

### Discussion

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Thijs van Rens\*

As union membership is declining, it is natural to ask whether this decline results in slower wage growth. The paper by James Bishop and Iris Chan (2019) studies this question in the context of the recent slowdown in wage growth in Australia and argues the answer is a clear “No”. It is a pleasure to discuss this paper, which not only adds to the discussion about the recent slowing in wage growth in Australia but makes some interesting contributions to the academic literature on unions as well.

#### A stylized model of wage setting

To organize thoughts, I start with a simplified representation of wage setting in a standard macroeconomic model. In most modern models, the wage  $W_t$  is a weighted average of the (marginal) productivity of labor and workers’ reservation wage  $W_t^R$ , as in the equation below. This equation is often justified as the result of a bargaining process between firm and worker and results in the surplus, which is generated when the worker joins the firm, being shared between the two parties. Let  $\tilde{\varphi}$  denote the share of the surplus accruing to workers. Then, wage setting can be described by the equation below.

The reservation wage includes the outside option of workers at other firms, which is again related to productivity, but also depends other factors that are unrelated to it, which we denote by  $z$ , representing the worker’s productivity at home or her value from leisure. Splitting out the terms that depends on productivity and those that do not, we can write the wage as a weighted average between the marginal productivity of labor and  $z$ .

$$W_t = \tilde{\varphi} \text{MPL} + (1 - \tilde{\varphi})W_t^R \simeq \varphi \text{MPL} + (1 - \varphi)z < \text{MPL}$$

Using a standard production function to describe the transformation of capital  $K_t$  and labor  $N_t$  into output,  $Y_t = A_t K_t^\alpha N_t^{1-\alpha}$ , we can express the marginal production of labor as  $\text{MPL} = (1 - \alpha) Y_t / N_t$ , and substituting this into the wage bargaining equation above, we the following expression for the labor share.

$$\frac{W_t N_t}{Y_t} = \varphi(1 - \alpha) + (1 - \varphi) \frac{z N_t}{Y_t} < 1 - \alpha$$

Since the productivity of a worker at home  $z$  is generally smaller than her productivity in a firm (otherwise, workers would not accept jobs), wages are lower than productivity, with the difference going towards the firm’s profits. As a result, the labor share is smaller than  $1 - \alpha$ , which would be the labor share if workers were paid their marginal product.

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\* University of Warwick and UNSW

How much wages are below productivity depends on  $\varphi$ , which is a parameter that is related to the bargaining power of workers in wage negotiations. This is where unions enter the model. If a decline in union membership erodes workers' bargaining power, then we would expect to see wages falling behind productivity, and a decline in the labor share.

## Different experiences in different countries

Our simple framework suggests there are generally three reasons for low wage growth: low growth, lagging productivity or a decline in the labor share. In a situation of low growth, we would expect to see stagnation not only wages and productivity, but also in other macroeconomic aggregates including output. Lagging productivity would suggest a change in the transmission of macroeconomic shocks to the labor market. In both cases, the labor share would be constant, and declining unionization would be an unlikely candidate for explaining these developments. A decline in the labor share, possibly related to declining unionization, would result in wages lagging behind even though productivity growth is strong. We can use this framework to interpret recent experiences with wage growth in different countries.

The United States has seen sustained real wage growth over the past two decades, interrupted only briefly by the 2008 financial crisis (Hamermesh 2017).<sup>1</sup> However, there has been a secular decline in the labor share since the early 1990s (Elsby et al. 2013), indicating wage growth has not kept pace with strong productivity growth, and spurring a debate and some research into the role of declining unionization.

The economy in the United Kingdom recovered quickly after the 2008 crisis, but wages and productivity lagged behind, and real wages continued to fall until 2014 (Herz and van Rens 2018). Although the productivity slowdown is probably not related to unions, commentators have argued that wage growth is even lower than should be expected based on productivity, and declining unionization, as part of a wider trend of “casualisation” of the labor market, is often mentioned as part of the explanation (Haldane 2017).<sup>2</sup>

In Australia, finally, earnings grew uninterruptedly for a quarter of a century, but wage growth, at least in nominal terms, seems to have slowed down recently, around 2014 (Barrett 2018).

## Trends in unionization

Although the recent labor market experiences of the United States, the United Kingdom and Australia would appear to be rather different, there is a shared concern in all three countries about declining unionization. This is perhaps not surprising given the sharp decline in union membership rates in these three and in all other Anglo-Saxon economies, see Figure 1.

The decline in union density in Australia looks in line with that of other Anglo-Saxon countries. However, this similarity is misleading. Unions play a very different role in Australia than in the US or the UK, with a much wider coverage of collective bargaining agreements. This can be seen readily if

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<sup>1</sup> This growth has not been broadly shared. Due to rising wage inequality, real wages of the bottom 10% of wage earners were constant or may even have fallen over this period.

<sup>2</sup> Apart from declining union density, the observed casualisation of work (or the emerging “gig” economy) also includes the increasing incidence of self-employment, flexible and part-time working and zero-hours contracts.

we graph the percentage of workers that are covered by a union agreement, as in Figure 2, rather than the percentage that are members of a union.<sup>3</sup>

A classification of OECD countries by the role of unions reveals that Anglo-Saxon economies like the United States and the United Kingdom are entirely the wrong comparison group for Australia. In Table 1 we group countries by the percentage of workers that are union members and the percentage of workers that are covered by union agreements. In this classification, Australia looks a lot more similar to western Europe, with membership density of around 20%, but much wider coverage rates (60% for Australia, 80% for western European countries). The US and the UK (and New Zealand), on the other hand, are more similar to eastern European and Asian countries, with near equality between membership and coverage rates.

Comparing the trends in coverage in Australia to those in western European economies confirms the idea that these countries are the right comparison group for Australia, see Figure 3. The percentage of workers covered by a union agreement in Australia in 1980 was at the average of this group. By 2013, coverage in Australia has fallen a bit and is now lower than the average for western Europe, but very much in line with Germany.

Union membership rates in Australia are also similar to those in Europe, but the decline in density is larger in Australia than in any of the western European economies, see Figure 4. There certainly seems to be scope for the decline in union membership in Australia to have an effect on wage growth. A simple cross-country comparison of changes in wages and changes in union membership reveals something of a positive correlation among western European countries, see Figure 5, with countries that saw a smaller decline in union membership experiencing higher wage growth. However, it is also clear that we reached the limits of the usefulness of cross-country comparisons. Australia's wage growth does not seem to "fit the picture" in this graph, probably because of its very different experience during the 2008 financial crisis. In order to further analyze this question, a more in-depth analysis using micro data is needed, and I now turn to the analysis in Bishop and Chan (2019).

### A new measure of the union premium

What makes the Bishop and Chan (2019) paper interesting, is that they provide an analysis of the power of unions that, unlike most of the literature, makes sense in a country where collective bargaining coverage is much higher than union membership.

First, they document that the decline in union membership did not lead to a decline in the percentage of workers that are covered by a union-negotiated enterprise agreement. If the number of agreements that are negotiated with a union did not decline, then any effect of the decline in union membership must be through the negotiating power of the union. In other words, if the decline in union membership affected wage growth, it must be through a decrease in the union premium. The union premium is usually measured as the difference in the wages of a worker who is a member of a union and an otherwise identical worker who is not (Farber et al. 2018). However, since a non-union member might very well be covered by a union-negotiated agreement, this is not the right measure for Australia or other countries where union coverage is much higher than membership.

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<sup>3</sup> The OECD data on coverage include workers covered by statutory wage regulations (e.g. awards). Bishop and Chan remove these workers to focus on enterprise agreements and the data shown in Figure 2 are therefore not directly comparable with the data in Figure 4 of their paper.

Bishop and Chan define the union premium as the difference in wage growth between an enterprise agreement that was negotiated with union involvement and an otherwise identical agreement that was negotiated without a union at the table. The main difference with the standard measure is the unit of observation, which is the enterprise agreement, i.e. the firm, rather than the worker.<sup>4</sup> In the context of Australia, this is a much more direct measure of the power of unions than the standard worker-level union wage premium.

A measure of the union premium at the firm level means that it is hugely important to control for firm characteristics. Enterprise agreements with union involvement constitute about two thirds of all agreements but cover almost 90% of all workers. This indicates that firms that negotiate an agreement with a union are on average much larger than firms that do not deal with a union. It is likely that there are many other differences between firms in the two groups as well. Failing to control for these differences would generate substantial bias in the estimates of the union premium from the wage differential between the two groups.

In order to control for firm characteristics, Bishop and Chan exploit a new administrative dataset with information on all enterprise agreements over the 1991-2017 period. They match these agreements into families, which by-and-large correspond to firms, by tracking which previous agreement was replaced by each agreement in the data. This matching allows them to control for firm-specific fixed effects. In addition, the dataset includes some observable firm characteristics, importantly firm size, which they use as time-varying controls on top of the fixed effects.

The firm-level union premium, controlling for firm characteristics, is estimated at 0.34 percentage points of wage growth, with a standard error of 0.09. After ten years, this translates to a difference in wages between firms with and without union involvement in wage bargaining between 1.6 and 5.3%. This estimate is roughly in line with estimates for the worker-level union premium in the US and -while not huge- is economically significant. Importantly, when they allow the union premium to vary over time, they find virtually no change in the premium over the past three decades.

There are some technical issues with the estimation of the union premium in Bishop and Chan (2019), most of which are discussed in the paper: the involvement of a union in the enterprise wage bargaining is likely to be endogenous; individual wage arrangements and awards, which together account for about 60% of wages in Australia, are not in the data; there is sample attrition and selection due to the matching of agreements into families and difficulties in calculating annual wage growth for some agreements; and the effect of union involvement on wages may be different in the long and the short run. While solutions to these sorts of empirical problems are necessarily imperfect, none of these issues makes me doubt the gist of the findings in the paper.<sup>5</sup>

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<sup>4</sup> Another difference is that the union premium in Bishop and Chan is in terms of wage growth instead of in the level of wages. This is due to data limitations (they do not observe the level of wages in their data), and the paper attempts to translate the wage growth premium into a wage level premium.

<sup>5</sup> The only issue that is perhaps worth expanding on here is the endogeneity problem. Bishop and Chan use two different identification strategies, which address two different endogeneity problems. Controlling for firm characteristics, including firm-specific fixed effects, mitigates the issue of sample selection of firms into the treatment (agreements with union involvement) and control groups (agreements without union involvement). Reverse causation from wage growth to union involvement is addressed with a creative difference-in-differences strategy that uses a change in the treatment of greenfield agreements under the Work Choices Act, which was introduced in 2006 and repealed again in 2009. Unfortunately, the paper treats these two identification strategies as substitutes, whereas it is likely that both endogeneity problems are present at the same time, and I would advocate trying to combine both solutions into a single combined identification strategy.

## Conclusion

In conclusion, I am convinced by Bishop and Chan (2019) that the decline in union membership was not relevant for the slowdown in wage growth in Australia around 2014. It is important, however, to point out that this finding does not necessarily generalize to other countries or other time periods. In particular, it seems inevitable that if union membership were to continue its decline, there will eventually be an effect on the union premium.

The main contribution of Bishop and Chan's paper, in my opinion, is not about the specifics of the recent experience in Australia. Instead, I believe that what is most interesting about this paper is that it helps us to understand the role of unions in labor markets that are like Australia rather than like the US or the UK.

Bishop and Chan show how we can redefine and measure a union premium at the level of the firm rather than the worker, as a more relevant measure for union power in labor markets where coverage of union-negotiated wage agreements is much wider than union members. As explained above, Australia is far from the only country where this is the case, and it seems to me that when it comes to the role of unions in wage setting, the rest of the world stands to learn more from Australia than Australia learned from the rest of the world.

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		coverage	
		high	low
mbr	high	Scandinavia (64.4/81.9)	
	low	Australia (17.4/59.2) W Europe (24.4/81.8)	US (12.7/11.0) UK (29.7/25.9) New Zealand (15.5/20.0) E Europe (10.5/18.7) Japan (17.4/17.9) Korea (11.7/10.0)

Table 1. Union membership and coverage across OECD countries. Averages for 2010-14. Source: OECD.

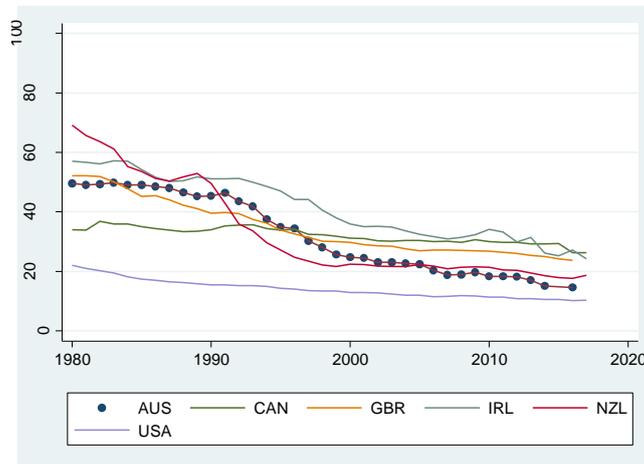


Figure 1. Union membership (% employees) in Anglo-Saxon countries. Source: OECD.

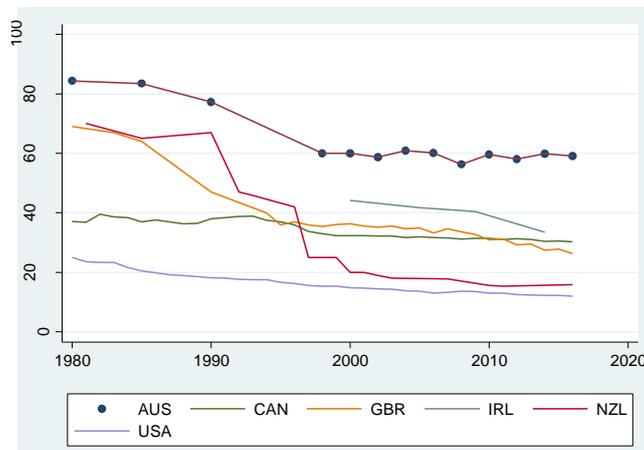


Figure 2. Union coverage (% employees) in Anglo-Saxon countries. Source: OECD.

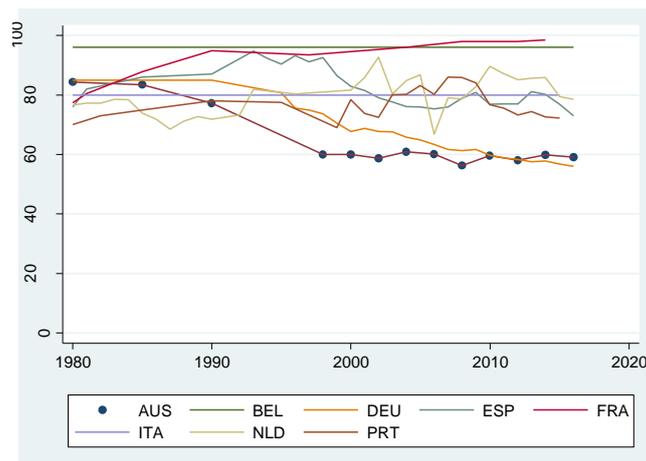


Figure 3. Union coverage (% employees) in western European countries. Source: OECD.

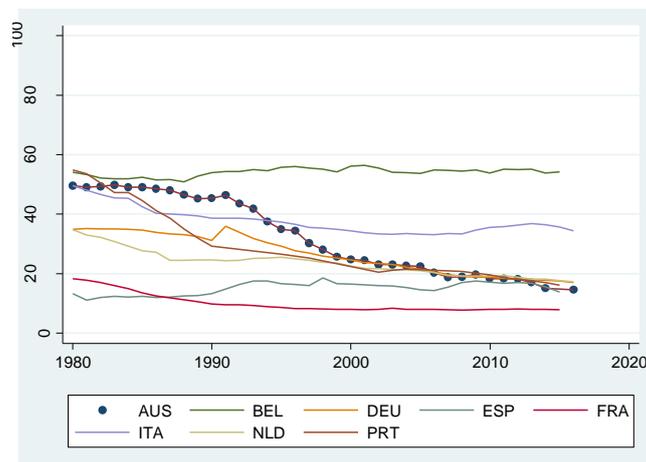


Figure 4. Union membership (% employees) in western European countries. Source: OECD.

## IS DECLINING UNION MEMBERSHIP CONTRIBUTING TO LOW WAGES GROWTH?

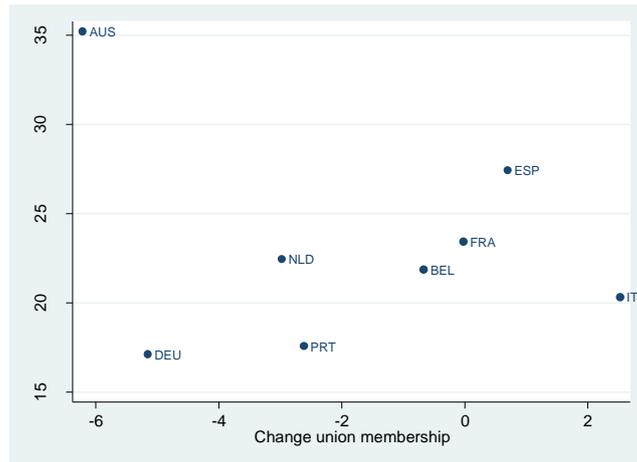


Figure 5. Relation between union membership and wage growth across western European countries and Australia. Changes in averages from 2000-04 to 2010-14. Source: OECD.