

Comments on “Productivity or Employment: Is It a Choice?”

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ABSTRACT

These comments express caution regarding the results of the article “Productivity or Employment: Is It a Choice?” by Andrea De Michelis, Marcello Estevão, and Beth Anne Wilson and recommend further investigation of the relationship between productivity and employment growth before definitive conclusions are reached. In particular, the authors are encouraged to attempt to take account of the age and educational attainment distribution of the workforce within a country in attempting to explain TFP growth.

RÉSUMÉ

Ces commentaires expriment certaines réserves face aux résultats de l'article « Productivity or Employment: Is It a Choice? » de Andrea De Michelis, Marcello Estevao and Beth Anne Wilson, et recommandent une analyse approfondie de la relation entre croissance de la productivité et croissance de l'emploi avant d'arriver à des conclusions définitives. En particulier, les auteurs sont encouragés à prendre en compte l'âge et le niveau de scolarité de la main-d'œuvre à l'intérieur d'un pays dans leur tentative d'expliquer la croissance de la PTF.

THE ARTICLE “Productivity or Employment: Is it a Choice?” by Andrea De Michelis, Marcello Estevão, and Beth Anne Wilson contends that there is a tradeoff between growth in hours and productivity. The authors argue that for countries such as Canada, which are operating near the efficiency frontier, low rates of productivity growth should not be a concern as long as hours growth is robust. Growth from any source matters.

The authors ran their basic regression including and excluding recession years in order to determine if a recession effect dominates their sample. Recession and recovery effects are two-fold: at the beginning of a recession firms typically hoard

labour as they do not wish to lay off their most valuable employees until it is absolutely clear that it is necessary. During this phase, productivity growth tends to be negative as output is decreasing with hours stable or slightly increasing. As recovery begins, firms are slow to rehire workers as they are uncertain about the strength of the economy. During this phase, productivity growth tends to be high as output is increasing with hours stable or slightly increasing.

As the coefficients with recession years omitted are fairly similar to those with recession years included, it is safe to conclude that their conclusions are not compromised by business cycles effects.

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The sector results raise concerns. Models were estimated for the G7 countries and for 14 OECD countries for the years 1980-2007 for ten sectors and for the total economy.² In these results, the hotel and restaurant sector played a prominent role. This sector coefficient was significant at a .05 level of significance or less in both models and was the largest of any coefficient in absolute value terms, including that for the total economy. Other than hotels and restaurants, the only other statistically significant coefficients at that level were for manufacturing and the total economy (G7) or for the total economy only (OECD 14). Since hotels and restaurants are part of the difficult to measure service sector, I question the validity of these results without a validating story and an examination of this sector's data and the underlying measurement methodology.

Weighting hours and total factor productivity at the sector level by U.S. value-added shares seems very similar to a reallocation decomposition. The authors state that this weighting was done to remove the effect of industry composition. Reallocation explains the difference between aggregate total factor productivity estimated from an aggregate production function growth and sectoral productivity growth estimated from sectoral production functions in terms of reallocation of value-added, capital, and labour. An aggregate production function assumes industry composition makes no difference, whereas sectoral production functions allow for differences in industries and captures movements of

factors and the corresponding value-added across sectors. The weighting of hours and total factor productivity may be largely picking up reallocation effects as opposed to cleanly removing the effect of industry composition.³

Both the age and education distribution of a country's working age population can have a significant impact on total factor productivity. The authors recognize age as a factor when they state "In response to aging populations, will countries experience rising TFP as firms find ways to utilize existing workers more effectively?" (De Michelis, Estevão, and Wilson, 2013:43) In addition, they conclude that "population affects TFP only through hours worked and, thus, appears to be a good instrument for TFP" (De Michelis *et al.*, 2013:52). I suspect such a conclusion could not be reached if population distributions were used instead of total population.

Charts 1 and 2 illustrate the significant differences in age and educational attainment distributions across countries.⁴ For the working age population, the charts show significant differences between countries. Countries with a larger proportion of younger and highly educated individuals are more likely to experience higher total factor productivity growth. Accordingly, using total population growth can hide important factors which could affect total factor productivity directly.

Questions from the floor during discussing at the AEA session where the paper was presented raised additional factors which could influence the relationship between hours and

2 The OECD 14 countries are: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Italy, Japan, Netherlands, Spain, United Kingdom and the United States.

3 The reallocation equation is found in Jorgenson, Gollop, and Fraumeni (1987:312-313).

4 The charts are derived from data underlying Li (2011), Li *et al.*, (2013), and Liu (2011). Australia, Canada, Denmark, France, Israel, Italy, Japan, Korea, Netherlands, Norway, New Zealand, Spain, the United Kingdom, and the United States are in the charts and included in the De Michelis *et al.* (2013). Belgium, Finland, Germany, Greece, Portugal, Sweden, and Switzerland are included in the De Michelis *et al.* (2013), but not in the charts. China, Poland, and Romania are in the charts, but are not included in De Michelis *et al.* (2013).

Chart 1

Working Age Population Shares by Age Group, 2006

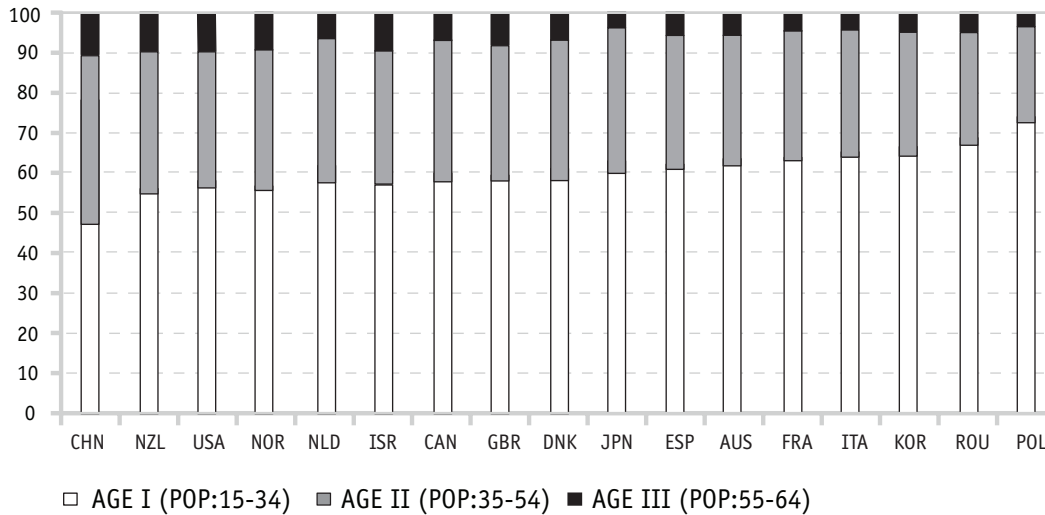
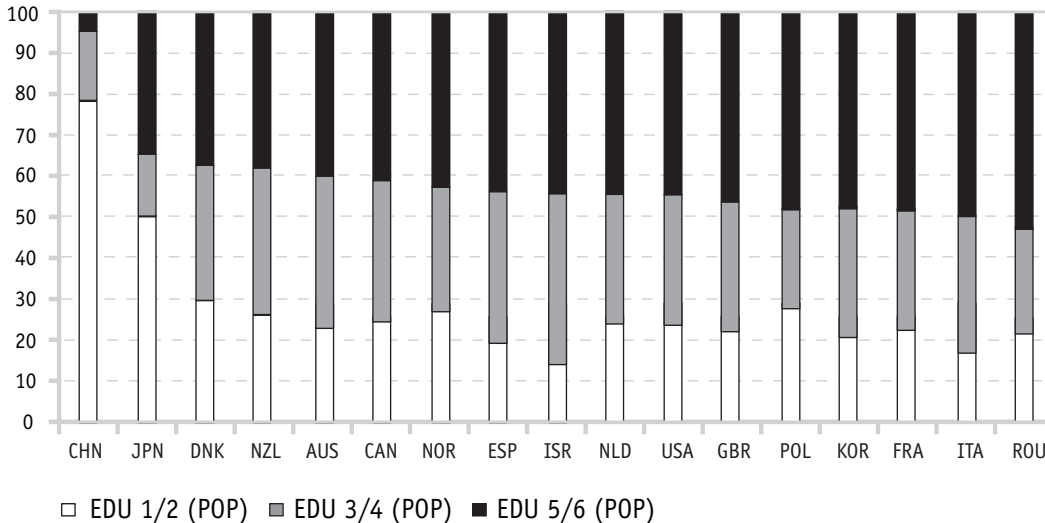


Chart 2

Working Age Population Shares by Educational Level, 2006



Note: Following the International Standard Classification of Education (ISCED), EDU 0/1/2 includes those with at most primary or junior middle school levels of attainment (grades 1-9), EDU 3/4 includes those with at most senior middle school grade (grades 10-12) or post-secondary non-tertiary education levels of attainment, and EDU 5/6 includes those with at least one year of higher (tertiary) education.

total factor productivity. These questions should be followed up.

In conclusion, this article has established an important relationship between hours and total factor productivity. I would like the nature of this

relationship investigated further. My comments have suggested some directions for this investigation. An important result is that for a country experiencing growth, the focus of concern should not be limited to total factor productivity.

References

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