*3.5*	*0.11*
Mexico	*3.1*	*0.22*
Colombia	*2.9*	*0.18*
Peru	*3.1*	*0.16*
Uruguay	*3.4*	*0.19*
Emerging Europe	4.1	0.23
Emerging Asia	3.7	0.35

Source: Broda et al (2017), IMF Staff Calculations
Note: Standard errors for country groups calculated assuming uncorrelated estimation errors.

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Summary statistics for estimated output elasticities

Summary Statistics for Elasticity Estimates

	Mean	Std. Dev.	P25	P50	P75	Min	Max
All regions							
Cost of Goods Sold	0.80	0.08	0.75	0.80	0.86	0.43	0.96
Capital	0.10	0.06	0.06	0.09	0.13	-0.01	0.41
Returns to scale	0.90	0.05	0.87	0.90	0.94	0.69	1.16
Latin America							
Cost of Goods Sold	0.73	0.07	0.68	0.74	0.78	0.51	0.90
Capital	0.16	0.06	0.12	0.15	0.18	0.05	0.33
Returns to scale	0.89	0.04	0.87	0.89	0.91	0.78	1.04
Global							
Cost of Goods Sold	0.81	0.07	0.76	0.80	0.87	0.52	0.90
Capital	0.09	0.03	0.06	0.09	0.11	0.04	0.17
Returns to scale	0.90	0.04	0.87	0.90	0.93	0.69	0.97

Source: ORBIS; WBES; and IMF staff calculations.
Note: Estimates by region and 2-digit industry following approach of Diez et al (2021). Global estimates pool firms across all regions during the estimation.

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Appendix: Diagnosis I

Details on Hsieh and Klenow (2009)

HK09 show that aggregate TFP is technological capabilities adjusted for resource misallocation

$$A_t = \frac{\widetilde{A}_t}{\Lambda_t} \text{ with } \Lambda_t \geq 1.$$

HK09 identify Revenue TFP (TFPR) as an implicit measure of frictions.

- In absence of frictions, TFPR should be equalized across firms to set MC = MB

$$TFPR_{it} = \frac{Y_{it}}{(W_{it} \cdot L_{it})^{\beta^L_{s(i)}} \cdot K_{it}^{\beta^K_{s(i)}}}.$$

The distribution of TFPR is then sufficient to estimate the impact of friction on aggregate TFP

$$\Lambda_t = \prod\nolimits_{s \in S} \Lambda_{st}^{\theta_s}$$

$$\text{where } \Lambda_{st} = \sum\nolimits_{i \in F_{st}} \frac{A_{it}^{\sigma-1}}{\sum_{j \in F_{st}} A_{jt}^{\sigma-1}} \cdot \left(\frac{TFPR_{ft}}{TFPR_{st}}\right)^{-\sigma} \text{ and } TFPR_{st} = \left(\sum\nolimits_{i \in F_{st}} \frac{A_{it}^{\sigma-1}}{\sum_{j \in F_{st}} A_{jt}^{\sigma-1}} \cdot TFPR_{it}^{1-\sigma}\right)^{\frac{1}{1-\sigma}}.$$

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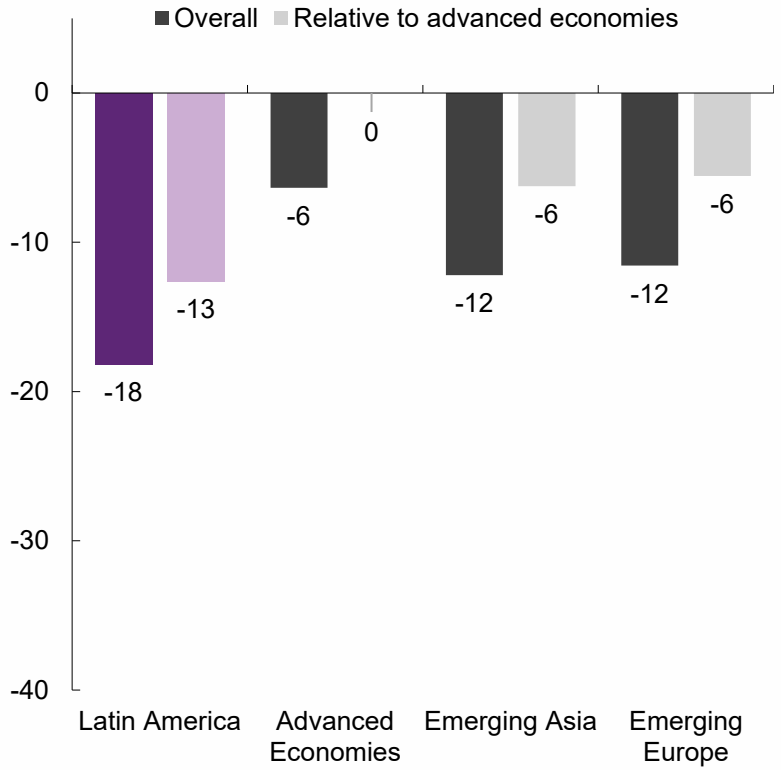
Misallocation is pervasive across sectors and sample periods

Resource misallocation in more pronounced in Latin America's manufacturing …

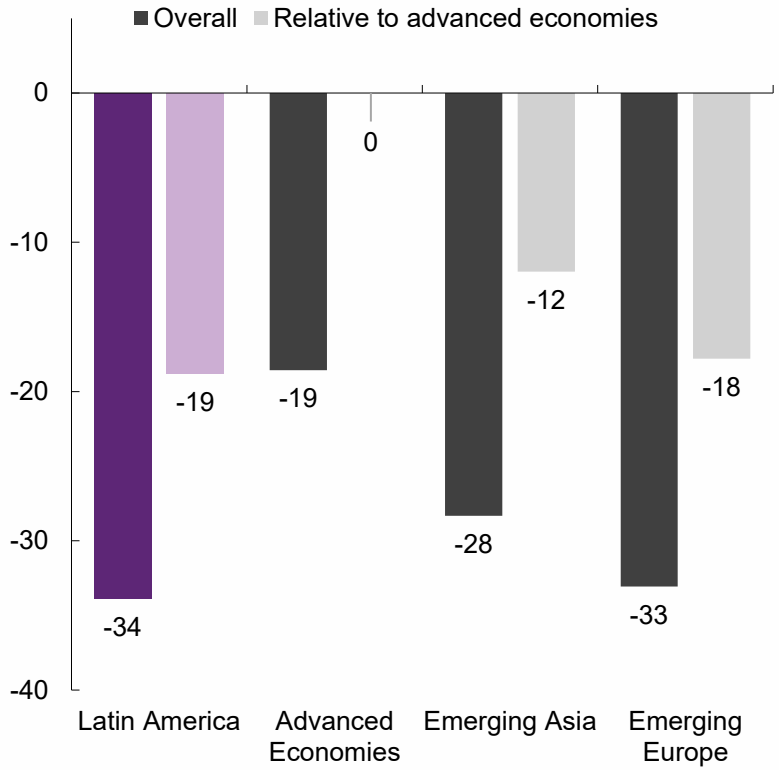
TFP Losses from Misallocation: Manufacturing
(Percent)



Sources: WEO; PWT; Orbis; WBES; and IMF staff calculations.
Note: Estimates from applying the Hsieh and Klenow (2009) framework from 2005 to 2021. Aggregates are PPP-GDP-weighted averages. Regional groupings use 2005 WEO classification. Estimates relative to AEs report gains from achieving AEs' level of misallocation. Observations are weighed to match the size distribution in the WBES. Advanced economies = DEU, FRA, ESP; Emerging Asia = MYS, THA, VNM; Emerging Europe = SVN, SVK, LVA, LTU, ROU; Latin America = BRA, COL, MEX; TFP = total factor productivity.

… and service sector than in Advanced Economies …

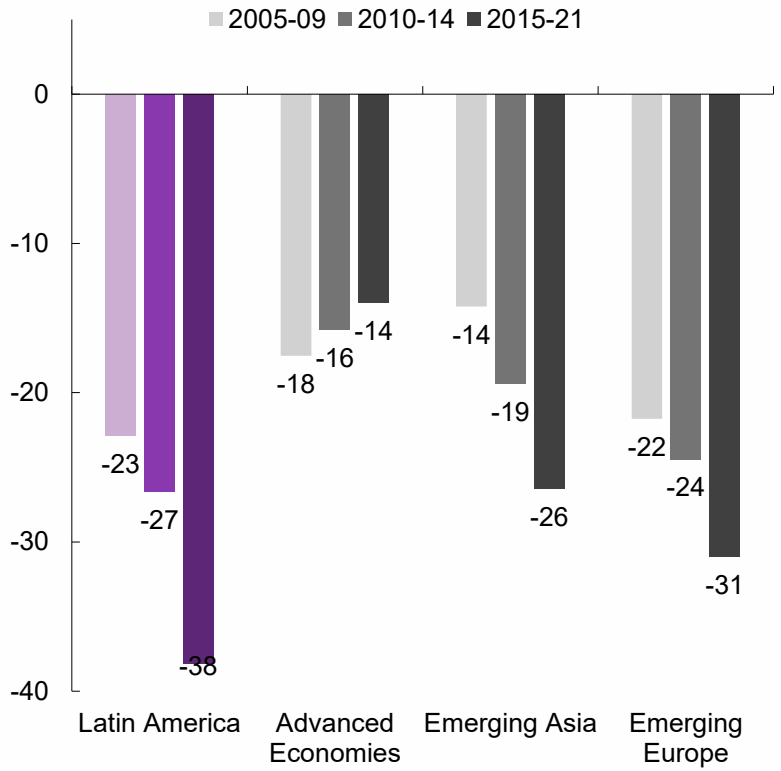
TFP Losses from Misallocation: Services
(Percent)



Sources: WEO; PWT; Orbis; WBES; and IMF staff calculations.
Note: Estimates from applying the Hsieh and Klenow (2009) framework from 2005 to 2021. Aggregates are PPP-GDP-weighted averages. Regional groupings use 2005 WEO classification. Estimates relative to AEs report gains from achieving AEs' level of misallocation. Observations are weighed to match the size distribution in the WBES. Advanced economies = DEU, FRA, ESP; Emerging Asia = MYS, THA, VNM; Emerging Europe = SVN, SVK, LVA, LTU, ROU; Latin America = BRA, COL, MEX; TFP = total factor productivity.

… which is a consistent finding across sample periods.

TFP Losses from Misallocation: Full Economy
(Percent)



Sources: WEO; PWT; Orbis; WBES; and IMF staff calculations.
Note: Estimates from applying the Hsieh and Klenow (2009) framework from 2005 to 2021. Aggregates are PPP-GDP-weighted averages. Regional groupings use 2005 WEO classification. Estimates relative to AEs report gains from achieving AEs' level of misallocation. Observations are weighed to match the size distribution in the WBES. Advanced economies = DEU, FRA, ESP; Emerging Asia = MYS, THA, VNM; Emerging Europe = SVN, SVK, LVA, LTU, ROU; Latin America = BRA, COL, MEX; TFP = total factor productivity.

Robustness for misallocation results

TFP Cost of Misallocation across Regions
(Percent)

Country/ Region	Manufacturing			Full Economy		
	Baseline	Unweighted	Large Firms	Baseline	Unweighted	Large Firms
Latin America	**-18.2**	**-12.1**	**-11.1**	**-30.8**	**-23.6**	**-22.0**
Brazil	*-22.8*	*-12.3*	*-13.0*	*-38.2*	*-28.0*	*-27.9*
Colombia	*-11.7*	*-22.2*	*-9.4*	*-41.9*	*-41.3*	*-28.7*
Mexico	*-13.3*	*-8.8*	*-8.8*	*-15.4*	*-11.3*	*-11.3*
Advanced Economies	-6.4	-6.1	-6.3	-15.7	-14.1	-15.2
Emerging Asia	-12.2	-8.0	-8.6	-22.5	-16.4	-16.9
Emerging Europe	-11.6	-16.7	-7.3	-27.4	-32.3	-21.5

Sources: WEO; PWT; Orbis; WBES; and IMF staff calculations.
Note: Estimates from applying the Hsieh and Klenow (2009) framework from 2005 to 2021. Aggregates are PPP-GDP-weighted averages. Regional groupings use 2005 WEO classification. Observations are weighed to match the size distribution in the World Bank Enterprise Surveys. Advanced economies = DEU, FRA, ESP; Emerging Asia = MYS, THA, VNM; Emerging Europe = SVN, SVK, LVA, LTU, ROU; Latin America = BRA, COL, MEX; TFP = total factor productivity.

Appendix: Diagnosis II

Details on TFP growth decomposition

Macro TFP is the weighted-average of micro TFP

$$A_t = \sum_{i \in F_t} \omega_{it} \cdot A_{it}$$

They then show that we can decompose the growth-rate of TFP into three components

$$\frac{A_{t+s} - A_t}{A_t} = \underbrace{\Phi^C_{t,t+s}}_{\text{Growth among incumbents}} + \underbrace{\Phi^E_{t,t+s}}_{\text{Growth from firm entry}} + \underbrace{\Phi^X_{t,t+s}}_{\text{Growth from firm exit}}$$

Growth from entry (exit) is positive if entering (exiting) firms are more productive than continuing firms

Growth among incumbents can be decomposed into within, across, and covariance components

$$\Phi^C_{t,t+s} = \underbrace{\Phi^W_{t,t+s}}_{\text{TFP growth within firms}} + \underbrace{\Phi^A_{t,t+s}}_{\text{Reallocation towards productive firms}}$$

Robustness diagnosis II: Incumbent specification

Survivor Contribution to TFP Growth: Alternative Specifications
(Percent)

Country/ Region	Baseline			Impute Missing			No TFP Adjustment		
	Survivors	Within	Across	Survivors	Within	Across	Survivors	Within	Across
Latin America	**-1.5**	**-1.6**	**0.0**	**-1.1**	**-1.2**	**0.2**	**-1.0**	**-1.0**	**0.0**
Brazil	-1.8	-1.6	-0.3	-1.5	-1.0	-0.6	-1.1	-0.8	-0.3
Colombia	-0.2	-1.5	1.3	-0.1	-0.4	0.3	-0.6	-1.9	1.3
Mexico	-1.5	-1.6	0.1	-0.6	-1.8	1.1	-0.9	-1.0	0.1
Advanced Economies	0.0	-1.0	1.0	-0.3	-0.8	0.5	0.4	-0.7	1.0
Emerging Asia	0.9	1.0	-0.1	0.8	1.1	-0.2	0.4	0.7	-0.4
Emerging Europe	0.4	0.5	-0.1	0.8	1.2	-0.4	0.3	0.3	-0.1

Sources: IMF, World Economic Outlook database; Penn World Table 10.01 database; Orbis; World Bank Enterprise Surveys; and IMF staff calculations.
Note: Melitz and Polanec's (2015) decomposition of survivor contribution to TFP growth with alternative specifications. In Impute Missing, missing values for surviving firms are imputed using the closest value. In No TFP Adjustment, TFP levels are not adjusted to match Penn World Tables. Aggregates are purchasing-power-parity GDP-weighted averages. Regional groupings use 2005 World Economic Outlook classification. Countries are abbreviated using International Organization for Standardization (ISO) country codes. Observations are weighed to match the size distribution in the World Bank Enterprise Surveys. Advanced economies = DEU, FRA, ESP; Emerging Asia = MYS, THA, VNM; Emerging Europe = SVN, SVK, LVA, LTU, ROU; Latin America = BRA, COL, MEX; TFP = total factor productivity.

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Robustness diagnosis II: Headline weights

TFP Growth Decomposition
(Percentage points)

Country/ Region	TFP Growth	Baseline		Unweighted		Large Firms	
		Survivors	Entry and Exit	Survivors	Entry and Exit	Survivors	Entry and Exit
Latin America	**-0.7**	**-1.5**	**0.9**	**-1.5**	**0.8**	**-1.5**	**0.8**
Brazil	*-0.9*	*-1.8*	*0.9*	*-1.8*	*0.9*	*-1.8*	*0.9*
Colombia	*0.0*	*-0.2*	*0.2*	*-0.2*	*0.2*	*-0.1*	*0.1*
Mexico	*-0.5*	*-1.5*	*0.9*	*-1.4*	*0.8*	*-1.4*	*0.8*
Advanced Economies	0.1	0.0	0.1	0.1	0.0	0.2	-0.1
Emerging Asia	0.6	0.9	-0.3	0.8	0.1	0.8	0.0
Emerging Europe	1.1	0.4	0.7	0.4	0.7	0.5	0.6

Sources: IMF, World Economic Outlook database; Penn World Table 10.01 database; Orbis; World Bank Enterprise Surveys; and IMF staff calculations.
Note: Melitz and Polanec's (2015) decomposition of the contributions to TFP growth with alternative sampling weights. Aggregates are purchasing-power-parity GDP-weighted averages. Regional groupings use 2005 World Economic Outlook classification. Countries are abbreviated using International Organization for Standardization (ISO) country codes. Observations are weighed to match the size distribution in the World Bank Enterprise Surveys. "Large Firms" weighs observations to match the implied sampling of Orbis Mexico. Advanced economies = DEU, FRA, ESP; Emerging Asia = MYS, THA, VNM; Emerging Europe = SVN, SVK, LVA, LTU, ROU; Latin America = BRA, COL, MEX; TFP = total factor productivity.

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Robustness diagnosis II: Headline specification

TFP Growth Decompositions: Alternative Specifications
(Percent)

Country/ Region	TFP Growth	Baseline		Impute Missing		No TFP Adjustment		
		Survivors	Entry and Exit	Survivors	Entry and Exit	Survivors	Entry and Exit	TFP Growth
Latin America	**-0.7**	**-1.5**	**0.9**	**-1.1**	**0.4**	**-1.0**	**0.9**	**-0.1**
Brazil	*-0.9*	*-1.8*	*0.9*	*-1.5*	*0.6*	*-1.1*	*1.0*	*-0.1*
Colombia	*0.0*	*-0.2*	*0.2*	*-0.1*	*0.1*	*-0.6*	*0.2*	*-0.4*
Mexico	*-0.5*	*-1.5*	*0.9*	*-0.6*	*0.1*	*-0.9*	*0.9*	*0.0*
Advanced Economies	0.1	0.0	0.1	-0.3	0.4	0.4	0.2	0.5
Emerging Asia	0.6	0.9	-0.3	0.8	0.0	0.4	0.0	0.4
Emerging Europe	1.1	0.4	0.7	0.8	0.3	0.3	0.7	0.9

Sources: IMF, World Economic Outlook database; Penn World Table 10.01 database; Orbis; World Bank Enterprise Surveys; and IMF staff calculations.
Note: Melitz and Polanec's (2015) decomposition of survivor contribution to TFP growth with alternative specifications. In *Impute Missing*, missing values for surviving firms are imputed using the closest value. In *No TFP Adjustment*, TFP levels are not adjusted to match Penn World Tables. Aggregates are purchasing-power-parity GDP-weighted averages. Regional groupings use 2005 World Economic Outlook classification. Countries are abbreviated using International Organization for Standardization (ISO) country codes. Observations are weighed to match the size distribution in the World Bank Enterprise Surveys. Advanced economies = DEU, FRA, ESP; Emerging Asia = MYS, THA, VNM; Emerging Europe = SVN, SVK, LVA, LTU, ROU; Latin America = BRA, COL, MEX; TFP = total factor productivity.

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Robustness diagnosis II: Headline time window

TFP Growth Decompositions: Alternative Time Windows
(Percent)

Country/ Region	Full Sample (2005-17)			Early (2005-11)			Late (2011-17)		
	TFP Growth	Survivors	Entry and Exit	TFP Growth	Survivors	Entry and Exit	TFP Growth	Survivors	Entry and Exit
Latin America	**-0.7**	**-1.5**	**0.9**	**-0.2**	**-1.5**	**1.3**	**-1.1**	**-1.1**	**0.0**
Brazil	*-0.9*	*-1.8*	*0.9*	*0.3*	*-1.3*	*1.6*	*-2.1*	*-1.6*	*-0.5*
Colombia	*0.0*	*-0.2*	*0.2*	*0.1*	*0.0*	*0.1*	*-0.1*	*-0.1*	*0.0*
Mexico	*-0.5*	*-1.5*	*0.9*	*-1.0*	*-2.2*	*1.2*	*-0.1*	*-0.7*	*0.6*
Advanced Economies	0.1	0.0	0.1	-0.1	0.2	-0.4	0.3	-1.0	1.4
Emerging Asia	0.6	0.9	-0.3	-0.2	-0.1	-0.1	1.9	1.9	0.0
Emerging Europe	1.1	0.4	0.7	0.4	-0.3	0.7	1.8	2.0	-0.2

Sources: IMF, World Economic Outlook database; Penn World Table 10.01 database; Orbis; World Bank Enterprise Surveys; and IMF staff calculations.
Note: Melitz and Polanec's (2015) decomposition of TFP growth by time window from 2005 to 2017. Aggregates are purchasing-power-parity GDP-weighted averages. Regional groupings use 2005 World Economic Outlook classification. Countries are abbreviated using International Organization for Standardization (ISO) country codes. Observations are weighed to match the size distribution in the World Bank Enterprise Surveys. Advanced economies = DEU, FRA, ESP; Emerging Asia = MYS, THA, VNM; Emerging Europe = SVN, SVK, LVA, LTU, ROU; Latin America = BRA, COL, MEX; TFP = total factor productivity.

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Robustness diagnosis II: Headline sample

TFP Growth Decomposition: Sectors
(Percent)

Country/ Region	TFP Growth	Baseline		Manufacturing		Services	
		Survivors	Entry and Exit	Survivors	Entry and Exit	Survivors	Entry and Exit
Latin America	**-0.7**	**-1.5**	**0.9**	**-1.5**	**0.8**	**-1.2**	**0.5**
Brazil	*-0.9*	*-1.8*	*0.9*	*-2.6*	*1.7*	*-0.7*	*-0.2*
Colombia	*0.0*	*-0.2*	*0.2*	*-0.2*	*0.2*	*-0.2*	*0.2*
Mexico	*-0.5*	*-1.5*	*0.9*	*-0.3*	*-0.2*	*-2.0*	*1.5*
Advanced Economies	0.1	0.0	0.1	-0.7	0.8	0.1	0.0
Emerging Asia	0.6	0.9	-0.3	0.8	0.0	1.6	-1.2
Emerging Europe	1.1	0.4	0.7	0.9	0.1	2.1	-1.0

Sources: IMF, World Economic Outlook database; Penn World Table 10.01 database; Orbis; World Bank Enterprise Surveys; and IMF staff calculations.
Note: Melitz and Polanec's (2015) decomposition of TFP growth by sector from 2005 to 2017. Aggregates are purchasing-power-parity GDP-weighted averages. Regional groupings use 2005 World Economic Outlook classification. Countries are abbreviated using International Organization for Standardization (ISO) country codes. Observations are weighed to match the size distribution in the World Bank Enterprise Surveys. Advanced economies = DEU, FRA, ESP; Emerging Asia = MYS, THA, VNM; Emerging Europe = SVN, SVK, LVA, LTU, ROU; Latin America = BRA, COL, MEX; TFP = total factor productivity.

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Robustness diagnosis II: Incumbent weights

Survivor Contribution to TFP Growth: Sampling Weights
(Percent)

Country/ Region	Baseline			Unweighted			Large Firms		
	Survivors	Within	Across	Survivors	Within	Across	Survivors	Within	Across
Latin America	**-1.5**	**-1.6**	**0.0**	**-1.5**	**-1.4**	**-0.1**	**-1.5**	**-1.4**	**0.0**
Brazil	-1.8	-1.6	-0.3	-1.8	-1.5	-0.2	-1.8	-1.6	-0.2
Colombia	-0.2	-1.5	1.3	-0.2	-1.3	1.1	-0.1	-1.4	1.3
Mexico	-1.5	-1.6	0.1	-1.4	-1.2	-0.2	-1.4	-1.2	-0.2
Advanced Economies	0.0	-1.0	1.0	0.1	-1.1	1.1	0.2	-0.8	1.0
Emerging Asia	0.9	1.0	-0.1	0.8	1.2	-0.4	0.8	1.4	-0.6
Emerging Europe	0.4	0.5	-0.1	0.4	0.8	-0.4	0.5	1.4	-0.9

Sources: IMF, World Economic Outlook database; Penn World Table 10.01 database; Orbis; World Bank Enterprise Surveys; and IMF staff calculations.
Note: Melitz and Polanec's (2015) decomposition of survivor contribution to TFP growth with alternative sampling weights. Aggregates are purchasing-power-parity GDP-weighted averages. Regional groupings use 2005 World Economic Outlook classification. Countries are abbreviated using International Organization for Standardization (ISO) country codes. Observations are weighed to match the size distribution in the World Bank Enterprise Surveys. "Large Firms" weighs observations to match the implied sampling of Orbis Mexico. Advanced economies = DEU, FRA, ESP; Emerging Asia = MYS, THA, VNM; Emerging Europe = SVN, SVK, LVA, LTU, ROU; Latin America = BRA, COL, MEX; TFP = total factor productivity.

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Diagnosis II: The entry and exit margin

Entry and Exit Contribution to TFP Growth
(Percent)

Country/ Region	Entry			Exit		
	Contribution	Rate	Selection	Contribution	Rate	Selection
Latin America	**0.39**	**0.67**	**59.3**	**0.46**	**3.24**	**14.7**
Brazil	0.66	0.66	99.6	0.27	3.58	7.4
Colombia	0.11	0.97	11.5	0.09	2.43	3.5
Mexico	0.11	0.59	18.1	0.83	3.01	27.6
Advanced Economies	0.17	1.24	13.1	-0.02	3.63	0.6
Emerging Asia	-0.26	3.23	-2.3	-0.03	1.12	1.2
Emerging Europe	0.76	2.43	30.1	-0.09	1.41	-31.0

Sources: IMF, World Economic Outlook database; Penn World Table 10.01 database; Orbis; World Bank Enterprise Surveys; and IMF staff calculations.
Note: Melitz and Polanec's (2015) decomposition of entry and exit contribution to TFP growth from 2005 to 2017. The total contribution is the product of the rate and selection terms. Aggregates are purchasing-power-parity GDP-weighted averages. Regional groupings use 2005 World Economic Outlook classification. Countries are abbreviated using International Organization for Standardization (ISO) country codes. Observations are weighed to match the size distribution in the World Bank Enterprise Surveys. Advanced economies = DEU, FRA, ESP; Emerging Asia = MYS, THA, VNM; Emerging Europe = SVN, SVK, LVA, LTU, ROU; Latin America = BRA, COL, MEX; TFP = total factor productivity.

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