

# Growth and Reform in Peru Post-1990: A Success Story?

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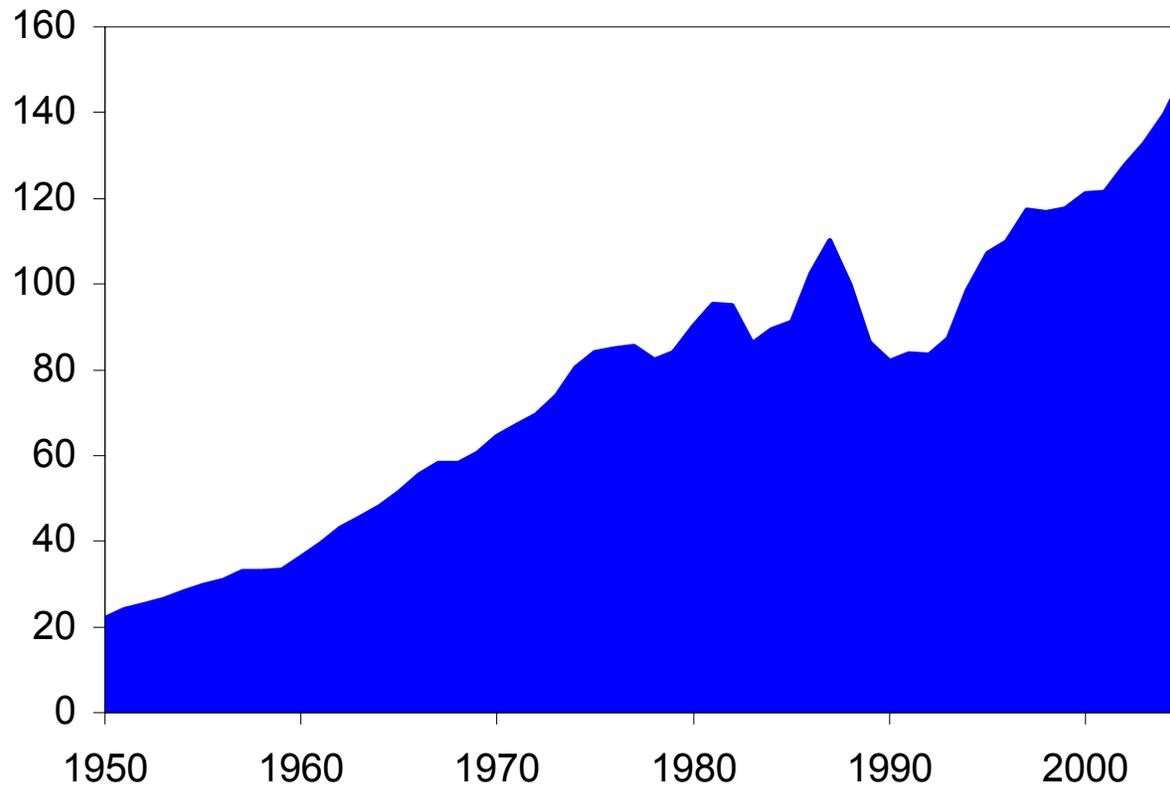
# Overview

- **Motivation**
- **General Approach**
- **Summary of Regression Results**
- **Conclusions:** What have we learned?  
What do we still need to know?

# Peru's historical growth performance has been very volatile...

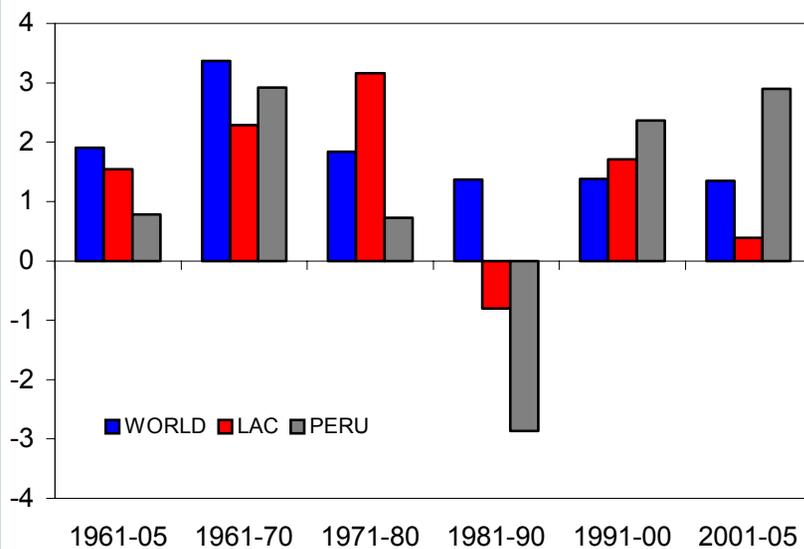
## Real GDP 1950-2005

(In billions of 1994 New Soles)

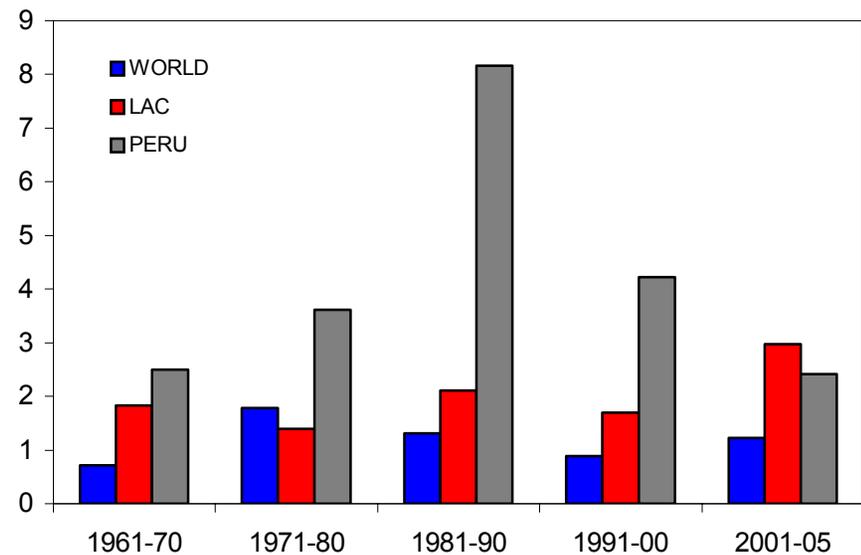


# ...but outperforming international comparators since 1990.

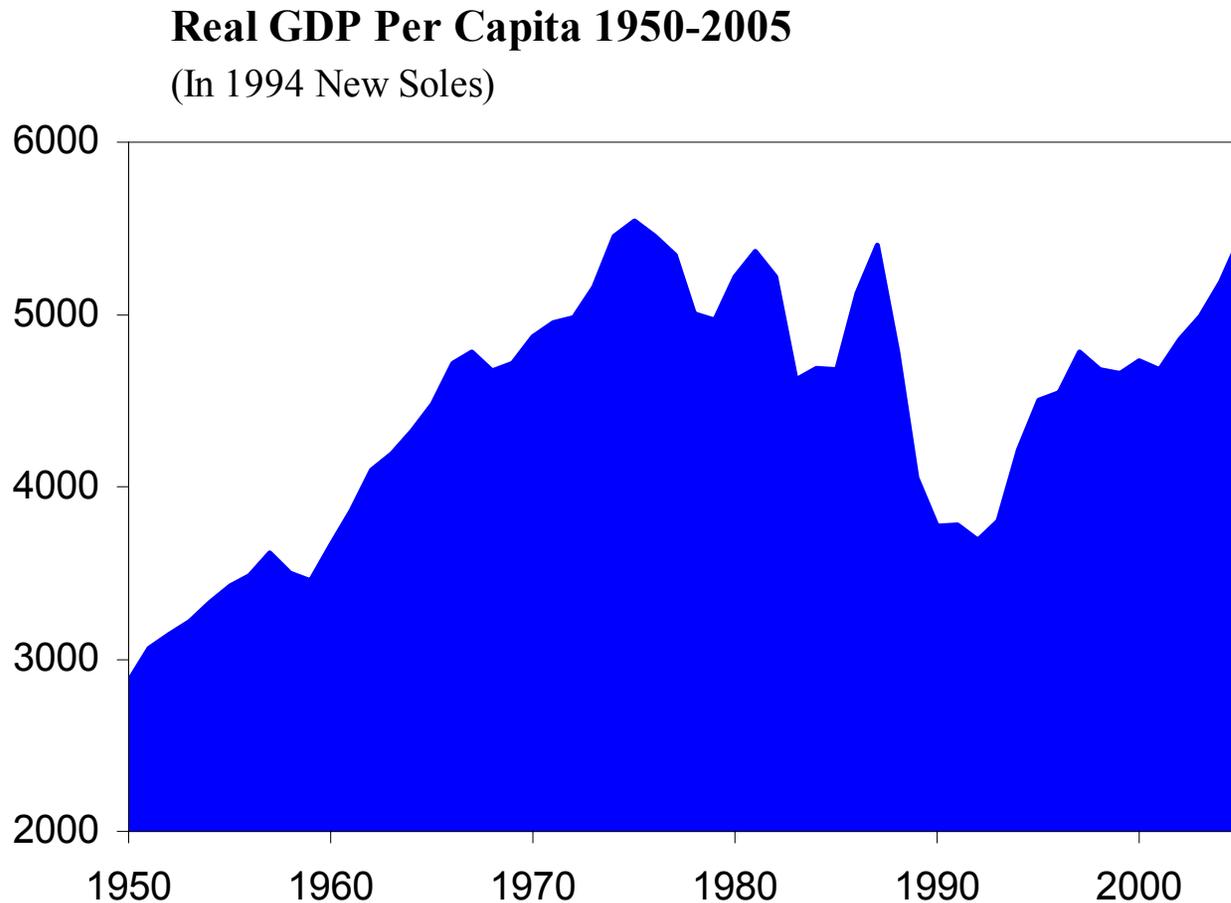
**Growth Rates of GDP per Capita 1961-2005**



**Volatility of GDP per Capita 1961-2005**

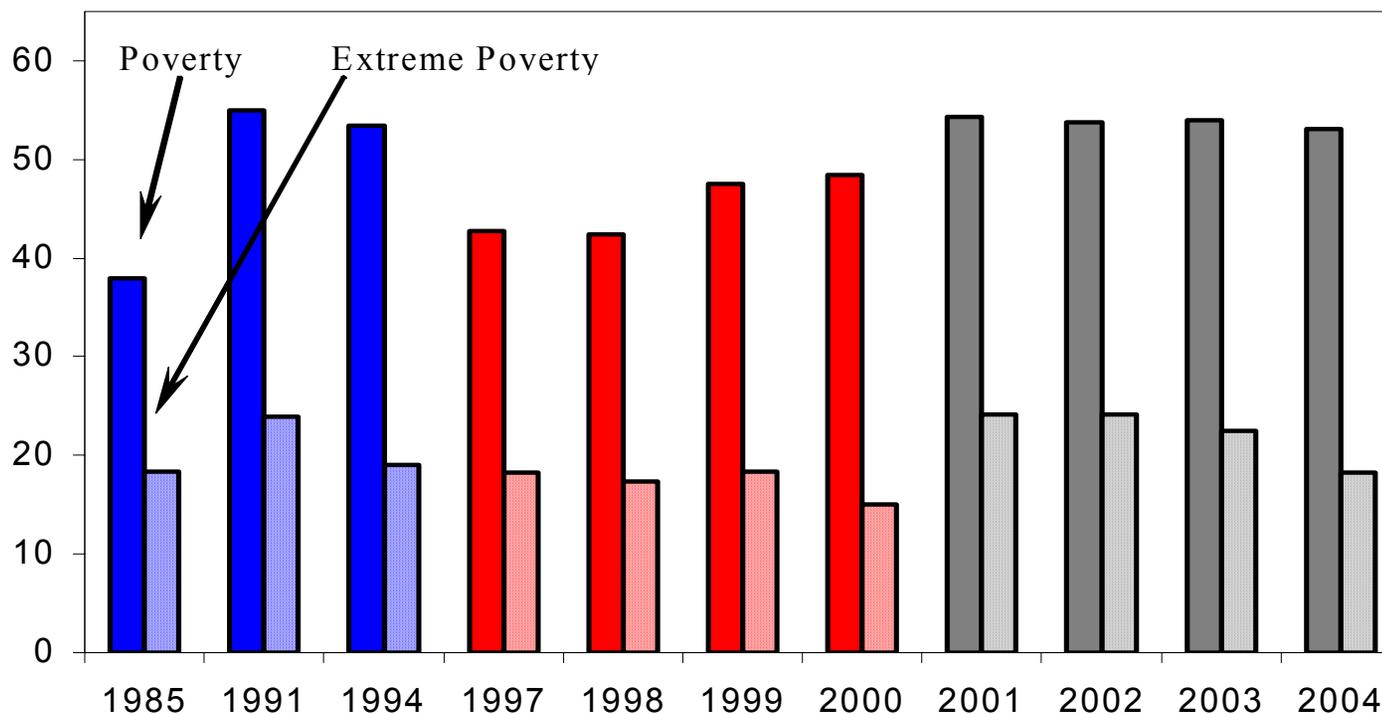


Nonetheless, per capita GDP is only just back to its 1970s levels...



..and poverty rates have remained stubbornly high...

**Peru: Poverty Trends 1985-2004 (fourth quarter)**



Sources: Instituto Cuanto (1985-1994); World Bank(2005) and INEI (1997-2004).

...fuelling discontent with liberal policies and public institutions.



To inform the design of policies going forward, we need to understand:

- To what extent did structural reforms contribute to Peru's growth performance post-1990?
- Did lack of complementary reforms perhaps reduce the positive contribution of reforms?
- Or were other factors actually more important?

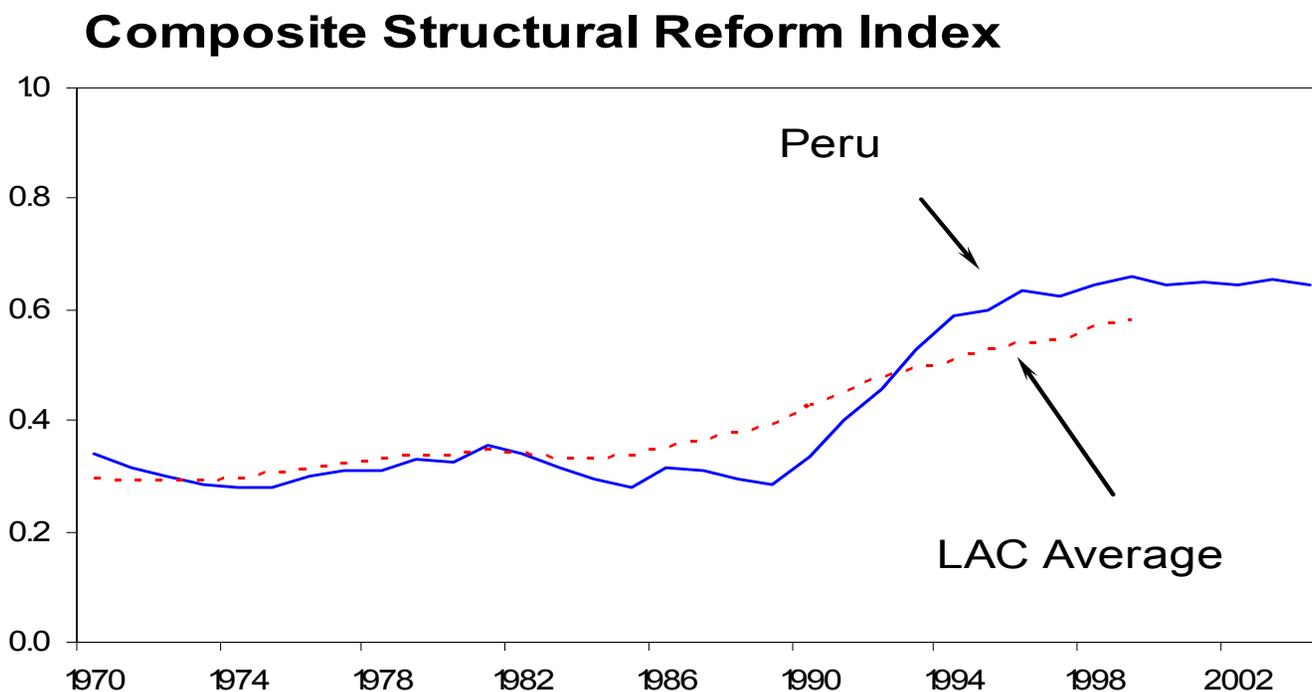
# General Approach

- Calculate **structural reform index (SRI)** on the basis of existing indices to capture policies, not outcomes.
- Estimate the **impact of the SRI on per capita growth**, including a set of control variables.
- Include interaction terms of the SRI with **proxies for complementary reform areas**, that may have affected the impact of liberalization on growth.

# Structural Reform Index (SRI)

- SRI based on indexes calculated by **Lora (2001)**, extended until 2004 for Peru, and **Morley, Machado and Pettinato (1999)**.
- The Lora index is a composite index that includes **five sub-categories** for trade liberalization, financial sector reform, the tax regime, privatization, and labor market reform.

# SRI Peru 1970-2004



- Spurt in the 1990s mainly driven by trade liberalization, financial sector reform and privatization.

# Time-Series Analysis for Peru

- We estimate the basic model of per capita GDP growth ( $g$ ) for 1970-2004

$$g = \alpha + \beta_1 glac + \beta_2 inf + \beta_3 cl + \beta_4 edu + \beta_5 infra + \beta_6 sri + \beta_7 sri * CR$$

where ***glac*** is average Latin American per capita GDP growth, ***inf*** is inflation, and ***cl***, ***edu*** and ***infra*** are proxies for civil liberties, education and infrastructure, respectively.

# Summary of Results

- **Structural reforms, macroeconomic stabilization** and the **external environment** – as captured by their proxies – are estimated to have had a positive impact on per capita growth in Peru.
- **Civil liberties, education** and **infrastructure** proxies are not significant.
- Only changes in **civil liberties** appear to have affected the impact of the SRI.
- But **obvious methodological shortcomings**.

# Dynamic Panel Analysis

- We estimate a more robust **dynamic panel for 17 LAC countries over 1971-1999**, following the basic approaches of Loayza, Fajnzylber and Calderon (2005) and Chang, Kaltani and Loayza (2005).
- **Main differences:**
  - Include SRI as proxy for structural reforms, along with usual control variables.
  - Interact SRI with complementary reform areas (education, infrastructure, civil liberties).
  - Include dummies to test for Peru-specific differences in slope or significance.

# Summary of Results

- **SRI** significant and positive.
- Most **control variables** (initial pc GDP, initial output gap, tot, inflation, infrastructure, period dummies) are also significant and have the expected signs, except for education.
- **Peru-specific dummies** show only significantly stronger cyclical reversion -> coefficient on SRI holds for Peru.
- Improvements in **education** and **civil liberties** are found to boost the contribution of the SRI.

# Growth Contributions Peru

## Estimated Growth Contributions (GMM)

	1990s vs. 1980s	2000s vs. 1990s
Initial GDP Per Capita	0.9	-0.6
Initial Output Gap	1.9	0.0
Change in the Terms of Trade	0.3	0.3
Inflation	1.4	1.0
Education	0.0	0.0
Public Infrastructure	1.8	1.0
<b>SRI</b>	<b>2.1</b>	<b>0.5</b>
Period Dummies	-0.1	-2.3
Cumulative Contributions	8.2	-0.1
<u>Actual Change in Average Per Capita GDP Growth</u>	<u>6.1</u>	<u>-0.4</u>

## Conclusions: What have we learned?

- Need to interpret results with **caution**.
- Results are suggestive that **reforms** – as captured by the SRI – explain part of Peru's strong performance after 1990, and indeed growth in Latin America as a whole.
- Despite obvious caveats, could infer that **income levels may be boosted** by further reforms and improvements in the quality of education and basic infrastructure, while maintaining macroeconomic stability.

- Key **structural weaknesses** that remain to be addressed in Peru include labor market rigidities, regulatory uncertainty, and lack of financial depth.

## What do we still need to know?

- Apart from understanding how to boost and sustain growth rates, it will be key to understand better how we can strengthen the **tenuous link between growth and poverty reduction.**