

# External Vulnerabilities

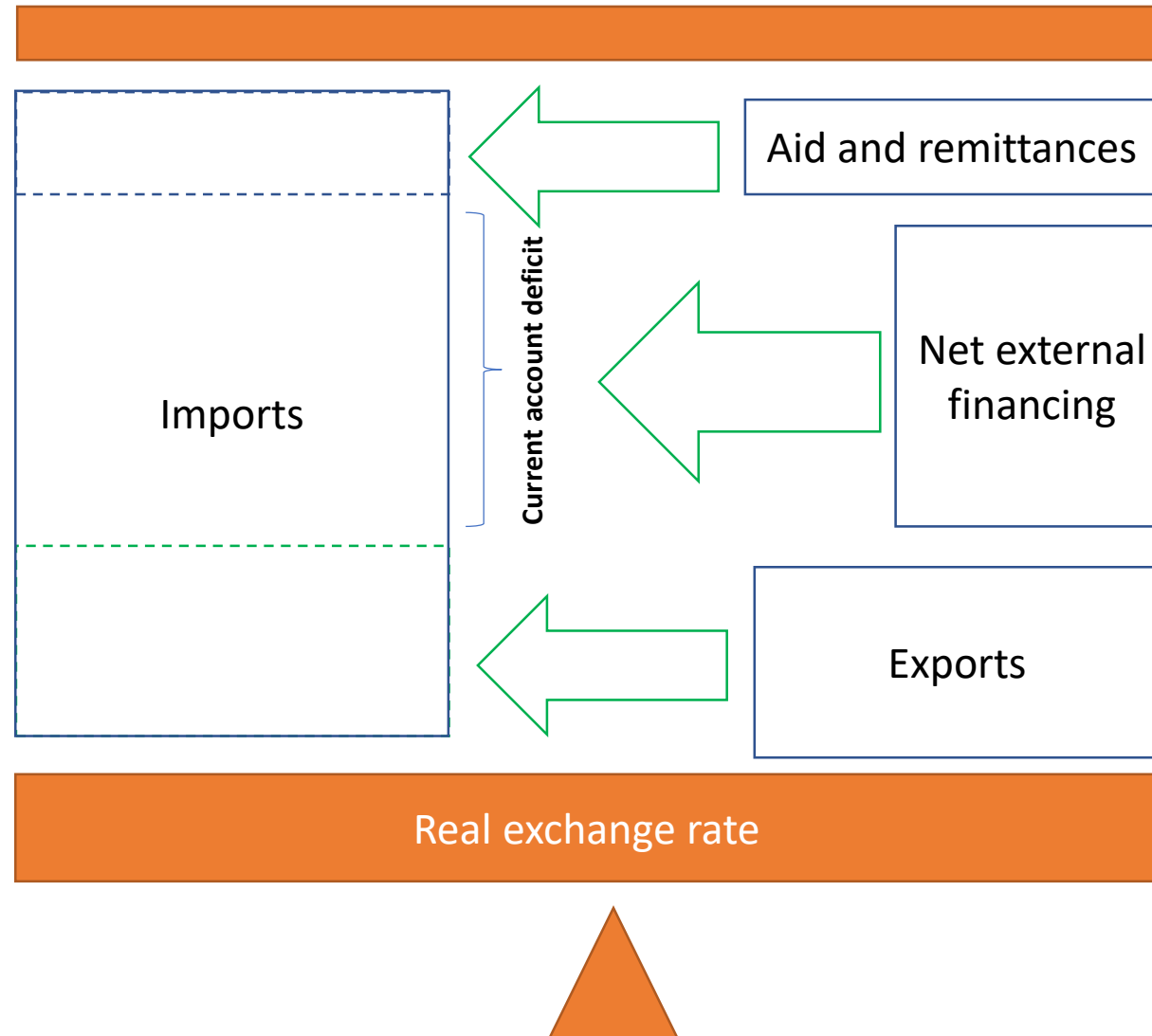
Focus Chapter

**South Asia Economic Focus, Spring 2019**

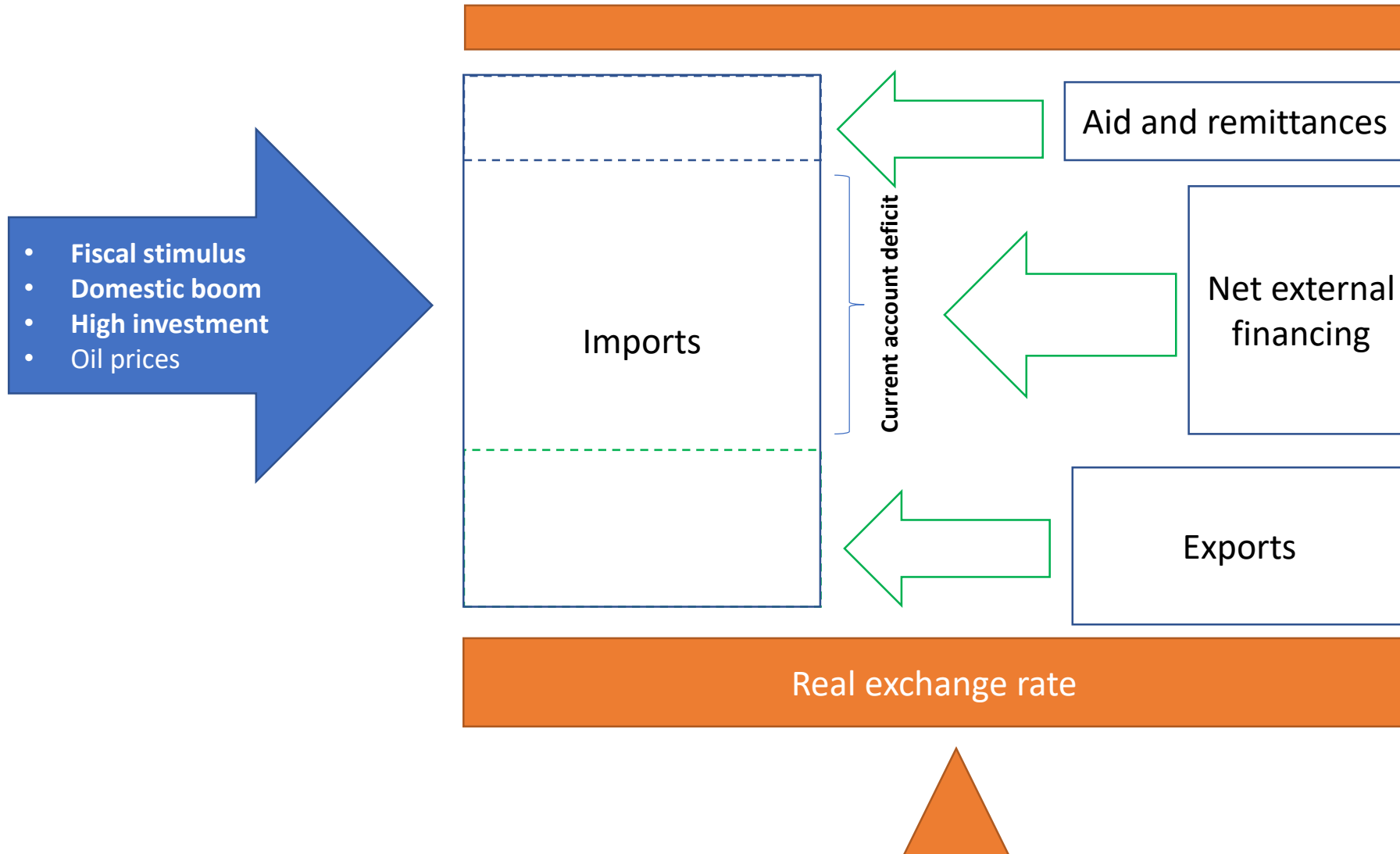
South Asia Chief Economist Office (SARCE)

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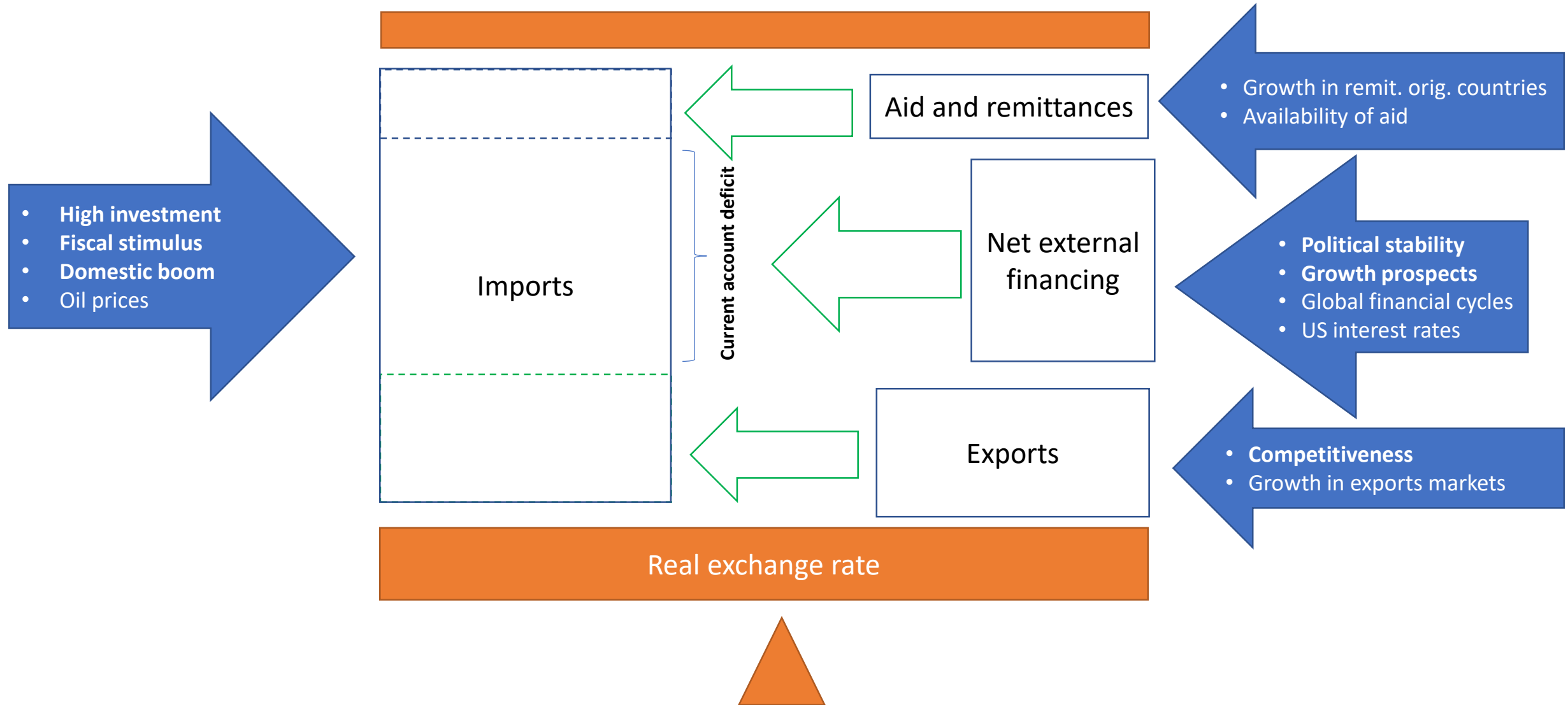
All countries in South Asia import more than they export.



Both imports and exports are driven by domestic and international factors.



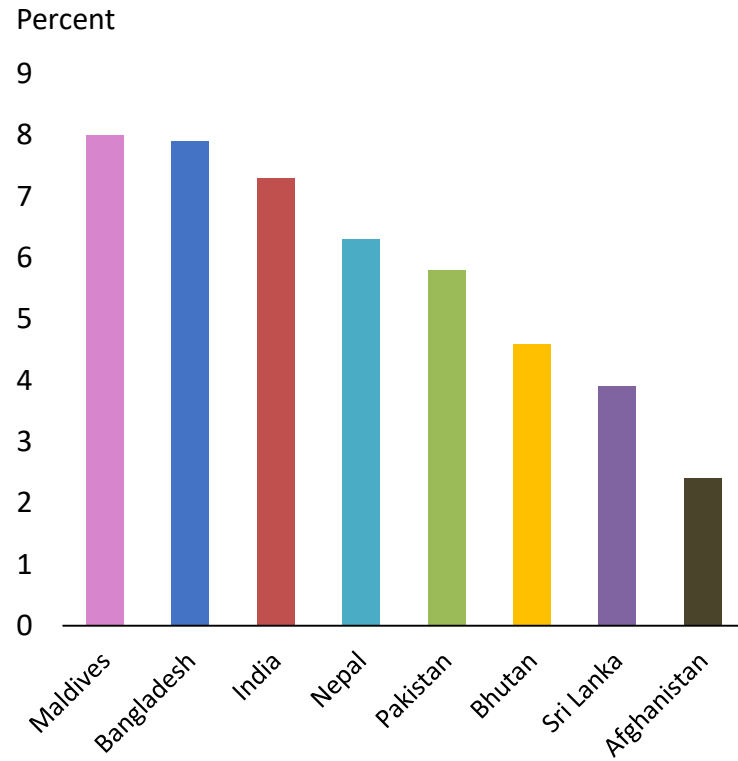
... and what drives it.



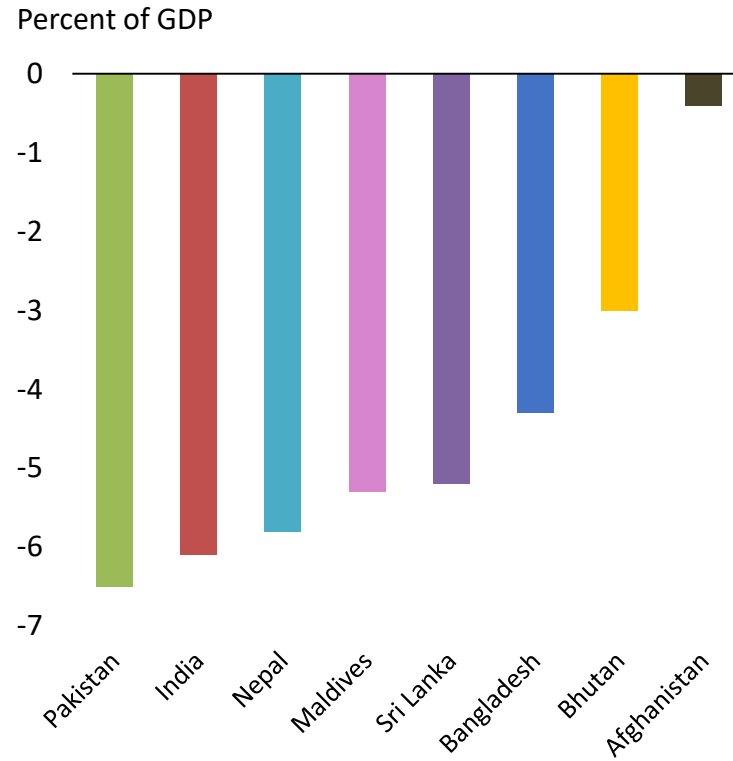
**Import demand in South Asia is high**

GDP growth is high, fiscal deficits are large, and investment grows fast.

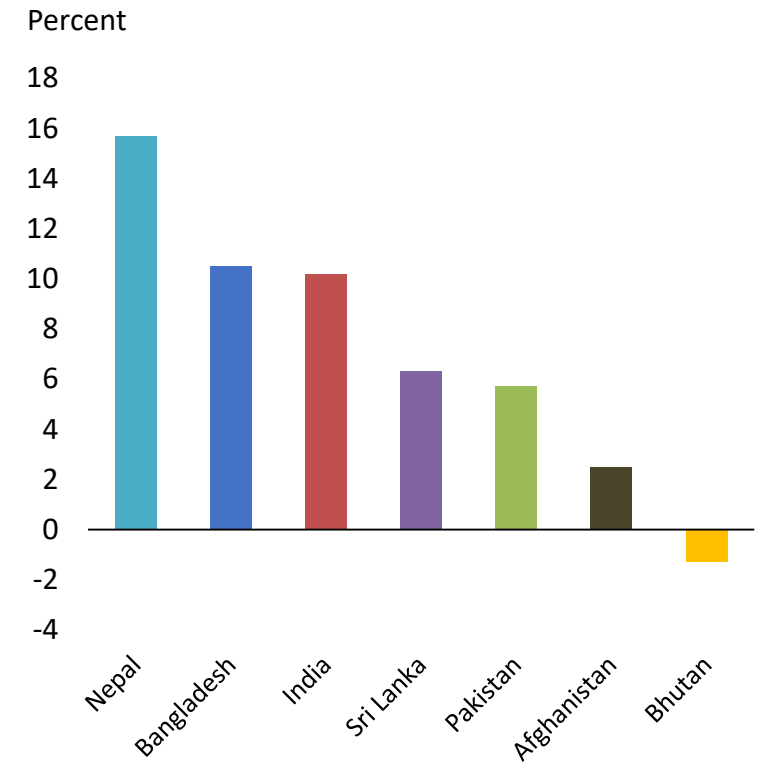
**Real GDP growth in 2018**



**Fiscal balance in 2018**



**Investment growth in 2018**

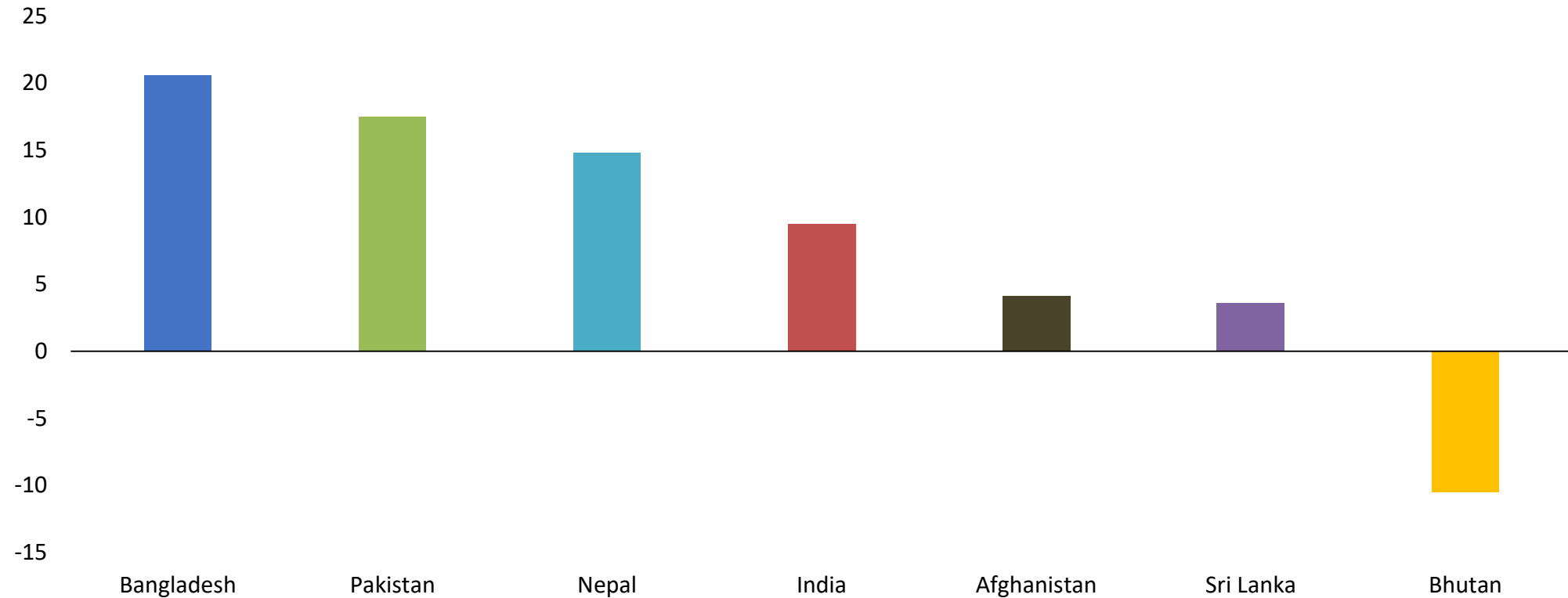


Source: SAEF Fall 2018.

Little surprising, these domestic factors translate into high import growth...

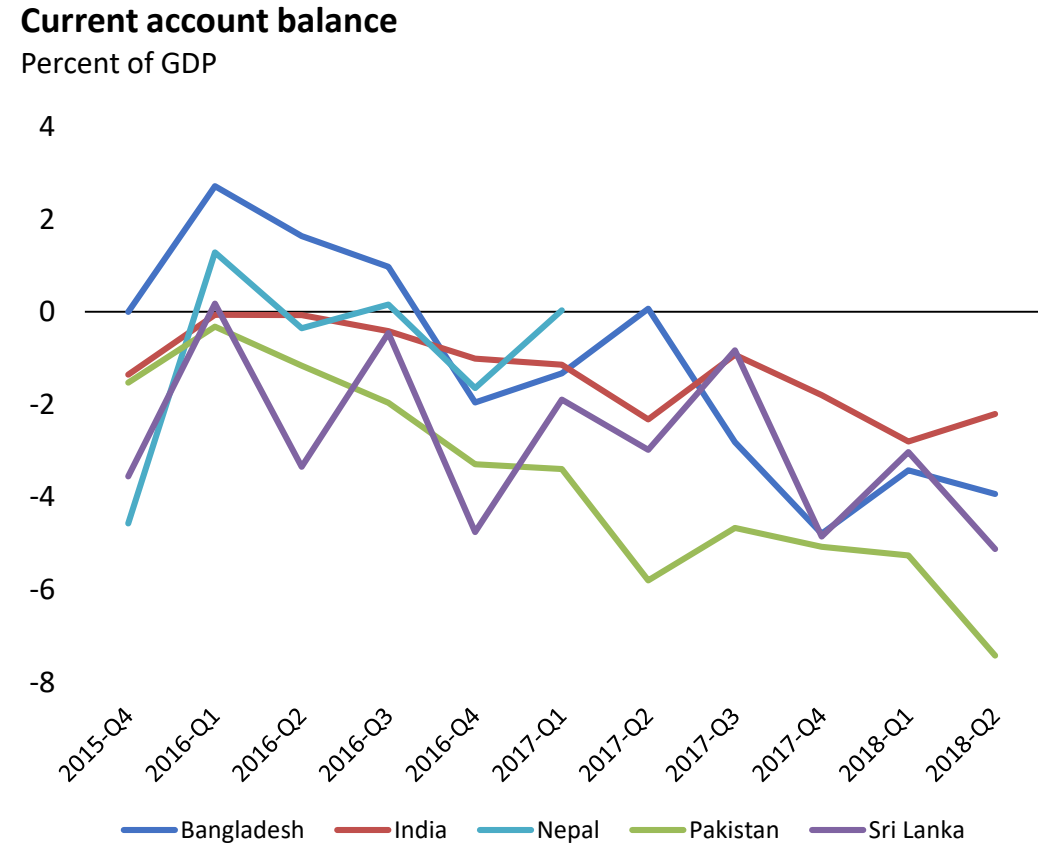
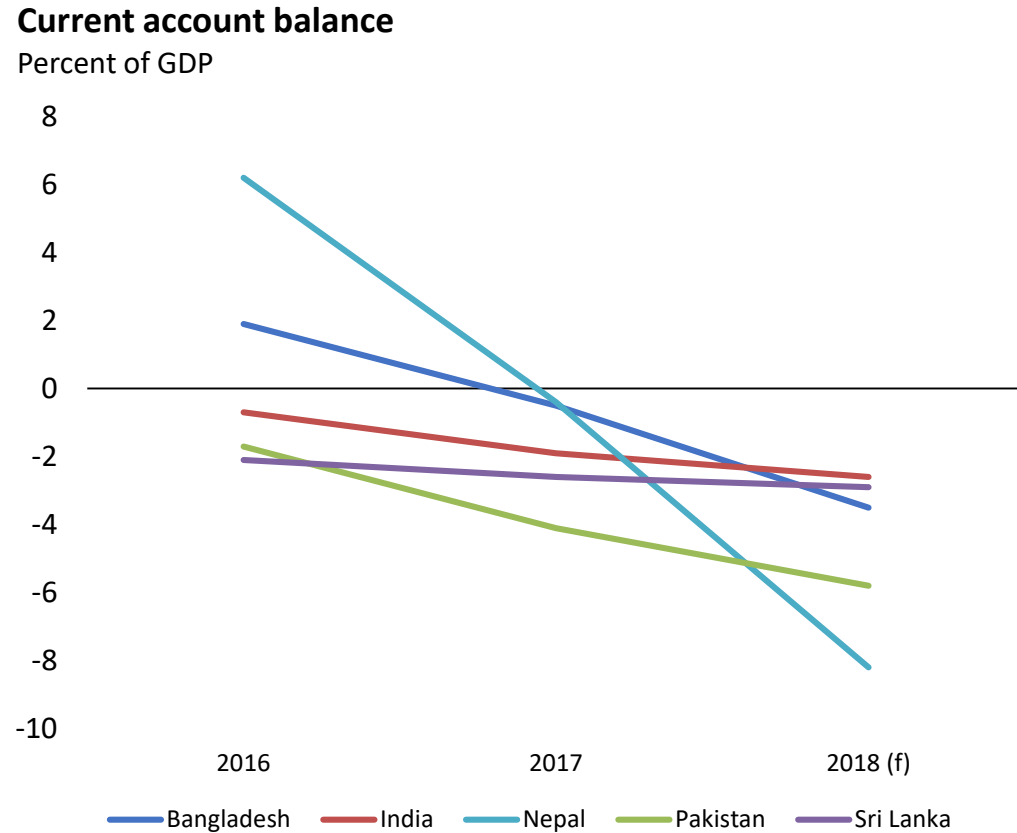
**Import growth in 2018**

Percent



Source: SAEF Fall 2018.

...and increasing current account deficits in most countries in South Asia.



**Note:** Quarterly GDP for Bangladesh, Pakistan, Nepal, Afghanistan is derived from annual GDP and assumed to be constant for all four quarters.

**Source:** Trading Economics and Haver Analytics and SAEF Fall 2018.



In South Asia, a one percentage point higher fiscal deficit decreases the current account balance by more than a 1/3 percentage point.

$$ca_{it} = \alpha_i + \beta ca_{it-1} + \partial fb_{it} + \varepsilon_{it}$$

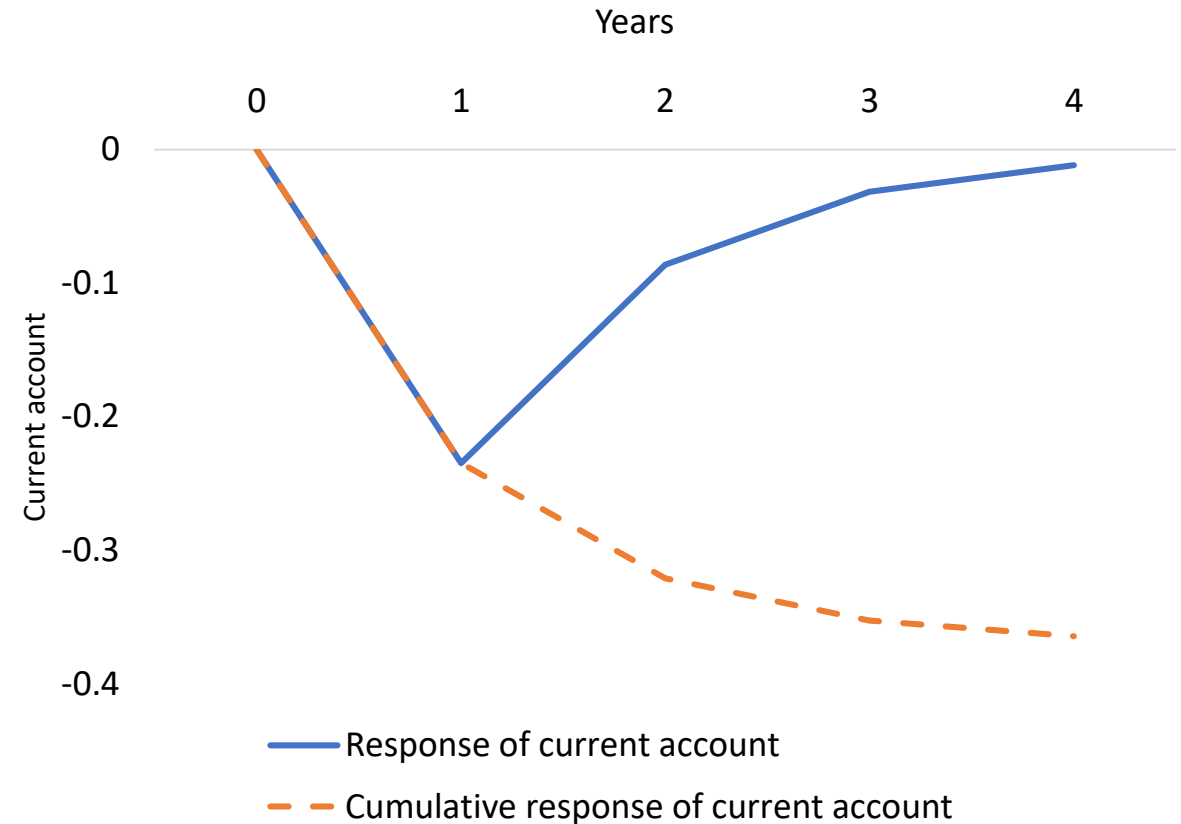
(1)

Lagged current account balance	<b>0.367***</b> (0.0540)
Fiscal balance	<b>0.235**</b> (0.0737)
Constant	-0.643 (0.363)
Observations	151
R-squared	0.181
Number of countries	6

Robust standard errors in parentheses  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Effect of one percentage point higher fiscal deficit**

Percentage points

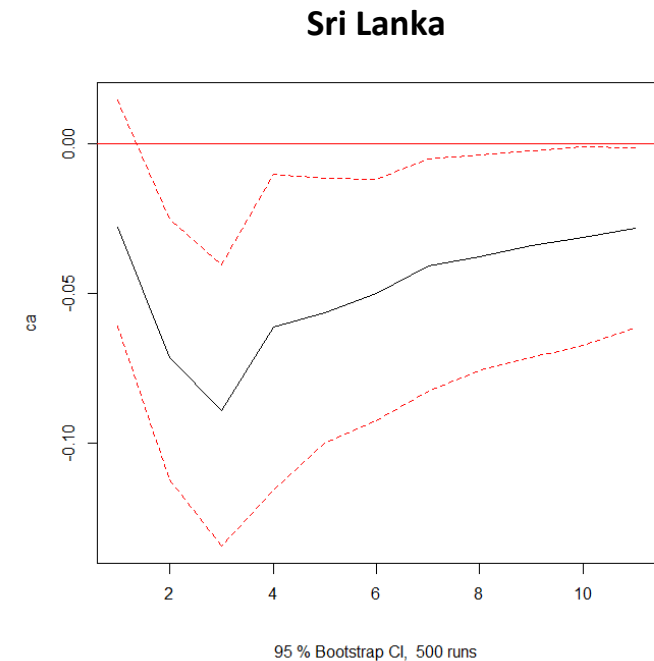
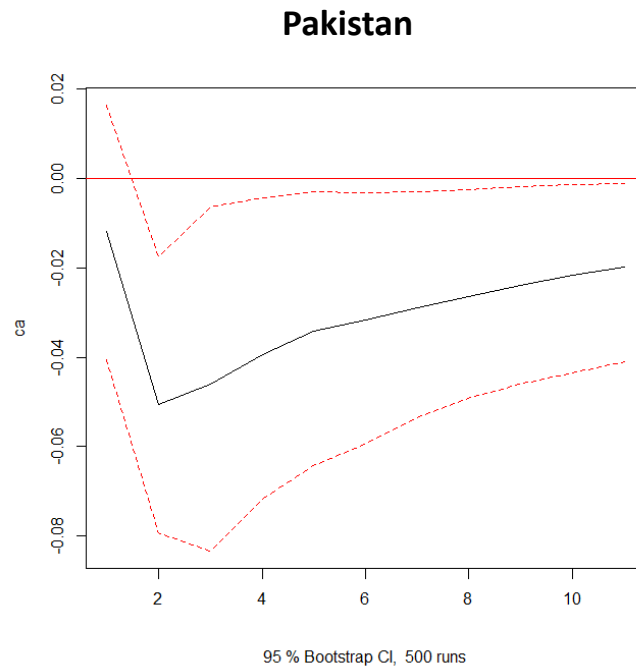
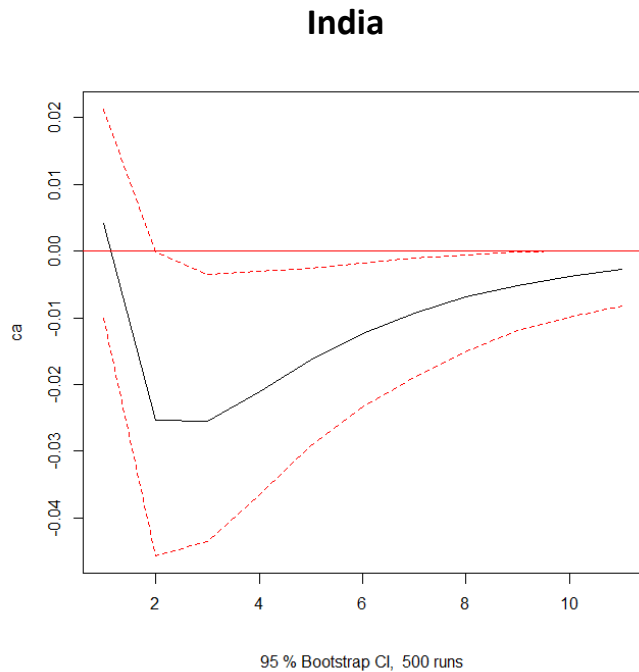


**Source:** WDI and IMF and staff calculations.

**Note:** The six countries included in the regression are Bangladesh, India, Maldives, Nepal, Pakistan and Sri Lanka. And the estimation is from 1990 to 2017.

# Higher oil prices also decrease the current account balance.

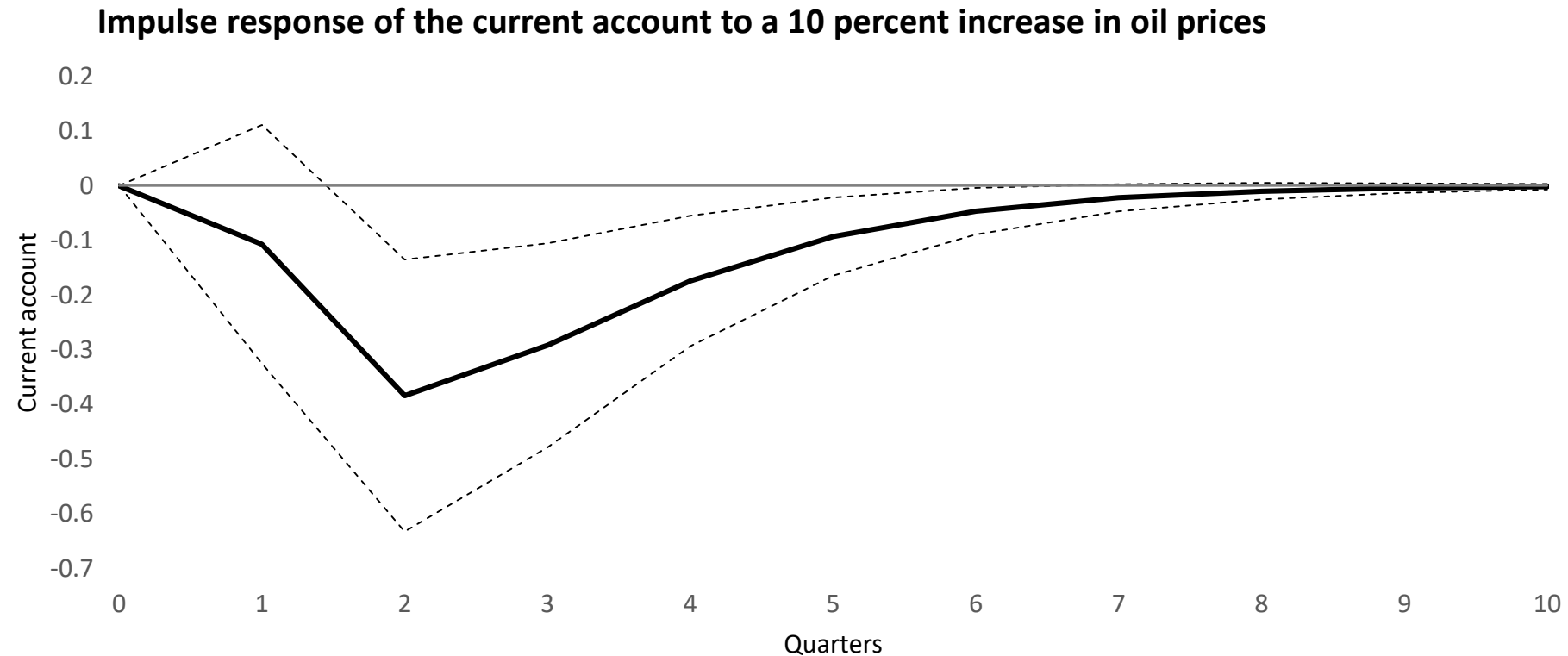
- We estimate a three variable model with the current account, oil prices, and the real exchange rate
- We use quarterly data from 1990Q1 to 2017Q4 from the IMF and FRED. GDP growth over the year for countries without quarterly GDP data is assumed to be constant.
- The identification is based on Qurat-ul-Ain and Tufail (2013) and assumes that the exchange rate is more exogenous than the current account and that oil prices are the most exogenous. Results for the oil price shock are robust to alternative ordering.
- We find a significant effect of the oil price on the current account in India, Pakistan, and Sri Lanka:



**Note:** All estimations are based on a VAR estimated with one lag. The data used for estimation is x for India, y for Pakistan, and z for Sri Lanka.

**Source:** IMF, FRED, and staff calculations.

A 10 percent increase in oil prices, reduces the current account balance temporarily by 0.4 percentage points.

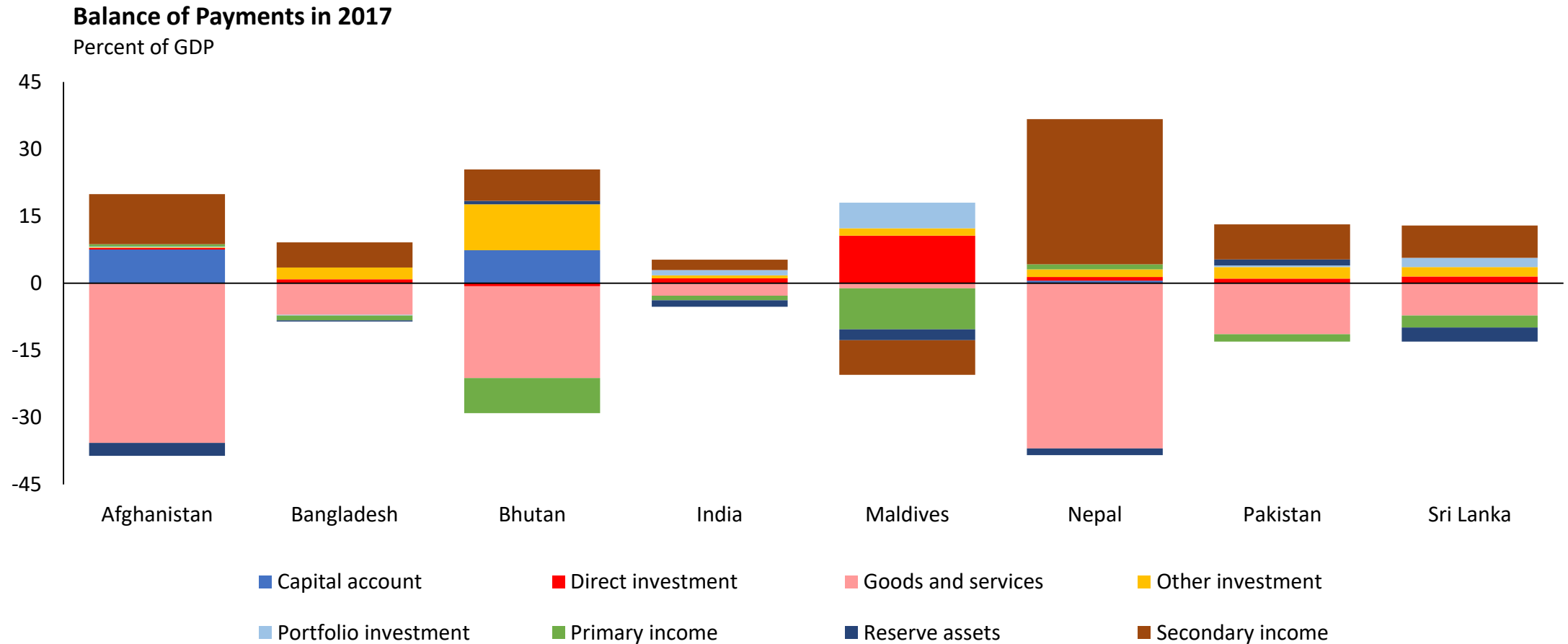


**Note:** Pooled panel VAR estimated from 1994Q2 to 2017Q4 for India, Pakistan, and Sri Lanka.

**Source:** IMF, FRED, and staff calculations.

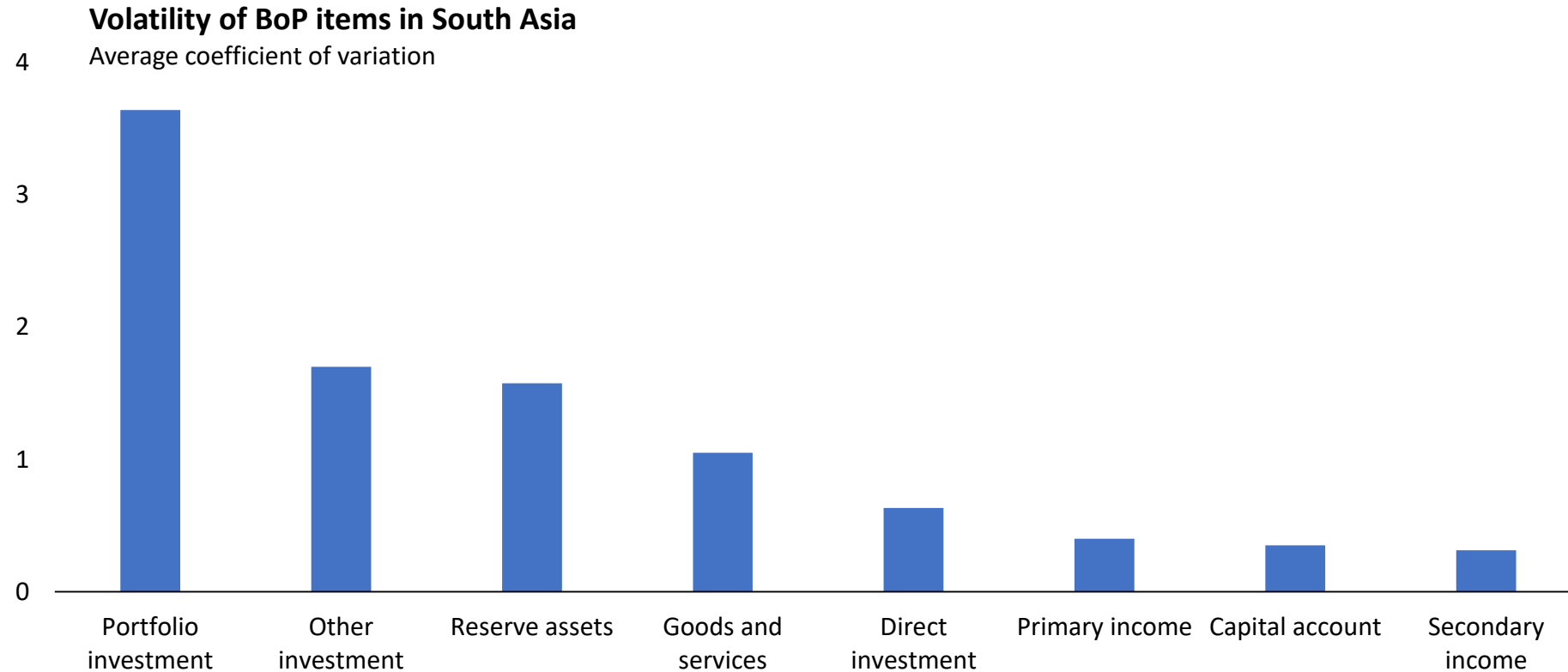
**Financing is becoming more uncertain**

# South Asian countries rely on external financing to pay for their imports.



Source: IMF BoP Statistics.

Portfolio investment is very volatile and countries rely on reserves to balance their payments.



**Note:** The coefficient of variation is the standard deviation divided by the mean. It is estimated from 2000 to 2017 for all except for Afghanistan and Bhutan for which the estimation starts in 2006 and 2008 respectively. We show simple averages across countries and exclude observations if the item itself is very small.

**Source:** IMF and staff calculations.

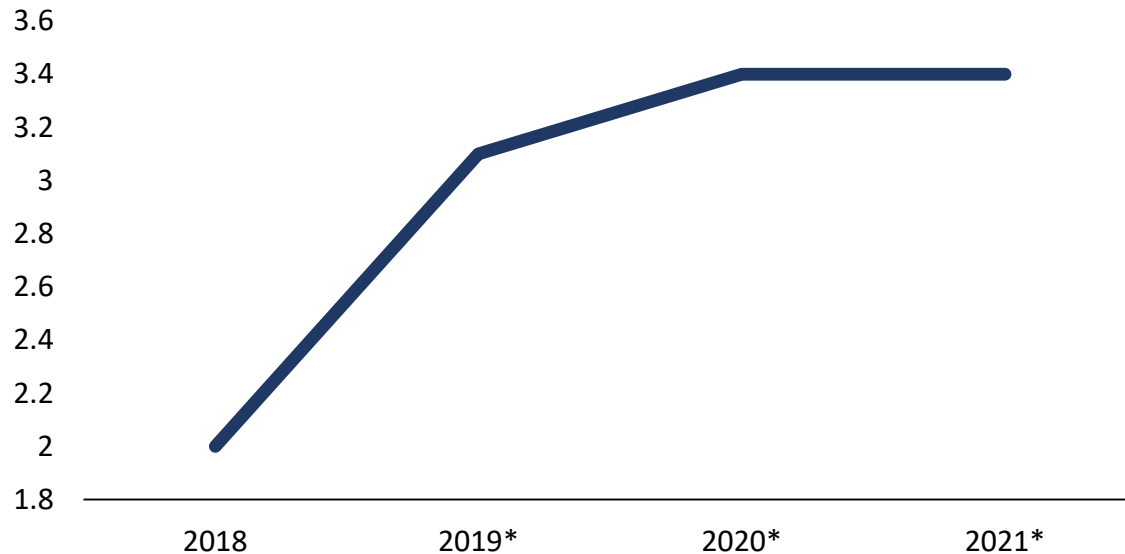
- Portfolio investment and other investment is very volatile in many countries
- Many South Asian countries rely a lot on reserves to balance their international payments

With expected monetary tightening in advanced countries and high economic policy uncertainty, external financing conditions are becoming less benign.

### US monetary policy is expected to tighten further

#### US Federal funds rate

FOMC projections

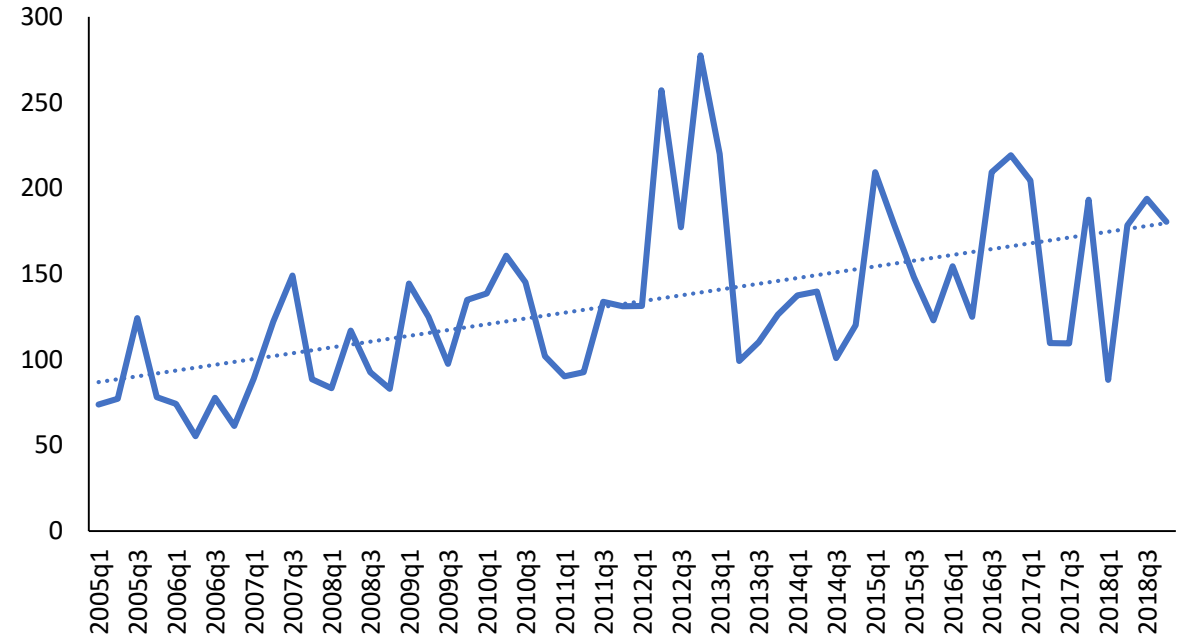


**Note:** \* The projections for the federal funds rate from the Federal Open Market Committee (FOMC) are the value of the midpoint of the projected appropriate target range for the federal funds rate or the projected appropriate target level for the federal funds rate at the end of the specified calendar year or over the longer run.

**Source:** Federal Reserve System.

### Global Economic Policy Uncertainty is high

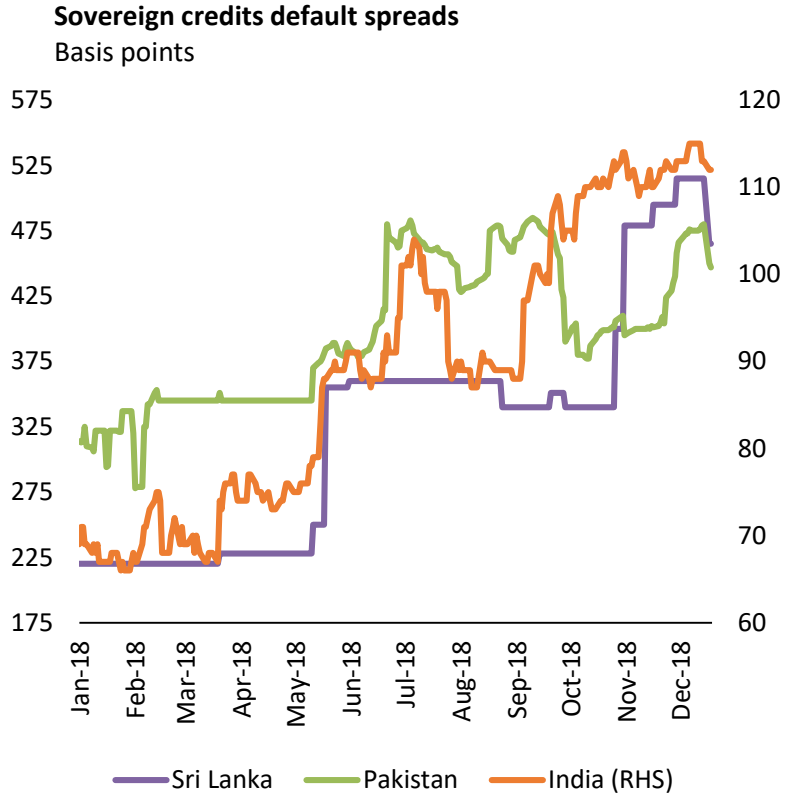
#### Global Economic Policy Uncertainty Index



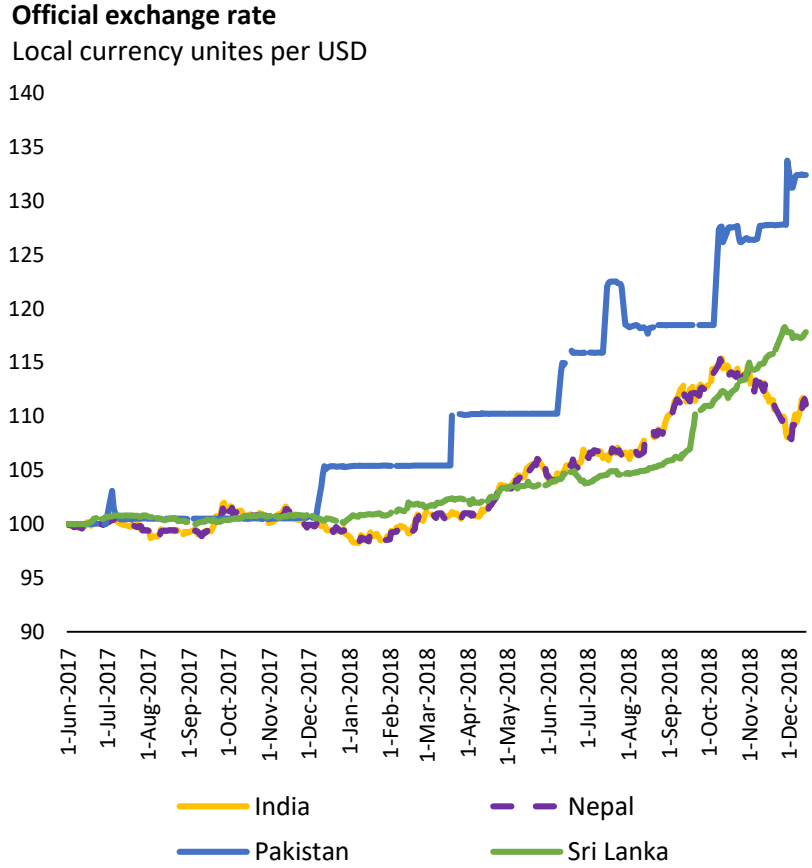
**Note:** The solid line shows the GDP weighted Global average. The dashed line is a linear approximation from 2005 to 2018.

**Source:** 'Measuring Economic Policy Uncertainty' by Scott Baker, Nicholas Bloom, and Steven J. Davis at [www.policyuncertainty.com](http://www.policyuncertainty.com). Davis, Steven J., 2016. An Index of Global Economic Policy Uncertainty. Macroeconomic Review, October.

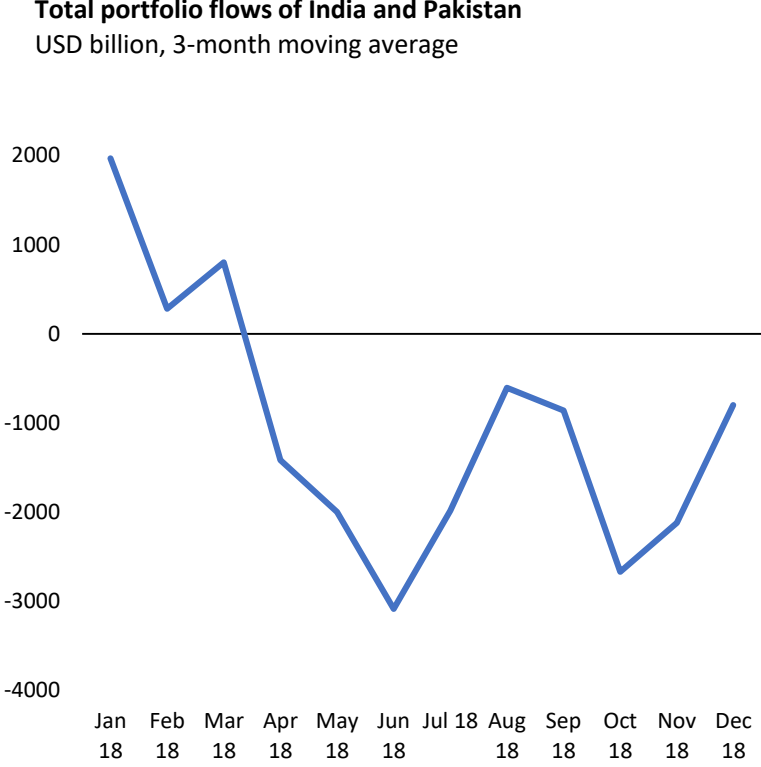
Higher risks already resulted in increasing sovereign spreads, depreciating currencies and capital outflows.



**Note:** Left-Hand Axis: Pakistan and Sri Lanka; Right-Hand Axis: India  
**Source:** Global Economic Prospects (January 2019).



**Source:** Haver Analytics.

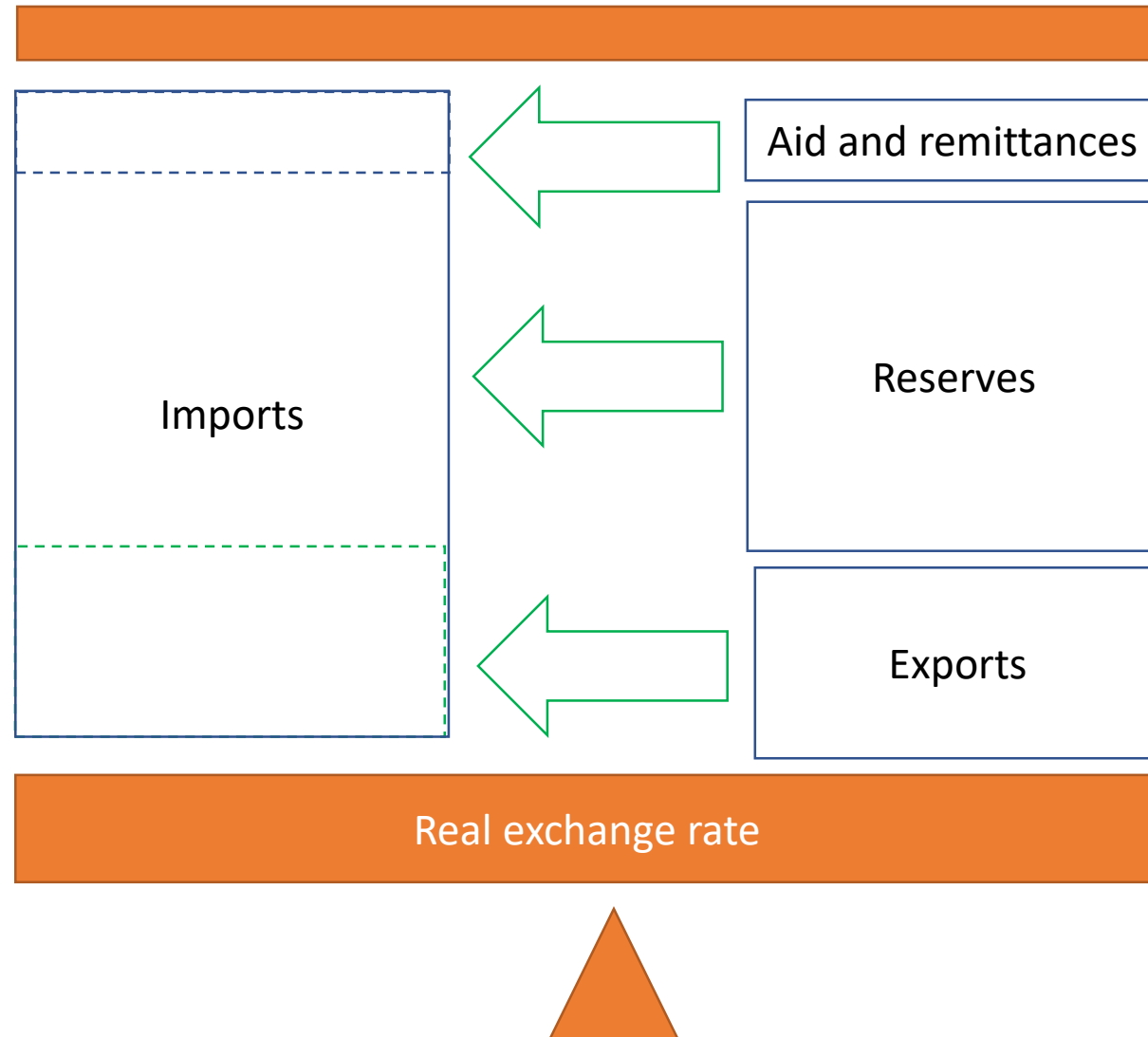


**Source:** IIF and staff calculations.

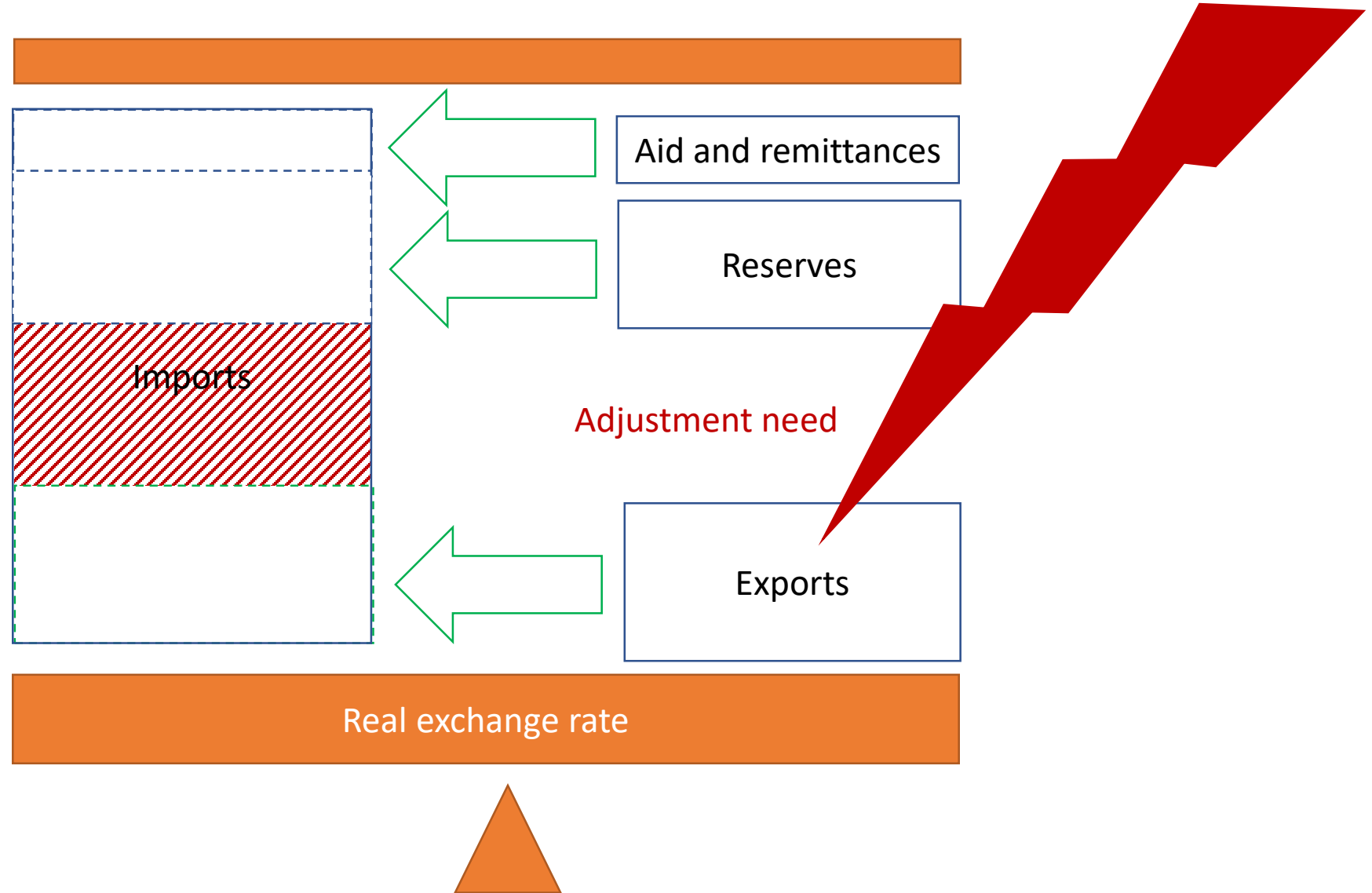


# Adjusting through relative prices

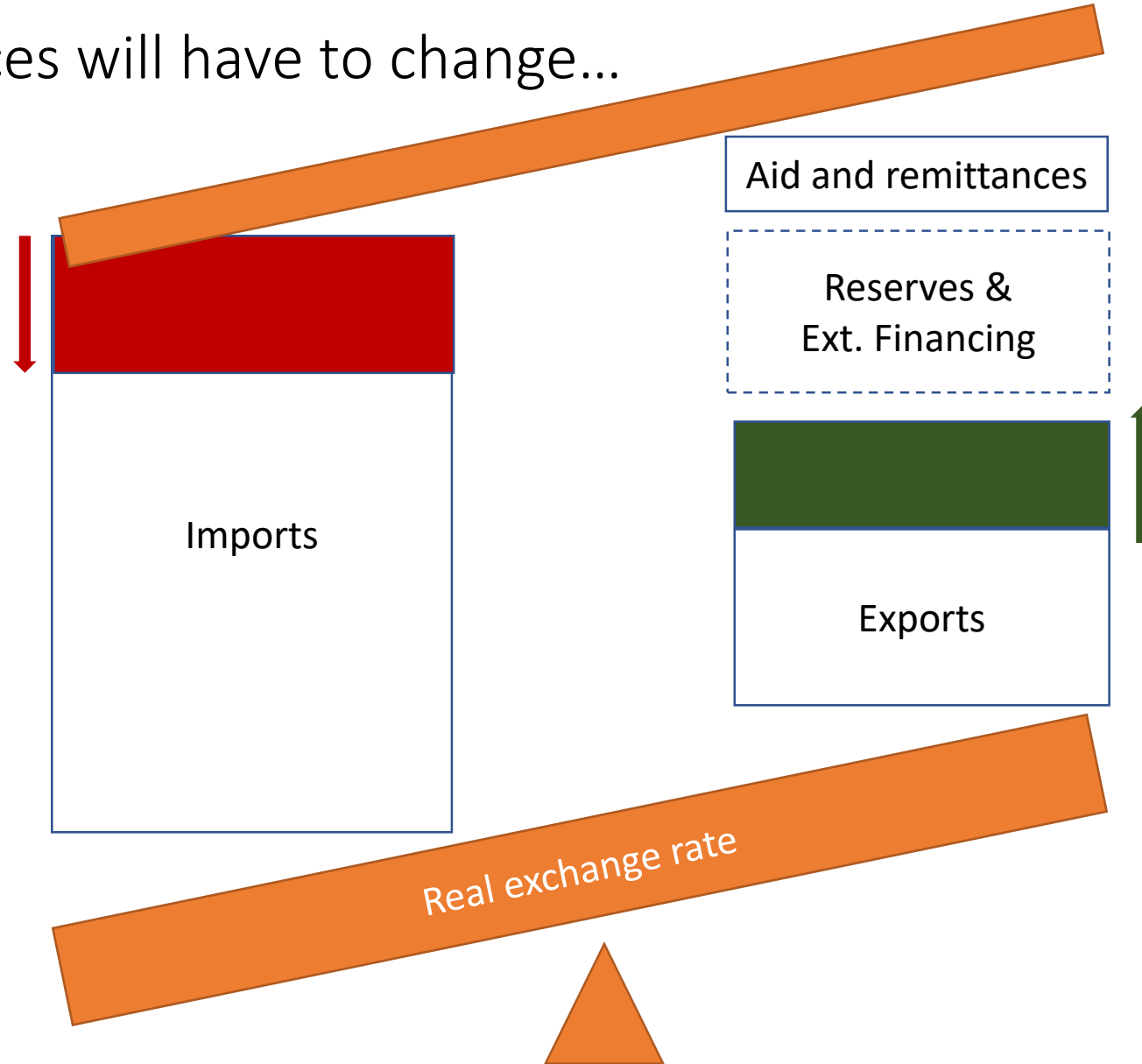
**An example:** if international financing dries up, a country may be able to initially sustain high imports by running down the reserves....



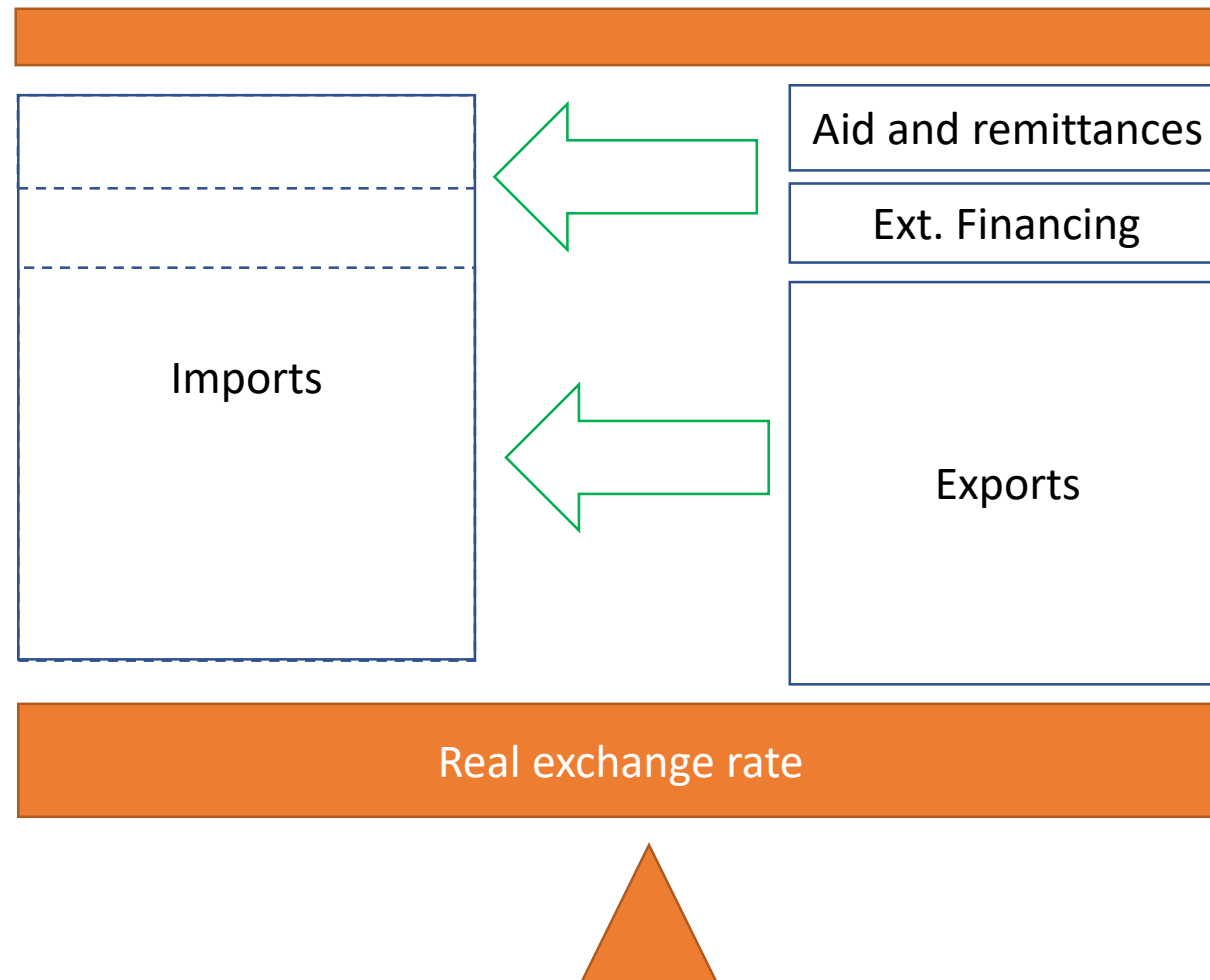
... but reserves are not endless and eventually the country will have to adjust.



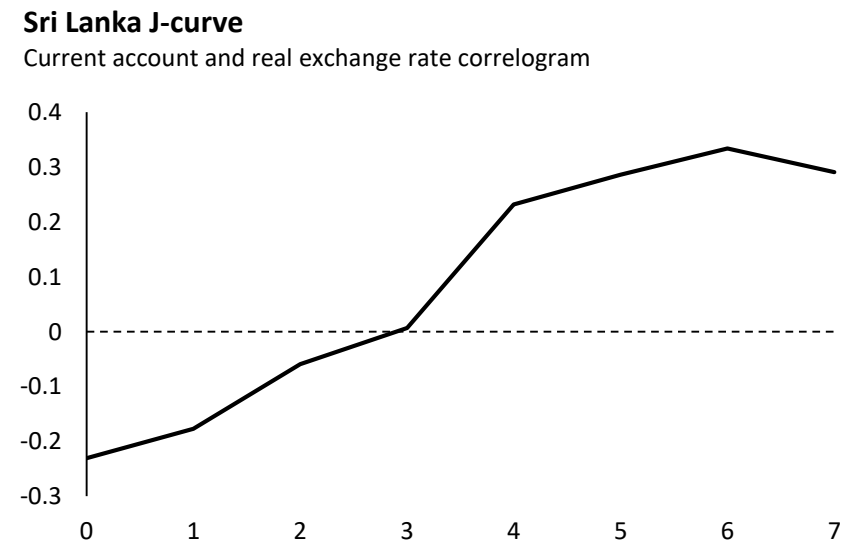
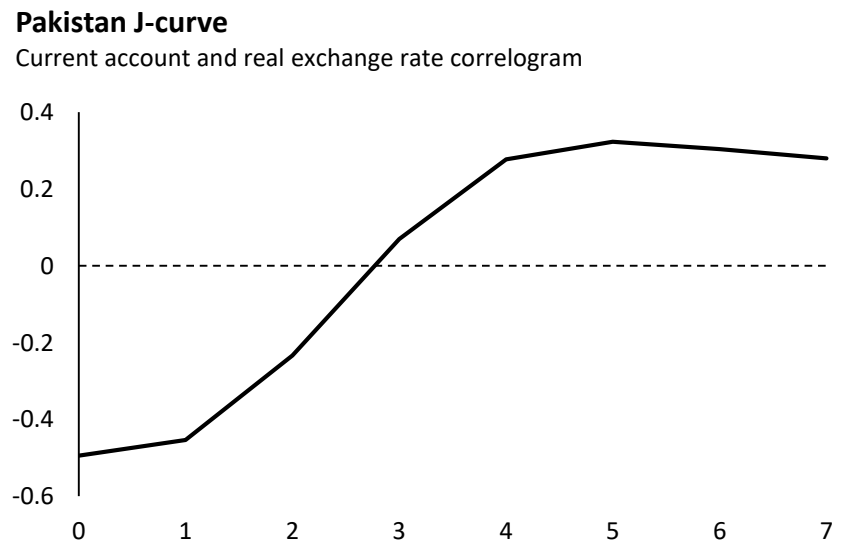
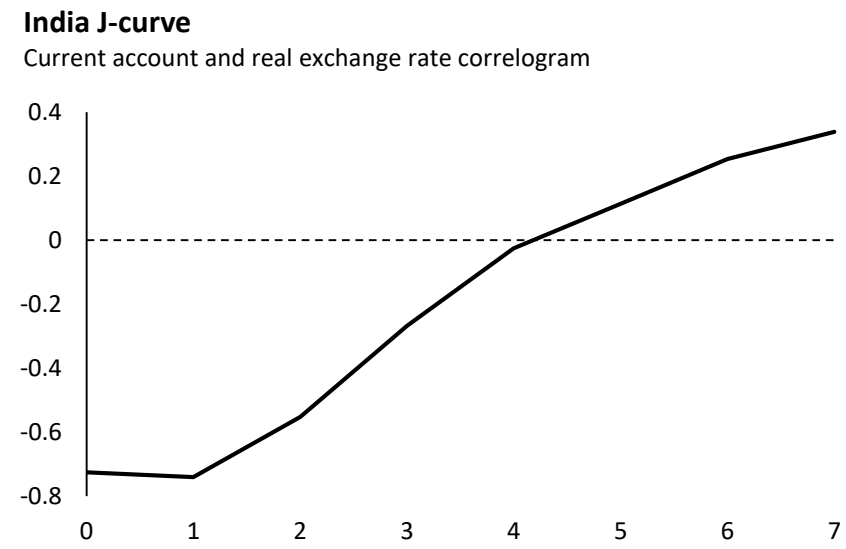
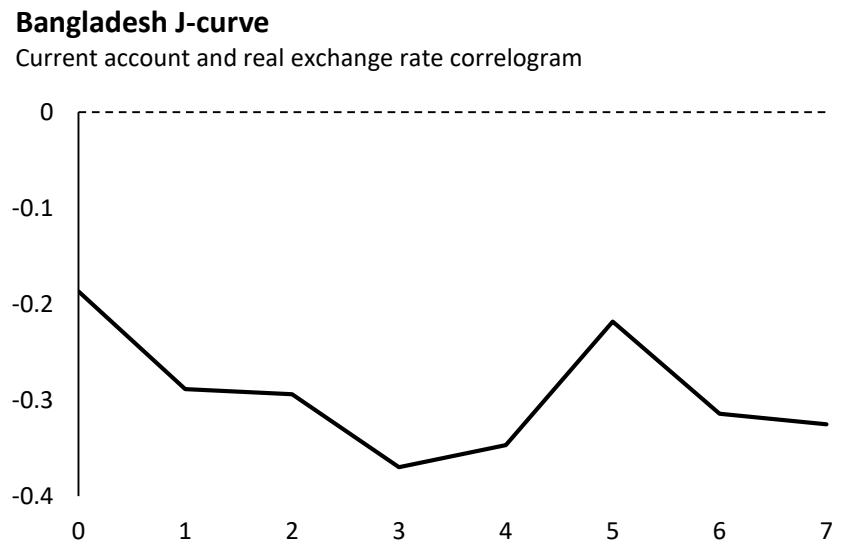
Relative prices will have to change...



... to reach a new sustainable external equilibrium.



J-curves are present in South Asia: after some time, the current account balance tends to improve after a real depreciation.



**Source:** IMF, WDI, and staff calculations.  
**Note:** Correlograms based on annual data from 1990 to 2018.

## Estimating the effect of permanent and temporary shocks on the current account

$$\begin{bmatrix} \Delta q_t \\ b_t \end{bmatrix} = C(L) \begin{bmatrix} \Delta q_t \\ b_t \end{bmatrix} + \begin{bmatrix} \eta_t^q \\ \eta_t^b \end{bmatrix}.$$

- In general, temporary shocks play a larger role in explaining variation in the current account, while permanent shocks play a larger role in explaining variation on the real exchange rate.
- Following Lee and Chinn (2006), we estimate a bivariate VAR with one key identification assumption: temporary shocks have no long-run effect on the real exchange rate
- Shocks are then identified by long-run restrictions (Blanchard and Quah 1989)
- Temporary shocks can be understood as monetary and permanent as productivity shocks
- We estimate a quarterly model for India with data from the IMF and the Reserve Bank of India.

As expected, temporary shocks effect the current account and permanent the exchange rate.

### Current account

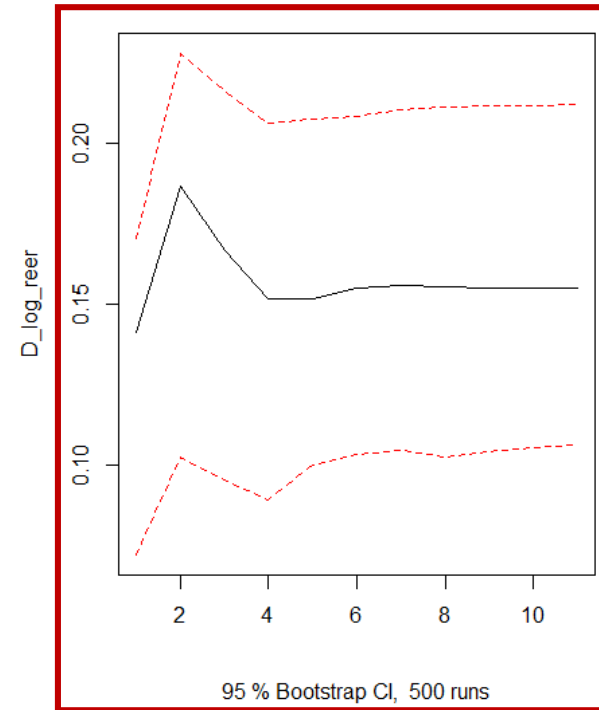
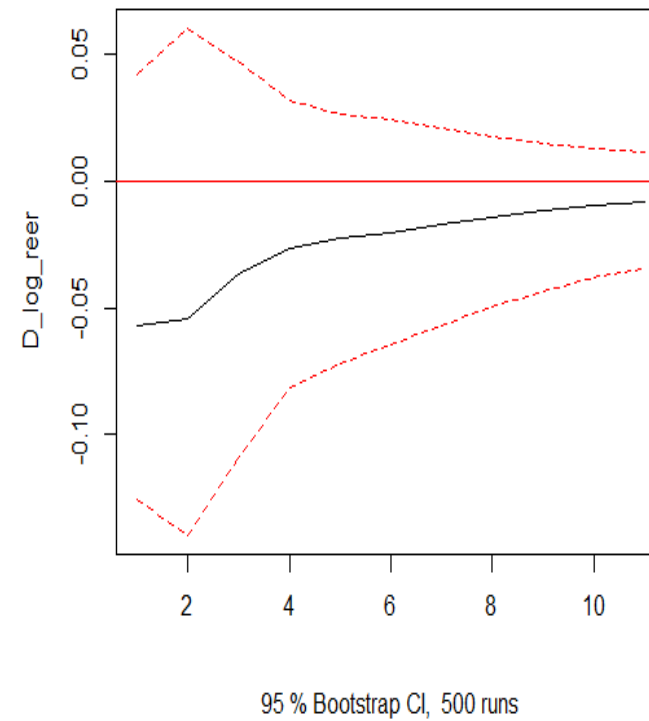
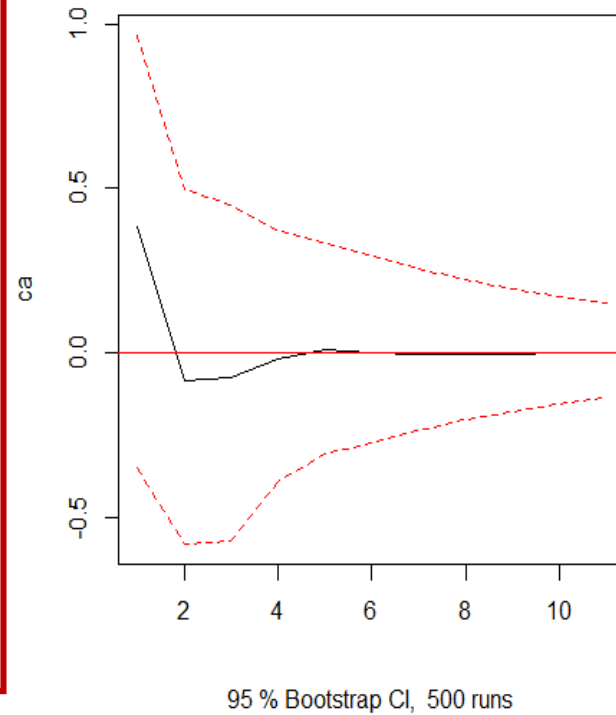
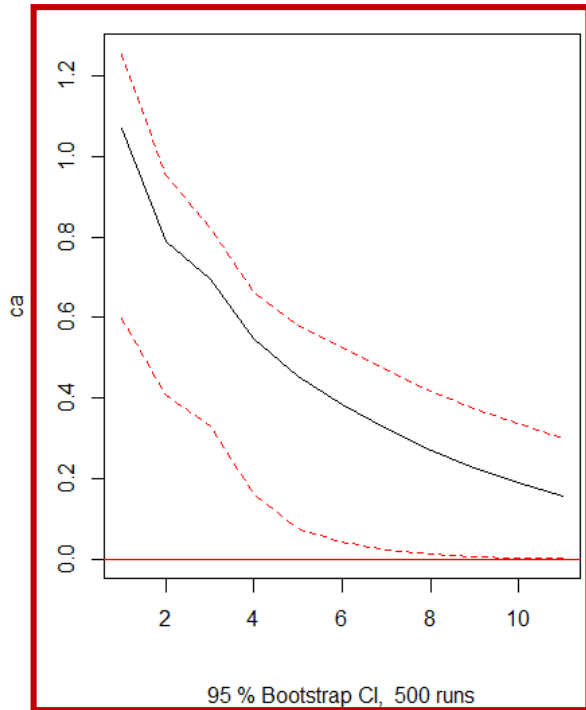
### Exchange rate

Temporary shock

Permanent shock

Temporary shock

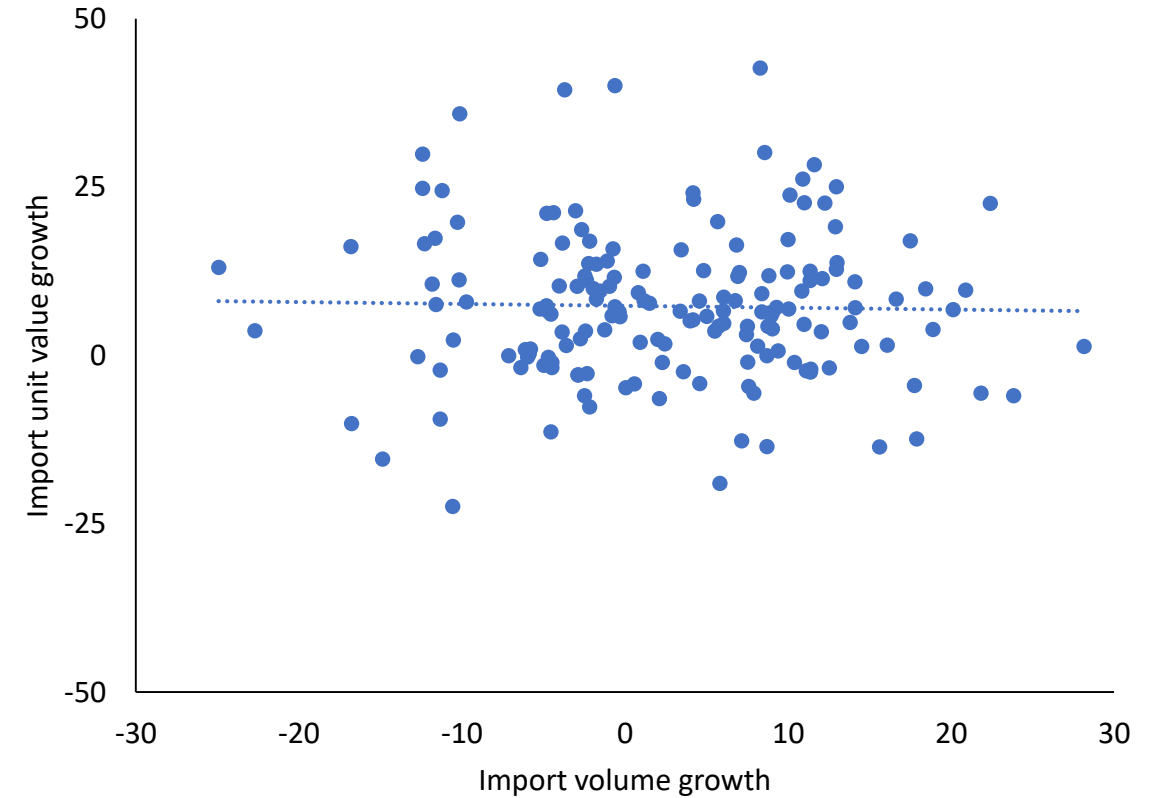
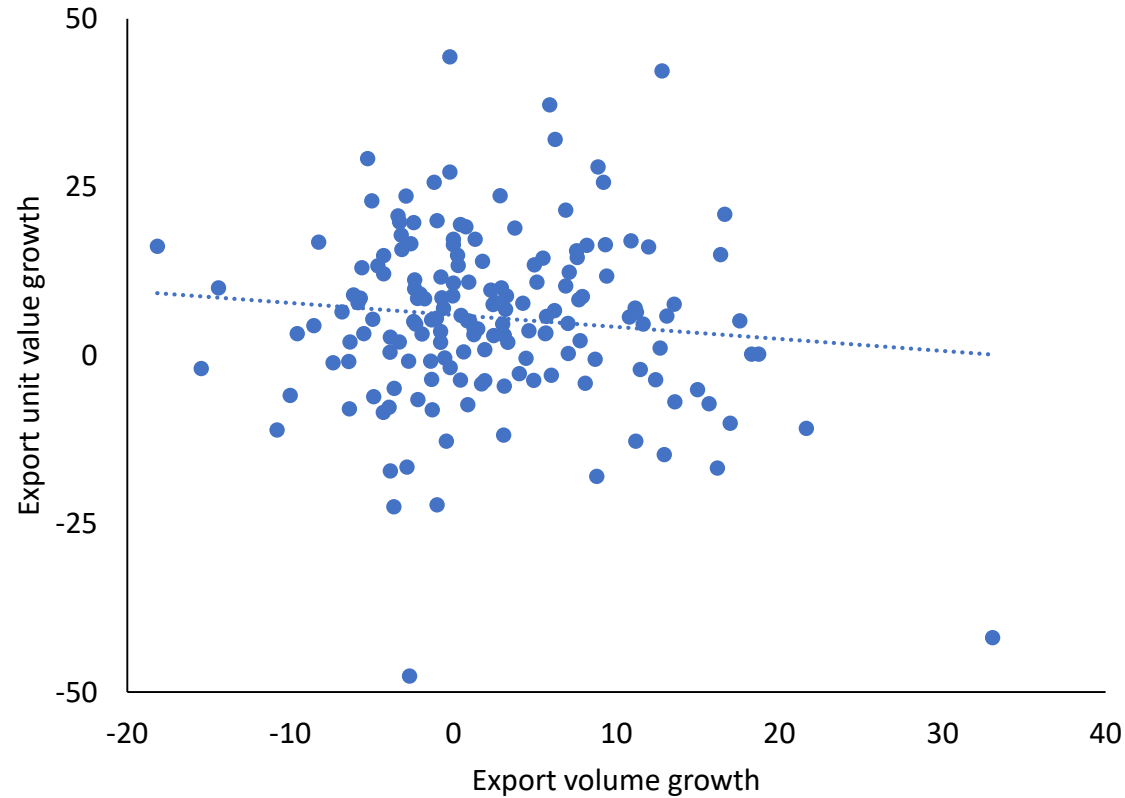
Permanent shock



**Note:** The model is estimated using quarterly data for India from 1990Q1 to 2017Q4 and is estimated with one lag.



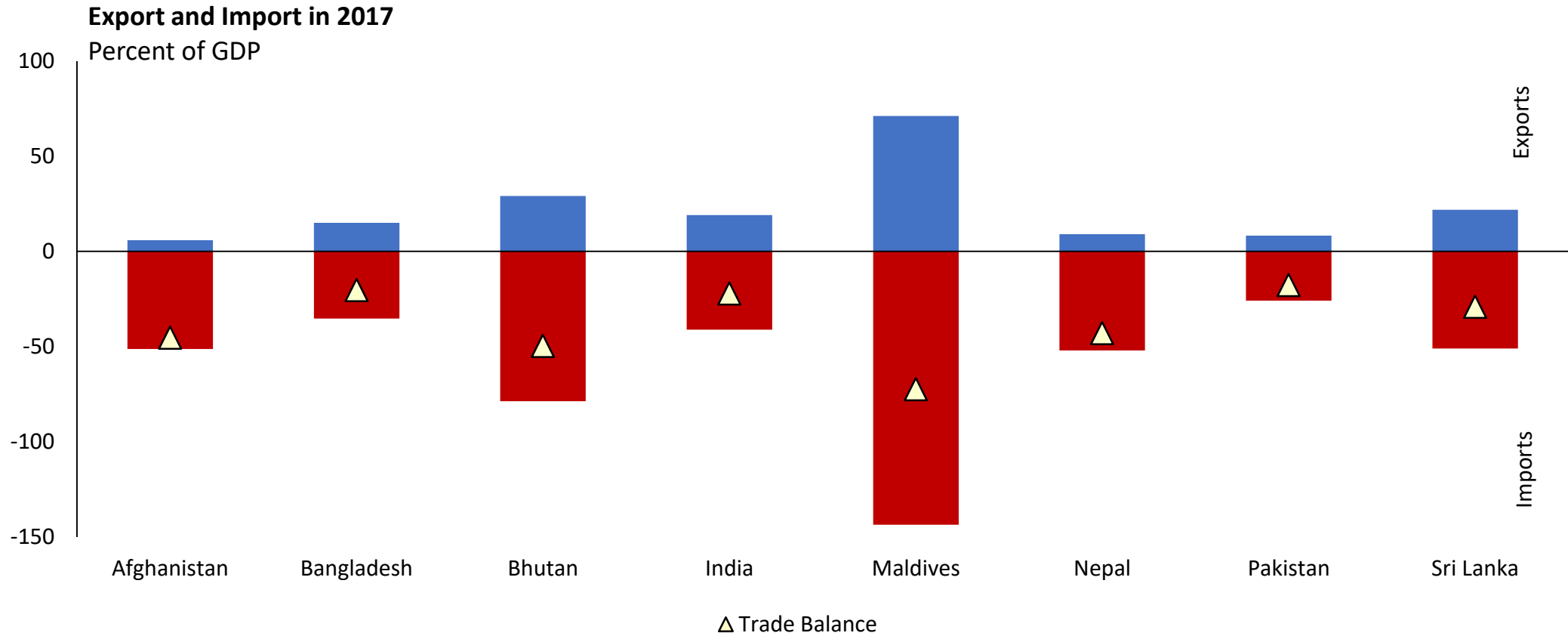
But the low price elasticities of imports and exports make adjustments through prices difficult...



**Note:** Data is for all South Asian countries from 1991 to 2017 or as long as available.

**Source:** WDI and staff calculations.

... and low exports make it even harder to reduce the trade deficit.



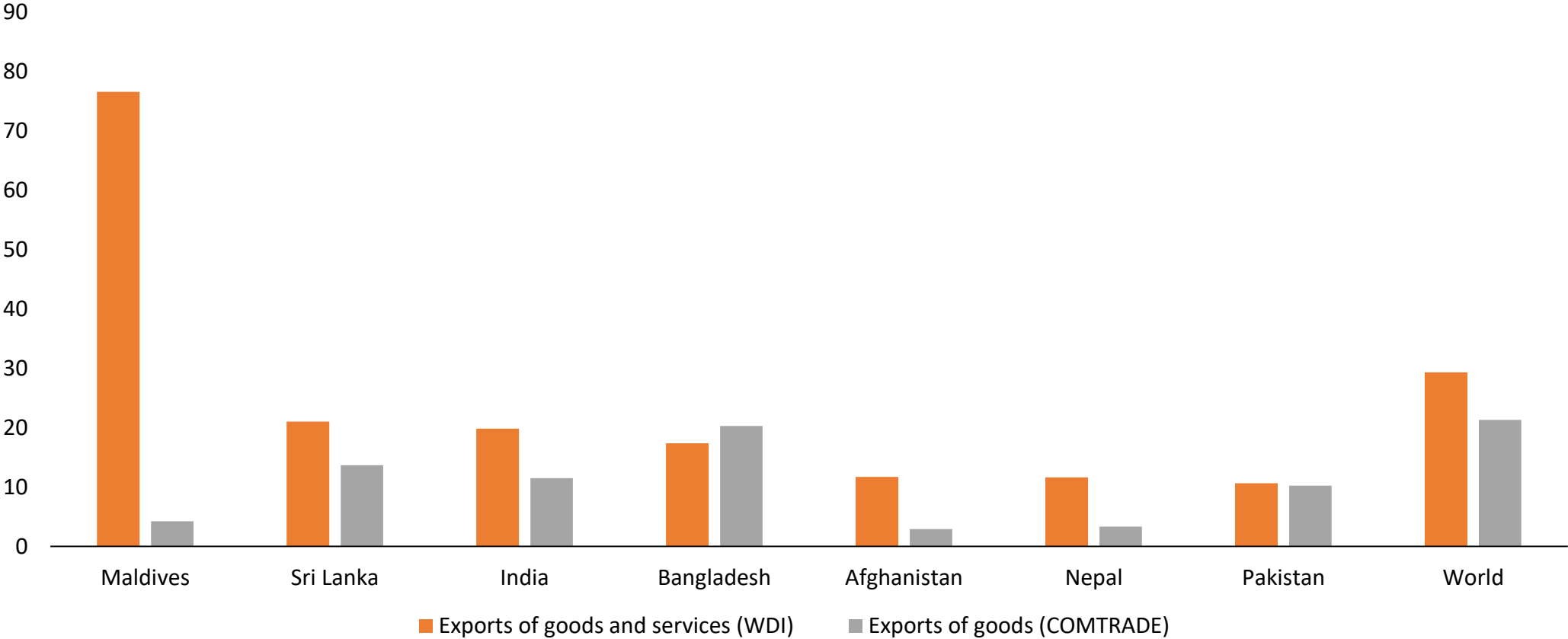
Source: WDI and staff calculations.

# **Export performance in South Asia**

Some South Asia countries export a lot of services, but goods exports seem low across South Asia.

**Exports of goods and services (WDI) vs. exports of goods (UN Comtrade)**

Percent of GDP



Sources: WDI and UN Comtrade.

Note: Data is for year 2015.

# How to measure goods export potential and import norm

- We estimate how trade between countries  $i$  and  $j$  depends on the distance between them, their economic and geographical size, cultural linkages, ...

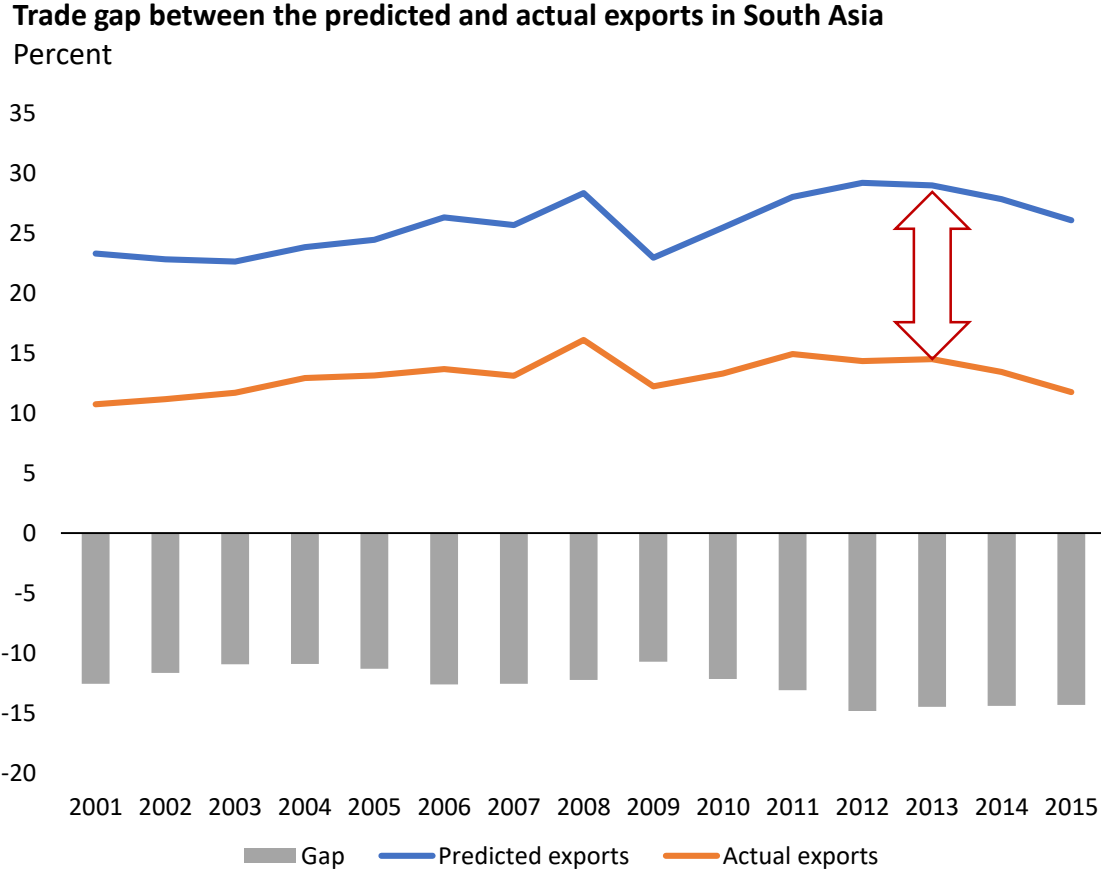
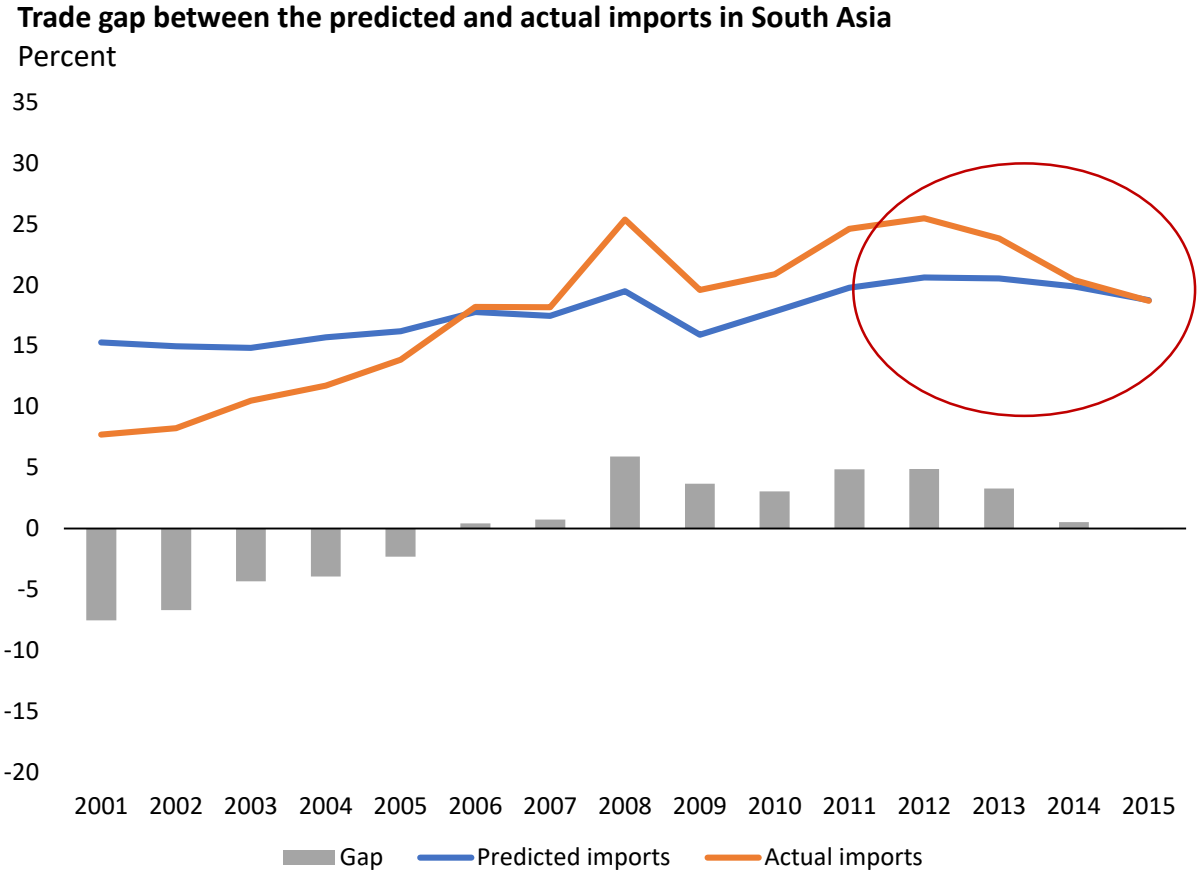
$$T_{ijt} = \alpha_0 + \alpha_1 \log(\text{dist}_{ij}) + \alpha_2 \log(\text{GDP}_{it}) + \alpha_3 \log(\text{GDP}_{jt}) + \alpha_4 \log(\text{Remoteness}_{it}) + \alpha_5 \log(\text{Remoteness}_{jt}) + \alpha_6 \text{area}_j + \alpha_7 \text{area}_i + \alpha_8 \text{CommonBorder}_{jt} + \alpha_9 \text{CommonLanguage}_{jt} + \alpha_{10} \text{ColHist}_{jt} + \alpha_{11} \text{CommonCur}_{jt} + \alpha_{12} \text{RTA}_{ijt} + \gamma_t$$

- We estimated this model for 196 countries from 1996 to 2015 building on World Bank (2018)
- We use the following data sources: bilateral import data from UN Comtrade, remoteness indices following Wei (1996), and all other variables from the CEPII gravity dataset (originally generated by Head, Mayer, and Ries 2010).

## Preferred specification

Distance	GDP		Common language	Common border	Common currency	Colony	RTA-WTO	Remoteness		Area	
	origin	destin.						origin	destin.	origin	destin.
-0.52***	0.76***	0.80***	0.12***	0.52***	0.12***	0.060**	0.40***	-5.47***	-2.78***	0.00	-0.11***

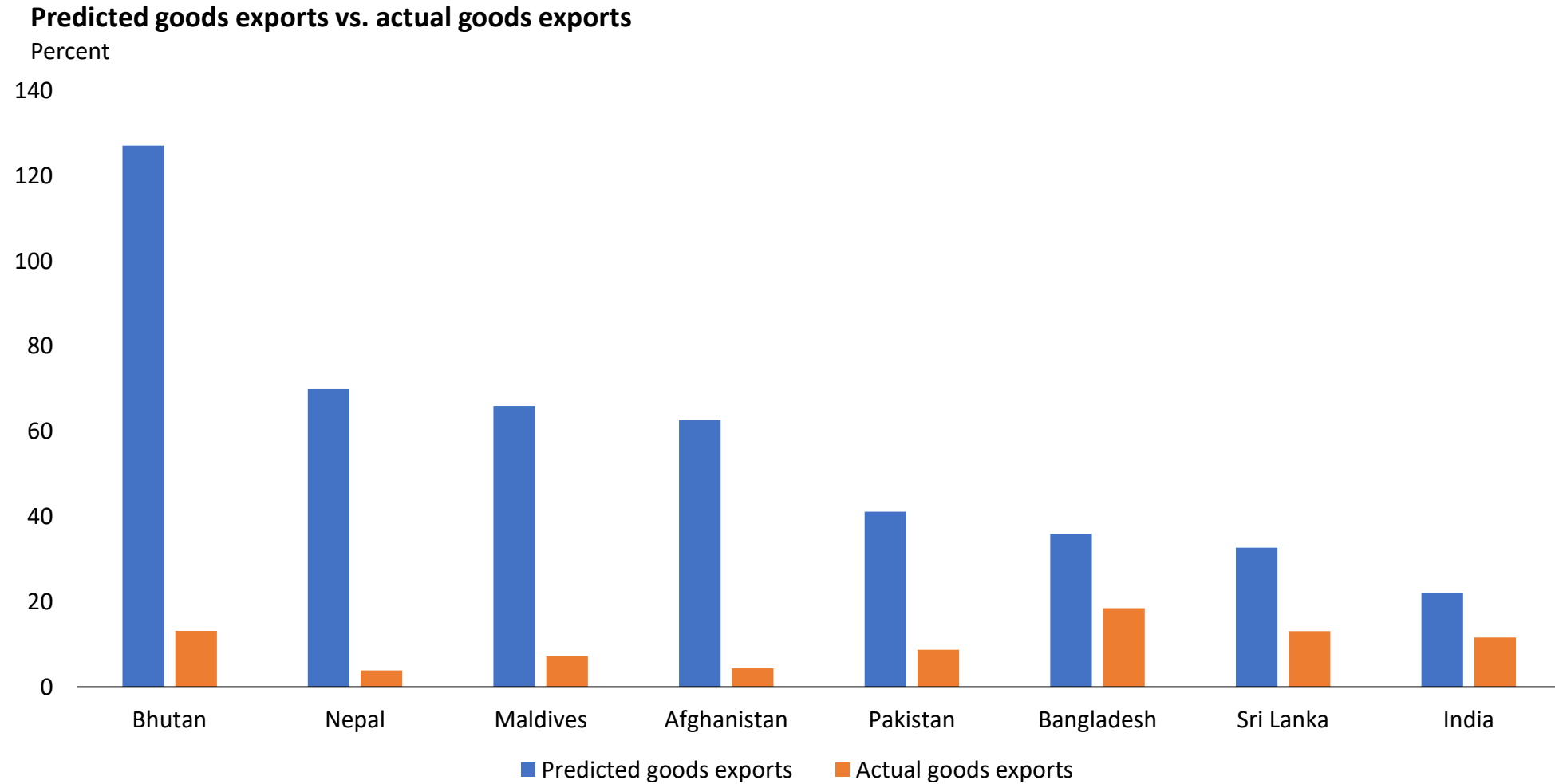
# South Asian countries import as much as others, but export much less than predicted.



**Note:** Predicted trade based on gravity regression (1) described before. Actual imports from UN Comtrade. Data to update gravity equation is missing is after 2015.

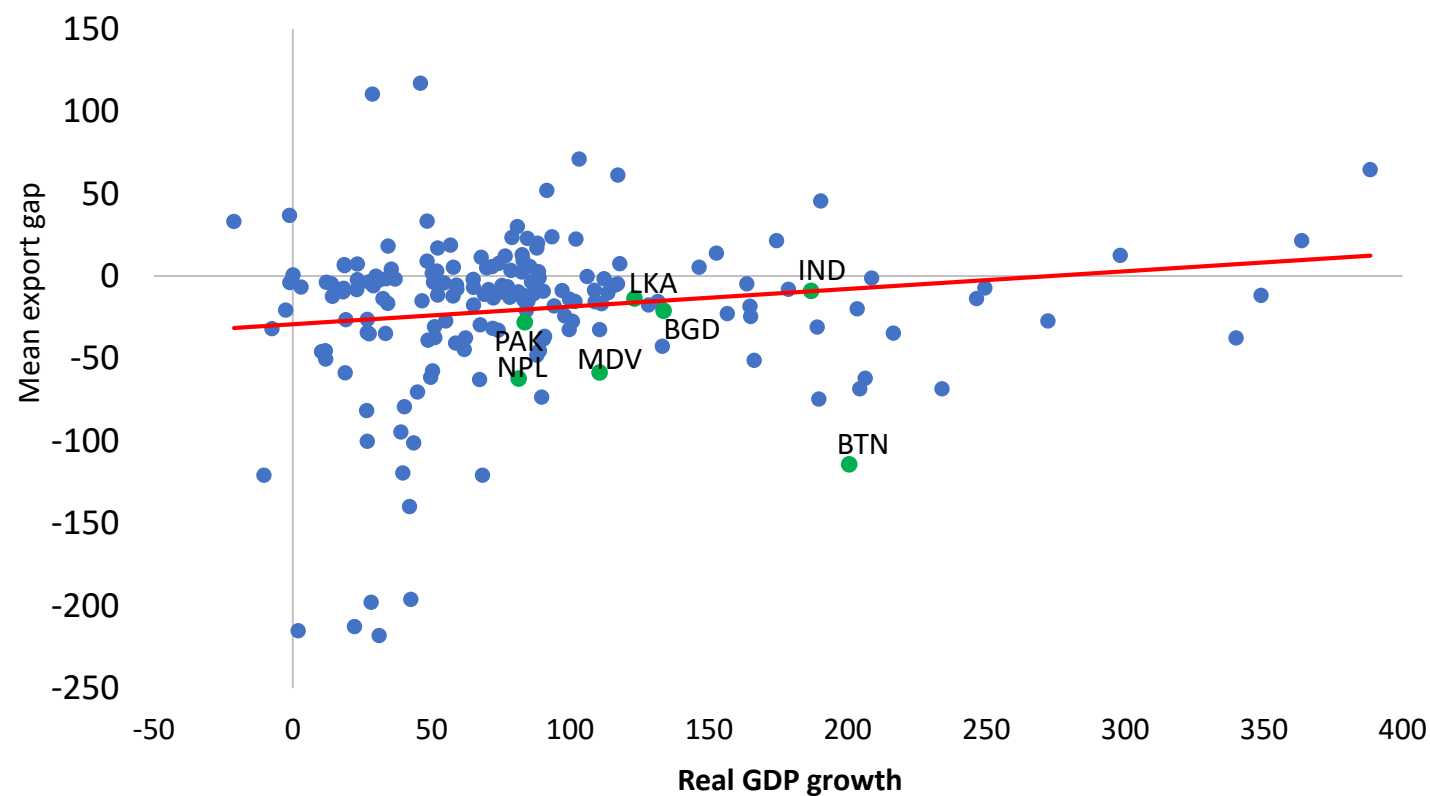
- South Asia is different from other countries not in terms of goods imports, but in terms of good exports!

Goods exports are below potential across South Asia - and especially so in the small countries.



**Note:** Predicted trade based on gravity regression (1) described before. Actual exports from UN Comtrade. Data is shown for 2015.

It matters: countries with larger export gaps grow slower.



**Note:** The export gap is the mean from 2000 to 2015; the real GDP growth from 2000 to 2015.

**Source:** WDI and gravity estimation presented above.

	<b>GDP growth 2000 to 2015</b>
<b>Exports minus potential</b>	<b>0.278**</b> <b>(0.107)</b>
Per capita GDP	-0.000650** (0.000310)
Regional Dummies	YES
Observations	178
R-squared	0.144

Standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

- Countries with larger export gaps have a harder time to adjust (weak shock absorption capacity)
- Countries with larger export gaps benefit less from technology transfer, FDI, ...



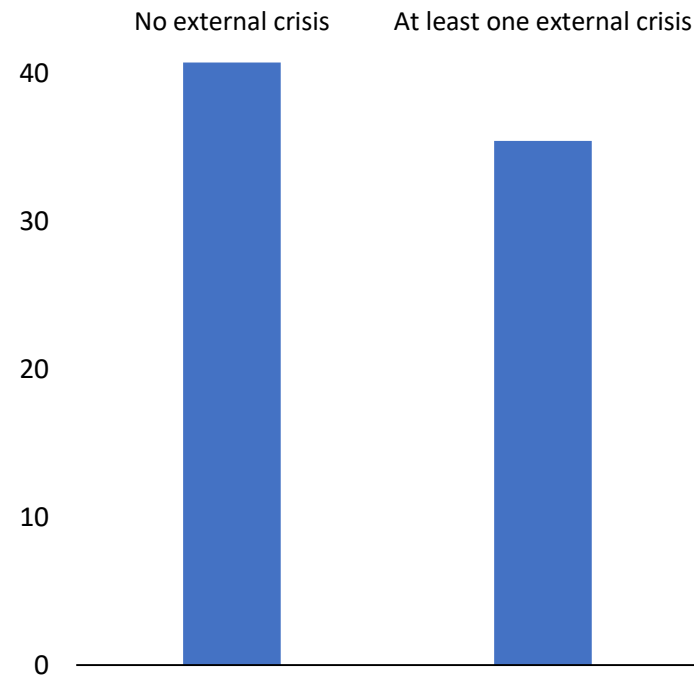
Countries that trade more are not more likely to face external crises – if anything, it’s the opposite.

- Our definition of a crisis follows the literature on EMP indicators (as described by Eichengreen 1997 and Herrera-Garcia 1999).
- We consider quarterly changes in exchange rates and foreign reserve position.
- All variables are standardized to have mean zero and unit variance

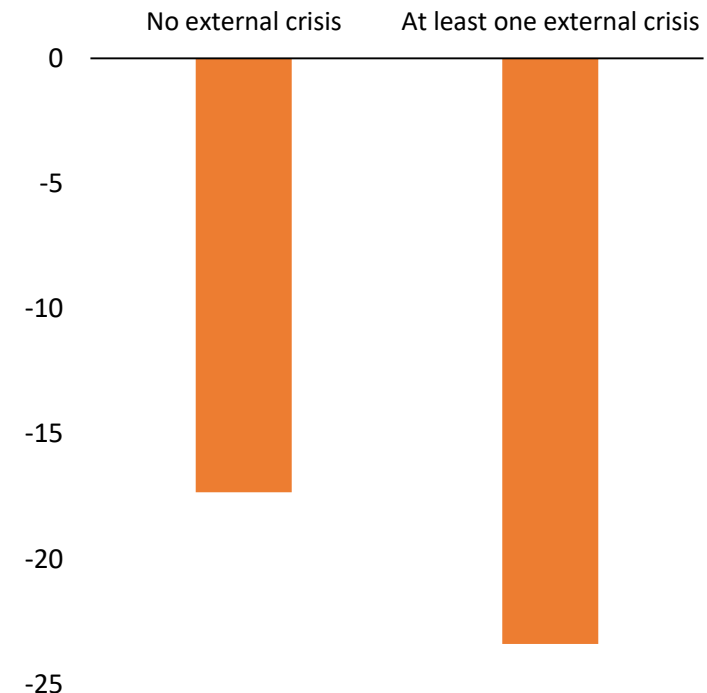
$$EMP_{it} \equiv \text{standardize}(\% \Delta e_{i,t}) - \text{standardize}(\% \Delta r_{it})$$

$$CRISIS = \begin{cases} 0 & \text{if } EMP < 1.5\sigma \\ 1 & \text{if } EMP \geq 1.5\sigma \end{cases}$$

**Mean exports from 2000 to 2015**  
Percent of GDP



**Mean export gap from 2000 to 2015**  
Percent of GDP



**Note:** The data shows the mean of all countries in EAP, ECA, LAC, MENA, SAR, and SSA. No external crisis countries did not experience a crisis between 2000 and 2015.

# Conclusions

# Conclusions

1. High growth, fast investment growth and fiscal stimulus result in increasing current account deficits in South Asia.
2. Heightened external risks call for prudent fiscal and monetary policy.
3. Countries in South Asia need to preserve adequate reserve coverage, as they rely on these to balance international payment obligations.
4. Relative price adjustments (i.e. changes of the exchange rate) seem to work, but seem costly in South Asia due the low price elasticity of trade and low exports.
5. South Asia's goods exports are below potential: more exports would increase growth prospects without harming external stability.
6. To stabilize the *BoP* and foster growth, countries should rely more on FDI and less on portfolio flows.