Report of Round Table on Productive Equity II

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Background

In May 2019 Brookings Institution and the Chumir Foundation for Ethics in Leadership published a report titled *Productive Equity: Technology and the Twin Challenges of Reviving Productivity and Reducing Inequality.* This report (PE I) shows both a decline in productivity and an increase in inequality.[1]

A second study (PE II) has been proposed by the Chumir Foundation in conjunction with the World Academy of Productivity Science (WAPS) to examine the role of technology in these phenomena. A series of virtual round tables has been planned in order to orient this second study and to determine a direction to be taken and questions to be answered.

The first such virtual round table was held on July 27/28, 2021. As this will be a global study, technologists from the Asia time zones and the Pacific time zones participated. A second round table will include technologists from the Eastern and Central, U.K. and Europe, and Africa time zones.

Prior to the round table, participants were provided with a two-page brief about the project with a link to the PE I report and a fact sheet from the PE I report summarizing some of the findings regarding productivity and investment, etc.

The round table was held on Zoom and, with permission from the participants, the round table was recorded. The names of the participants can be found in Appendix A. Their anonymized comments are included in Appendix B. Common themes were extracted from these comments and a matrix of the common themes addressed by the participants is presented in Appendix C.

Common Themes

The following common themes were extracted from the comments of the participants.

[1]This report was prepared by the WAPS organizers, Appendix A.

Culture of Technologists: Culture was brought up a number of times, particularly with respect to work ethic and direction. The culture of technologists was brought up but not referred to as a "culture". Technologists do not necessarily develop technologies with the larger economic picture in mind, nor on how people will use the technology. They tend to be narrowly focussed on the technology itself and often do not consider if the technology will scale.

Digital Transformation: This had multiple parts, two of which are notably disruption in the workforce and growing inequalities.

Transition to new technologies is often not well planned. Such transitions often do not take into account the skills and knowledge of the current workforce and as a result there is disruption in the workforce. This leads to growing inequalities with positive feedback loops that favor entrenched interests at the expense of true innovation. The rich gets richer and the poor gets poorer, and the middle is being hollowed out.

Scale: Technology at scale is not the same as economies of scale. Technology at scale is taking technology and increasing its spread and use over a larger base. However, technology is not usually developed with being scaled in mind. As a result, many technologies when scaling ups do not produce the desired effects and productivity does not reach its full potential.

Government Policies: Government policies have a huge effect on productivity and technology. Policies effect everything from marker power, to funding of innovation, to intellectual property.

Productivity: Productivity is not driven just by technology. Productivity needs more than just technology but human skills as most innovation is incremental, building on a base of products and skills.

Key Points to Consider for the PE II Study

Productivity: The PE I report was based on data prior to 2014 and GDP annual growth up to 2017. These data show a decline in both metrics. More recent data *(US Labour Productivity Growth, 1949 - 2021* | *CEIC Data, The coming productivity boom* | *MIT Technology Review)* are projecting a significant increase in labor productivity, primarily due to technology. These data should be examined for the impact on inequality.

Labor Productivity Formula: The current formula for Labor Productivity is GDP divided by hours of labor. However, the growth in the intangible economy may require that this formula be revisited. The labor hours for intangible products and services are invested up front and the longer these intangibles stay in the market place, the greater the GDP but the lower the labor hours, resulting in an increased labor productivity measure but with fewer labor hours (greater inequality).

Quality Data: Quantification of quality data is critical to measuring the impact of various factors on Productivity.

Summary

This first round table was stimulating, and the discussion generated further valuable insights. A second round table with perhaps slightly refined questions presented to the participants should be equally productive.

WAPS proposes to carry out series of Round Tables with experts across sectors and countries to get wider perspective of variables and parameters that contribute to Productivity in the context of Technology Development and Deployment.

Appendix A

Round Table Participants, July 27/28, 2021

Invited Participants, in no particular order:

- Mr. David Kasik, U.S.A.
- Mr. Daniel Yeo, Singapore
- Prof. Danny Tsang, China
- Mr. Leon Bian, U.S.A.
- Dr Andrew Csinger, Canada
- Mr. Allen Huo, Taiwan
- Mr. Mohan Das Pai, India

Also attending:
- Joel Bell (Chumir Foundation), U.S.A.
- Sunil Abrol (WAPS, Project Lead), India
- Anita Tang (WAPS), U.S.A. and China
- Michael Shepherd (WAPS), Canada

Appendix B
Participants' Discussion Points

Participant A
- Technology and innovation contribute to higher productivity growth.
- In U.S.A. labor productivity has increased by 5.4% in Q1 2021.
- Erik Brynjolfsson and Georgios Petropoulos wrote in a June 10, 2021, MIT Review: "There's reason to believe that this is (5.4% labor productivity growth) not just a blip, but rather a harbinger of better times ahead: a productivity surge that will match or surpass the boom times of the 1990s." They based their optimism on three factors:

1. Technological breakthroughs during the past decade such as advancements of AI/ML, the ever-lowering cost of computing power, and discoveries in medical treatments like mRNA, among others.
2. The compressed restructuring timetable for digital innovations - to remote working because of covid-19.
3. An economy trending towards full capacity.

- Technology alone is not enough for increasing productivity, it needs to be clubbed with business processes, human skills, and other intangibles.
- Productive Equity I is partly based on productivity growth statistics in previous years, with the new trend, we may need to revisit some of the assumptions and conclusions about technology and productivity growth in this second phase of the study.
- Concentration of market power raises issues for competitors, consumers, and the labor market. Dominant companies take bigger shares of total benefit in the areas where they compete.
- Does technology cause a concentration of market power? My view is "no." Market power derives from many non-technological factors:

1. There are clear incentives for a "winner-takes-all" approach - the market usually rewards firms that best meet customer needs; so, investors and co-founders/top executives do their best to gain market share.
2. Public policies enabled many dominant players to secure their positions (some through M&A) within their markets and expand into other markets. Once a firm achieves a dominant position, its dominance becomes a barrier to other firms wanting to enter that arena or engage in similar activities.
   As remedy, maybe we should seriously consider breaking up some companies as too many of them are just too big.

- There is a need for public policy to encourage cooperation between education, technology development, industry, and competition; and reform tax codes.
- Technology enables improve quality of life and reinventing work.

Participant B
- Productivity is a combination of human factor and technology. It is human beings' willingness to do things, the

ability of the individuals, the ideas and creativity which help a company innovate.

- There is a need for integration of technology, human factor, culture, and processes. Human factor and culture - self motivation, norm, family upbringing, peer pressure, etc. can have big impacts on innovation and technology; this is particularly true in some Asian economies.
- Integration of human and technology is about linking the disconnected parts together. Productivity can be increased by applying the right technology and assigning the right job to the right people.

Participant C

Point 1

- Inequity between those empowered by the new technology and those who are disenfranchised by new tech
- This leads to income disparity
- How do we take advantage of the skill sets of these displaced persons?

Point 2

- Technologists make it difficult for others to transition to new technologies
- Technologists tend to ignore existing infrastructure and world
- They design and build things not easy to implement in a meaningful way

" Technologists do not play nice with others

Point 3

- Challenge to accommodate for scale
- Scale but keep existing customer base happy
- Technologists do not build for scale
- Benefits of new tech often not realized because it is not designed for scale
- Transition to new technology not well planned:
  - o Benefits not realized
  - o People displaced

Point 4

- Need good data

Participant D

- During the last decade U.S. productivity has increased from 3% to 9%
- Who is getting the benefit and value add of Technology? Economy, Industry, People
- People are most affected by technology
- Productivity is stagnating
- While prices are going down, value add is going up
- Automation is helping in improving efficiency
- Capital gets maximum benefits of technology
- Big Tech not good for society
- Labor cost coming down year after year
- Global monopolies control Big Tech

Participant E

- Technology is driver of productivity
- Slow adoption of technology leading to low productivity
- Public policy plays important role in adoption and deployment of technology
- Social acceptance of technology a barrier

Participant F

- Changes are needed in the way innovation is funded

- Current model is a positive feedback loop that favors entrenched interests at the expense of true innovation
- Change from funding at very grass roots of innovation to funding aggregation of large companies (super clusters)
- Metric seems to be more at number of dollars than actual innovation
- Large companies now do less in-house innovation and more acquisitions (scale issue)
- Government becoming more like large venture capital funds
- Moving to scale is still a problem
- Perhaps micro-funding might help with grassroots funding

Participant G

- Some countries benefit from technology while others not as much.
- Developing countries have the bare minimum facilities and have much to gain in technology innovation.
- Developed countries, when adopting new technology, have redundancy issues to resolve due to existing processes, people, and system.
- In terms of distribution of benefits, the creation of wealth by corporations is to monetarize innovation, it is up to the owners of the Big Tech companies to redistribute the wealth.
- Government also plays a role in policies impacting the redistribution.
- Innovation, technology, and advancement are all good, it is about:

1. How do you monetarize it?
2. How then to redistribute the profit or benefits to the masses
   If 1 and 2 are doable, people will see the benefits of the advancement of technology.

Appendix C
Matrix of Common Themes and Participants' Comments

Participant	Culture	Disruption in Workforce	Growing Inequalities	Scale	Government Policies	Productivity needs tech, human skills etc.
P1			X		X	X
P2	X	X	X	X		X
P3	X					X
P4	X	X	X	X		
P5			X			
P6					X	
P7			X		X	