Purchasing Power Parity and Education Productivity
Framing Education Productivity

- Education production is exchange between teacher and pupil
- Education is a non-market service
- Private and public education components
- Open system
- Long term productivity return
Issues

- Volume and price measurement problems
- Input-price approach
- Using expenditures to represent prices
- Ratio of inputs to outputs not the same across countries
- ICP 2005 – high price variation and differences between nominal and real prices
Suggestions

• Volume/Quantity
  • # of pupil hours
  • # of pupil years
  • # of days of learning

• Price/Quality
  • PISA quality adjustment
  • School Inspections
  • Pupil/teacher ratio
  • Incremental earnings
  • Drop out rate
  • College enrollment
Measurement Considerations

- # of pupil hours/year
- Must calculate
- Data collection issues
- Level of stratification
- Average years of education
- Drop-out and repetition
Price/Quality Considerations

- Earnings output currently not viable
- Yield - Drop-out/Repetition
- PISA selected due to high level of coverage and greatest content diversity
- Still only covers less than 40% of ICP countries
## International Assessment Coverage Examples

<table>
<thead>
<tr>
<th>Country</th>
<th>ICP</th>
<th>PIRLS</th>
<th>PISA</th>
<th>TIMSS</th>
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PISA Replacement Options

- Other Assessments (less coverage)
- Impute PISA using other tests
- Estimate PISA using quality inputs
- Use another international testing system (distribution issues)
- Use national examinations and quality indicators
Education Productivity

- Productivity = f (quantity, quality)
- Quantity = # of pupils (enrollment)*repetition/dropout*# hours of school/pupil*days open/year
- Proxy for quality = Assessment
- Assessment = SES, system structures, yield (drop-outs), quality variables (time on task)
• Literature suggests move toward output approach
• Convergence of suggestions for measurement refinements
• Volume and Price refinements need piloting
• Imputation requires rigorous testing
• Piloting will provide feedback