Productivity Adjustment in ICP

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Background = Government salaries are input, not output prices

ICP 2011 approach = Adjustment based on economy-wide levels of capital/worker

ICP 2017 approach = Same method, updated data from Penn World Table (PWT)

Impact and implications = Small revisions of ICP 2011 due to updated data

TAG asks = n.a.
Background
The basic setup

- Salaries of public-sector workers used for public education, health and general government
- Adjust for differences in productivity due to economy-wide differences in the level of capital per worker
ICP 2011 Approach
Basic method

Key ingredients: capital stock/worker $k_i$ and their estimated contribution to labour productivity $\alpha_i$

\[ P_i = \frac{1}{2} (\alpha_i + \bar{\alpha}) \log \left( \frac{k_i}{k} \right) \]

\[ F_{i,b} = (e^{P_i-P_b})^{-1} \]

\[ \overline{PPP}_{i,b} = PPP_{i,b} \times F_{i,b} \]
Implementation

Economy-wide data from PWT on:

- Net capital stock at current-costs by asset
- Total employment
- Share of labor income in GDP, $\alpha_i = 1 - \text{Labor share}$

Basic-heading level PPPs for GFCF, matched to PWT assets
ICP 2017 Approach
Update of basic data

- Method remains unchanged, no adjustment for natural resource income
- Previously: PWT 8.1, updated to PWT 9.1 with data until 2017
  - Relies to a greater extent on NA source material on the asset composition of investment
Impact and Implications
Some big revisions, on average lower

Productivity adjustment factors, USA=1
# Impact on GDP PLI

<table>
<thead>
<tr>
<th>PLI (revised) / PLI (original)</th>
<th>Average</th>
<th>Standard deviation</th>
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<tbody>
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<td>Eurostat-OECD</td>
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Impact on GDP PLI

Revision PLI\{revised\}/PLI\{original\}

\[
\log \text{ of GDP PLI (USA=1)}
\]

-1.5  -1   -0.5  0    0.5

8   9   1   1.1  1.2
THANK YOU