Written Exam at the Department of Economics summer 2020

Development Economics

Final Exam

May 25, 2020

(3-hour open book exam)

Answers only in English.

This exam question consists of 4 pages in total

The paper must be uploaded as <u>one PDF document</u>. The PDF document must be named with exam number only (e.g. '127.pdf') and uploaded to Digital Exam.

This exam has been changed from a written Peter Bangsvej exam to a take-home exam with helping aids. Please read the following text carefully in order to avoid exam cheating.

Be careful not to cheat at exams!

You cheat at an exam, if you during the exam:

- Copy other people's texts without making use of quotation marks and source referencing, so that it may appear to be your own text. This also applies to text from old grading instructions.
- Make your exam answers available for other students to use during the exam
- Communicate with or otherwise receive help from other people
- Use the ideas or thoughts of others without making use of source referencing, so it may appear to be your own idea or your thoughts
- Use parts of a paper/exam answer that you have submitted before and received a passed grade for without making use of source referencing (self plagiarism)

You can read more about the rules on exam cheating on the study information pages in KUnet and in the common part of the curriculum section 4.12.

Exam cheating is always sanctioned with a warning and dispelling from the exam. In most cases, the student is also expelled from the university for one semester.

Problem A

Please provide short answers to the following questions and statements:

1. Why might GDP fail to measure annual value added in a country? Why might GDP be a bad indicator of "Economic Development"?
2. Please explain briefly the difference between exchange rate conversion and PPP conversion of GDP. Which is preferred – and why?
3. Please briefly explain how it can be argued that aid has little or no effect on growth.
4. Please explain the special principal-agent problem for aid agencies.
5. Please explain how the relationship between wages and nutrition can lead to low-level equilibria in labor markets in very poor countries.
6. Please define the "growth multiplier" for agriculture and explain why it may be larger than 1.

Problem B: Inequality and poverty

1. Please give an overview of why inequality is considered to be important for development.
2. The four standard scientific rules guiding choices of inequality measures are:
    1. The anonymity principle
    2. The population principle
    3. The relative income principle (also referred to as the scale independence axiom)
    4. The transfer principle (or the Dalton/Pigou-Dalton principle).

    Please explain the four rules in the context of an inequality measure of the incomes of *n* individuals, $I(y_1, y_2, .., y_n)$.

3. Please discuss how global inequality has evolved over the period 1990-2010. Please draw on the "elephant" and "serpent" graphs of Ravallion (2018)[1], reproduced in figure 1, for your answer.
4. Those at the bottom of the global income distribution live in absolute poverty. Please discuss some stylized facts about how the poor tend to spend their money – and discuss potential causes for these spending patterns.

Problem C: Productivity

1. Please explain how the figures of "development accounting" in table 1 are constructed. Be as precise as you can.
2. Please discuss which conclusions can be drawn from the results of table 1. Please also discuss any caveats related to the validity of the conclusions.
3. Jerzmanowski (2007)[2] examines a case where all differences in productivity are due to differences in efficiency. Please discuss how it is possible to measure efficiency using the concept of a production frontier. Please draw on figure 2 for your answer.

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[1] "Ravallion, Martin. (2018): What might explain today's conflicting narratives on global inequality? UNU-WIDER working paper 2018/141".

[2] Jerzmanowski, Michal (2007). Total factor productivity differences: Appropriate technology vs. efficiency, European Economic Review, 51, 2080–2110.

4. Productivity is often considered to reflect technology and efficiency. Please give a summary of the reasons why efficiency may be lower in developing countries than in developed countries.
5. Even when technologies are available, they may not always be adopted.
    a. Please explain how the findings of Atkin et al. (2017)[3] is an example of this.
    b. Please discuss the broader implications of Atkin et al.'s findings for the prospects of economic growth in developing countries.

Figure 1

(1a)
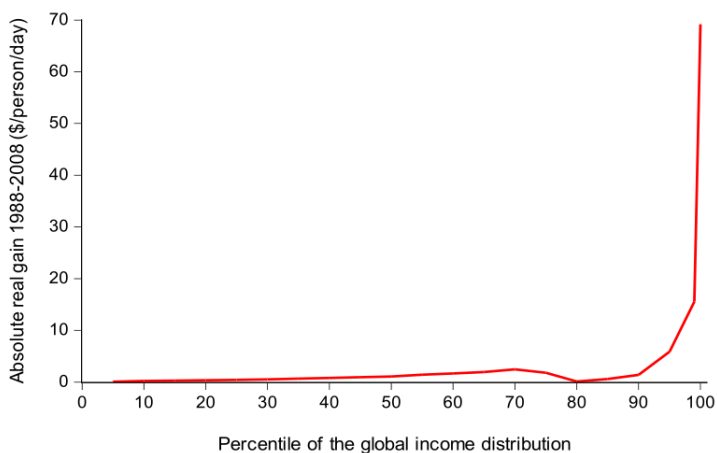
(1b)

Source: Ravallion (2008)

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[3] Atkin, D., Chaudhry, A., Chaudry, S., Khandelwal, A. K., & Verhoogen, E. (2017). Organizational barriers to technology adoption: Evidence from soccer-ball producers in Pakistan. The Quarterly Journal of Economics, 132(3), 1101-1164.
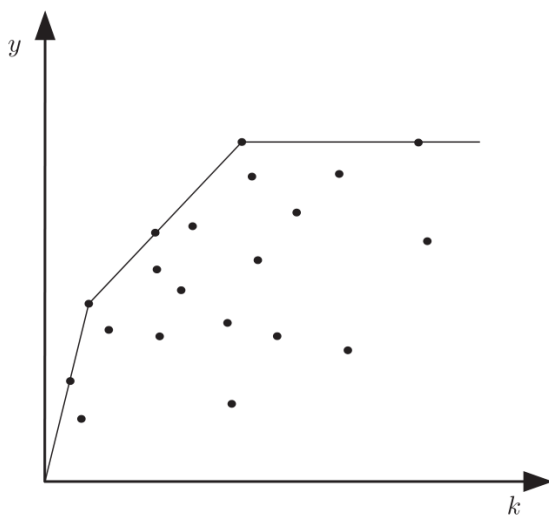
Table 1

Country	Output per Worker, y	Physical Capital per Worker, k	Human Capital per Worker, h	Factors of Production, $k^{1/3}h^{2/3}$	Productivity, A
United States	1.00	1.00	1.00	1.00	1.00
Norway	1.12	1.32	0.98	1.08	1.04
United Kingdom	0.82	0.68	0.87	0.80	1.03
Canada	0.80	0.81	0.96	0.91	0.88
Japan	0.73	1.16	0.98	1.04	0.70
South Korea	0.62	0.92	0.98	0.96	0.64
Turkey	0.37	0.28	0.78	0.55	0.68
Mexico	0.35	0.33	0.84	0.61	0.56
Brazil	0.20	0.19	0.78	0.48	0.42
India	0.10	0.089	0.66	0.34	0.31
Kenya	0.032	0.022	0.73	0.23	0.14
Malawi	0.018	0.029	0.57	0.21	0.087

Sources: Output per worker: Heston, Summers, and Aten (2011); physical capital: author's calculations; human capital: Barro and Lee (2010). The data set used here and in Section 7.3 is composed of data for 90 countries for which consistent data are available for 1975 and 2009.

Source: Weil, David N., 2013. "Economic Growth", Pearson International Edition, 3rd Edition.

Figure 2

Source: Jerzmanowski (2007)