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...
...but outperforming international comparators since 1990.
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)

...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)


- 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.
Spurt in the 1990s mainly driven by trade liberalization, financial sector reform and privatization.
We estimate the basic model of per capita GDP growth \((g)\) for 1970-2004

\[
g = \alpha + \beta_1 \text{glac} + \beta_2 \text{inf} + \beta_3 \text{cl} + \beta_4 \text{edu} + \beta_5 \text{infra} + \beta_6 \text{sri} + \beta_7 \text{sri}*\text{CR} \]

where \text{glac} is average Latin American per capita GDP growth, \text{inf} is inflation, and \(\text{cl}, \text{edu}\) and \text{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)

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