The Future of Work: Challenges and Opportunities for Middle Income Countries

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Outline

• Introduction
  • Future of Work: Concepts
  • Hopes and Fears
  • Projections

• Policy Consequences
  • Social and Labour Market Policy
  • Education
  • Government Employment and Taxation

• Conclusions
Introduction
Ongoing Research

• My previous work on social security and labour reforms in middle income countries

• Now focus on technological change: Interviews in Indonesia, now Malaysia

• Comparison between the two countries is fascinating. (for instance, the size of the formal sector is much bigger in Malaysia)
Role Inversion: you are my teachers

• Normal expectation for the audience: to learn something.
• But in this case, I think I will learn more from you than you from me.
A plethora of new terms

- Digitalisation
- Automation
- Internet of Things
- Big Data
- Robots
- Machine learning and AI
Bots and Robots = Human Labor?
The Future of Work

• Another key word is **Industry 4.0**, the differences in production technologies and how they will shape labour demand.

• Several dimensions, but my focus on **digitalisation** and **automation**

• Could mean
  
  • **reorganization** of work (e.g. platform economies such as Grab, AirBnB,...),
  
  • **redefinition** of work (e.g. what is formal employment?) and
  
  • **reshuffling** of labour force (more/ less, different).
Public Interest in the Topic?
A salient topic in high-income countries

Google Trends - Digitalization as a Topic
Recently also in Malaysia and Indonesia
## Scenarios

<table>
<thead>
<tr>
<th></th>
<th>Positive</th>
<th>Negative</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Number of Jobs</strong></td>
<td>More <em>creation</em> than destruction</td>
<td>Technological <em>unemployment</em></td>
</tr>
<tr>
<td><strong>Formal Sector</strong></td>
<td><em>Formalization</em> of Jobs</td>
<td>Larger <em>informal</em> sector</td>
</tr>
<tr>
<td><strong>Skills Profile</strong></td>
<td>More <em>demand</em> for (high, social, cognitive) skills</td>
<td><em>Hollowing-out</em> of medium skills (routine work), technosilos</td>
</tr>
<tr>
<td><strong>Productivity</strong></td>
<td>Pushes <em>whole</em> economy</td>
<td>Little growth, <em>unbalanced</em> growth</td>
</tr>
<tr>
<td><strong>Inequality</strong></td>
<td>Benefits even poor <em>(leapfrogging)</em></td>
<td>Increases income <em>inequality</em> <em>(winner-takes-it-all markets)</em></td>
</tr>
</tbody>
</table>
Potential Job Loss

Job automation potential by region and estimation approach

<table>
<thead>
<tr>
<th>Region</th>
<th>Occupation</th>
<th>Activities</th>
<th>Task</th>
</tr>
</thead>
<tbody>
<tr>
<td>Africa</td>
<td>71%</td>
<td>48%</td>
<td></td>
</tr>
<tr>
<td>Developing Asia</td>
<td>73%</td>
<td>51%</td>
<td></td>
</tr>
<tr>
<td>Developed countries</td>
<td>48%</td>
<td>48%</td>
<td>9%</td>
</tr>
<tr>
<td>EBRD countries</td>
<td>60%</td>
<td>50%</td>
<td>8%</td>
</tr>
<tr>
<td>Latin America and the Caribbean</td>
<td>67%</td>
<td>51%</td>
<td></td>
</tr>
</tbody>
</table>

Source: Dieu Cirhigiri Kizito et al. (2020) Report to the Aspen Institute on the future of work
A concrete example

• Indonesian motorway toll booths transitioned to an e-payment system
• Improves gov.t services
• Makes 20,000 employees redundant.
• How about Malaysia?

Potential Hollowing-Out

B. Workers with Less Than 4 Years of College

Source: Autor (2014) Polanyi’s Paradox and the Shape of Employment Growth
### Table 2-2: Unemployment Rates by Level and Stream of Education

<table>
<thead>
<tr>
<th>No</th>
<th>Educational attainment</th>
<th>2010</th>
<th></th>
<th>2017</th>
<th></th>
<th>2018</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Feb</td>
<td>Aug</td>
<td>Feb</td>
<td>Aug</td>
<td>Feb</td>
<td>Aug</td>
</tr>
<tr>
<td>1</td>
<td>No schooling</td>
<td>1.02</td>
<td>2.95</td>
<td>2.46</td>
<td>1.25</td>
<td>2.21</td>
<td>1.63</td>
</tr>
<tr>
<td>2</td>
<td>Not completed primary school</td>
<td>2.92</td>
<td>3.23</td>
<td>3.22</td>
<td>2.42</td>
<td>3.06</td>
<td>2.47</td>
</tr>
<tr>
<td>3</td>
<td>Primary School</td>
<td>4.63</td>
<td>4.29</td>
<td>4.02</td>
<td>3.09</td>
<td>3.98</td>
<td>2.82</td>
</tr>
<tr>
<td>4</td>
<td>Junior high school</td>
<td>7.55</td>
<td>7.45</td>
<td>7.14</td>
<td>6.22</td>
<td>5.36</td>
<td>5.54</td>
</tr>
<tr>
<td>5</td>
<td>General High School</td>
<td>11.90</td>
<td>11.90</td>
<td>8.17</td>
<td>10.32</td>
<td>7.03</td>
<td>8.29</td>
</tr>
<tr>
<td>6</td>
<td>Vocational School/SMK</td>
<td>13.81</td>
<td>11.87</td>
<td>9.05</td>
<td>12.65</td>
<td>9.27</td>
<td>11.41</td>
</tr>
<tr>
<td>7</td>
<td>Academy / Diploma</td>
<td>15.71</td>
<td>12.78</td>
<td>7.49</td>
<td>7.54</td>
<td>6.35</td>
<td>6.88</td>
</tr>
<tr>
<td>8</td>
<td>University</td>
<td>14.24</td>
<td>11.92</td>
<td>5.34</td>
<td>6.40</td>
<td>4.98</td>
<td>5.18</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>7.41</strong></td>
<td><strong>7.14</strong></td>
<td><strong>5.81</strong></td>
<td><strong>6.18</strong></td>
<td><strong>5.33</strong></td>
<td><strong>5.50</strong></td>
</tr>
</tbody>
</table>

Source: Calculated based on BPS data

E.g. Malaysia

Higher labour force participation rates, lower informal sector than in Indonesia.

Might also mean that amount of automatable jobs is higher. Especially in routine tasks in manufacturing and services (McKinsey 2017).

But also that in the long run more jobs could be created than lost.

~50% of work time in Malaysia is spent on repetitive activities that are highly automatable.

<table>
<thead>
<tr>
<th>Automation potential by activity, %</th>
</tr>
</thead>
<tbody>
<tr>
<td>72</td>
</tr>
<tr>
<td>71</td>
</tr>
<tr>
<td>71</td>
</tr>
<tr>
<td>37</td>
</tr>
<tr>
<td>26</td>
</tr>
<tr>
<td>22</td>
</tr>
<tr>
<td>13</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Time spent in all Malaysian occupations 2018, %</th>
</tr>
</thead>
<tbody>
<tr>
<td>13</td>
</tr>
<tr>
<td>18</td>
</tr>
<tr>
<td>19</td>
</tr>
<tr>
<td>20</td>
</tr>
<tr>
<td>14</td>
</tr>
<tr>
<td>10</td>
</tr>
<tr>
<td>6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Example occupations with high level of those activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Payroll officers, transaction processors</td>
</tr>
<tr>
<td>Legal support workers, mortgage originators</td>
</tr>
<tr>
<td>Production workers, machine operators</td>
</tr>
<tr>
<td>Gardeners, construction laborers</td>
</tr>
<tr>
<td>Personal care workers, salespersons</td>
</tr>
<tr>
<td>Artists, scientists, CEO, project manager</td>
</tr>
</tbody>
</table>

Most susceptible activities to automation account for ~50% of total working hours in Malaysia

1. Managing and developing people.
2. Applying expertise to decision making, planning, and creative tasks.
3. Interfacing with stakeholders.
4. Performing physical activities and operating machinery in predictable environments.
5. Performing physical activities and operating machinery in unpredictable environments.

Note: Numbers may not sum due to rounding.

Source: ONET, BLS, Oxford Economics, IHS, EIU, McKinsey Global Institute analysis

McKinsey
Digitalisation = Growth?

**FIGURE 2:** Global wealth will be redistributed due to digitalization

- **Real GDP per capita ($)**
  - **Leapfrogging**
    - African developing economies
      - Countries poor in raw materials + highly indebted
  - **Asian emerging economies**
    - South Korea, Indonesia, Taiwan, Thailand
  - **Western industrial economies**
    - Technology frontrunners
    - Technology Laggards and ageing societies

Source: Own representation.

Some wider effects?

• Does TC cause the rise of populism?
Policy Consequences
Social & Labour Market Policies

• Depending on scenario a lot is at stake
• Do new jobs allow for more or less formalization?
  • If more, then integration into social insurance systems possible (e.g. e-payroll systems).
  • If less, then different types of social protection necessary (tax-financed, minimal assistance)
• Even Indonesian finance minister at IMF summit 2017 suggested a UBI (universal basic income scheme) might be necessary (Jakarta Post 2017).
Cont.d

• **Labor regulation**: Much depends on definition of work (what is formal, what labor standards apply etc.).
  - E.g. taxi drivers complain about **Grab’s** working standards & prices. This political contest plays out differently in different countries.
  - Difference between tax- and contribution-financed social security
  - But size of platform economy still relatively small.

• In the past technological shocks created demand for insurance, e.g. **unemployment insurance**.
  - Where does recent push in Malaysia (2018) and Indonesia (currently discussed) come from?
Education

• Education systems need to adapt, especially on medium skill level.

• Increasing focus on general rather than firm-specific skill.

• More **blended forms** of learning between social aspects, general skills and technical skills.

• Also: new tools for instruction! (apps, 3D learning, long-distance)
Vocational Training

- **Vocational Training** systems in the past reactive
  - Defining occupations, jobs and tasks to bind workers/employees and firms together
  - Technological change one reason for frequent mismatch between supply and demand for TVET.

- Now, they need to be open and more **forward looking** (redefining occupations regularly).
  - E.g. a secretary nowadays has to do less routine work (scheduling, typing), but to provide more content compatible with different softwares. Should these occupations be part of TVET? (Upskilling problem)
  - Both countries overhaul their TVET systems, but differently and without trade unions.
Government and Taxation

- TC makes gov't more **productive** (e.g. robot lawyers)
- What does this mean for government **employment**? (income or substitution effect?)
- What does it mean for **qualification** of civil servants? (more IT knowledge)
- What does it mean for **recruitment**? (automated?)
- And what for public service **delivery**? (more equitable delivery or tech gap?)
Can AI Be a Fair Judge in Court? Estonia Thinks So

Estonia plans to use an artificial intelligence program to decide some small-claims cases, part of a push to make government services smarter.
Tax Revenue Collection

• **E-business** could make taxation easier (e.g. French ordering Airbnb to pay digital taxes)

• But technological change also means **tax competition** is fiercer (within ASEAN for example, IMF 2017)
  
  • E.g. profits of large platform companies often concentrated outside country of origin (e.g. Singapore).
  
  • But see here https://ecipe.org/publications/the-geopolitics-of-online-taxation-in-asia-pacific/

• Tax **administration** itself facilitated (e-payroll, automated services, online tax declaration).
Conclusions
Disruptions

• Big waves of occupational and sectoral change have put political systems under pressure.
  • The European welfare state was a consequence of disruptive industrialization

• New technological change no exception. Will create disruptions even if long-run perspective positive.

• Policy makers need to find strategies how to mitigate and steer these disruptions.

• Malaysia and Indonesia differ in context and adaption strategies, especially in the degree of state intervention.
Making TC socially inclusive

• Using **tools** of digitalization to make systems faster, more transparent and giving access to more people.

• This requires also **political will** to engage with powerful vested interests (both for and against change).

• And it requires **international cooperation** on matters of taxation etc.
Terima kasih banyak untuk perhatian anda!
Robot lawyers

- Already practice in private legal relations:
  - Case Crunch claims that it can detect **insurance fraud** better than human judges ([https://www.case-crunch.com/#challenge](https://www.case-crunch.com/#challenge))
  - Watson/ Ross etc. already in operation in several countries
  - In private simple routine cases claims to be more accurate (payment obligations, business start up etc.)

- What about public law?
  - **Estonia** is the first country to use them for judicial system (see WIRED magazin)
  - Small cases up to 7000 Euros worth, revision done by human court