

## Discussion of the paper: Decoupling of Wages from Productivity by Cyrille Schwellnus

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### Summary

The presentation is based on the author's three related papers (OECD Economic Outlook, 2018; Pak and Schwellnus 2019; and Schwellnus et al. 2018). The three papers share the common theme of investigating what cause the decline in the labour share. The labour share is defined as the ratio of the labor compensation and the gross value added, and can be written as the product of the average wage and the inverse of labour productivity as follows:

$$LabourShare_{c,t} = \frac{labour\ compensation_{c,t}}{Gross\ value\ added_{c,t}} = \frac{\bar{w}_t^c L_t^c}{p_t^c y_t^c} = \bar{w}_t^c * \frac{1}{labour\ productivity_{c,t}}$$

where  $c$  and  $t$  are country and time-period subscripts, respectively.  $\bar{w}_t^c$  denotes the average wage;  $L_t^c$  denotes the number of employees;  $p_t^c y_t^c$  denote the nominal value added. The author focuses on analyzing the change in the labour shares over the past two decades by looking at the growth of average wage and labour productivity. Three types of analyses are provided.

The first analysis documents the “decoupling” between the growth of median wage and labour productivity using data from 24 OECD countries. The divergence is decomposed into two components:

$$\text{“decoupling”} = (\Delta median\ wage_{c,t} - \Delta \overline{wage}_{c,t}) + (\Delta \overline{wage}_{c,t} - \Delta labor\ productivity_{c,t}).$$

The first term is considered a measure of “wage inequality”. The second term reflects the change in the labour share. The author finds large cross-country differences, in terms of the overall decoupling and the contribution of each component.

The second analysis attempts to explain the change in the labour share using industry-level data from OECD countries. The author finds that the decline in the relative investment price, and the increase in the global value chain participation are significantly associated with the decline in the labour shares. The result also shows a larger effect on industries with a higher fraction of low skilled workers. In addition, the author attempts to assess the role of public policies in driving the decline in the labour shares.

The last analysis looks at the change in the labour share using firm panel data. The author finds that firms at the top 5% productivity frontier are the ones driving the decline in the labour share. The result is viewed as consistent with Autor et al. (2017)'s “winner-take-most” story.

## Comments and questions

This is a very interesting set of papers. The papers provide a wide-ranging review of relevant literature. While the author attempts to answer several important questions, I find the labour share decomposition analysis at the firm-level and industry-level most interesting and credible, given the data used is a firm-panel dataset.

My detailed comments and questions are as follows:

1) It would be useful to provide the overall picture of what drive the labour shares (in terms of level and change) across countries. At the country-level, to which extent the variation in the decline is attributed to the decline within industries vs. the reallocation across industries, and whether the compositions differ across countries. At the industry-level, to which extent the variation in the decline is attributed to the decline within firms, the reallocation across firms, or the changes in the labour shares of the entry and exit firms. Although the frontier-firm result suggests that the reallocation across firms is an important part, the overall picture is not totally clear.

In addition, summary statistics of used in variables all regressions should be provided.

2) The result about the firms entering the frontier are the main driver of the decline in the labour share seems novel to the literature and would be worth to further investigate the issue. For instance, is the result different or consistent with the earlier finding of Author et al (2017)? Author et al. use a slightly different definition of superstar firms (firms with top market shares) and a different decomposition. By decomposing the change in the labour share (LS) into four terms,

$$\Delta LS = \text{“}\Delta LS \text{ within firms”} + \text{“}\Delta LS \text{ between firms”} + \text{“}\Delta LS_{\text{entry firms”}} - \text{“}\Delta LS_{\text{exit firms”}},$$

they find that the second term is the main driver. The entry and exit components are canceled out. This paper only considers the change at the top 5% labour productivity (frontier) firms,

$$\Delta LS \text{ at frontier} = \text{“}\Delta LS_{\text{firms staying in the frontier”}} + \text{“}\Delta LS_{\text{(entry – exit) frontier firms”}}.$$

The net entry is found to be the main driver whereas the first component is almost zero. The fact that the second component drives the change is somewhat not surprising as the firms who can jump to the frontier must have a high labour productivity growth. It will be interesting to explore whether this component is driven by the entry or exit firms or both; and who are these firms who can enter the frontier? Are they young or old firms? Are they firms participating in the global value chain? Are the effects of global value chain participation symmetric for export and import?

3) What missing from the wage inequality discussion is how the labor demand, labor supply and wages for different types of workers have evolved over time.

3.1) The impact on workers with different skill sets is assessed by interacting the relative investment price (based on the average wage) with an indicator of whether the industry have a large fraction of low skilled workers. It will be useful to directly look at the change in the relative wage of skilled and unskilled workers across industries and countries.

3.2) “wage inequality” vs. “return to skills” ? The paper calls the difference in wages of executive and others “wage inequality within firm”. Labour economists would call this difference return to skills. The question would then become whether the wage premium for higher skilled workers is too high. The widen gap between the wages of high and low skilled workers could also reflect the changes in the occupation composition (types of jobs performed) over time. For example, in the US, Autor (2019) found that as automation replaces some routine jobs, non-college workers perform less skilled jobs compared to what they used to do in the past.

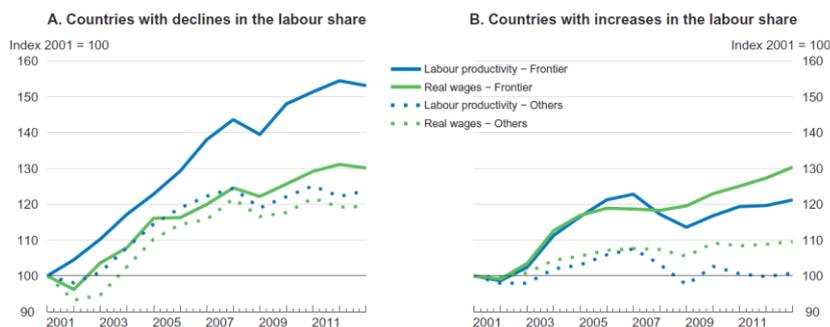
4) Regarding the analysis of the role of public policies in balancing the equity and efficiency goals, two concerns are:

4.1) because wage is a combination of worker’s productivity and firm’s productivity, using a firm dataset might not give us a complete picture of wage determinants. The author may want to discuss the literature using matched employer-employee data (e.g., Abowd et al. 2002; Card et al. 2013). In that literature, they can identify different sources of wages and wage growth – whether it comes from worker productivity difference, firm productivity difference or sorting. Different factors have different policy implications for reducing inequality. For example, to reduce differences in firms’ productivity, the policy should focus on firms’ lack of competitiveness or constraint. To reduce differences in workers’ productivity, the policy should focus on education or training programs.

4.2) the fact that the considered public policies vary at the country-level leads the analysis to rely on the “exposure” variable, which is specified to vary only by industry and policy type. The assumption that firms in the same industry in all countries are exposed to the same level of policies is quite strong and needs more supportive evidence. Also, the author may want to provide supplementary tests for the difference-in-difference analysis (e.g., common trend between the treatment and control groups and placebo test, see Athey and Imbens, 2017).

5) My last comment is about the striking different patterns of wage and productivity growth between the two groups of OECD countries (see the figure below). All the discussion so far seems to be concerned about the countries in the left panel where the labour shares have declined and the gap between the wage and labour productivity growth has widened. However, if we look at the levels of wage and productivity, the countries in the right panel, with the increase in the labour share, have much lower wage and productivity. Which group of countries shall we be more worried?

Figure 2.3. Average wages and productivity in frontier firms and others



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