*The Office of the Chief Economist of the South Asia Region*

OCTOBER 2023

# South Asia Development Update

# Toward faster, cleaner growth

WORLD BANK GROUP

# Four Questions

1. What is the economic outlook for South Asia?
2. How can South Asia's fiscal risks be addressed?
3. What can spur investment in energy efficient technologies?
4. How will the energy transition shape labor markets?

# Four Questions

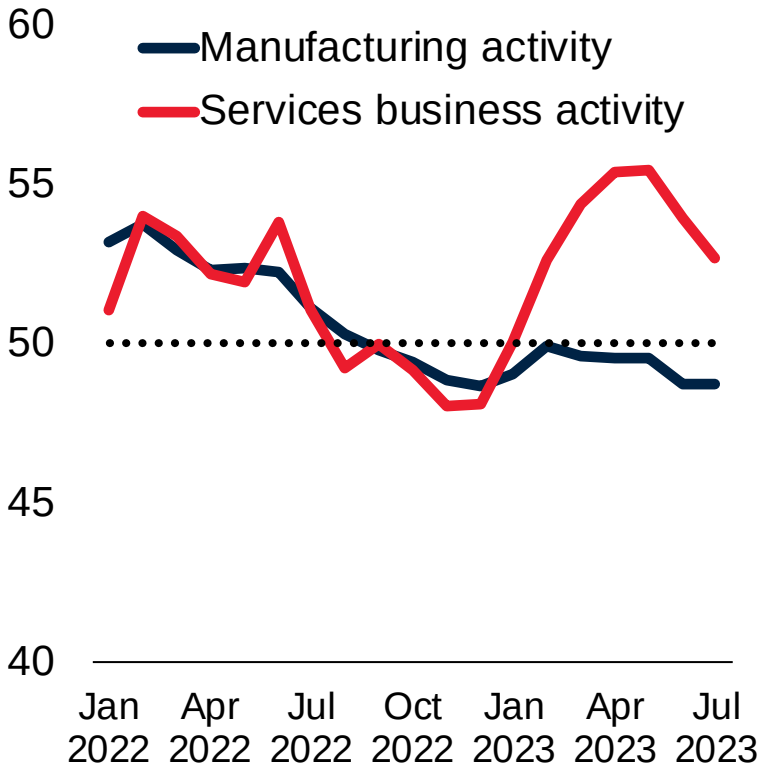
1 **What is the economic outlook for South Asia?** *Solid but slowing growth, with downside risks. Persistent challenges from weak private investment, administrative controls, weak fiscal positions.*

# Global Economic Environment

*Challenging*

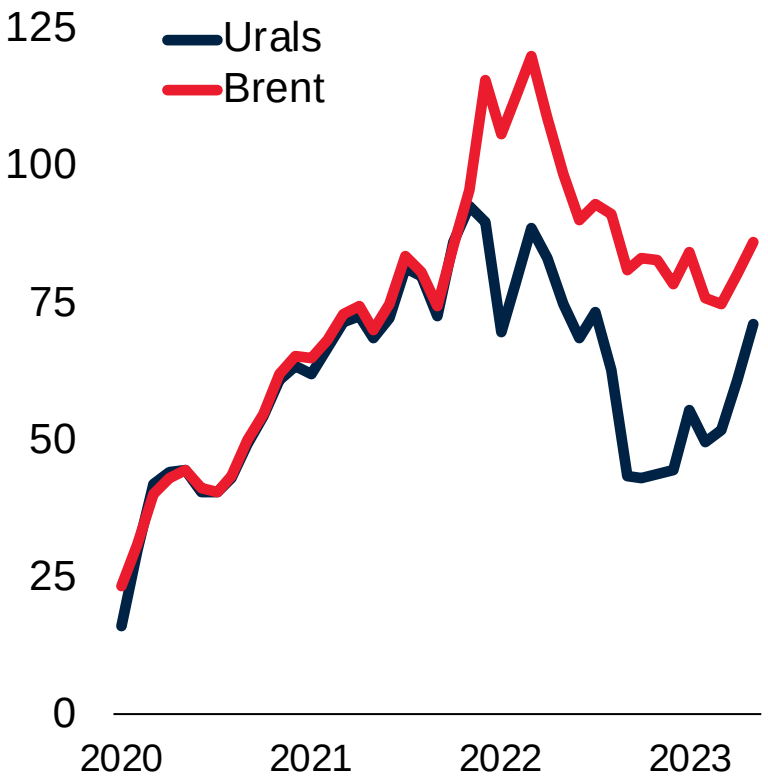
## Global manufacturing and services PMIs

*(Index, 50+=expansion)*



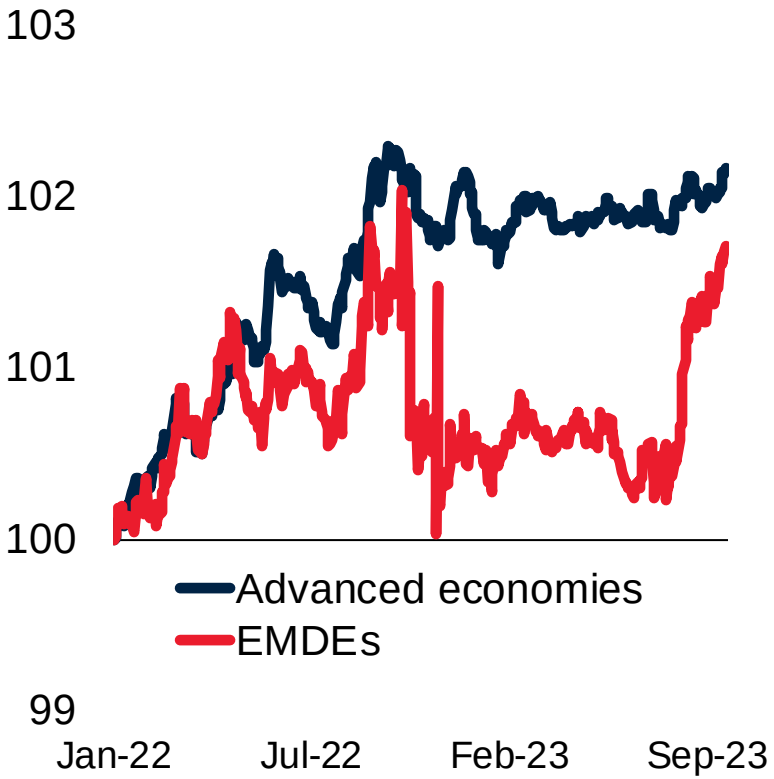

## Oil prices

*(U.S. dollars per barrel)*




## Financial conditions

*(Index; January 1, 2022 = 100)*




Sources: Bloomberg; Haver Analytics; World Bank Global Economic Prospects report; World Bank (Macro Poverty Outlook); World Bank South Asia Development Update; data available here.

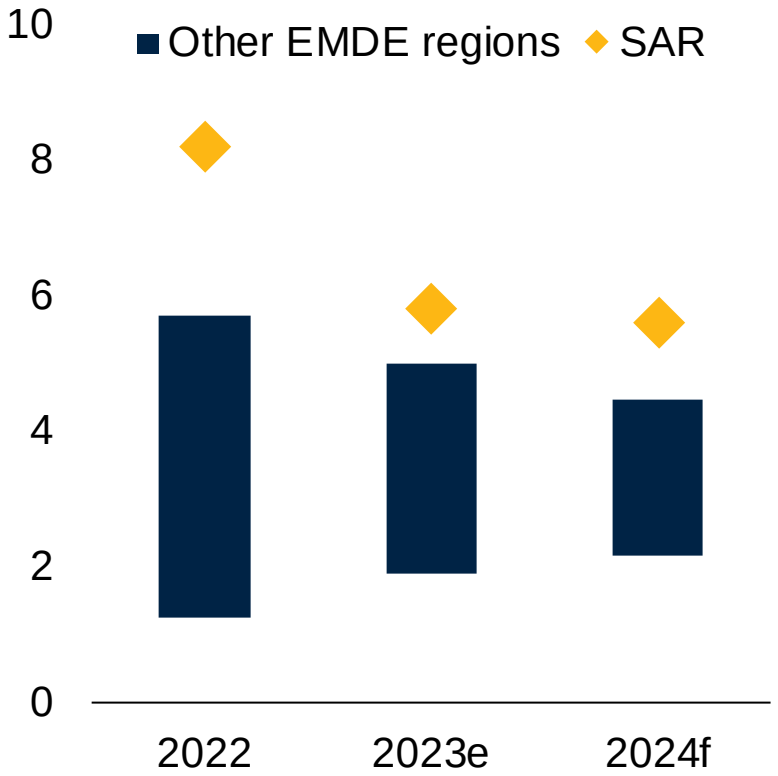
Left Panel: Purchasing Managers' Indexes (PMIs) come from IHS Markit and are seasonally adjusted. PMIs above 50 (below 50) indicate expansion (contraction). Latest data are August 2023. Center Panel: Monthly data from April 2020 to August 2023. Price cap is at US$60 per barrel. Data for Russian Urals prices from IEA's Oil Market Monthly Reports. Right panel: Blue bars reflect the range of growth across all the other EMDE regions. Regional aggregate computed using 2015 GDP as weights. Sample includes 7 countries in SAR and 136 in other EMDE regions. Right Panel: Based on Goldman Sachs Financial Conditions Index. Higher index numbers reflect tighter financial conditions. The aggregates are computed using GDP weights at 2010-19 prices and market exchange rates, based on 12 advanced economies (including the euro area) and 13 EMDEs. Last observation is September 25, 2023.

# Growth Prospects

## *Higher than Elsewhere, But Lower than Historically and Lower than Needed*

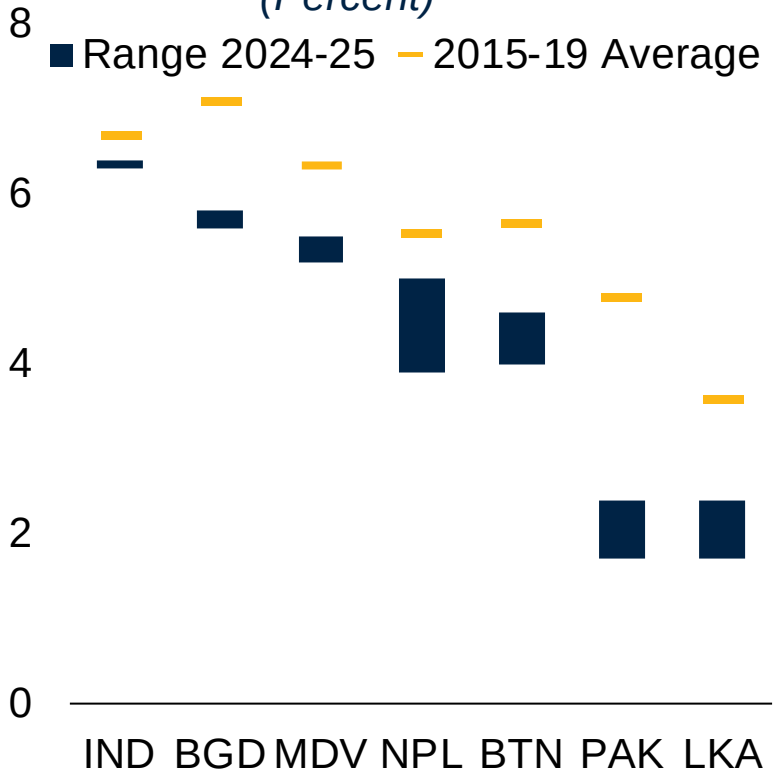
### Output growth in South Asia

*(Percent)*



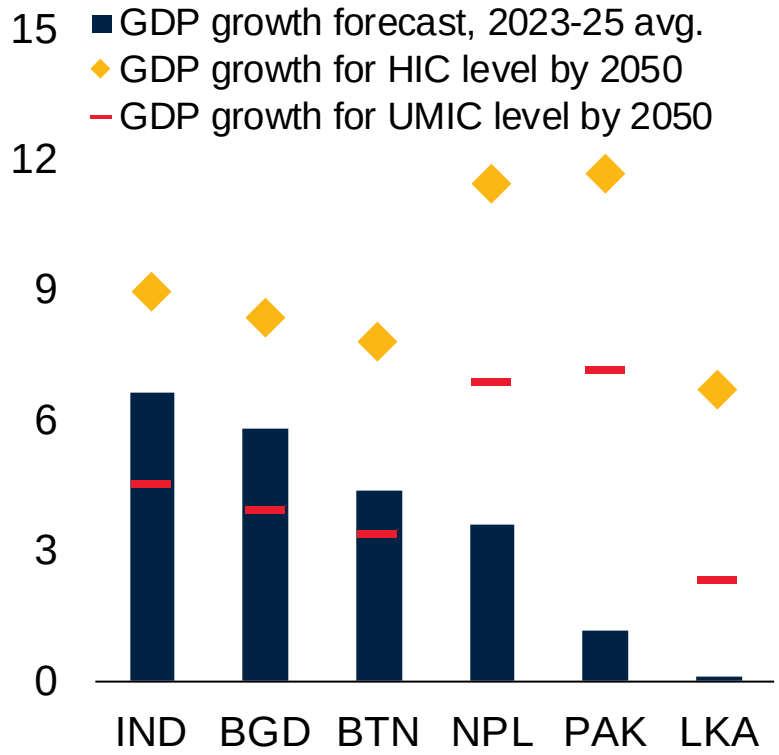

### Annual output growth in SAR countries

*(Percent)*




### GDP growth required to reach income threshold by 2050

*(Percent)*




Sources: UN Population Division (database); WDI (database); World Bank (Macro Poverty Outlook); World Bank South Asia Development Update; data available here.

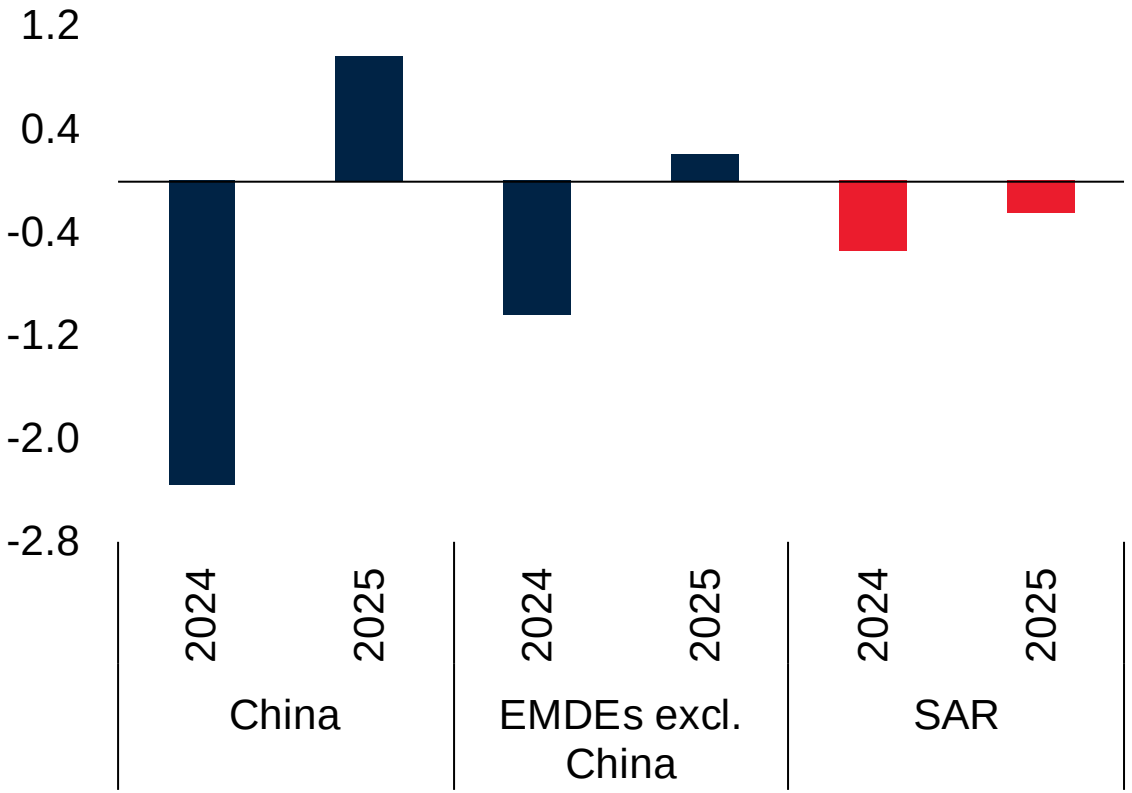
Left Panel: Blue bars reflect the range of growth across all the other EMDE regions. Regional aggregate computed using 2015 GDP as weights. Sample includes 7 countries in SAR and 136 in other EMDE regions. Center panel: Blue bars reflect the range of growth across all the other EMDE regions. Regional aggregate computed using 2015 GDP as weights. Sample includes 7 countries in SAR and 136 in other EMDE regions. Right Panel: Figure shows the GDP growth rate forecast for 2023-25 and the GDP growth rate required to achieve high-income and upper middle-income status by 2050. Population growth is from United Nation population projections. The threshold for high- and upper middle-income status is assumed to grow by 1.5 percent, its average growth rate between 1999 and 2019. The income threshold is based on GNI per capita in current U.S. dollars (Atlas method). Since the income threshold is based on GNI, while the forecast is based on GDP, this figure assumes equal growth rates of the two measures.

# Risks

## *Slowdown in China, Climate Change*

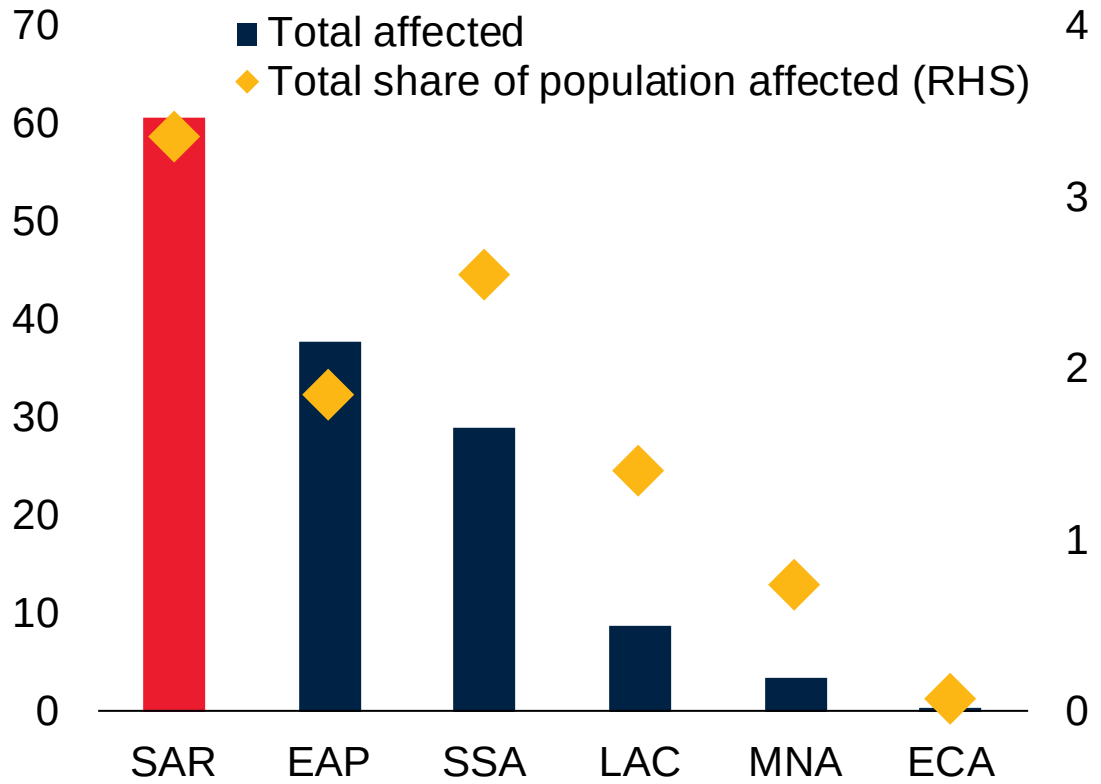
### Growth impact of sharper slowdown in China

*(Percentage points)*




### People affected by natural disasters

*(Million people)* *(Percent)*




Sources: International Disaster Database (EM-DAT); Oxford Economics; World Bank South Asia Development Update; data available here.

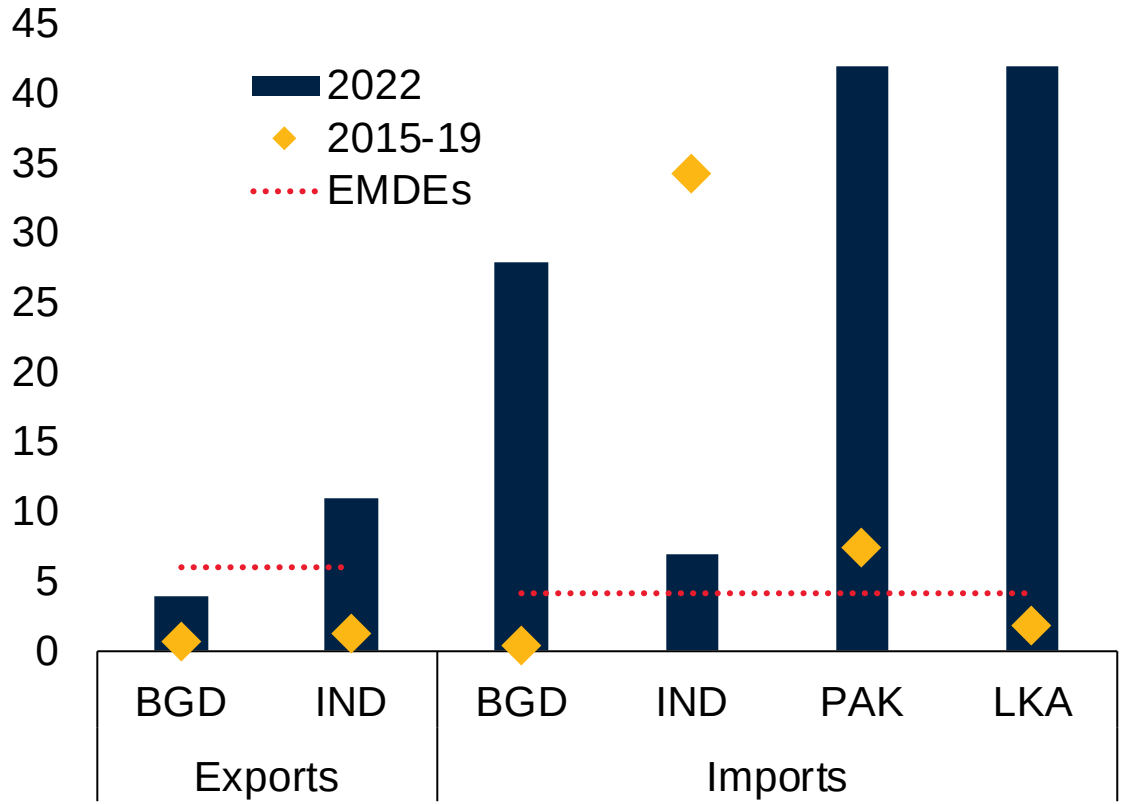
Left panel: Bars show growth revisions between the China slowdown scenario and the baseline scenario. SAR includes 6 countries. Right Panel: Bars show the total population affected by natural disasters, and diamond shows the share of total population affected; annual averages over 2013-22. Sample includes 144 EMDEs (22 in EAP, 20 in ECA, 31 in LAC, 18 in MNA, 8 in SAR, and 45 in SSA).

# Trade and Capital Flow Restrictions

## *Heavily Used in South Asia*

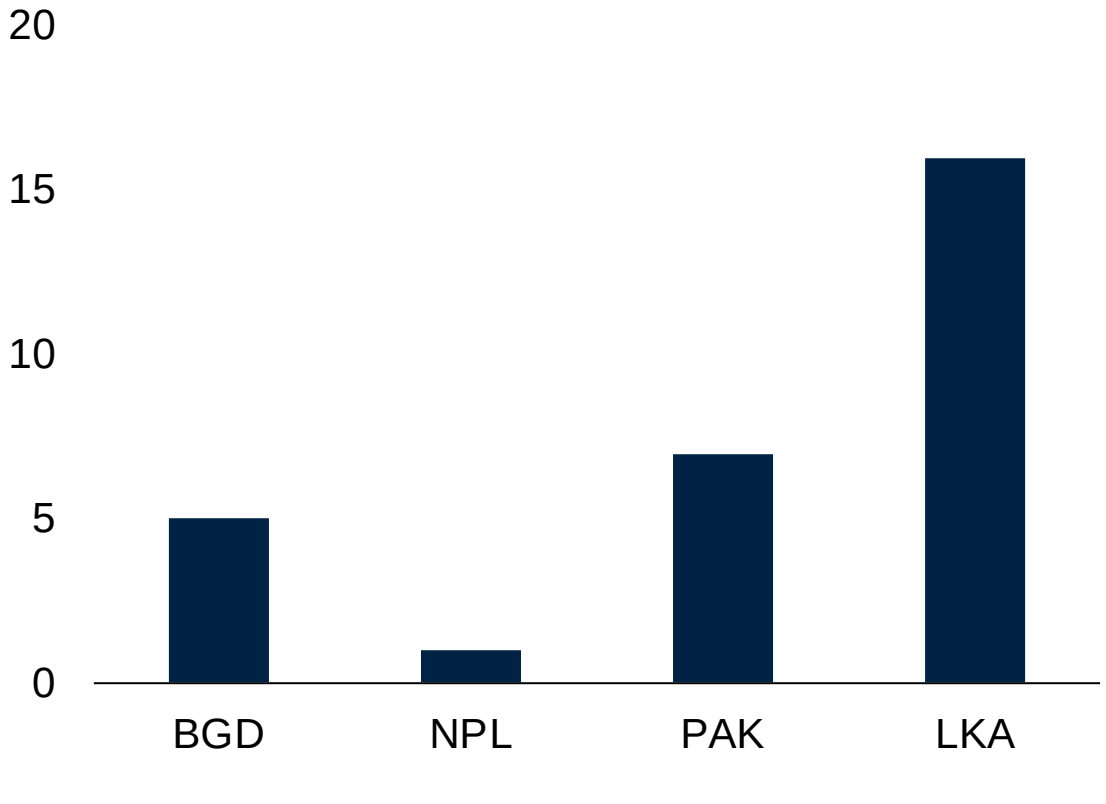
### Import and export restrictions

*(Number of restricted product groups)*




### New foreign exchange restrictions, 2021–22

*(Number of new restrictions)*




Sources: Fernández et al. (2016); IMF (2022); Kose and Ohnsorge (2023); UNCTAD COVID-19 Trade Measures Database; WTO Trade Monitoring Database; World Bank South Asia Development Update; data available here.

Left Panel: Dashed lines mark the EMDE average, weighted by 2015 GDP. Restrictive measures include duties, tariffs, taxes, custom procedures, quantitative restrictions, and others. For export measures, EMDEs include 62 economies. For import measures, EMDEs include 90 countries. Product groups counted at the 2-digit Harmonized System (HS) level. Method counts number of measure-product group pairs, and so a product group affected by two restrictive measures is counted twice..

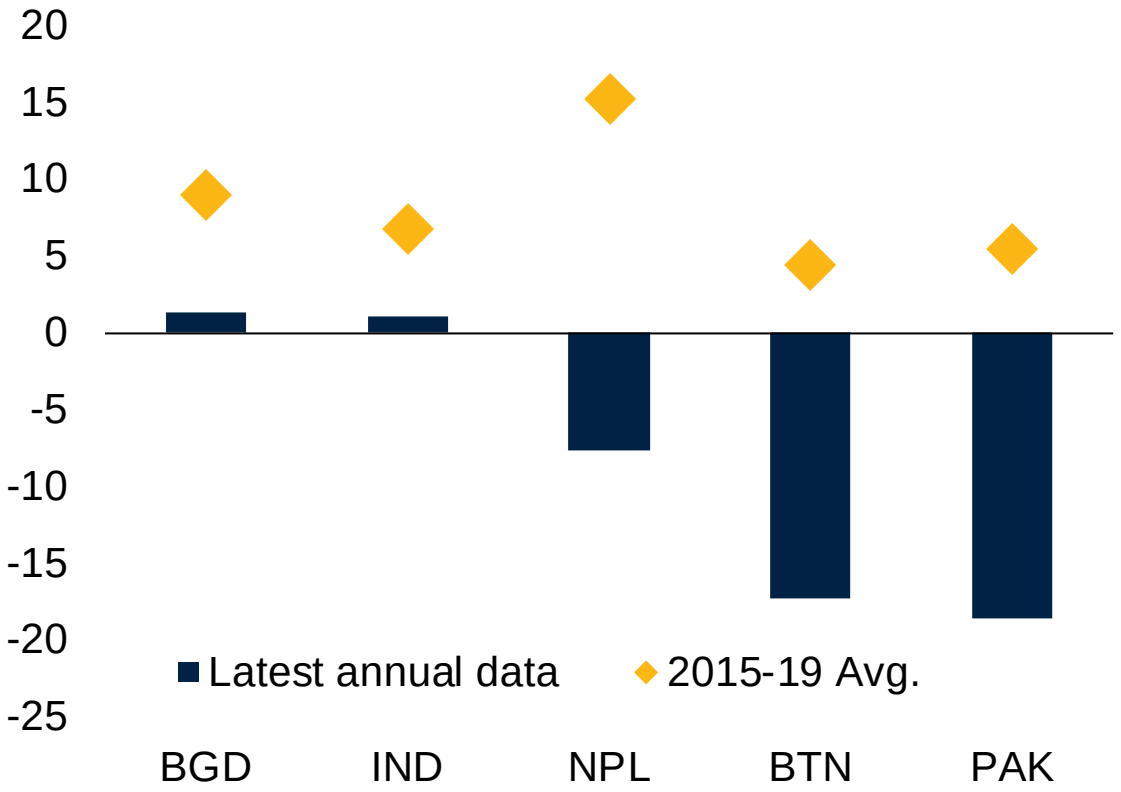
Right Panel: Number of tightened measures includes those in 2021 and part of 2022. The cut-off date is June 30, 2022 for Bhutan, Maldives, Nepal; July 31, 2022 for India and Sri Lanka; August 31, 2022 for Pakistan; and September 30, 2022 for Bangladesh.

# Private Investment

## *Weak in Most Countries; In Some, Offset by Robust Public Investment*

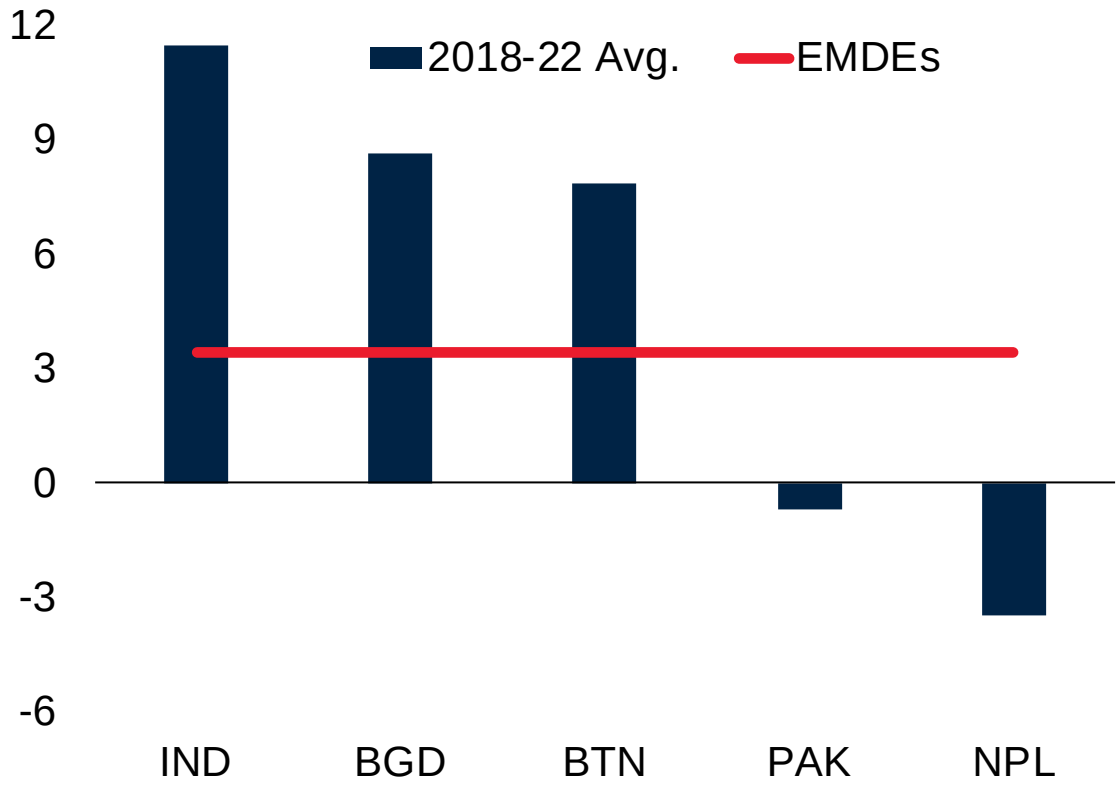
**Real private investment growth**

*(Percent)*




**Real public investment growth**

*(Percent)*




Sources: WDI (database); World Bank (Macro Poverty Outlook); World Bank South Asia Development Update; data available here.

Left panel: Figure shows annual growth of real private fixed investment (in local currency), average of 2015-2019. "Latest data" refers to 2022, except for Bhutan and India, which are based on 2020-21 average due to limited data and to even out the deep contractions of 2020 and strong rebounds of 2021.Right Panel: Figure shows the annual growth of real public fixed investment (in local currency), average of 2018-22. Sample includes 93 EMDEs.

# Four Questions

1. **What is the economic outlook for South Asia?** *Solid growth, with downside risks. Persistent challenges from weak private investment, low fiscal revenues, administrative controls.*

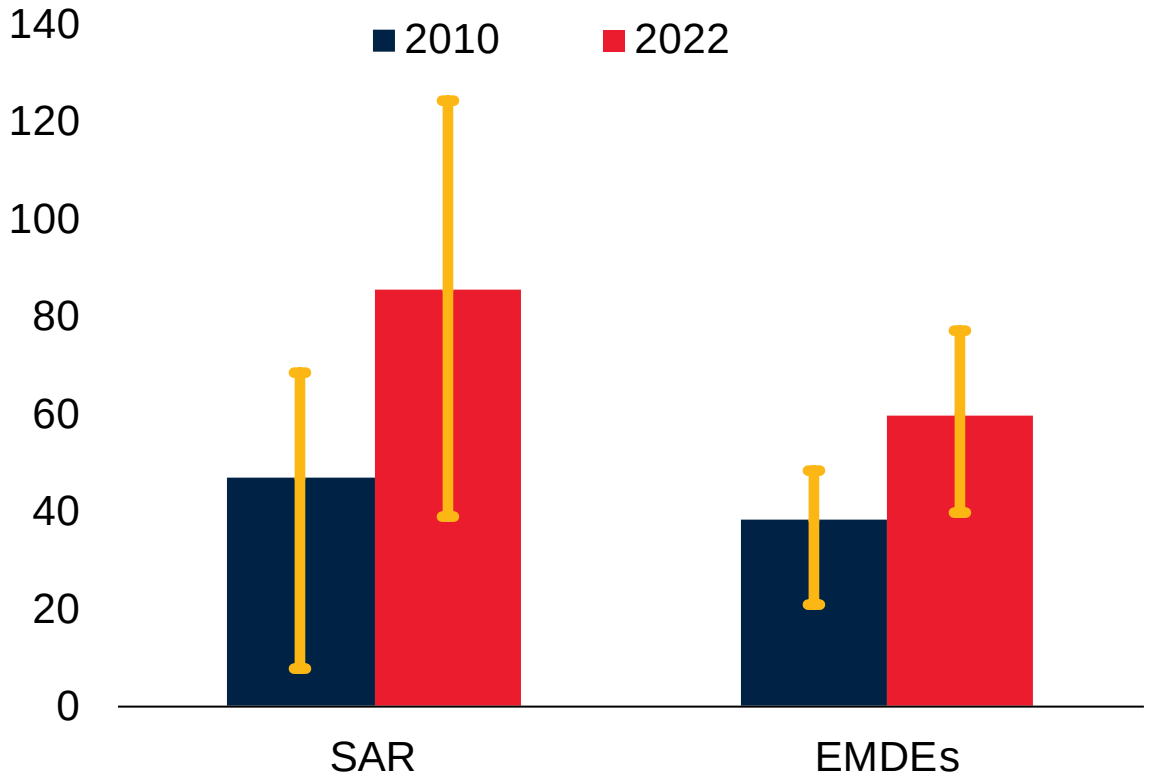
2. **How can South Asia's fiscal risks be addressed?** *Conditions are ripe for debt default. Debt restructuring, growth-boosting reforms, stronger revenue collection/fiscal institutions can facilitate success.*

# Fiscal Challenges

## *High Debt; Low Revenues*

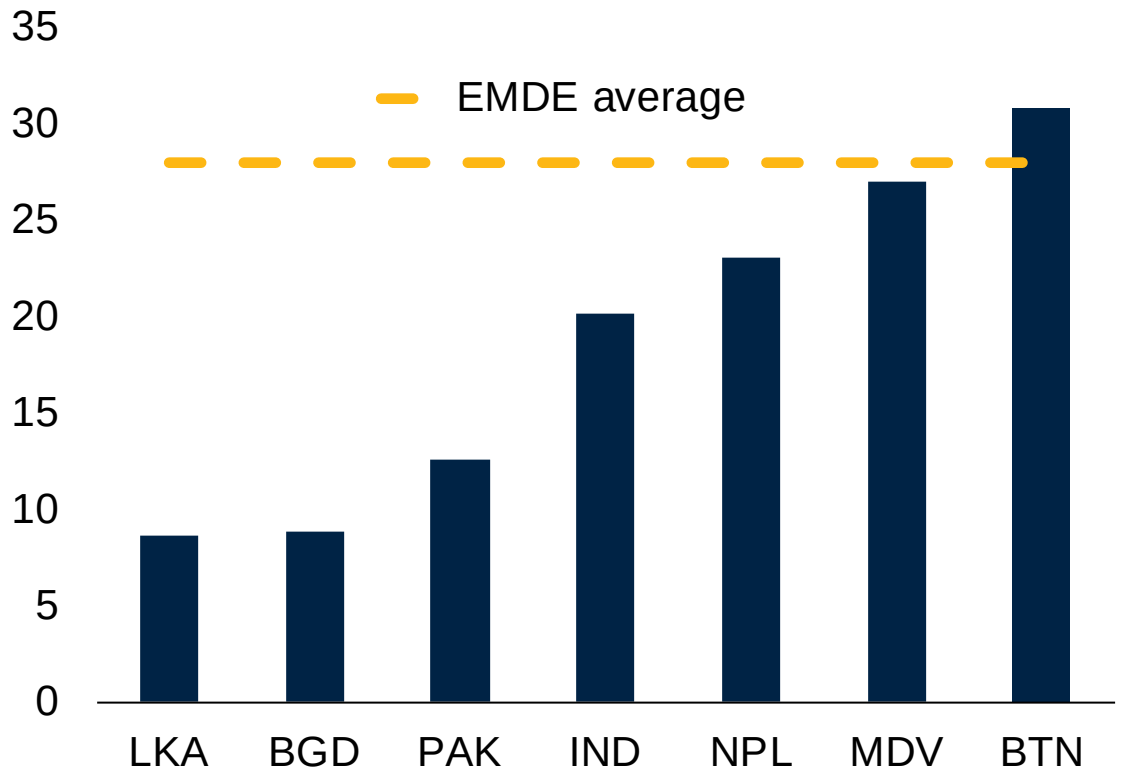
**Government debt**

*(Percent of GDP)*




**Government revenues, 2020-22 average**

*(Percent of GDP)*




Sources: WEO (database); World Bank (Macro Poverty Outlook); World Bank South Asia Development Update; data available here.

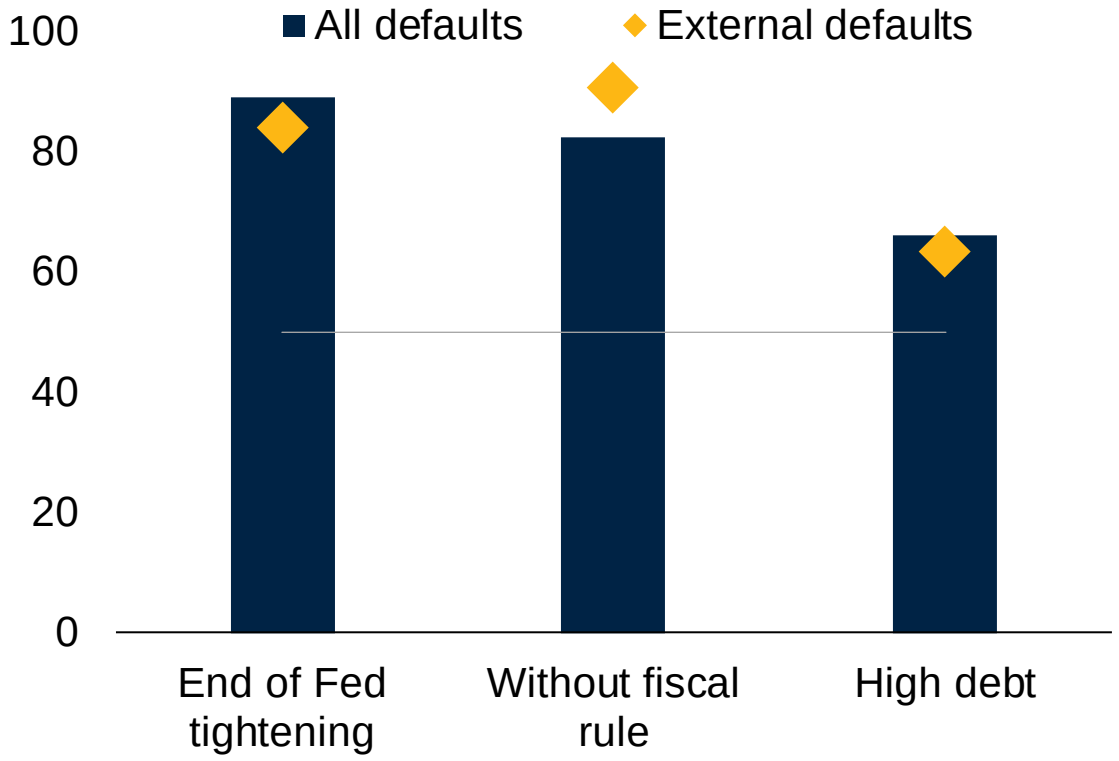
Left Panel: Bars show unweighted averages. Yellow whiskers indicate minimum-maximum range for seven South Asian economies, and interquartile range for EMDEs. Right Panel: EMDE average computed using 2015 GDP as weights. Bars show 2020-22 averages of government revenue.

# Making the Best of Debt Default

## *Defaults Are Common Under Current Conditions; Successful Defaults Are Rare*

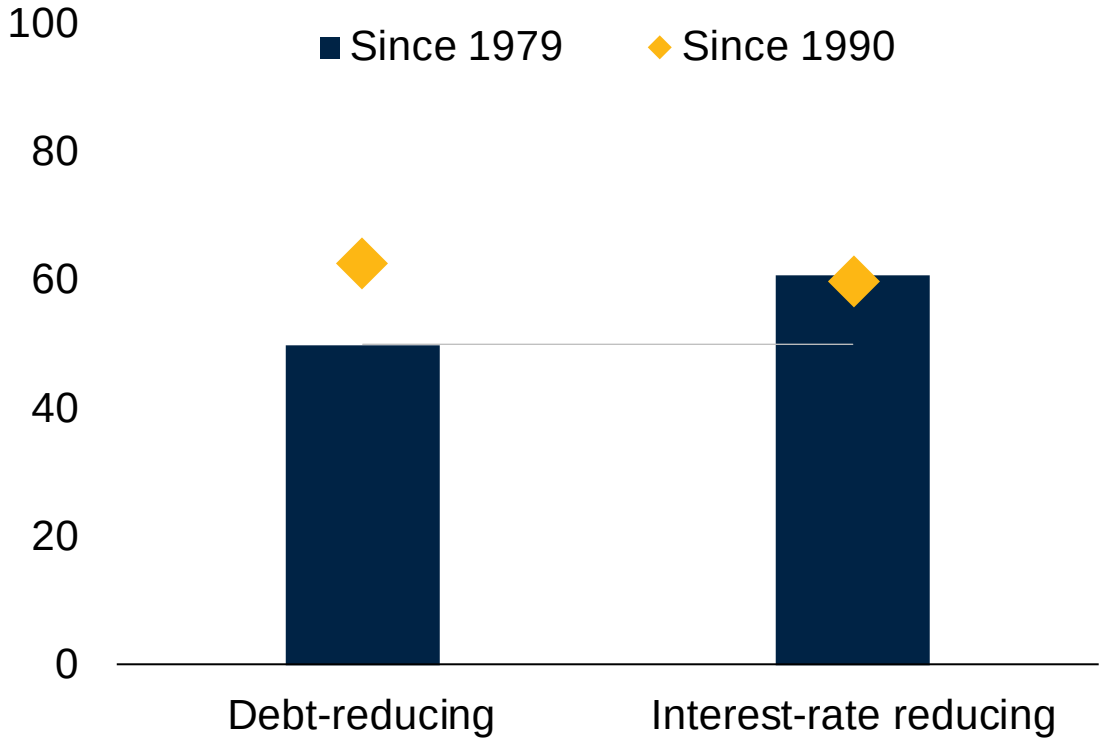
**Share of defaults in the most common circumstances**

*(Percent of defaults)*




**Share of successful defaults**

*(Percent of defaults)*




Source: CEIC; Asonuma and Trebesch (2016); Erce, Mallucci, and Picarelli (2022); Haver Analytics; International Monetary Fund; JP Morgan; World Bank South Asia Development Update; data available here.

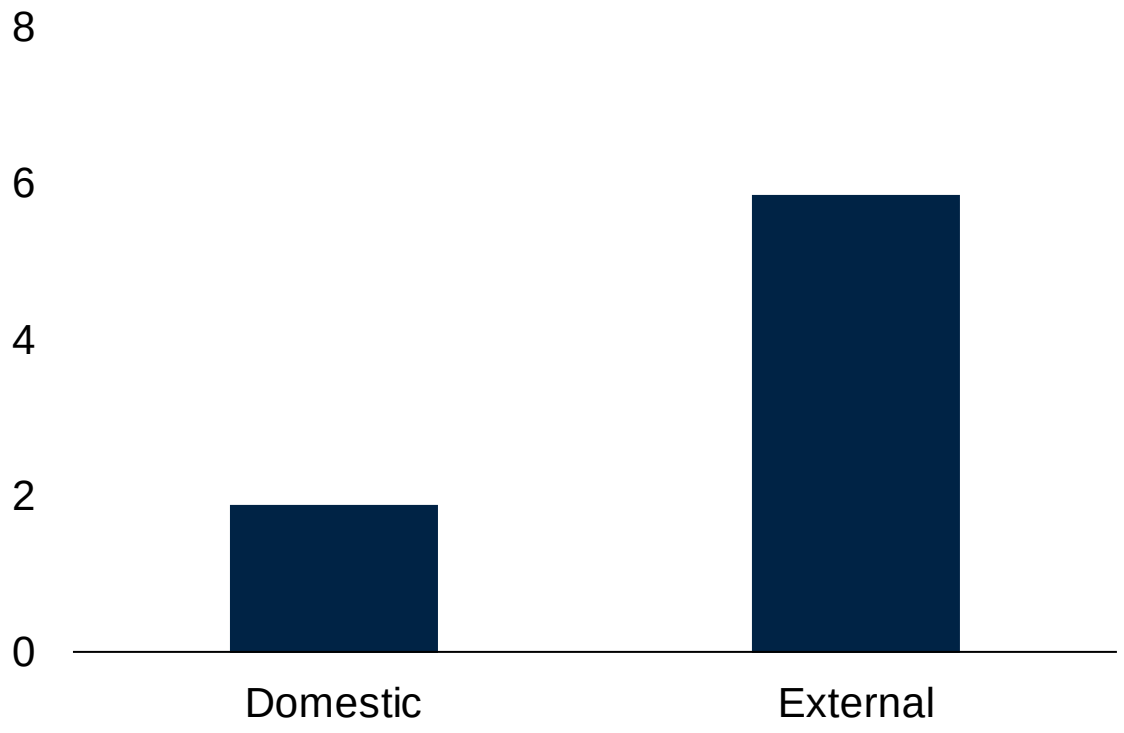
Left Panel: Share of all defaults that occurred in the year of the end of U.S. Federal Reserve tightening cycle as defined in World Bank (2022) or in the subsequent year. Share of all defaults that occurred in countries without a fiscal rule or in countries with above-median (across the full EMDE sample) government debt at the time of default. All defaults include defaults on domestic and external creditors; external defaults refers to defaults on external creditors. Gray line denotes 50 percent. Right Panel: Default episodes are differentiated between those that featured lower ("Successful") or higher ("Unsuccessful") government debt-to-GDP ratios or effective interest rates on government debt five years after the default than in the year of default. Based on 177 domestic or external default episodes in 64 EMDEs during 1979–2018.

# Domestic Debt

## *Lower Probability of Default, But Costly*

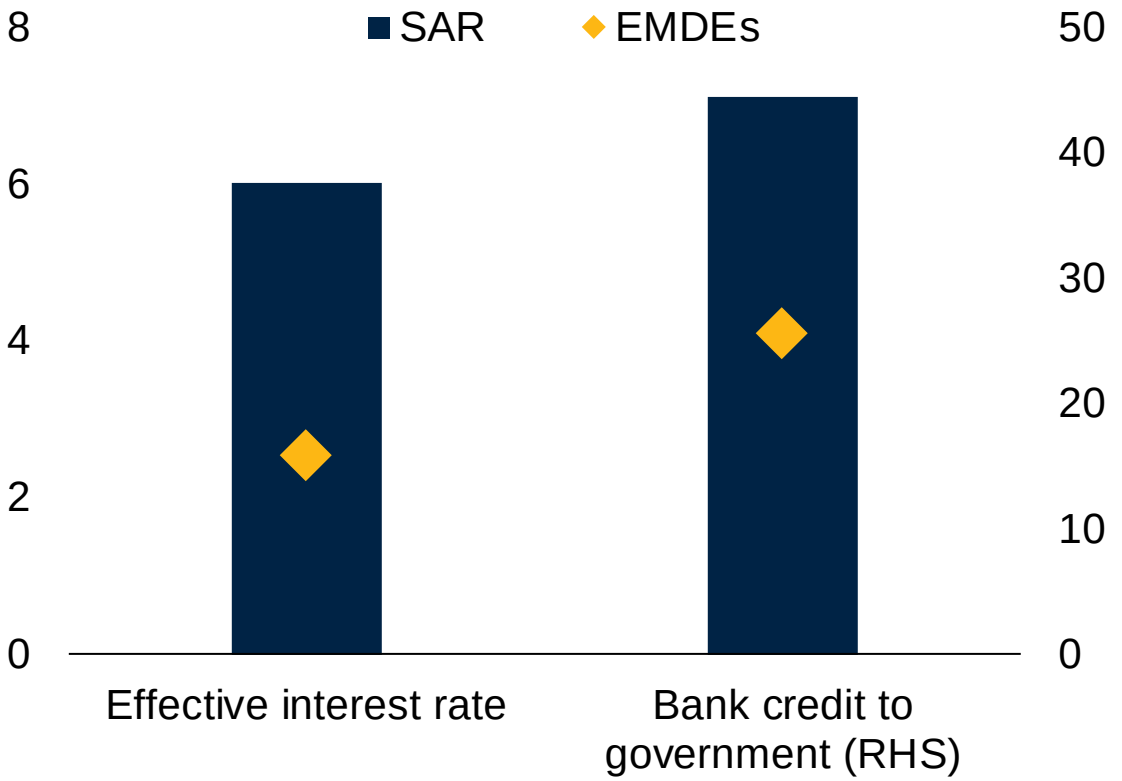
**Share of government debt booms associated with debt default**

*(Percent)*




**Effective interest rate and bank credit to government, 2021-22**

*(Percent)* *(Percent of domestic credit)*




Source: IMF (various staff reports); Kose et al. (2022); World Bank South Asia Development Update; data available here.

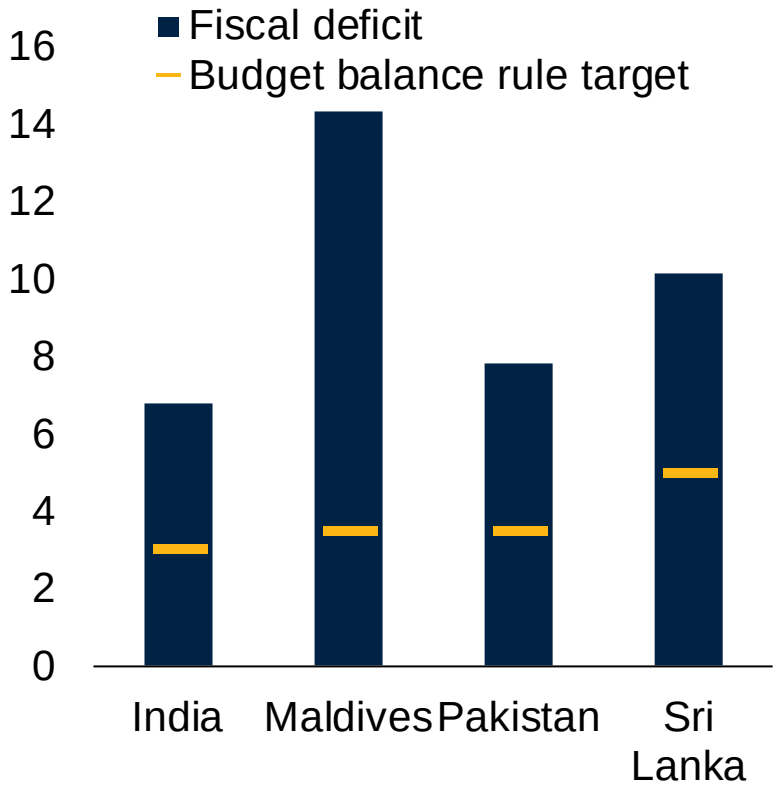
Left Panel: Bars show the share of total government debt booms associated with default (of any type), domestic government debt booms associated with domestic default, and external government debt booms associated with external default, up to one year after the end of a boom. Right Panel: Latest data is for 2022 for interest spending. Net interest spending is defined as the difference between the primary fiscal balance and the overall fiscal balance. South Asia includes Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, and Sri Lanka. GDP-weighted averages (at 2010–19 average prices and market exchange rates).

# Fiscal Rules

## *Can Help, But Existing Rules Are Not Being Met*

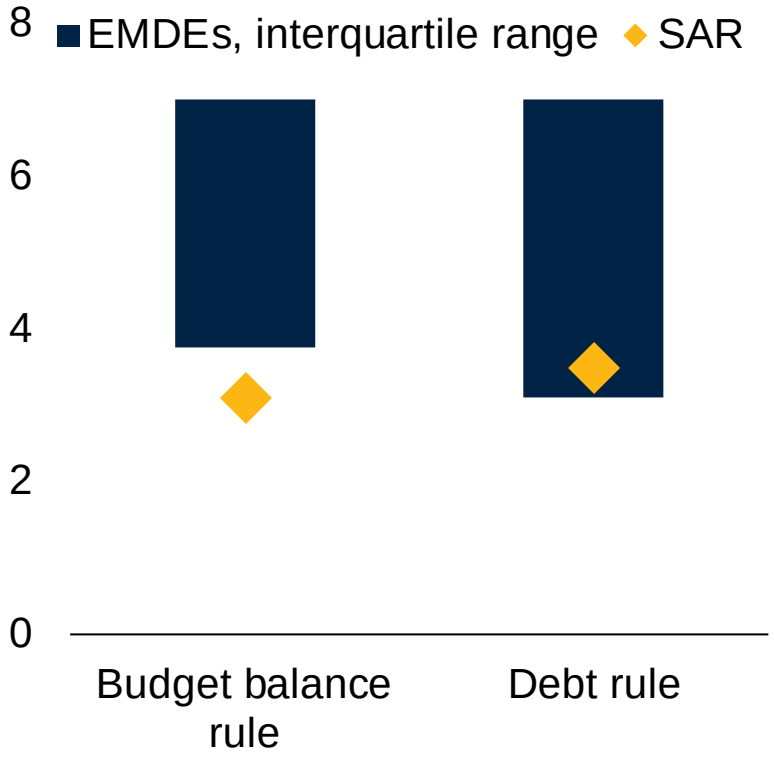
### Budget rule target and actual fiscal deficit

*(Percent of GDP)*



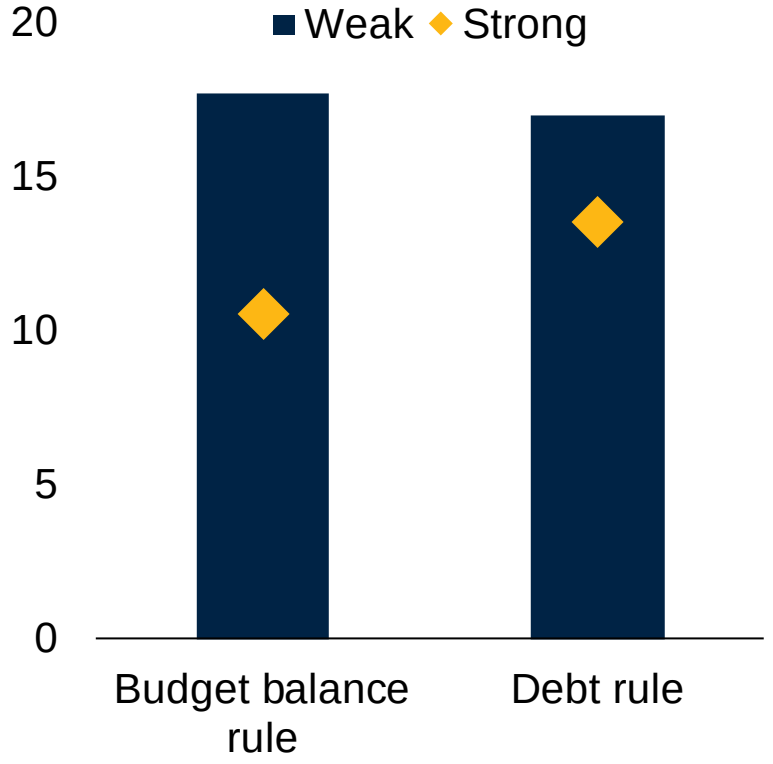

### Strength of fiscal rules

*(Index, Higher=Stronger)*




### Change in EMDE government debt, 2015-22, by strength of fiscal rule

*(Percentage points of GDP)*




Source: CEIC; IMF Fiscal Rules Dataset, 1985–2021; WDI (database); World Bank (Macro Poverty Outlook); World Bank South Asia Development Update; data available here.

Left panel: Latest data available. Budget balance rule for Pakistan is on federal budget deficit excluding foreign grants. Budget balance rule target and debt shown for India are for the central government. Central panel: The fiscal rule strength is constructed following Davoodi et al. (2022, appendix III), and is a sum of legal basis, monitoring, enforcement, and flexibility, weighted by the rule coverage (national, supranational, or both). SAR sample includes India, Maldives, Pakistan, and Sri Lanka. Sample includes 65 EMDEs (25 for the expenditure rule, 56 for the budget balance rule, and 52 for the debt rule). A higher index means a stronger fiscal rule. Values shown are the unweighted average of fiscal rule strength index for countries in the group, over 2015–2021. Right panel: Values shown are the unweighted average change (2015–2022) in government debt for countries with above-average strength of fiscal rule ("Strong") or below-average strength of fiscal rule ("Weak"), over 2015-21.

# Four Questions

1. **What is the economic outlook for South Asia?** *Solid growth, with downside risks. Persistent challenges from weak private investment, low fiscal revenues, administrative controls.*

2. **How can South Asia's fiscal risks be addressed?** *Conditions are ripe for debt default. Debt restructuring, growth-boosting reforms, stronger revenue collection/fiscal institutions can facilitate success.*

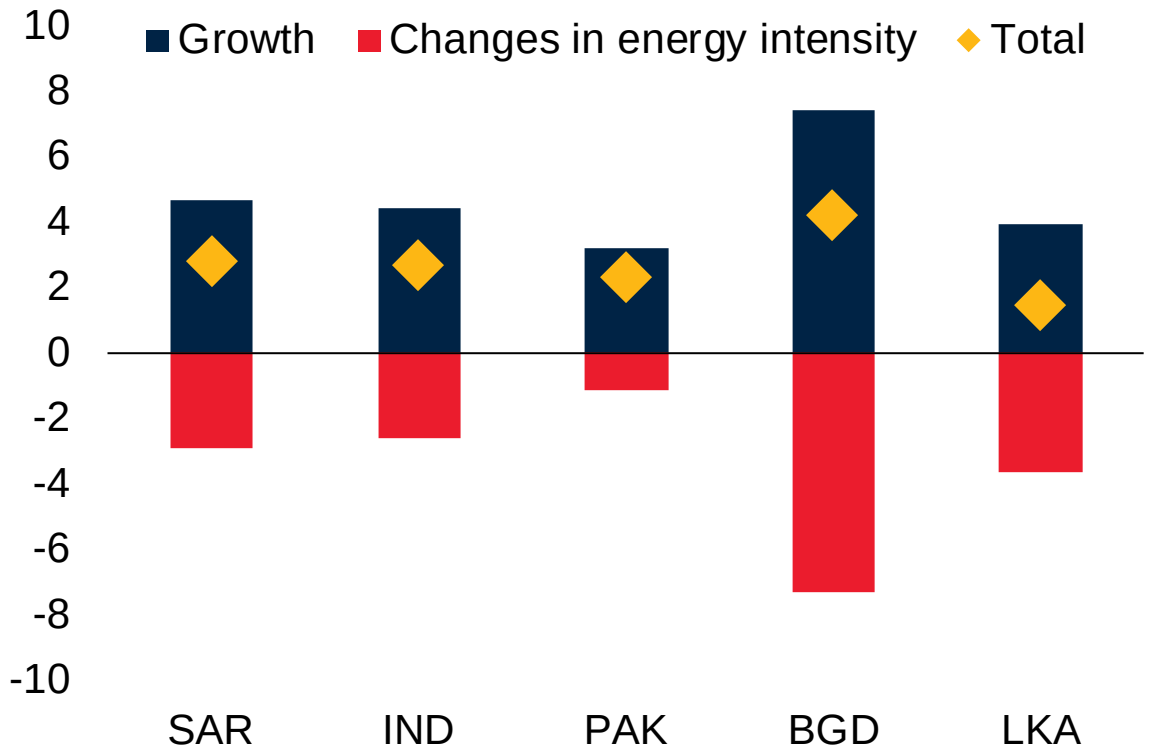
3. **What can spur investment in energy efficient technologies?** *SAR's energy intensity is twice the global average, firms lag in adopting advanced technologies. Regulation, financing, information can help.*

# Energy Intensity of Output in South Asia

## *Despite Improvements, Twice the Global Average*

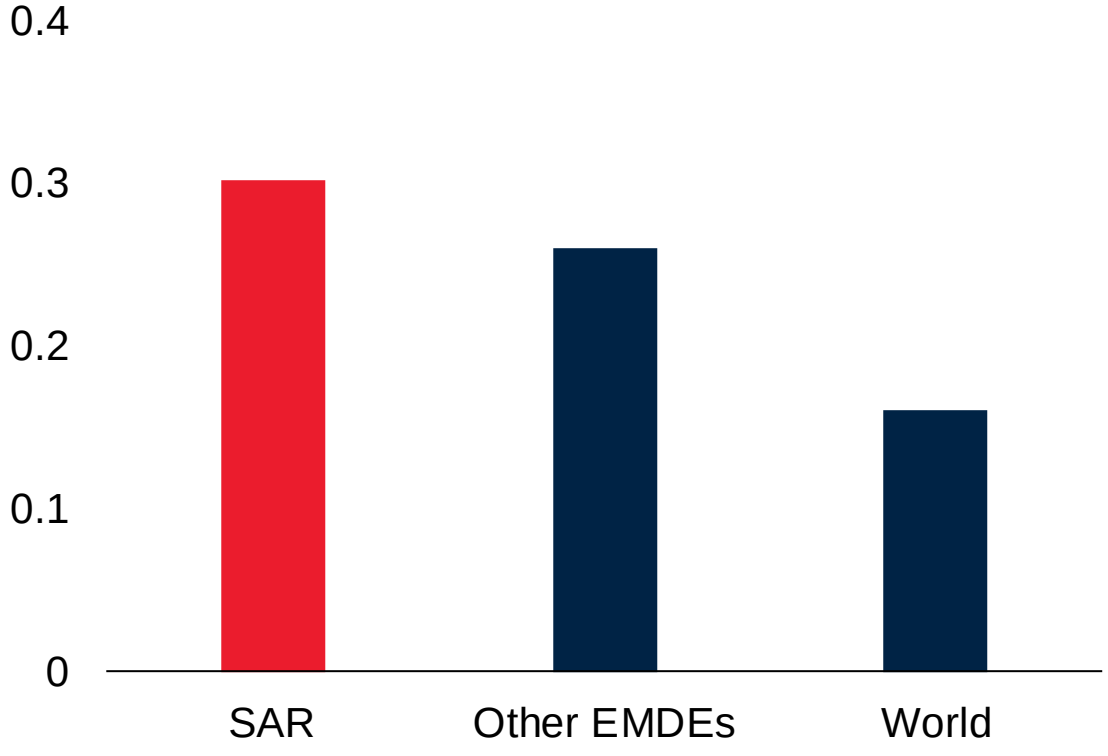
**Contribution to energy consumption growth, 2010-2020**

*(Percentage points per year)*




**Energy intensity of output, 2020**

*(Toe/thousand US$)*




Sources: WDI, European Commission; OECD Green Growth database (left panel); World Bank Enterprise Surveys (right panel); World Bank South Asia Development Update; data available here

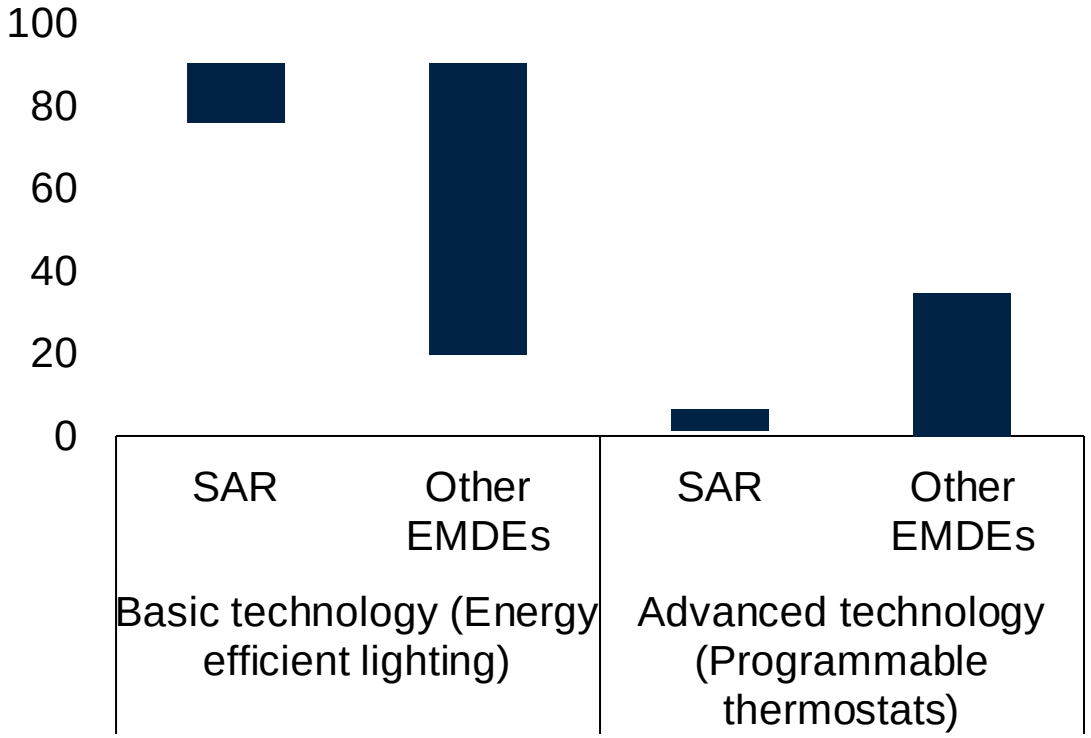
Note: Energy intensity is defined as energy consumption (in tons of oil equivalent, toe) relative to nominal GDP (in thousands of U.S. dollars). Left Panel: Data on energy consumption in SAR is only available for Bangladesh, India, Pakistan, and Sri Lanka. Latest available data is for 2020. SAR is a GDP-weighted average.

# Energy Intensity of Output in South Asia

## *Firms Lead in Basic-Technology Adoption, Lag in Advanced-Technology Adoption*

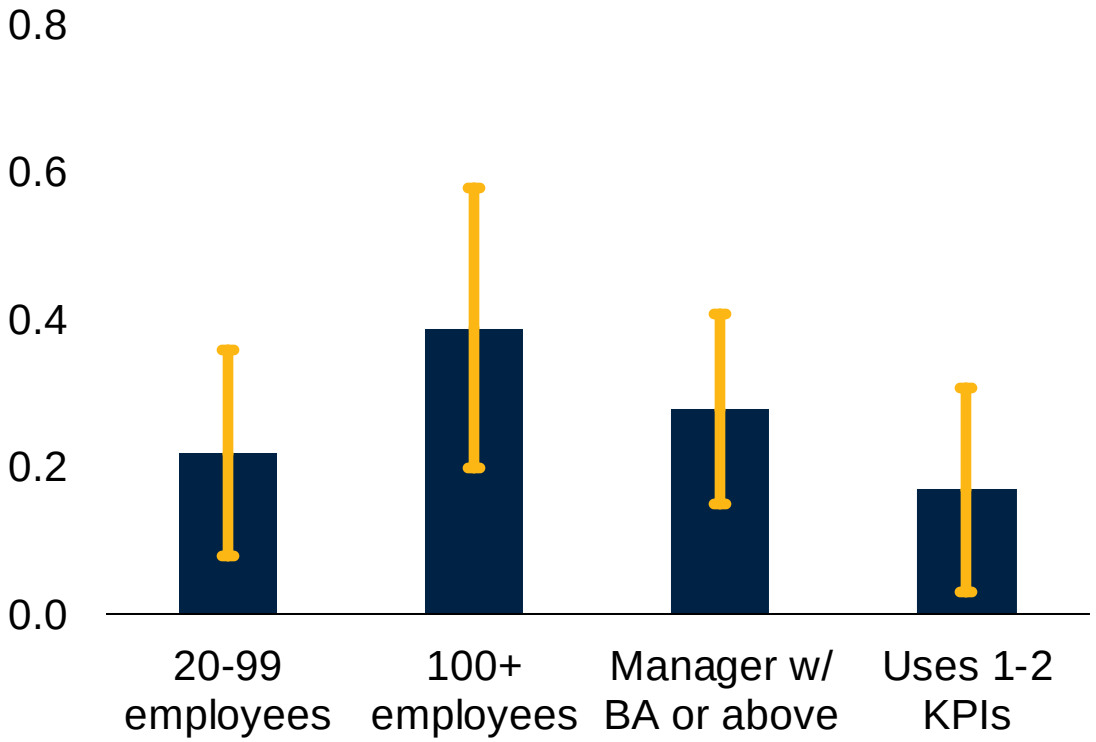
**Adoption rates of energy efficient technologies in firms**

*(Percent)*




**Firm characteristics and technology adoption**

*(Technology index points)*




Source: World Bank Firm Level Adoption of Technology Surveys World Bank South Asia Development Update; data available here.

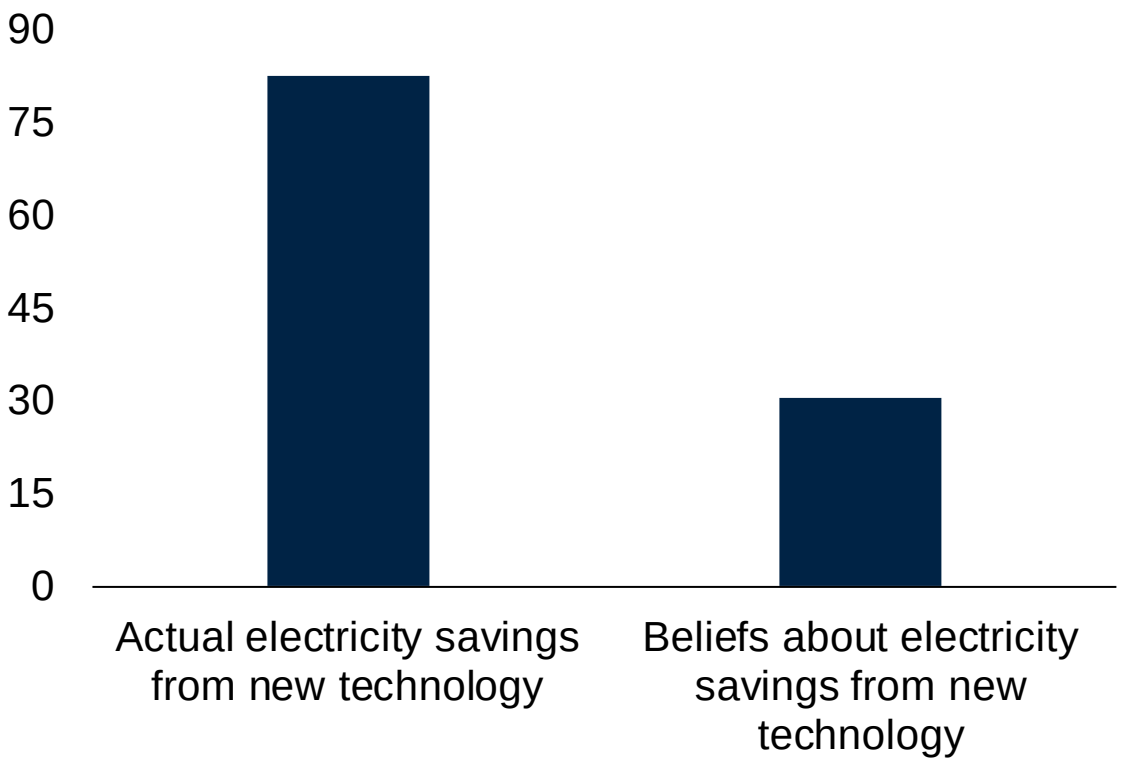
Left Panel: Includes World Bank's Firm Adoption of Technology (FAT) Surveys of 10,090 firms in seven EMDEs (Brazil, Bangladesh, Cambodia, Chile, Ethiopia, India, and Georgia). Depicts the range of country-level averages of percent of firms adopting technologies in SAR and other EMDEs. Right Panel: Charts depict coefficient estimates with 95 percent confidence intervals from OLS regressions of Energy Efficient Technology Index on firm attributes, including employment size, sector, and region dummies. KPI = Key Performance Indicator. The Technology Index ranges from 0 to 6 in value. The sample for the regression is the FAT Survey Wave 2 pooled data for 2,436 firms in Bangladesh, India and five other EMDEs.

# Policy Options to Encourage Firm Technology Adoption

## *Firms Underestimate Benefits of New Technologies*

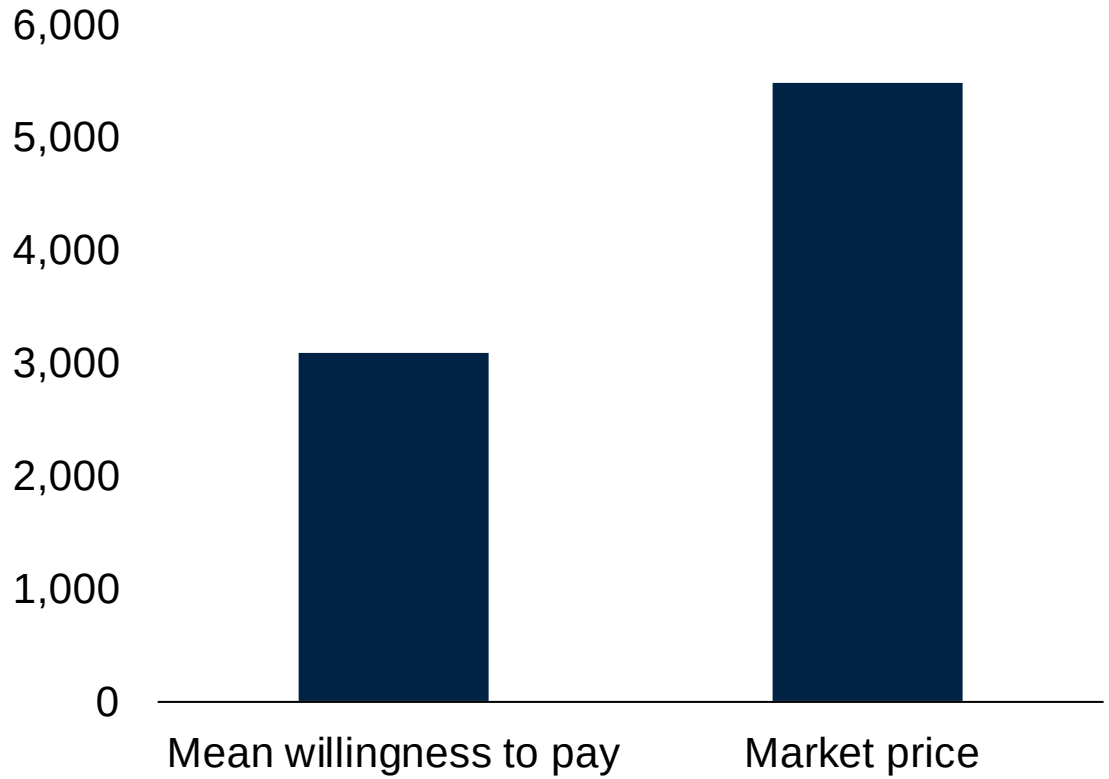
**Actual versus perceived savings from a new energy-efficient technology**

*(Percent)*




**Willingness to pay for new technology**

*(Bangladeshi Taka)*




Sources: Chaurey et al. 2023; World Bank South Asia Development Update; data available here.

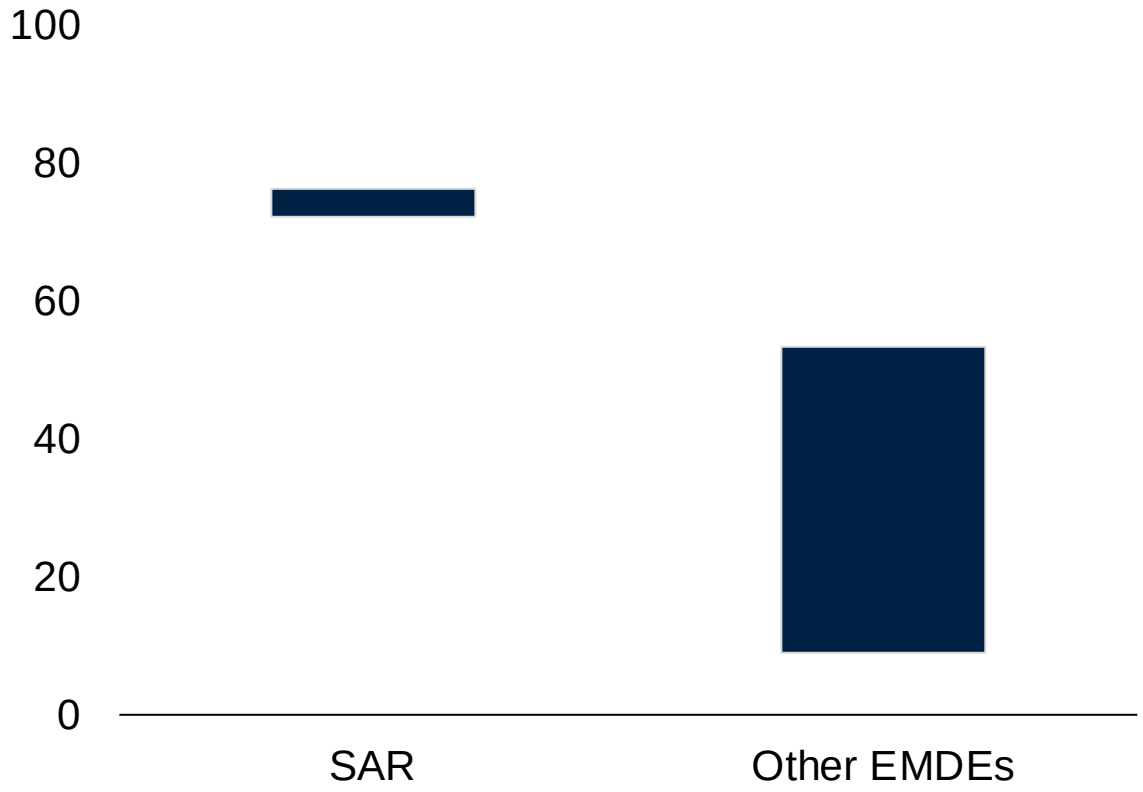
Note: From a study of technology adoption among 504 firms in the leather goods sector of Bangladesh (Chaurey at al, 2023) . Left Panel: The left bar depicts the estimated percentage reduction in electricity consumption per day from switching a clutch motor (old technology) with a servo motor (new technology) in a sewing machine, based on readings from electricity meters installed in 124 firms. The right bar depicts the percentage reduction in electricity consumption implied by firms' mean beliefs about electricity consumption in clutch versus servo motor sewing machines, estimated from survey data. Right Panel: Willingness to pay for new technology and market price of new technology.

# Policy Options to Encourage Firm Technology Adoption

## *Provision of Reliable Power Grid*

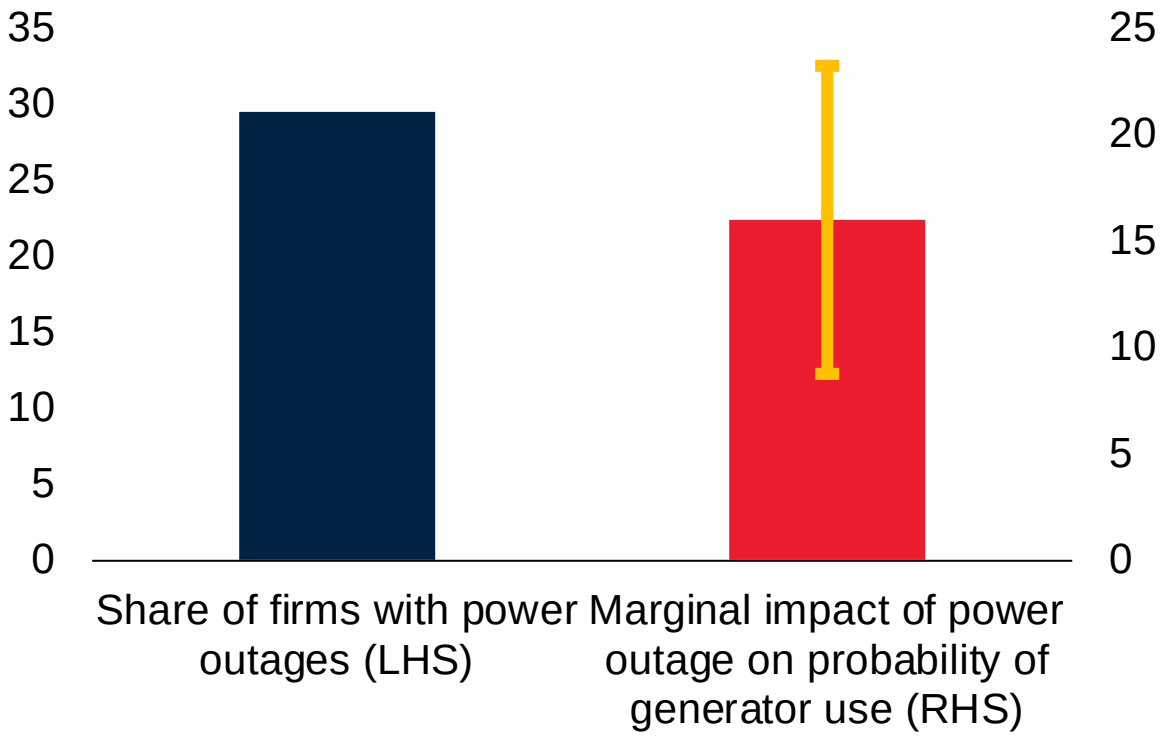
**Establishments using generators**

*(Percent of firms)*




**Impact of power outages on generator use in India**

*(Percent of firms)* *(Percentage points)*




Source: World Bank Firm Level Adoption of Technology Surveys; World Bank South Asia Development Update; data available here.

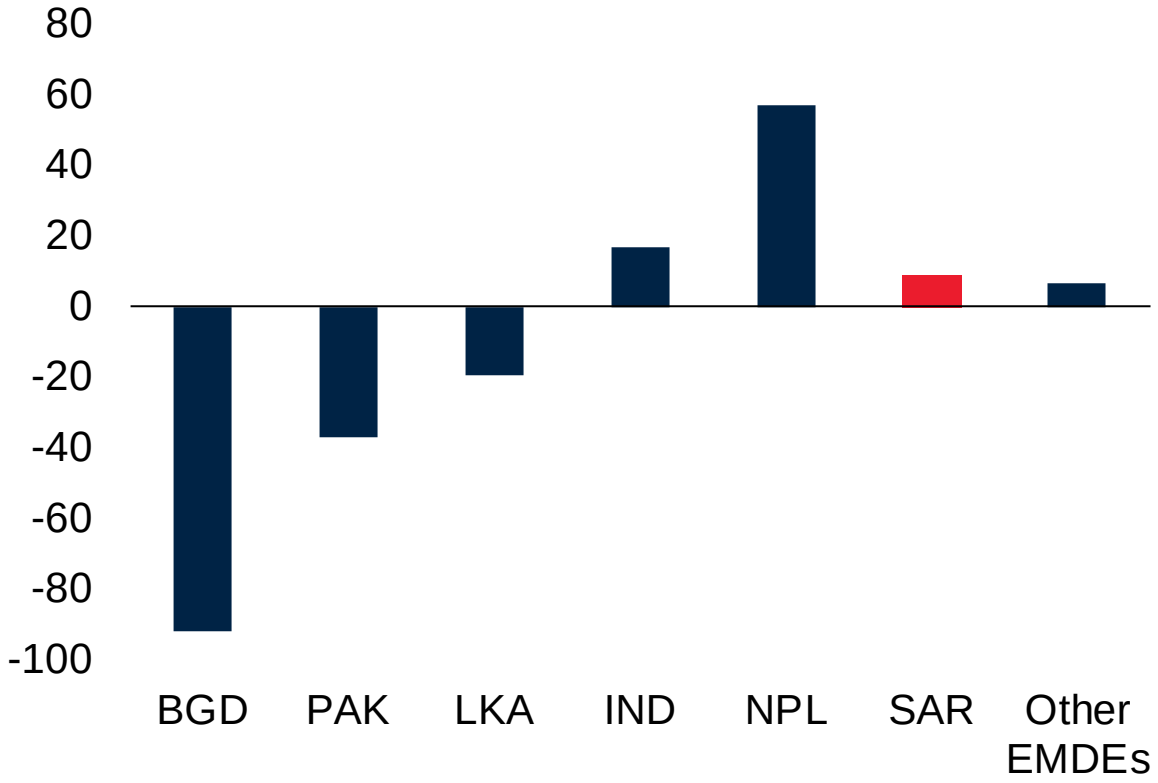
Includes World Bank's Firm Adoption of Technology (FAT) Surveys of 10,090 firms in seven EMDEs (Brazil, Bangladesh, Cambodia, Chile, Ethiopia, India, and Georgia). Depicts the range of country-level averages of percent of firms adopting technologies in SAR and other EMDEs.

# Policy Options to Encourage Firm Technology Adoption

## *Getting Incentives Right*

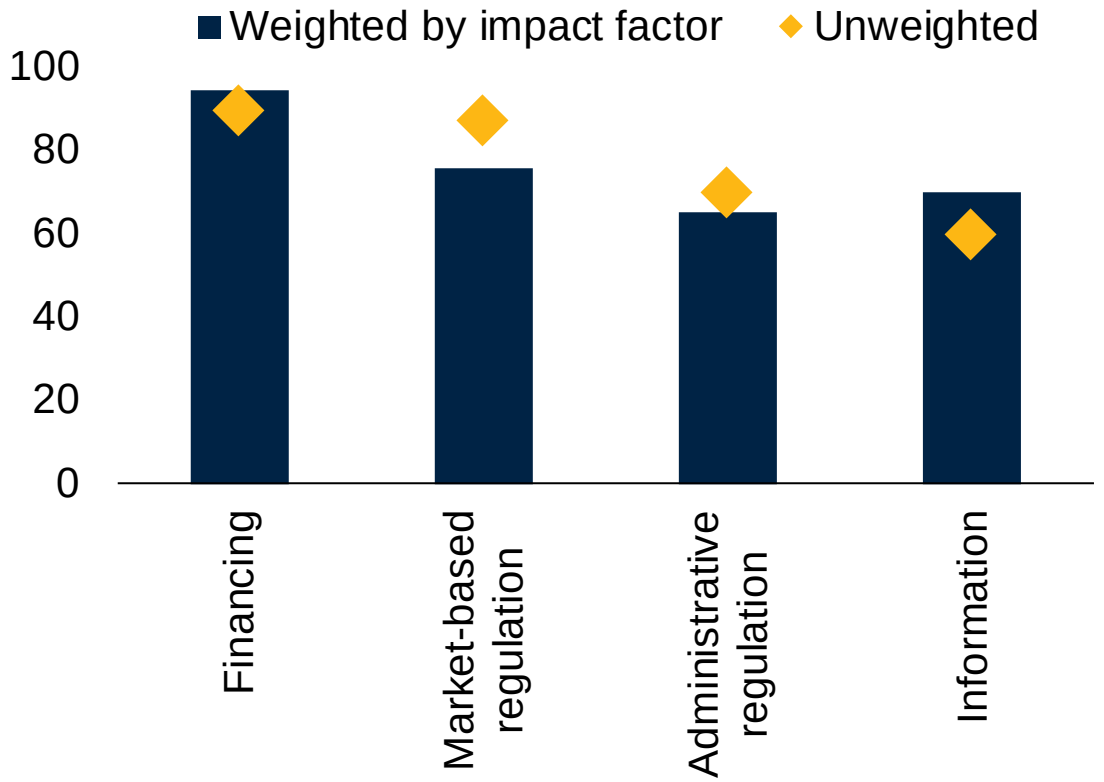
**Total carbon price, 2021**

*(PPP U.S. dollars per ton of CO2)*




**Studies reporting successful green technology intervention**

*(Percent of studies)*




Sources: Bangladesh leather goods and footwear RCT (Chaurey et al. 2023) (left panel). Agnolucci et al. 2023 (center panel); World Bank South Asia Development Update; data available here.

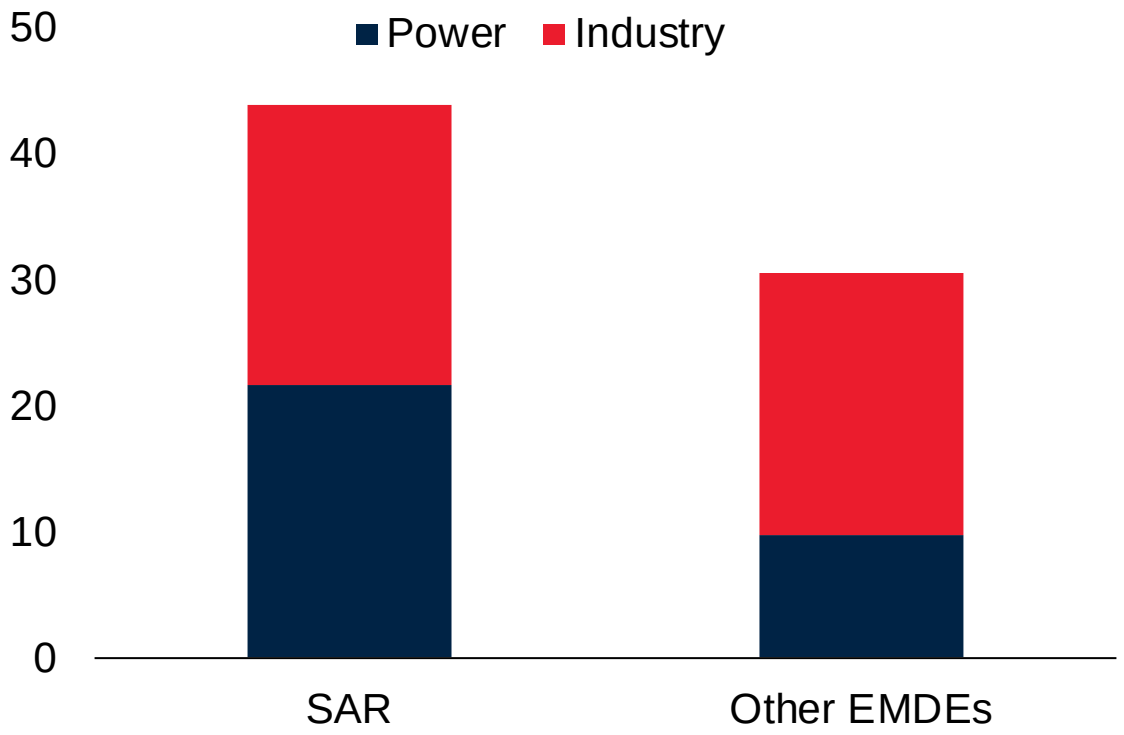
Left Panel: The total carbon price combines a comprehensive set of direct carbon pricing policies with indirect interventions on carbon-containing energy source to measure the aggregate carbon price signal faced by agents in the economy. A negative price is a net subsidy on carbon, while a positive price is a tax. SAR and EMDE averages are emissions-weighted. Right Panel: Based on results from a review of 45 academic and policy studies on the impact of specific policy interventions (regulation, information/behavioral, and finance) on either firm technology adoption or firms' energy efficiency. Impact weighting according to the RePEc ranking of the journal of working paper series in which the study was published.

# Collateral Benefits of More Energy-Efficient Technologies

## *Less Pollution, More Jobs*

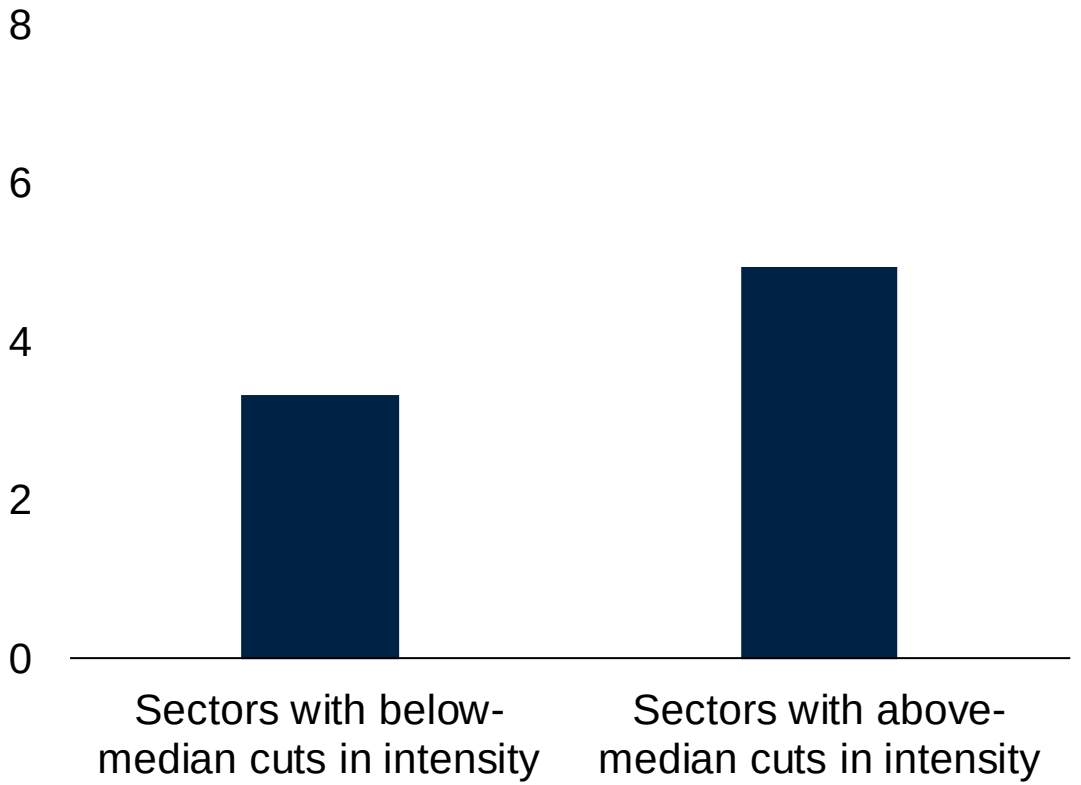
**Contribution of power and industry to PM2.5 emissions, 2018**

*(Percent of PM2.5 emissions)*




**India: Employment growth, by decline in energy intensity, 2001-18**

*(Percent per year)*




Sources: European Commission EDGAR database; Annual; Survey of Industries, India; World Bank South Asia Development Update; data available here.

Left Panel: "Power" includes industries with "Main Activity Electricity and Heat Production", "Industry" includes "Manufacturing Industries and Construction", "Glass Production", and "Other Process Uses of Carbonates". Share in total PM2.5 emissions in South Asia ("SAR") and other EMDEs. Latest data for 2018. Right Panel: The measure of electricity (or energy) intensity is the ratio of energy expenses to the total wage bill of each firm. Chart depicts the annual employment growth rate between 2001 and 2018 in 23 manufacturing sectors grouped into those with below-median and above-median cuts in sector-level energy intensity. The difference is statistically significant.

# Four Questions

1. **What is the economic outlook for South Asia?** *Solid growth, with downside risks. Persistent challenges from weak private investment, low fiscal revenues, administrative controls.*

2. **How can South Asia's fiscal risks be addressed?** *Conditions are ripe for debt default. Debt restructuring, growth-boosting reforms, stronger revenue collection/fiscal institutions can facilitate success.*

3. **What can spur investment in energy efficient technologies?** *SAR's energy intensity is twice the global average, firms lag in adopting advanced technologies. Regulation, financing, information can help.*

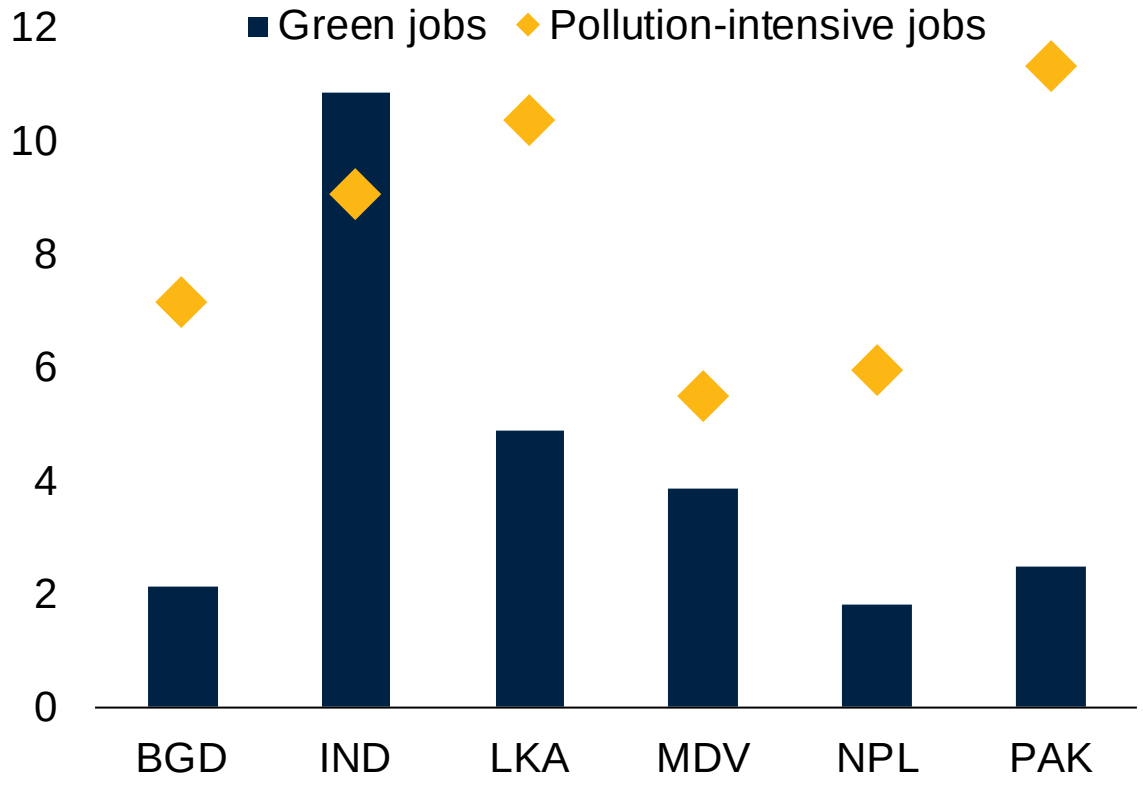
4. **How will the energy transition shape labor markets?** *Most SAR countries have more pollution-intensive than green jobs. Policies need to boost job creation and help workers, regions adjust.*

# Pollution-Intensive Jobs

## *More, in Fewer Sectors, Than Green Jobs*

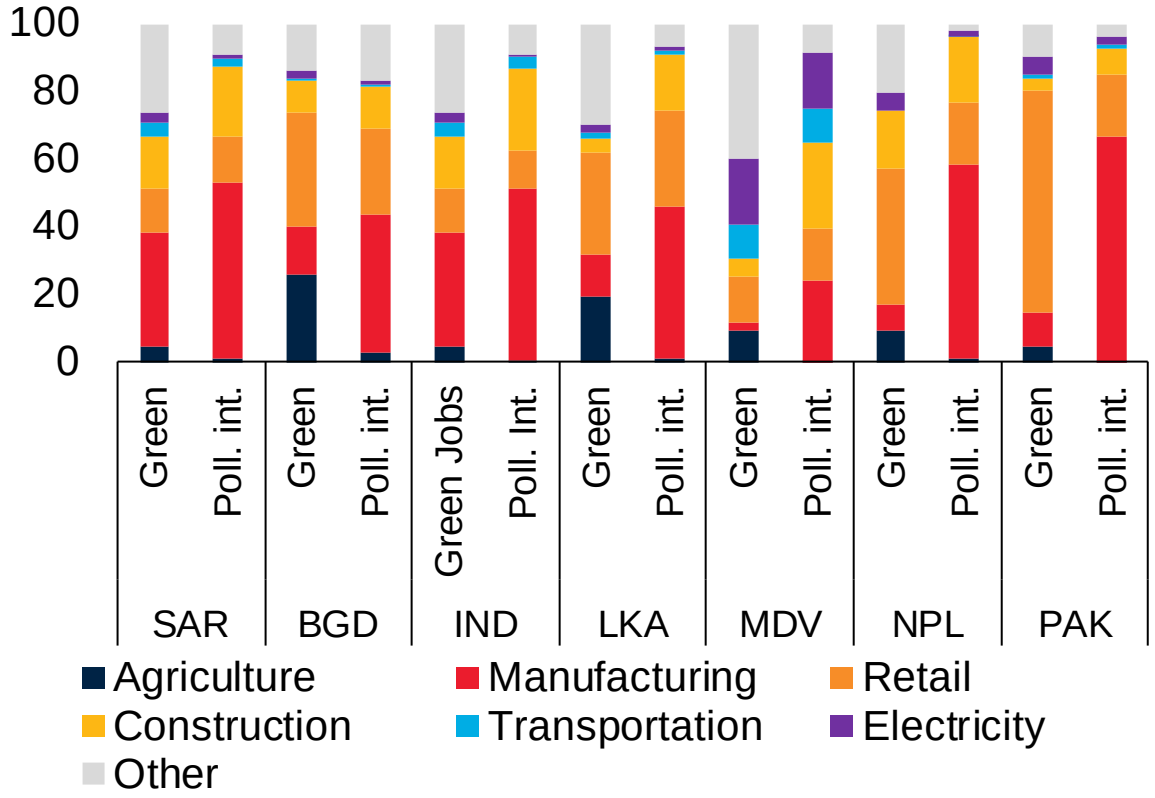
**Share of green and pollution-intensive jobs**

*(Percent of workers)*




**Share of green and pollution-intensive jobs**

*(Percent of jobs)*




Source: National statistical offices, World Bank South Asia Development Update; data available here.

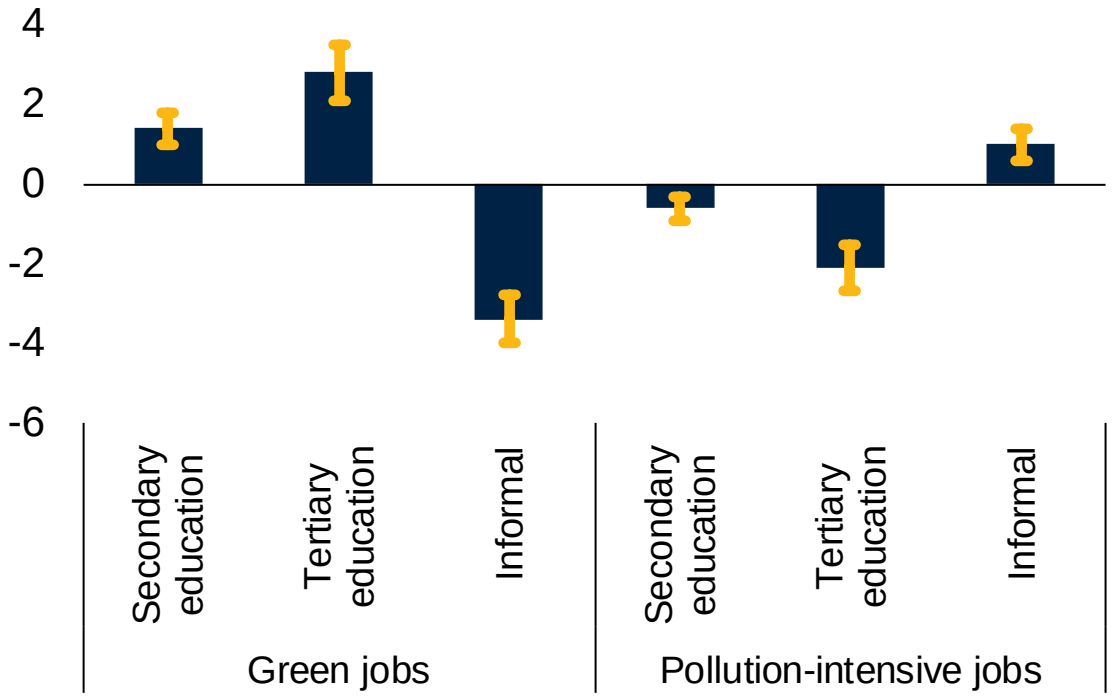
Note: Green jobs are those in occupations with a positive share of environmentally friendly tasks as defined in Granata and Posadas (2022). Pollution-intensive jobs are those in the most common occupations (at the 6-digit IOSCO level) in the five percent of industries that have the highest emissions of pollutants per worker as in Vona et al. (2018; annex 2). Labor force surveys are available for India (2018), Pakistan (2018), Maldives (2019), Sri Lanka (2019), Nepal (2017), and Bangladesh (2015).

# Pollution-Intensive Jobs

## *Less-Educated, More Informal Than Green Jobs*

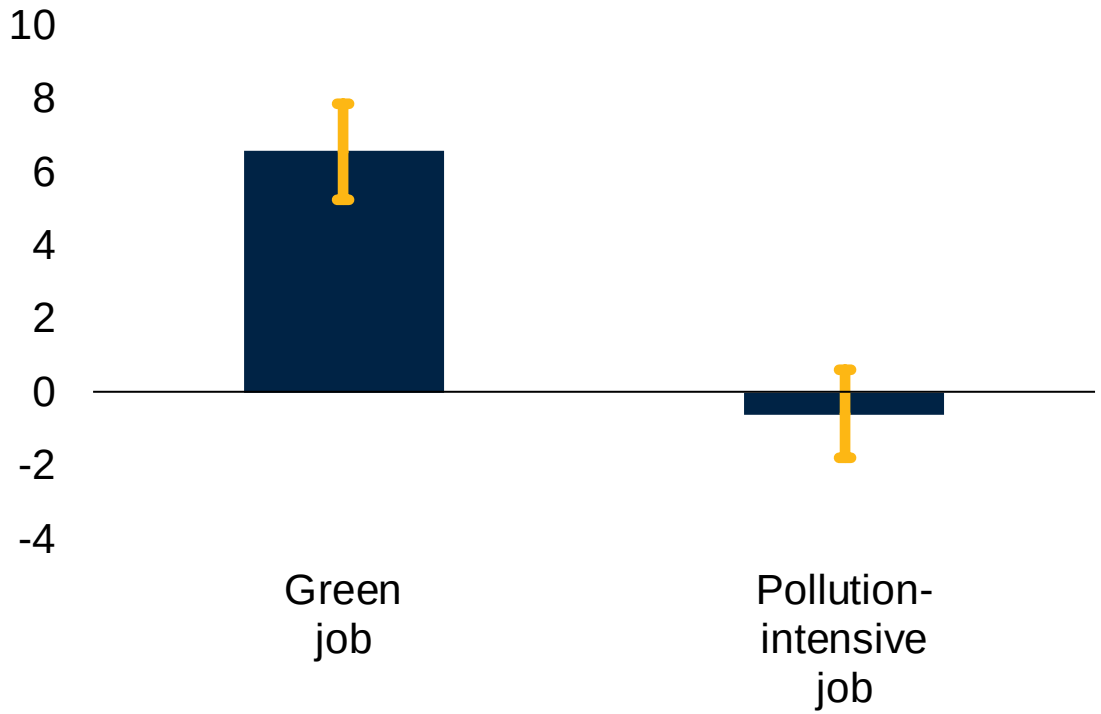
**Marginal probability of worker characteristics in green jobs relative to other workers**

*(Percentage points)*




**Wage premium relative to average workers**

*(Percent)*




Source: National statistical offices, World Bank South Asia Development Update; data available here.

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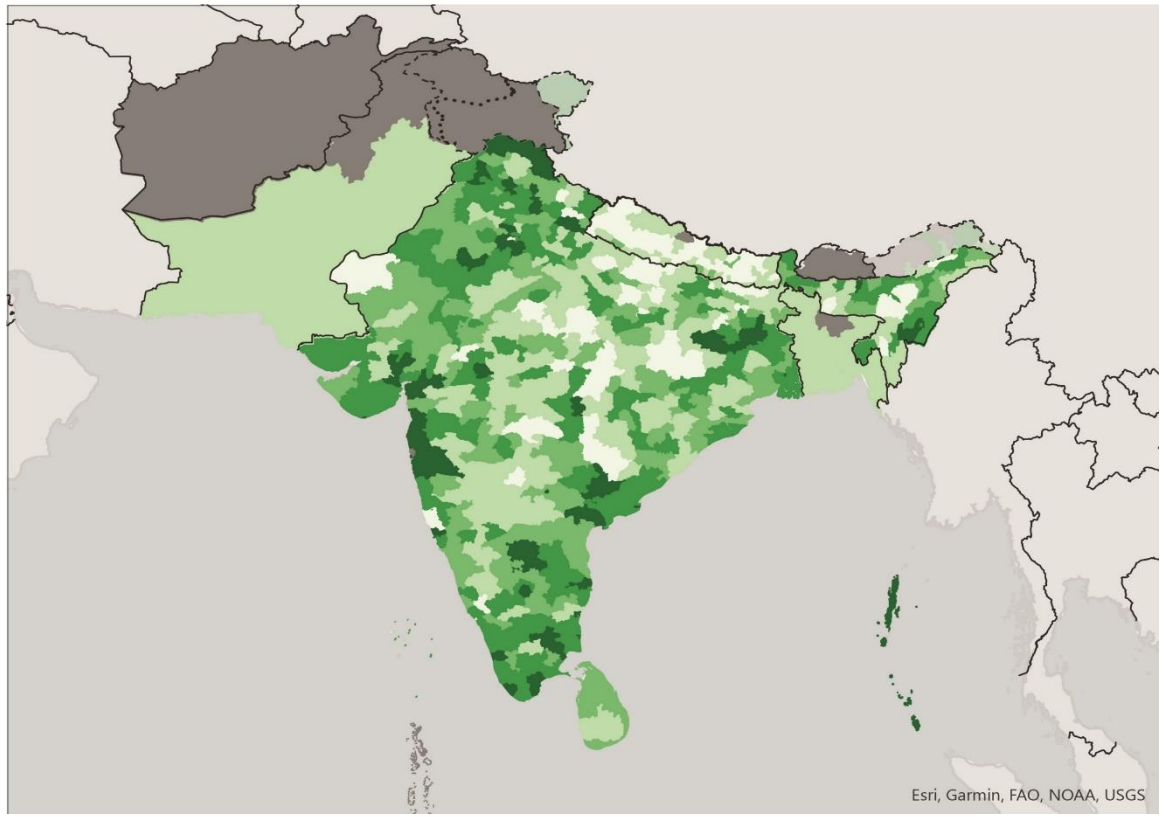
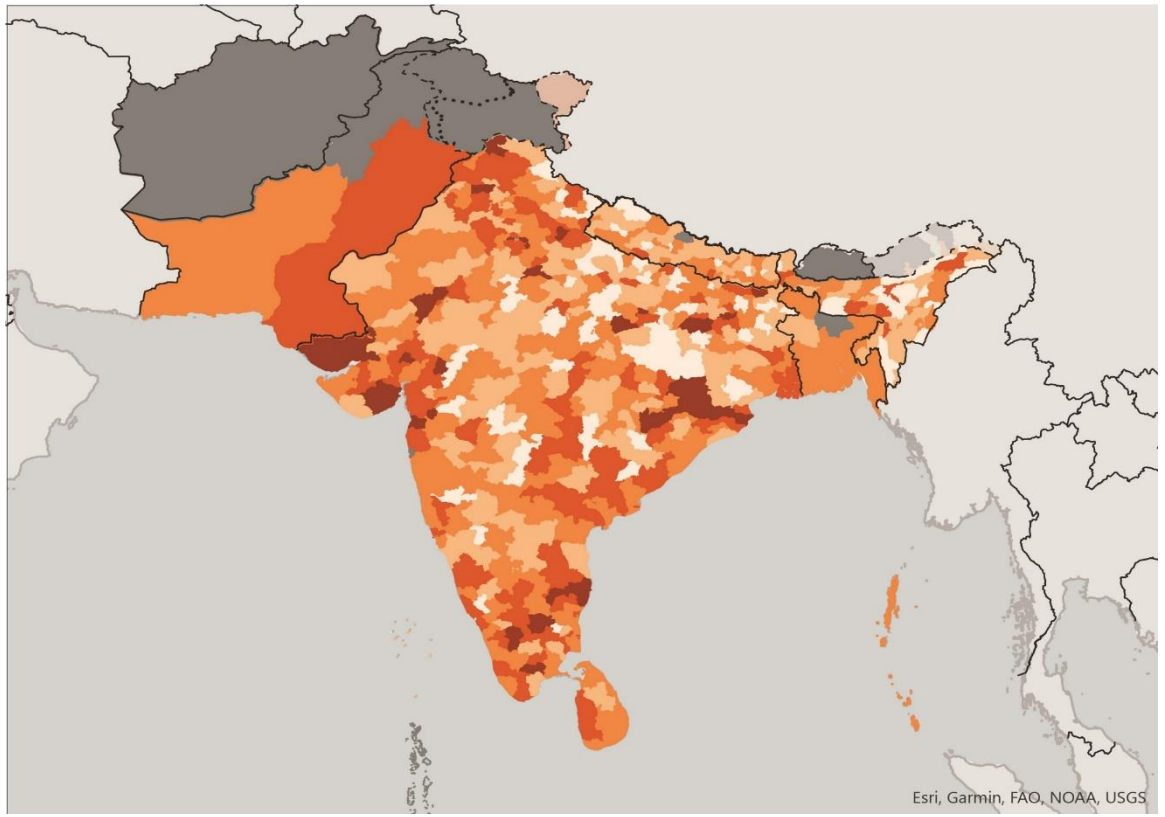
# Pollution-Intensive Jobs

## *More Geographically Concentrated than Green Jobs*

**Share of green jobs**
*(Percent of subnational region's workers)*




**Share of pollution-intensive jobs**
*(Percent of subnational region's workers)*



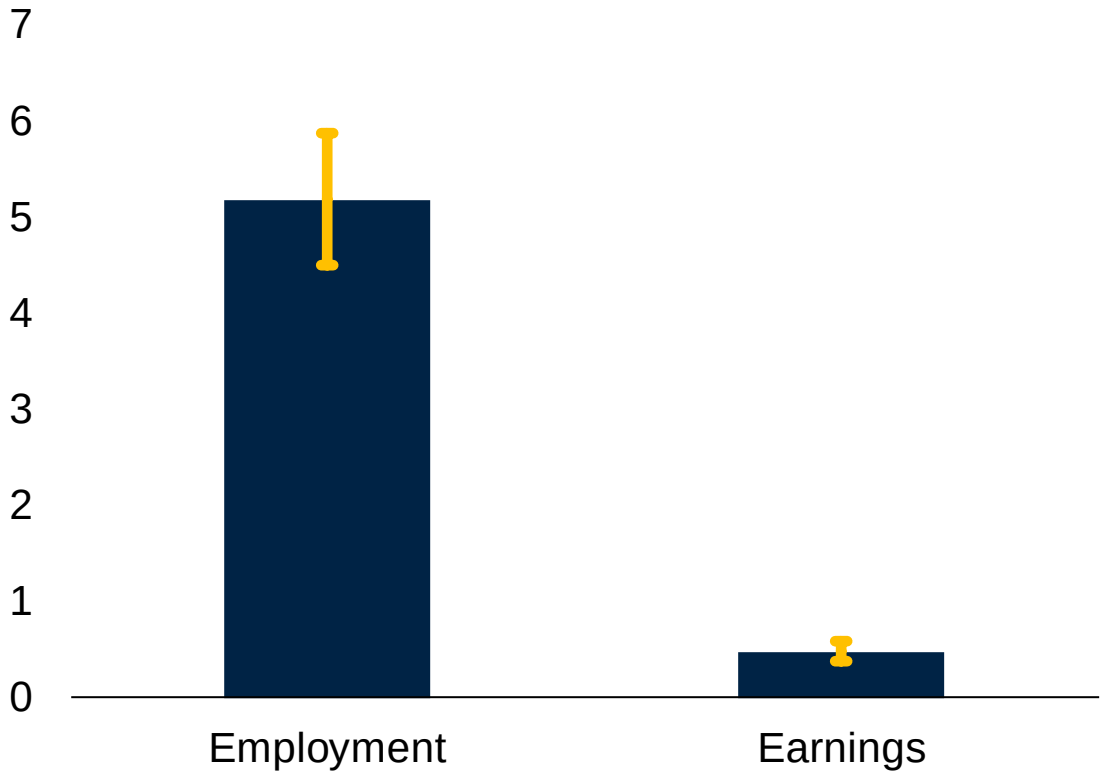

Source: National statistical offices, World Bank South Asia Development Update; data available here.
Note: Green jobs are those in occupations with a positive share of environmentally friendly tasks. Pollution-intensive jobs are those with above-median pollution intensity. Labor force surveys are available for Bangladesh (2015), India (2018), Sri Lanka (2019), Maldives (2019), Nepal (2017), and Pakistan (2018). A deeper color indicates a larger share of local workers employed in green or in pollution-intensive jobs.

# Lessons from History: Resource Booms and Busts

## *Transient Gains, Persistent Losses*

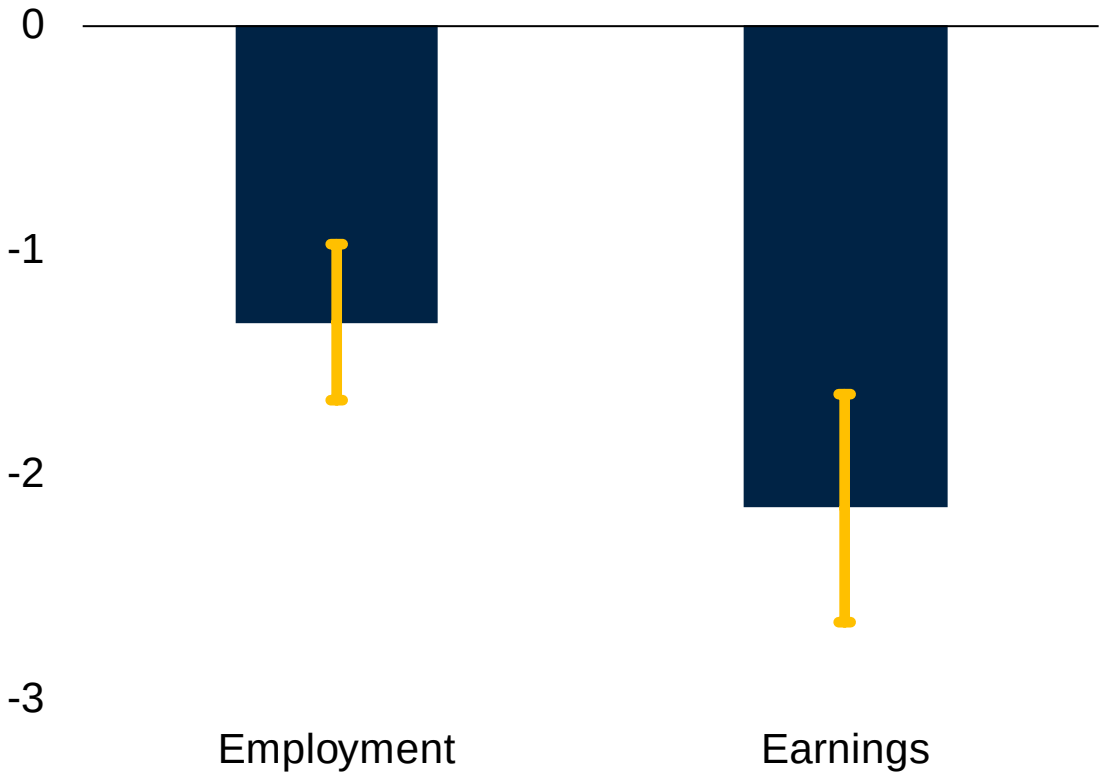
**Changes during resource booms**

*(Percent)*




**Changes during resource busts**

*(Percent)*




Sources: Calculations based on Aragón, Chuhan-Pole, and Land (2015), Marchand and Weber (2018), and related studies; World Bank South Asia Development Update; data available here

Note: Estimates are based on random effects meta regressions. Each study's effect size is standardized to percentage changes. Log changes are interpreted as percentage changes. Employment measure is total employment in the labor market considered by each study. Earnings include earnings per worker, family earnings, wage and salary income, GDP per capita, total wages, annual pay, household income, median income, median earnings, and per capita expenditure.

# Four Questions

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# Thank you!

## October 2023 South Asia Development Update

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| Box 1. | Fiscal deteriorations around elections |
| Spotlight. | When life gives lemons: Making the best of debt default |
| Chapter 2. | Recruiting firms for the energy transition |
| Chapter 3. | Stranded workers? The energy transition in South Asia's labor markets |

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