Comments on Dr. Quintini’s paper, “The Skills Proficiency of Workers and How Skills are Used in the Workplace”

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The Survey of Adult Skills (PIAAC)

- A remarkable accomplishment
- Analyses provide rich snapshots of skill distributions of adults
- Path-breaking attempt to measure the extent to which workers in different countries use particular skills in their jobs
- Website explains well the methodology used to measure different types of skills and their use
Dr. Quintini’s Assignment

- Use the responses from the Survey of Adult Skills to shed light on:
  - The skills proficiencies of adults in 22 countries
  - The extent to which workers in different countries use particular skills in their jobs
  - The degree of mismatch between skill proficiencies and skill uses in different countries
Challenge 1 Dr. Quintini Faced

1. Cross-sectional surveys do not provide a basis for defensible causal inferences
   a. Example: The labor market “payoff” to computer skills used on the job
      i. Krueger (1993)
   b. Implications for choice of verbs in describing and interpreting analytic results
Challenge 2

2. Survey was administered in 2011-12
   a. Many countries had not recovered from financial crisis and deep recession
   b. Recession increased time young labor force entrants took to find jobs that used their skills
   c. Patterns may have been very different if survey administered during period of high labor market demand
Challenge 3

3. Technological change has altered tasks done in many occupations and requisite skills

Occupational Outlook Handbook for 1976:
Secretaries relieve their employers of routine duties so they can work on more important matters.
Challenge 3

Occupational Outlook Handbook for 1976:
Secretaries relieve their employers of routine duties so they can work on more important matters.

Occupational Outlook Handbook for 2000:
Office automation and organizational restructuring have led secretaries to assume a wide range of new responsibilities once reserved for managerial and professional staff. Many secretaries now provide training and orientation to new staff, conduct research on the Internet, and learn to operate new office technologies.

Impact may be greatest for new labor market entrants.
4. How to measure skills used in particular jobs is controversial.
   
a. Is frequency of use an adequate metric?
   
b. Ethnographers argue one must observe workers for a lengthy period of time.
   
c. Respondents may not recognize the skills they use on the job (Brazilian street children).
   
d. Implication: examine sensitivity of skill use measures to alternative methodologies.
A Sample of Important Patterns

• Correlations between skill proficiencies and labor market outcomes vary substantially among countries.

• Mismatches between skills and use of skills on the job are greatest for young adults and vary widely across countries.

• Countries in which the gender gap in use of skills at work is high tend to be countries in which the gender gap in wages is high.
A Sample of Puzzles

- Why were scores for problem-solving in technology rich environments missing for 24% of respondents in Korea?
- The variance in earnings in the U.S. for adults with level 4 or 5 literacy levels is larger than in any other country.
Why Do Skill Distributions Vary Among Countries?

- Many possible explanations.
- Implication:
  “improvements in the teaching of literacy and numeracy in schools . . . may provide considerable economic returns to individuals and society as a whole.”

Why is it difficult to improve skills in some countries?
Figure 1B: Country Inequality – PISA 2000

Source: Freeman, Machin and Viarengo (2011)
Children’s family income over time

Note: Chart shows 20th, 80th and 95th percentiles of the distribution of family incomes for all children age 5-17. They based on data from the U.S. Bureau of the Census and are adjusted for inflation. Amounts are in 2012$. 

<table>
<thead>
<tr>
<th>Year</th>
<th>Bottom 20%</th>
<th>Top 20%</th>
<th>Top 5%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1970</td>
<td>37.7</td>
<td>100.8</td>
<td>152.8</td>
</tr>
<tr>
<td>1990</td>
<td>30.0</td>
<td>113.5</td>
<td>180.6</td>
</tr>
<tr>
<td>2010</td>
<td>26.9</td>
<td>125.4</td>
<td>223.1</td>
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</tbody>
</table>
Family enrichment expenditures on children

Duncan and Murnane's calculations based on data from the Consumer Expenditure Surveys. Amounts are in 2012$. 

<table>
<thead>
<tr>
<th>Year</th>
<th>Poorest 20% of families</th>
<th>Richest 20% of families</th>
</tr>
</thead>
<tbody>
<tr>
<td>1972-3</td>
<td>$883</td>
<td>$3,740</td>
</tr>
<tr>
<td>2005-6</td>
<td>$1,391</td>
<td>$9,384</td>
</tr>
</tbody>
</table>

Annual expenditures

Poorest 20% of families

Richest 20% of families
Income-based gaps in reading achievement in SAT-type units

Reardon (2011)
College graduation rates for low and high income children

Source: Bailey and Dynarski (2011). Low and high incomes are defined as the bottom and top 25% of the parent income distribution. Dates indicate the calendar years in which the subjects turned age 14.

Percent completing college

<table>
<thead>
<tr>
<th>Year</th>
<th>Low income</th>
<th>High income</th>
</tr>
</thead>
<tbody>
<tr>
<td>1975-78</td>
<td>36.0</td>
<td></td>
</tr>
<tr>
<td>1993-96</td>
<td>9.0</td>
<td>54.0</td>
</tr>
</tbody>
</table>
Concluding Comments

1. Dr. Quintini’s paper documents striking patterns, which raise many questions about differences among countries in labor market institutions and rules, educational systems, and social safety nets.

2. Value of assessing sensitivity of skill use measures to methodology.

3. Value of Administering the Survey of Adult Skills on a regular basis to assess within countries:
   - Changes over time in skill use of young adults.
   - Changes over time in the relationship between family background and skills.

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Thank you for your attention

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