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

Country	ICP	PIRLS	PISA	TIMSS
Austria	X	X	X	X
Argentina	X		X	
Sri Lanka	X			

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)

Insights

- 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