The Relationship Between Superannuation Contributions and Wages in Australia

By Dr. Jim Stanford Economist and Director The Centre for Future Work at the Australia Institute

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Summary

Employers' minimum statutory superannuation contributions, presently set at 9.5% of eligible earnings, are scheduled to increase to 12% in five annual stages beginning 1 July 2021. Some policy analysts and business lobbyists oppose that increase. One of the arguments invoked by opponents of expanded superannuation is the idea that increases in compulsory superannuation contributions would necessarily and automatically be offset by equivalent reductions in direct wage and salary payments to covered employees. A higher superannuation guarantee rate is therefore self-defeating, and produces (at best) a transfer of income from an employee's working life to their retirement.¹ This argument is being wielded in a broader campaign to cancel the scheduled increases in the superannuation contributions voluntary for some groups of workers.² Proponents of this view are exploiting widespread concern over the current historically low pace of wage growth, to argue that workers should forego promised improvements in superannuation to supplement their (disappointing) current incomes.

However, the claim that wages automatically and fully adjust to offset higher superannuation contributions is not supported by concrete empirical evidence. Instead, it is simply asserted that such a trade-off is somehow an obvious and widely-accepted economic finding. Proponents of this view cite others who have also made similar assertions; but on closer investigation, these citations are circular and self-reinforcing. A group of writers cites other writers who make the same assumption – none of whom provide empirical support for the proposition. This hardly constitutes meaningful evidence or investigation.

In contrast, this report considers more concretely the historical, theoretical and empirical dimensions of the relationship between compulsory superannuation contributions and wage determination in Australia. It shows that even in competitive neoclassical economic theory (which requires restrictive assumptions about marketclearing and perfect competition), the conclusion that wages will decline to fully offset increases in compulsory superannuation is valid only in extreme special cases: with perfectly inelastic labour supply (that is, when labour supply does not respond at all to

¹ Some proponents of this argument argue workers are actually worse off on a net basis, due to the interaction of superannuation with the Age Pension and other factors; see Daley and Coates (2018), for example.

² See Borys (2019) or Cowan (2019a).

changes in wages), or with perfect substitutability between voluntary and policyinduced savings. More flexible neoclassical models (such as those which allow elastic labour supply, or acknowledge the existence of minimum wages and other labour market "rigidities") do not expect a perfect one-to-one trade-off between superannuation contributions and wages. More realistically, when wages are understood as the outcome of normal and ongoing regulatory, institutional, and bargaining processes (rather than determined by competitive market-clearing), there is no reason to expect any automatic trade-off between wages and superannuation contributions.

A broad review of the statistical history of wages and superannuation contributions in Australia over the last 35 years casts further doubt on these claims of an automatic and complete trade-off between wages and superannuation contributions. There is no visible correlation between increases in the superannuation guarantee (SG) rate and either lower or slower-growing wages. To the contrary, average wage growth has tended to be slightly stronger in years when the SG rate was increased, than in years when it was frozen – and wages were more likely to accelerate than decelerate in those years. There is no statistically significant correlation between the two forms of compensation. And throughout the entire period since compulsory superannuation was introduced, total labour compensation has declined steadily as a share of total GDP (despite rising superannuation contributions). This attests to a multi-dimensional and structural disempowerment of working people in Australia – the result of the overall set of business-friendly, wage-constraining policies implemented over the past generation.

This paper also conducts three more formal tests for a statistical relationship between wage growth and changes in superannuation contributions: one based on a multivariate time series analysis of Australian data, one based on inter-industry comparisons within Australia, and one based on international comparisons across the broader set of democratic industrial countries. In no case does the empirical evidence support the existence of a visible or statistically significant trade-off between wages and superannuation contributions (or compulsory employer-paid social contributions more generally) – let alone the perfect one-to-one trade-off assumed by those opposing scheduled increases in SG rates. In fact, the Australian historical analysis finds a surprising positive correlation: higher SG payments are associated with faster-growing wages, not slower, and in some specifications that finding is statistically significant.

The assumption of a one-to-one trade-off between superannuation contributions and wage growth is not credible, and policy conclusions based on that assumption should be rejected.

Record-low wage growth will not be "fixed" by giving up planned increases in compulsory superannuation contributions by employers. Australians concerned with weak wage growth should support measures that directly tackle that problem: including by strengthening the whole set of institutions and policies that support wages (like a higher minimum wage, an expanded mandate for Modern Awards, the revitalisation of collective bargaining, and the alignment of fiscal policy with the goal of stronger wages).

To rebuild labour's share of the economic pie, and restore the link between ongoing productivity improvements and real wage increases, will require concerted action on the part of regulators, government, workers and their unions. Canceling planned increases in the SG rate will not shift income from employers to workers; it would almost certainly lead to even further reduction in overall labour compensation relative to GDP. In that context, the planned increases in superannuation contributions should be supplemented by active measures to strengthen wage growth. Then Australian workers could attain both improved living standards now, and a decent and secure income after they retire.

Introduction: Give Yourself a Raise (With Your Own Money)

Australia's labour market has endured an unprecedented and painful slowdown in wage growth for several years. The slowdown became evident around 2013, and resulted in an approximate halving of previous typical rates of nominal wage growth: from around 4% per year (or even faster in the mid-2000s) to an average of 2% since then (and even below that during the worst years of the slowdown, 2016 and 2017).³ During this time, nominal wages have barely kept up with consumer price inflation, producing an outright stagnation in average real earnings for Australian workers. As indicated in Figure 1, after decades of fairly steady growth, real wages hit a "wall" in 2013, and have been essentially unchanged since then. The collapse of nominal wage growth since 2013 has widened an already-substantial gap between the ongoing advancement of real labour productivity, and real labour compensation.





Source: Author's calculations from ABS Catalogues 6302.0, Table 2 and 6401.0, Table 1.

³ For a detailed discussion of the dimensions, causes, consequences and potential remedies to the wages slowdown, see Stewart *et al.* (2018).

Weakness in wage growth, stagnation in living standards, and growing inequality have incited growing anger and frustration among Australians. They have also sparked an ongoing policy debate about how to achieve stronger wage growth and a more equal distribution of income. That policy discussion will continue. Many proposals for measures to strengthen wage growth have been advanced: in the areas of labour law and industrial relations, fiscal policy and income transfers, skills and training strategies, and other ideas for addressing the threats to inclusive prosperity in Australia.⁴

Into this important debate over wages and income distribution has been injected an unexpected and perhaps unfortunate dimension. Certain groups who oppose scheduled increases in required superannuation contributions by employers⁵ have seized on the widespread and legitimate concern over weak wage growth to argue that the superannuation guarantee (SG) should be frozen at its existing rate. These commentators argue that raising the SG rate will result in even weaker wage growth in the future, worsening the economic and social problems arising from the historic slowdown in wages. Some even suggest that the problems of low wages and weak wage growth could be ameliorated by *reducing* superannuation contributions: for example, by making contributions "voluntary" for at least some groups of workers (supposedly to divert superannuation contributions into supplementing low wages).⁶

These opponents of higher superannuation contributions argue that fundamental economic relationships, experienced through market forces of supply and demand in the labour market, will cause wages (or at least wage growth) to decline in response to the introduction of higher superannuation obligations on employers. However, concrete empirical evidence to support this contention has not been provided by the leading proponents of this argument. Instead, the major protagonists of this view have only *asserted* that relationship – and then cited others who also assert that argument. They have merely produced a circular, repetitive chain of self-citation that has contributed nothing to actual knowledge about the relationship between superannuation contributions and wages.

For households struggling to balance their incomes and expenses in the here-and-now, in the wake of stagnant real wages and escalating prices for many necessities of life (like housing and energy), topping up current incomes by diverting compensation originally intended to support them in retirement might seem tempting. Some

⁴ For discussion of proposals to strengthen wages and economic equality, see Stewart *et al.* (2018, Chapter 20), Isaac (2018), Bornstein (2019), and Stanford (2019).

⁵ On the basis of legislation passed in 2014, the superannuation guarantee (SG) rate is now scheduled to increase from its present rate of 9.5% of earnings to 12%, in 5 equal annual steps of 0.5 points from 1 July 2021through 1 July 2025.

⁶ See Borys (2019) and Cowan (2019a) for proposals for making superannuation contributions voluntary.

workers, especially those most impoverished by Australia's increasingly unequal and unforgiving labour market, might grasp that opportunity.⁷ But from a broader perspective, the notion that historically weak wage growth should be "solved" by raiding workers' retirement incomes in order to supplement inadequate current incomes, is both economically perverse and socially punitive. The current historic weakness of wages cannot be attributed to employers' superannuation contributions; indeed, the SG rate has been unchanged for over five years, including the worst years of the wage slowdown. The economic, fiscal and social rationales for requiring employers to contribute to the post-retirement incomes of their employees are as compelling as ever: all the more so, in fact, given demographic ageing and the fragmentation and restructuring of traditional employment relationships (producing more uncertain incomes for many workers during their working lives). To allow employers to offset their failure to pay adequate wage increases, by transferring resources from their compulsory superannuation contributions, seems like a dual injustice: not only are workers forced to bear the consequences of unnaturally low wage growth, but now they are asked to forego future retirement security as the only option for relieving the immediate pressure of stagnant wages. Employers, meanwhile, would be let off the hook: the failure to deliver normal wage increases is tolerated, and employers would simply divert superannuation contributions to relieve the economic and social pressures caused by their own austere wage policies.

This paper will consider recent claims regarding the impact of planned increases in the SG rate on future wage growth, and provide some original and relevant empirical perspective on the issue. The next section reviews the arguments of current opponents of scheduled increases in the SG rate, highlighting the general absence of actual empirical evidence to support their claim that higher SG contributions will be fully offset by lower wages. Section II considers the predictions of various streams of economic theory regarding the impacts of compulsory employer social contributions (such as superannuation contributions). It finds that the theoretical expectation that higher SG contributions will be *fully* offset by lower wages is true only under extreme and unrealistic theoretical cases. Section II also briefly surveys the major findings of the vast body of empirical research which has been published on the wage and employment effects of compulsory employer social contributions – and finds no consensus among economist about the extent of any possible trade-off between wages and social contributions. Section III provides a detailed historical review of wage growth in Australia since the introduction of the superannuation system beginning in the 1980s. It finds no observed correlation between increases in the SG rate and

⁷ An extensive literature confirms the ineffectiveness of retirement income programs based on voluntary individual saving decisions, attributed to many factors including short time horizons and immediate cash flow constraints of lower-income workers.

slower wage growth (and in fact notes a weak, statistically insignificant *positive* correlation between SG rate increases and faster wage growth). Section IV of the paper reports three original statistical tests of the correlation between superannuation contributions (and employer-paid payroll taxes more generally) and wage growth: using historical Australian data, inter-industry comparisons within Australia, and international comparisons across the broader set of industrial countries. In no case is evidence found that requiring higher contributions toward workers' retirement incomes by employers necessarily causes an offsetting reduction in their current wages. Again, there is more evidence of a positive correlation between the two components of compensation, rather than a trade-off. The conclusion of the paper provides several policy recommendations arising from this more theoretically balanced and empirically grounded analysis of the relationship between superannuation contributions and wages.

The relationship between superannuation contributions and wage determination is complex. In Australia's case, this complexity reflects the institutional, political and historical context of our unique wage-setting institutions and policies. Wages for most Australian workers are not set by an automatic and efficient market-clearing process in a competitive labour market. Rather, most Australians are paid according to a heavilyregulated institutional regime that reflects history, competing interests, and the relative power of various labour market stakeholders. After all, those very institutions and regulations explain why the superannuation system even exists – not to mention how the SG rate is specified, and how a bipartisan agreement was reached to gradually increase that SG rate over time. Neither current wages, nor future retirement incomes, are determined by a natural, autonomous, market-driven process: both are the product of institutions, history, and relative power. There may indeed be some tradeoff between those two forms of compensation, because there are ultimately limits to how much total compensation can be sustainably paid to workers (although Australia is far from those limits today); but that trade-off would depend on perceptions, policy, and priorities, and is not dictated by automatic market forces. And so whether planned increases in the SG rate are indeed associated with reductions in future wage growth at all (let alone the complete and self-defeating offset assumed by opponents of the scheduled increases) depends entirely on future policy decisions, and on the future evolution of this institutionally and politically mediated process of income distribution. If Australian workers' can successfully advance demands for both higher wages and better income security after retiring, and if governments ratify those demands (through policy decisions shaping both current income distribution and the retirement system), then there is no economic reason why both wages and the SG rate could not increase at the same time.

I. Would Cutting Superannuation Improve Wage Growth?

In recent months, several organisations in Australia have stepped up their arguments to cancel scheduled increases in the SG rate, set to begin on 1 July 2021. Most of these organisations have previously made criticisms of the superannuation system and the plan to increase required contributions; they have become more assertive in making those arguments as the next scheduled increase draws nearer. The federal government's decision to launch an inquiry into the broad parameters of Australia's retirement system has provided a further arena for these arguments. Although the scheduled (deferred) increases in the SG rate were approved by both major parties in 2014, it is clear that important and influential constituencies are now campaigning to stop them. Moreover, it is only a matter of degree to proceed from arguing against scheduled increases in the SG rate, to arguing for reductions in current contributions. Indeed, arguments are already being advanced that the current SG rate should be reduced, or made voluntary for certain workers (so that workers could divert existing SG contributions to supplement their current income).⁸

Many of these opponents of higher superannuation are now expressing concern over the glacially slow pace of wage growth in recent years, to support their call for cancelling future SG rate increases. They claim that scheduled increases in the SG rate will cause a fully offsetting reduction in future wage growth. By the same token, then, reducing future superannuation contributions (or even current contributions) should automatically lead to offsetting *increases* in wages. The claim that reducing an employer's required superannuation contributions would automatically cause them to pay an exactly offsetting amount to their workers in the form of higher current wages will strike most casual observers as surprising and naïve – and with good reason. However, these commentators suggest that their assumption of a full offset between superannuation contributions and wages is backed up by strong findings in economics. In the blunt words of one commentator, the conclusion that the incidence of superannuation contributions ultimately falls on workers themselves is "a completely

⁸ Liberal NSW Senator Andrew Bragg, among others, has recently argued that employer superannuation contributions should be made voluntary as a way of supplementing the wages of low-income workers; see Borys (2019). In fact superannuation contributions are already voluntary for workers who earn less than \$450 per month; no evidence has been presented that wages for these workers are higher because of the absence of SG payments by their employers. Cowan (2019a) argues superannuation should be voluntary for young workers.

settled issue, both theoretically, institutionally and empirically."⁹ As we will see, this is not remotely the case: in fact there is enormous debate and ambiguity, in both theoretical and empirical work, in economists' understanding of the relationship between employer social contributions (such as superannuation contributions) and wages.

Surprisingly, given these unequivocal and blunt assertions, proponents of this view have not provided concrete empirical evidence to show that wages for Australian workers have been harmed by the previous growth of required superannuation contributions. They do not argue that higher superannuation contributions might lead to some reduction in wages; they argue they will lead to a *complete and perfectly* offsetting reduction in wages, leaving workers no better off despite the additional superannuation contributions being made on their behalf. In fact, due to the interaction of superannuation and wages with other features of Australia's tax and pension systems, some authors argue that workers will be made worse off over their lifetimes by requiring their employers to make larger contributions to their retirement incomes.¹⁰ However, no empirical evidence is provided to support the counterintuitive and extreme claim that lower wages will fully offset any increase in superannuation contributions. Instead, proponents of this argument authors have simply asserted that assumption – and then, for support, referenced other authors who make the same assertion. The argument hangs on a circular and repetitive process of self-reference among writers who all think the same way.

We will consider in detail two telling examples of this "argument by echo chamber" approach to the debate over wages and superannuation contributions. The first is a commentary written by Michael Potter for the Centre for Independent Studies (2016). Potter and his organisation, of course, are long-standing critics of the compulsory superannuation system, viewing it as paternalistic interference with free-market decisions by optimising individuals (including distorting their decisions regarding the optimal trade-off between current and future consumption).¹¹ The Centre for Independent Studies is also a long-standing critic of labour-market interventions aimed at lifting wages: including strong criticisms of the minimum wage, the awards system, trade unionism, and income security programs.¹² However, despite this traditional faith that free labour markets will pay workers what they deserve (and governments should stay out of the picture), Potter reveals newfound compassion for the plight of

⁹ See Sloan (2019).

¹⁰ This is the claim advanced by Daley and Coates (2018).

¹¹ See, for example, Kirchner (2012).

¹² See, for example, Cowan (2019b) and Baker (2013).

Australian workers: bemoaning the recent weakness of wages, and then arguing that matters will be made worse by scheduled increases in the SG rates.

"If wages growth remains at the historically low rate of 2.1% per year, then the planned SG increase of 0.5% per year will cut pre-tax wages growth by about a quarter each year." (Potter, 2016, p.28).

No discussion is provided as to why wage growth has been so weak in Australia, and what else might be done about it (other than cutting superannuation).

Potter provides a numerical simulation (p. 28) to demonstrate the proportion of wage income that would be lost by workers at different income thresholds (both before and after tax) as a result of the planned increases in superannuation contributions. But this "empirical" demonstration is purely a mathematical demonstration of the magnitudes involved, on the *assumption* that workers' wages will indeed fall by 2.5% (thus perfectly offsetting the full five-year increase in the SG rate). In an accompanying footnote Potter confirms that this perfect and inverse relationship between the SG rate and wages has simply been assumed to be the case. Assuming that wages will fall by 2.5%, and then helpfully calculating how much lost after-tax income that would imply for different income brackets, hardly constitutes empirical "research": it is a straightforward (and unapologetic) assertion. In this simulation, workers at all income levels experience the same 2.5% reduction in pre-tax wages over five years (again, simply because every worker has been *assumed* to lose that much); the reported differences across income categories in after-tax losses are thus due solely to differences in marginal tax rates.

Potter backs up his assumption of a one-to-one trade-off between wages and superannuation contributions by citing nine different authorities who have also "argued that an SG increase will come from wages" (p. 27). Strategically, he includes in that list several figures traditionally associated with superannuation: including Paul Keating, Bill Shorten, and even the Australian Green Party (likely marking the first time in history this party was cited favourably by the Centre for Independent Studies!). If nine different authorities have also "argued" this case (including some influential progressive voices), then the assumption of a perfect one-to-one trade-off between superannuation contributions and wages must surely be valid.

In most cases Potter provides only broad references to these authorities, not actual citations of what they said. The problem is that none of those nine references actually provide empirical evidence to support the contention that superannuation contributions are indeed reflected in lower wages – and if so, to what extent. Rather, all the citations refer to other writers who also simply *asserted* that wages would *likely* be reduced by higher superannuation contributions, without corroborating evidence.

Moreover, the statements made by those authorities were generally more nuanced and equivocal than Potter's claim: some simply considered circumstances in which wages *could* be reduced by higher superannuation contributions, without making an unequivocal prediction that they *would* be. Only one citation (a letter to the editor from Paul Keating) was explicitly consistent with Potter's assumption of a full trade-off between the SG rate and wages, and even that statement has a specific historical context that Potter ignores.¹³

We have investigated each of the nine authorities cited by Potter, to confirm what they actually said, and consider what empirical evidence (if any) was provided to support their claims:

<u>Henry Tax Review</u>. Potter cites a passage from the review's final report (Treasury, 2009a, pp. 109-110) which asserts that, "Although employers are required to make superannuation guarantee contributions, employees bear the cost of these contributions through lower wage growth." No empirical evidence is provided for this broad position. A supplementary report focusing on the retirement income system (Treasury, 2009b) makes a similar assertion in a footnote (p. 9), again without providing empirical evidence or references to other research. Interestingly, the section of the Henry tax review that deals with payroll taxes is far more equivocal regarding their final incidence:

"Who bears the burden of a rise in the payroll tax rate will depend on which factor ... is relatively 'inelastic'." (Treasury, 2009a, p. 306).

While the review concludes that in *most* circumstances *most* of the incidence of a payroll tax will fall on wages, it considers several cases in which businesses bear some or all of the burden – and in no circumstance suggests that *all* of the incidence will fall on workers. As will be discussed below, analysis of the incidence of compulsory superannuation contributions is similar to the analysis of payroll taxes. In this regard, therefore, the Henry tax review actually contradicts any assumed one-to-one trade-off between wages and employer social contributions, so Potter's reference to the review as proof for his assumption of a full one-to-one trade-off is misplaced.¹⁴

<u>"Treasury."</u> Potter cites "Treasury" as endorsing the assumed trade-off; his precise reference (specified in a footnote) is to verbal testimony by a Treasury official to a

¹³ More recently, Keating and Shorten have rejected the idea that higher superannuation contributions in the future will automatically and fully be offset in slower wage growth; Potter is invoking earlier statements of the two leaders to cast doubt on their current views.

¹⁴ We will note several other occasions in which adherents of a one-to-one trade-off between wages and superannuation contributions cite as "evidence" other writers who do not themselves suggest a complete trade-off.

2012 Senate inquiry into the Mineral Resources Rent Tax Bill (Australia Parliament House, 2012). When asked who bears the burden of increased compulsory superannuation contributions, the official stated, "The expectation is that it will be largely borne by wages" (p. 75). No empirical evidence is provided to support that expectation, and the official's suggestion that the incidence "largely" falls on wages is not consistent with the *complete* trade-off asserted by Potter.

<u>Bill Shorten</u>. Potter cites a speech made by Mr. Shorten in 2011 when he was Assistant Treasurer, to an OECD conference on pensions. At that event Mr. Shorten said, "Analysis suggests that, over time, Superannuation Guarantee increases have come out of wages, rather than profits" (Shorten, 2011). The speech does not cite empirical evidence, nor does it explicitly specify a complete one-to-one trade-off between the two forms of compensation.

<u>ACOSS</u>. In the course of a comprehensive review of the tax treatment of superannuation, an ACOSS submission cited by Potter refers to a broad trade-off between wage growth and superannuation contributions:

"The increase in the Superannuation Guarantee contributions from 9% to 12% proposed in the Superannuation Guarantee (Administration) Amendment Bill 2011 should boost the retirement incomes of low and middle income earners, but at the cost of lower wage increases" (Davidson, 2012, p. 7).

This statement does not specify the extent of that trade-off (and certainly does not imply a one-to-one trade-off), and no empirical evidence is presented in support of the claim. The ACOSS report goes on to consider the importance of tax design in ensuring that workers are better off on a net basis – and hence is not consistent with Potter's claim that workers will be made worse off by the rise in the SG rate.

<u>The Green Party</u>. In a footnote Potter cites a minority report of Green Party senators arising from a Senate inquiry into the Minerals Resource Rent Tax. Potter cites its claim that "the ultimate incidence of the increased guarantee will be on workers (in the form of slower growth in wages) rather than on employers" (Senate of Australia, 2012, p. 152). Potter did not include in his citation the first four words of the Greens' complete sentence: namely, "Most economists believe that..." That additional phrase obviously nuances the claim. In turn, the Greens minority report cites three other witnesses to the inquiry (including the Treasury and ACOSS representatives cited above) to support its conclusion that superannuation contributions are ultimately paid by workers; but neither those witnesses nor the Greens provide empirical evidence to support the claim.

<u>CPA Australia</u>. The professional body for public accountants also submitted evidence to the same Senate inquiry cited above (CPA Australia, 2011), and Potter cites this group as another authority justifying his own assumption. The CPA's submission noted:

"The gradual increase [in the SG rate] of 0.25% pa for two years and then 0.5% pa over five years should be able to be absorbed into future wage increases with minimal impost on employers" (p.1).

This statement is certainly more equivocal than the automatic one-to-one trade-off assumed in Potter's simulations; it is not at all clear what "absorbed into future wage increases" means, and the claim is not supported by empirical evidence.

It is telling that several other witnesses who submitted evidence to the same Senate inquiry argued that some or all of the ultimate incidence of higher SG contributions would in fact be borne by business. For example, the Australian Chamber of Commerce and Industry argued stridently that the *full* cost of the SG rate increases would be borne by employers, while the National Farmers Federation suggested employers would bear 75 percent of the impact.¹⁵ AustralianSuper suggested the outcome would depend on the relative bargaining power of employers and employees:

"In some workplaces, essentially where labour is strong, there may be no offsetting in income. In other workplaces where employers are relatively strong the reverse will apply and it will be fully offset, and in many workplaces there will be some hybrid arrangement." (Senate of Australia, 2012, p. 92).

So while Potter cites some witnesses to a Senate inquiry to support an assertion put forward as established and uncontroversial, he ignores other witnesses (before the same inquiry) who make exactly opposite assertions. He has thus selectively cited other works to support the prior assumption (embedded in his simulation exercise) that higher SG contributions will be automatically and fully offset by lower wages. Moreover, even within that one-sided list of authorities, none actually provided corroborating statistical evidence for their claims regarding the relationship between wages and superannuation – and none explicitly endorsed Potter's extreme assumption that wages would decline by an amount *fully* equal to the increase in superannuation contributions.

¹⁵ Both cited by Senate of Australia (2012), p. 92. The statements of some employer groups regarding increases in the SG rate (echoing earlier employer opposition to the initial introduction of compulsory superannuation) indicate they do not accept the claim that compulsory superannuation is ultimately paid by workers. If the claims of a one-to-one trade-off between wages and super were credible, employers should be indifferent to paying any level of compulsory superannuation. In reality, of course, they have tended to higher compulsory superannuation.

<u>Bruce Bradbury</u>. Bradbury, a research fellow at UNSW, wrote an opinion commentary cited by Potter:

"Even though the superannuation guarantee is paid by employers, it is generally agreed by analysts that the cost of the employer contribution ultimately falls on wage earners via reductions in wage increases" (Bradbury, 2012).

Again, no empirical evidence is provided for the assertion, the possibility of alternate views is acknowledged, and Bradbury does not specify the extent of the assumed trade-off between wages and superannuation contributions.

<u>John Freebairn</u>. Potter cites a Melbourne Institute working paper by Freebairn (2007) as more support for his assumption that wages automatically offset superannuation contributions. Freebairn's analysis is theoretical (not empirical), and considers many different circumstances under which labour supply will respond variously to compulsory superannuation contributions and alternative pension funding arrangements; the paper provides no original empirical evidence of these effects, and Freebairn's stated conclusion was actually very nuanced:

"Given the consensus view that labour supply is less elastic than labour demand, most of the final incidence of a levy placed on either the employer or the employee is on the employee." Freebairn, 2007, p. 16.

Freebairn acknowledges other possible outcomes, and notes that this conclusion is dependent on prior assumptions about the nature of labour supply and labour market equilibrium.¹⁶

<u>Paul Keating</u>. Finally, Potter cites a letter to the editor of the Australian Financial Review written by the former Prime Minister (Keating, 2006). It states:

"The 9 per cent paid under the superannuation guarantee charge (SGC), which I introduced in 1992, is 9 per cent of wages and salaries paid as savings that would otherwise have been paid as cash."

Keating's letter was a rebuttal to business leaders who were objecting at the time to proposed increases in compulsory superannuation contributions.¹⁷ It is also clear from both the historical context and Mr. Keating's other statements (discussed below) that he is referring to the historical and deliberate trade-off made by trade unions and

¹⁶ The next section of this paper explores the nature and realism of those assumptions in more detail.

¹⁷ Again, business opposition to higher SG rates is not consistent with the expectation that the incidence of superannuation contributions is ultimately offset by lower wages – in which case employers should be indifferent about increased contributions.

other labour market stakeholders as part of the Prices and Incomes Accords in the 1980s and 1990s. In that regard his depiction of superannuation contributions as a trade-off for reduced wages reflects a process of deliberate policy choice, not an automatic market adjustment – and the relevance of that history for future changes in the SG rate obviously cannot be assumed. Instead, he was reminding employers that they had benefited from the pro-active wage restraint that was part of the overall policy package that led to the introduction and expansion of compulsory superannuation.

In sum, Potter's seemingly impressive list of published authorities cited to support his contention (embedded in his numerical simulations) that higher superannuation contributions will be fully reflected in lower wages is not convincing, and in many ways is misleading. None of the nine cited authorities provide empirical support for Potter's assertion. Only Keating (in his letter to the editor) explicitly suggests that the trade-off between wages and superannuation contributions is *complete* (one-to-one) – and Keating was referring to active policy choices made decades earlier, not to an automatic and continuing market relationship. Most of the nine authorities explicitly acknowledge possibilities in which at least some of the cost of higher superannuation contributions is borne by business and/or reflected in lower employment levels.

Potter argues that the scheduled increases in the SG rate should be abandoned, in the interests of strengthening future wage growth. Potter does not point out that the historically weak wage growth which so concerns him unfolded precisely at the same time as an extended *freeze* in superannuation contribution rates. So perhaps the more pertinent research question might be to consider precisely why wage growth has slowed to such an unacceptable pace – rather than trying to link weak wages to superannuation contributions. But that would lead discussion back to the failure of Australia's existing labour market to deliver normal wage increases in line with productivity growth (a line of inquiry that might be uncomfortable for Potter and his colleagues at the Centre for Independent Studies).

A second example of "argument by echo chamber" on the issue of the wagessuperannuation trade-off is provided by two commentaries authored by researchers at the Grattan Institute: Coates (2019) and Nolan *et al.* (2019). These commentaries were follow-ups to a larger Grattan Institute report (Daley and Coates, 2018), which argues that Australian workers would actually be worse off (measured by lifetime consumption) if the SG rate is raised. The simulation model they developed for that report assumes that wages will instantaneously and fully decline (relative to a base case forecast) by the full amount of the increase in the SG guarantee (p. 112). That decline in wages is then expected to have various negative effects on workers, according to the Grattan simulations: including reducing consumption during their working lives, and reducing the amount of Age Pension they receive in retirement (on the assumption that the Age Pension continues to be benchmarked to growth of Male Total Average Weekly Earnings). The assumed reduction in wages resulting directly and immediately from the increase in superannuation contributions is important to the Grattan finding that raising the SG rate will actually have a net negative impact on workers.

The Grattan model's assumption that wages adjust fully and immediately to offset superannuation contributions is supported only by a footnote, which claims that "increases to the Super Guarantee Charge are *mostly* passed through to workers in the form of lower wages" (Daley and Coates, 2018, p. 112, fn 390, emphasis added). The difference between being mostly passed through to wages, and immediately and fully passed through to wages, is not addressed. The footnote cites four authorities as support for this claim: Potter (reviewed above), and three sources that were also cited by Potter: Treasury, 2009a; Freebairn, 2007; and a powerpoint slide show by Keegan and Brown (2012).¹⁸ The Keegan-Brown slides describe a numerical simulation exercise in which the impact of higher SG payments is traced through employment and wage effects on the basis of various possible labour supply responses. It contains no empirical evidence on this issue (only a set of "what-if" simulations), and the core scenario simulated does not assume full pass-through of higher SG payments into lower wages. Once again, those claiming that higher compulsory superannuation will be perfectly offset by lower wages are citing other works that do not actually endorse that view.

Elsewhere in the Daley and Coates (2018, p. 88) report, three more authorities are cited as additional support for the modelers' assumption that lower wages will fully offset higher superannuation contributions. One citation refers to a paper by another modeler who also assumes that increases in the SG rate are fully offset by lower wages, so that total compensation is unchanged (Rothman, 2012, p. 5 and 13). But this other modeler presents no evidence to support that view; he simply states his assumption to that effect. Another citation refers to a speech by a Liberal cabinet minister opposing planned increases in superannuation contributions – in part because she believes a higher SG rate will result in lower wages (O'Dwyer, 2018). To support this view, O'Dwyer references the same citation from the Henry tax review that was discussed above (Treasury, 2009a). The third work cited by Daley and Coates is a blog

¹⁸ The Keegan-Brown slideshow was mentioned by Potter, but not in relation to his claim that superannuation contributions would be offset by lower wages (and hence this citation was not listed among the nine authorities reviewed above). Rather, Potter cited Keegan and Brown to support a separate conclusion that compulsory superannuation contributions are an imperfect substitute for wages and voluntary personal savings in the eyes of workers.

commentary which once again recycles the same passage from the Henry tax review, along with past statements by Bill Shorten, in support of the assumption that higher superannuation contributions will reduce take-home pay (van Onselen, 2018); again, no empirical evidence for this view is provided. In sum, therefore, the Grattan model's key assumption that higher superannuation contributions will be fully and immediately offset by an equivalent decline in current wages is not supported with any empirical evidence – only with a circular and repetitive citation of like-minded assertions, just as in the Potter analysis.

The subsequent commentaries by Coates (2019) and Nolan et al. (2019) aim to provide further justification for Grattan's assumption of a full trade-off between wages and SG payments; their goal is also to critique other writers (including Taylor, 2019, and more recent statements by Bill Shorten) who have questioned the existence of a full tradeoff between SG contributions and wages. Which authorities are cited by Coates (2019) to support the argument that higher superannuation contributions will be automatically and perfectly offset by lower wages? Once again Coates cites Potter (2016), the Henry Tax Review, and speeches by Paul Keating and Bill Shorten; this therefore constitutes a complete repetition of Potter's argumentation.¹⁹ In addition to repeating Potter's sources, Coates cites one more recent source: a Parliamentary Budget Office paper (Pelly and Sharma, 2019). But on investigation, that paper, too, simply asserts that increasing the superannuation guarantee "will likely lead to lower wage increases" (p. 13). Once again this is a broader and more cautious claim than the Grattan assumption of a complete and immediate one-to-one assumption. In turn, the only evidence provided by Pelly and Sharma to support their (weaker) assertion is a reference to another Parliamentary Budget Office paper (Wagner and Pitticary, 2018) adding to the circularity of the whole argument.

Wagner and Pitticary do not provide any empirical evidence on this point, but they do cite a 20-year-old paper by Bateman and Piggott (1998). On investigation, that paper merely provides a brief history (pp. 553-554) of early discussions and negotiations between the architects of the superannuation system, union leaders, and labour arbitrators in the 1980s and early 1990s, when the new system was first being introduced. Those discussions certainly contemplated strategic trade-offs by union leaders, the government, and arbitrators as part of the broader and complex process of negotiating and renewing the Prices and Incomes Accords (and related policies). But that historical episode does not imply a necessary, automatic, or continuing inverse relationship between superannuation contributions and wages. Rather, it simply

¹⁹ Citing both Potter, and some of the sources cited by Potter, seems especially circular – given that those citations were the only evidence provided by Potter to support his claim. As noted, neither Potter nor the nine authorities cited by Potter provide any empirical evidence to support their claim.

confirms a well-known fact of Australian political and economic history: namely, that the policy reforms implemented by the Hawke and Keating governments were dependent on voluntary buy-in from trade unions to a package of wage restraint, incented with a government commitment to important social reforms (including the creation of medicare and superannuation).²⁰

This early history of the formation of the superannuation system is worthy of further consideration. The superannuation system was developed in the context of a historic "compromise," embodied in the Prices and Incomes Accords, in which trade unions (widely thought at the time to be "too strong," with power to demand wages that were "too high") voluntarily restrained wage demands in return for various offsetting concessions, including improvements in the "social wage" (such as the eventual introduction of Medicare and universal superannuation). That particular chapter of history may have created the expectation in some minds that superannuation is always traded-off against wages. But that initial trade-off embedded in the Accords was a deliberate policy choice (not an automatic market adjustment). It reflected the specificities of the time: in particular, the view that Australia suffered from a "wage overhang" that had to be reduced through wage restraint. Moreover, the eventual implementation of compulsory universal superannuation did not occur until years after the initial restraint in wages facilitated by the Accords. Mees and Brigden cite Keating as describing the SG system as a deferred "reward" to workers and their unions for the voluntary wage restraint they exercised in the early years of the Accords:

"Accord Mark VI provided for the second 3 per cent of superannuation to be paid on a phased basis flowing from the wage restraint of the past few years." (Keating, cited in Mees and Brigden, 2018, p. 89)

Here Keating is describing a political and strategic trade-off, shaped by the times in which the Accords were developed. The wage restraint came first, and increased superannuation contributions came later – facilitated through conscious policy action, not market forces. This is very different from the automatic, market-driven adjustment of the sort assumed in competitive neoclassical models of the labour market (discussed further below). And there is no reason to expect that deliberate trade-off will be maintained in the future, at a time when policy-makers are now more concerned that wages are too low, not too high.

A similar time-specific context must be provided for another piece of evidence provided by Coates (2019) to support the contention of an automatic trade-off between superannuation contributions and wages. Coates notes that when the Fair

²⁰ See Carney (1988), Forsyth and Holbrook (2017), Mees and Brigden (2017), and Humphrys (2018) for more details on those discussions and trade-offs.

Work Commission announced its 2013 decision in the annual minimum wage review, it stated that its wage award (lifting the minimum wage by 2.6%) was lower than it might have been in light of the coincident increase that year (by 0.25% of wages) in the SG rate:

"The increase in modern award minimum wages and the NMW we have determined in this Review is lower than it otherwise would have been in the absence of the SG rate increase." (Fair Work Commission, 2013, p. 12)

Coates interprets this wording as more proof that wages will naturally fall to fully offset increases in compulsory superannuation contributions. However, the Commission did not indicate a full one-to-one reduction in its minimum wage award, nor specify the extent to which the minimum wage award was reduced. In fact, the Commission stated that "it would not be appropriate to quantify its effect" (p. 12). It added, in relation to the relevance of superannuation (and other extenuating factors):

"The range of considerations we are required to take into account calls for the exercise of broad judgment, rather than a mechanistic approach to minimum wage fixation." (Fair Work Commission, 2013, p. 93)

One year later, in 2014, the FWC increased the minimum wage by a larger amount, 3.1% – even though the SG rate also increased by 0.25% that year. The Commission indicated again that it had broadly taken the SG increase "into account" (Fair Work Commission, 2014, p. 45) in determining the 2014 minimum wage award – but with no specific quantum attached to that consideration, and no indication that the trade-off was on a one-for-one basis.

In fact, the two minimum wage increases announced by the FWC in 2013 and 2014 (2.6% and 3.1%, respectively) were broadly comparable to the prevailing pace of minimum wage increases in recent years: which have averaged 2.95% since 2011.²¹ In historical perspective, therefore, the minimum wage increases in those years were not unusually low, compared to adjacent periods (when the SG rate was unchanged): the 2013 increase was slightly smaller than average, the 2014 increase slightly greater than average. Moreover, as with the policy decisions which were taken at the time of the initial introduction of superannuation, this *stated* (but not *observable*) trade-off between superannuation contributions and minimum wages depends on the judgment

²¹ Minimum wages were not increased at all in 2009 as a response to the economic challenges of the global financial increases, and then by an unusual 4.8% in 2010 to provide a 'catch-up' increase to workers in light of the previous year's freeze. Minimum wage increases since then have fluctuated in a band between 2.4% and 3.5%; the increases announced in 2013 and 2014 were neither high nor low given that context.

and active discretion of policy-makers: it is not a natural, automatic or continuing relationship. There is no particular reason to believe that the FWC would automatically impose a trade-off between future minimum wage increases and planned increases in the SG rate in the future. The FWC's wage awards reflect its judgment regarding the most effective minimum wage adjustment given the circumstances of the time; it could certainly decide in future to increase minimum wages alongside increases in the SG rate.

One final piece of evidence presented by Coates to support his contention that wages and superannuation contributions are perfectly inversely related is a reference to the long decline in labour compensation as a share of GDP or total national income in Australia. Coates suggests that if wages did not decline in response to changes in the SG rate, then labour compensation should "spike" as a share of total national income in years when the SG rate increased. Instead, he notes that labour compensation has declined relative to total national income throughout the period covering the introduction of superannuation. (In fact, as described in detail in the next section, the labour share was falling before superannuation was introduced, it declined in years when the SG rate was not increased, and it has continued to decline over the period since 2014 when the SG rate was frozen at 9.5%.) But this decline in relative labour compensation hardly proves that wages and superannuation contributions are perfectly inversely related. It proves, rather, that overall labour compensation – both wages and superannuation contributions – has been suppressed. As discussed below, this is inconsistent with neoclassical economic assumptions that labour is paid (like other factors of production) according to its marginal productivity, in which case such large changes in relative factor shares are unlikely. Coates does not perform formal statistical analysis on the labour share data to see if there is any clear correlation with changes in the SG rate. Indeed, his cursory search for a "spike" in labour shares is farfetched given the small size of incremental SG payments relative to both total wages and total economic output. On its own, therefore, this evidence neither corroborates nor refutes the assumption of a one-to-one trade-off between wages and superannuation contributions.

The second Grattan commentary, by Nolan *et al.* (2019), brings no new evidence to bear to support the assumption of an automatic one-to-one trade off between wages and superannuation contributions. This commentary once again cites the familiar and well-worn assertions by the same authorities reviewed earlier: including (yet again) the Henry tax review and Paul Keating, along with the 1992 government document which announced the introduction of the universal superannuation system (Treasury, 1992). That government paper described superannuation as a process of deferring current consumption in order to accumulate resources for post-retirement incomes; but again, no empirical evidence is provided to support the assumption of a full, immediate and automatic trade-off between wages and SG payments.

Later, the Nolan *et al*. commentary surprisingly concedes that the assumed trade-off between wages and superannuation may not in fact be complete:

"Of course the full impact of higher compulsory super might not be felt fully via lower wages, or immediately." (Nolan *et al.*, 2019).

This contradicts the specific assumption of a full and immediate trade-off that is explicitly built into the Grattan Institute's own simulation model. One alternative case considered by Nolan et al. is employers responding to higher SG payments by raising prices – thus passing the burden to consumers. They argue this would have an equivalent impact on real wages to direct proportional reductions in nominal wages. But this claim is false: unit labour costs account for only about half of total production costs in Australia on average,²² so employers could raise prices sufficiently to cover their extra SG costs with only half the proportional impact on real wages. Nolan et al. acknowledge another possibility: that employers could absorb higher SG costs through a reduced profit margin, But they then invoke the same data as Coates (2019) regarding the long-term decline in labour compensation as a share of GDP, to show that profit margins have not been negatively affected by compulsory superannuation. Again, that decline in labour compensation does not prove that workers have paid for superannuation contributions through their wages; it only proves that workers' total labour compensation has been suppressed for a long time (including in years when the SG rate did not change).

In sum, neither Potter nor the Grattan publications (nor any of the references contained therein) provide empirical evidence to support their shared claim that wages will naturally and fully decline to offset the effects of a higher SG rate. Both Potter and the Grattan authors provide numerous references to authorities who they claim support their assumption. But on investigation, those references constitute a repetitive and self-referential "circle": a group of authors who all hold a certain view, and cite others who also hold that view (including each other) without actually bringing evidence to bear on the question. Most of the cited authorities do not even claim that there is a full, perfect offset between wages and superannuation – yet they are listed by Potter and the Grattan authors in support of their own assumption of a

²² Aggregate unit labour cost at the macroeconomic level is equivalent to the share of labour compensation in total GDP, which was just under 47% in 2018 (author's calculations from ABS Catalogue 5206.0, Table 7). Other final costs in valued-added production include return to capital, mixed income, and indirect taxes.

perfect one-to-one trade-off. At the end of the day, even Nolan *et al*. concede that the perfect trade-off they assume in their model may not prevail in practice.

Instead of simply assuming that higher superannuation contributions will cause lower wages (and citing, as evidence, others who make the same assumption), surely it would be more useful to investigate other economic research – both theoretical and empirical – into this relationship. To that goal the rest of this paper now turns.

II. The Predictions of Economic Theory, and the Findings of Empirical Research

The labour market impacts of compulsory employer social payments (such as retirement pensions, unemployment insurance, or workers compensation) have long captured the interest of economists. As a result, there is a large and comprehensive literature on this topic, covering both theoretical models and applied empirical research. This existing literature is relevant for considering the likely impacts arising from changes in Australia's SG rate. This section will review the findings of three classes of theoretical analysis: the conventional competitive neoclassical model, variations on that neoclassical model (allowing for imperfections or rigidities which interfere with normal competitive markets), and non-neoclassical (or heterodox) models which do not rely on traditional neoclassical assumptions about competitive, market-clearing behaviour. We also briefly consider the wide range of findings reported in the extensive body of empirical literature which has attempted to quantify the impacts of compulsory social contributions on wages and employment.

COMPETITIVE (NEOCLASSICAL) MODELS

The labour market effects of compulsory superannuation contributions (considering impacts on both wages and employment levels) are commonly hypothesised as being equivalent to a payroll tax, in which employer labour costs are increased by a compulsory levy applied to pre-tax wage costs. Since SG contributions are compulsory, calculated on top of wages, and paid by the employer, their effects are similar to those of a payroll tax. In the case of payroll taxes which flow into general government revenues, there would not likely be any direct impact of the tax on labour supply decisions; the main labour market impact is experienced via an increase in employers' labour costs. However, most payroll taxes are attached to the provision of specified benefits for the workers who are covered by them; in this case they can be considered as a form of indirect or deferred compensation to those workers.²³ There may then be impacts on labour supply decisions, in addition to their effect on employers' labour costs.

²³ Australia's national income accounting system treats employer payments for both superannuation contributions and workers' compensation schemes as forms of labour compensation.

An alternative theoretical approach for analysing pension payments by employers is to model them as a choice by workers regarding the optimal mixture of compensation between direct wages and fringe benefits (such as pensions, supplementary insurances, and other fringe benefits). Theoretical models of this choice aim to describe trade-offs between those various forms of compensation as being determined by the preferences of workers, mediated by relative 'prices' of different forms of compensation (which are influenced, among other things, by differences in the tax treatment of various forms of compensation).²⁴ In the case of Australian SG payments, which are compulsory at minimum rates determined by the government, this optimizing choice model is not relevant – and at any rate the findings of those compensation 'choice' models are broadly similar to models of payroll taxes.



Figure 2. Competitive Labour Market Partial Equilibrium

Neoclassical analysis of the wage and employment effects of payroll taxes, and their ultimate incidence, traditionally starts from an assumed competitive partial equilibrium condition in the labour market. This approach, a hallmark of neoclassical economics, assumes that a flexible market-clearing wage is established at a level which equalizes labour supply and labour demand. As illustrated in Figure 2, employers will predictably adjust their labour demand (L_D), and workers will predictably adjust their

²⁴ For examples of this approach, see Blumberg (1991), Woodbury and Huang (1991), or Smith and Ehrenberg (1983).

labour supply (L_S), in response to fluctuations in the (flexible) wage rate, until a wage level is reached (W_o) which equalizes labour supply and demand (at employment level E_o), and no involuntary unemployment exists. Lurking behind this partial equilibrium description is a whole set of further assumptions about competitive behaviour, the nature of economic preferences and decisions, and the existence of a broader general equilibrium in the economy as a whole. With the help of those other assumptions, the equilibrium wage can be shown to equal the marginal revenue product of employed labour – giving rise to the important neoclassical conclusion that workers are automatically paid according to their productivity.²⁵

This starting point of a well-behaved labour market partial equilibrium is familiar, but the assumptions underlying that model are not always elucidated or appreciated. It is important to be aware of those assumptions, to judge whether it is realistic to apply that model to real-world economic problems. The assumptions which are essential to this starting description of labour market behaviour include:

- A well-behaved labour supply function, whereby the amount of labour offered by workers increases monotonically with a higher wage. In practice, labour supply may respond unpredictably to a higher wage (if workers have a target standard of living, their labour supply may actually decline as the wage grows), or may be dominated by determinants other than the wage.
- A well-behaved labour demand function, whereby the amount of labour employed by businesses will increase as the wage falls. If the output of firms is constrained by demand conditions in product markets, a lower wage may have no impact on employment – since employers' labour demand is dependent on (and derived from) the expected demand for whatever those workers are being hired to produce. In fact, in certain circumstances, lower wages can reduce labour demand via their negative impact on aggregate purchasing power in the economy.²⁶
- A complementary assumption necessary for a well-behaved labour demand function is of constant returns to scale in production: that is, unit production

²⁵ Keep in mind that the specific concept of labour productivity utilised in the neoclassical model (marginal revenue productivity) is not equivalent to measures of average labour productivity typically reported in economic statistics; indeed, marginal productivity is not typically observable except through economic experimentation.

²⁶ Bhaduri and Marglin (1990) and Palley (2017) provide seminal examples of models in which lower wages result in lower employment through their negative impact on workers' consumption spending. Lavoie and Stockhammer (2012), among others, have found this effect to be empirically relevant in several OECD countries – even more so since the global financial crisis of 2008-2009 and resulting conditions of chronic macroeconomic stagnation.

costs of firms are invariant with respect to the size of their operations. This assumption (along with the assumption of a fixed capital stock in the short-run) is necessary to generate the finding of decreasing marginal productivity which underpins the downward-sloping demand curve. It is highly unrealistic.

- In turn, the assumption of constant returns, along with the numerous complementary assumptions of perfect competition (namely, atomistically small firms, perfect information and certainty, price-taking behaviour by all agents, and full consumer sovereignty), is also necessary for the neoclassical expectation that excess profits captured by any firm will be competed away. In general equilibrium, prices for all goods and services equal their cost of production (including a normal market-clearing return to the owners of capital). Businesses cannot earn excess profits (or "rents") thanks to the disciplining force of competition.
- Finally, the wage must be able to freely fluctuate until it reaches a marketclearing level, no matter how low (or high) that may be; involuntary unemployment does not exist.

These assumptions, necessary to the competitive neoclassical model, are self-evidently unrealistic. They do not describe any real-world economy: neither today, nor in the past. Indeed, these assumptions were never posited as a description of economic reality, but rather were conceived as the first step in a process of axiomatic theoretical analysis: the methodology of neoclassical general equilibrium theory begins with certain assumed starting points (or axioms), and then derives increasingly comprehensive conclusions from them (including the claim that unconstrained markets optimise social welfare). While any economic theory involves abstraction from real-world detail in order to identify deeper underlying forces and relationships, the dependence of the neoclassical model on those extreme starting assumptions should always be kept in mind – especially when applying findings of that theory to real-world policy issues.

Starting from that assumed partial equilibrium condition, neoclassical models of the impacts of a payroll tax proceed by adjusting labour demand and labour supply functions according to the size and nature of the tax.²⁷ We begin with the case of a payroll tax paid by the employer. For any given wage rate, employers now employ less labour than they would have without the payroll tax – because their total labour costs now include the payroll tax, and those higher total labour costs encounter the declining marginal revenue product of labour at a lower level of employment. This can

²⁷ See, for example, representative expositions of this approach in Bédard (1998), Organisation for Economic Cooperation and Development (1990), and Freebairn (2004).

be illustrated as downward shift in the labour demand curve. Workers do not pay the tax, and continue to receive the full value of whatever market-clearing wage they are paid; hence their labour supply function is unaffected (although the equilibrium wage will be).²⁸





As illustrated in Figure 3, the downward shift in the labour demand curve results in a reduction in both the total level of employment (falling to E_1) and in the equilibrium (market-clearing) wage level (falling to W_1). There is still no unemployment; employment declines because workers voluntarily offer less labour supply as the wage declines, but no unemployment is created. Some of the payroll tax is reflected in a loss of wage income to workers (even though the tax is paid by employers); but some is reflected in a reduction in employment. The relative size of those two effects depends on the relative elasticities of labour supply and demand: that is, the extent to which both respond to changes in the market-clearing wage. If labour supply is relatively insensitive to wages (inelastic),²⁹ then more of the final burden of the tax will be reflected in lower wages, since workers have to absorb lower wages (forced by market pressures) in order to ensure that their continuing labour supply is fully employed

²⁸ If the payroll tax funds some benefit for workers, then it can be considered as a kind of compensation, and hence might have labour supply effects; this case is discussed below.

²⁹ This is represented by a more steeply-sloping labour supply function.

despite higher labour costs; in this case, the resulting decline in wages might offset most of the increase in labour costs resulting from the payroll tax. But if labour supply is quite elastic (ie. highly sensitive to changes in wages), then wages will not change as much. Employment declines a lot in response to the increase in (total) labour costs, because workers withdraw their labour quickly as the wage begins to fall; hence the equilibrium wage is relatively unaffected. In any event, *none* of the payroll tax is "borne" or ultimately "paid" by employers: remember, in the neoclassical model there are no excess profits (or "rents") either before or after the imposition of the payroll tax, thanks to the pressure of competition. Firms always hire the optimal combinations of factors of production, given their (market-clearing) prices, and then sell the resulting output at prices which always exactly equal their cost of production.

Alternatively, the payroll tax might be paid by the worker, deducted from their wages and forwarded to the government. In this case there is now a difference between the wages paid by employers, and the wages received by workers. Workers now need a higher pre-tax wage in order to elicit a given amount of labour supply – since that pretax wage is reduced by the amount of the tax. This can be illustrated as an upward shift in the labour supply function (see Figure 4).





In this case, the pre-tax or gross wage increases (to $W_{1(gr)}$), but the after-tax or net wage received by the worker (after deducting the payroll tax) falls (to $W_{1(net)}$).

Employment will also decline, since employers will reduce their hiring in response to the increase in the (pre-tax) wage. Once again, the final effect of the payroll tax is divided between a decrease in the (after-tax) wage and a decrease in employment. And the relative division of those effects between lower employment and lower wages still depends on the relative elasticities of labour supply and demand. This gives rise to the celebrated finding in neoclassical theory that there is no difference between the impacts of a payroll tax levied on employers, and a similar tax levied on employees (known as the finding of "incidence equivalency").³⁰ The automatic workings of competitive markets will ensure that the end results are identical – including the extent to which the payroll tax is reflected in lower wages. This result is counter-intuitive (few Australians would believe they would be no worse off if the full burden of superannuation contributions was removed from employers, and instead deducted from their own paycheques), and as always is dependent on all the underlying assumptions of competitive market behaviour described above.

Whether the payroll tax is levied on employers, employees, or shared between them, the ultimate incidence of the tax (on wages and employment levels) depends on the elasticities of labour supply and demand. The extent to which a payroll tax produces an



Figure 5. Employer-Paid Payroll Tax with Perfectly Inelastic Labour Supply

³⁰ See Bédard (1998) for a typical exposition of the theory of incidence equivalence, and Fullerton and Metcalf (2002) for a survey of the literature on incidence.

offsetting reduction in wages is thus an empirical question; no unequivocal conclusion is expected, *even in a neoclassical model assuming perfectly competitive labour markets*. In general, if labour supply is very inelastic, then the decline in the marketclearing wage will be assumed to constitute a larger share of the initial payroll tax. But only in an extreme case does the neoclassical model suggest that labour will bear the *full* impact of the payroll tax in lower wages.

This case is illustrated in Figures 5 and 6. Both figures indicate a condition of perfectly inelastic labour supply: that is, workers will supply the same amount of labour to the market, regardless of the wage being paid. While it is often considered that labour supply is relatively inelastic in response to wages (since most workers must work in order to support themselves and their families, even if the wage is unattractive³¹), the assumption of perfect inelasticity is not realistic. Clearly, at least some workers (including segments of the labour force such as students, retirees, and homemakers) will adjust their labour supply in response to changes in wage rates, and in that case wages do not bear the full burden of the tax.³²



Figure 6. Employee-Paid Payroll Tax with Perfectly Inelastic Labour Supply

³¹ Labour supply is considered relatively inelastic when the proportionate change in labour supply offered is less than the proportionate change in the wage rate; that is, the measured elasticity is smaller than 1.

³² As Piketty *et al*. (2016) summarise, "Whenever supply effects cannot be neglected, the aggregate level of domestic output and national income will be affected by the tax system, and all taxes will be partly shifted to both labor and capital" (p.14, fn 24).

Figure 5 illustrates the case of an employer-paid payroll tax in conditions of perfectly inelastic labour supply. Employment does not change (since workers are compelled to continue supplying just as much labour, even as their wage falls), and the equilibrium market-clearing wage falls by the full amount of the payrolls tax.

If the payroll tax is deducted from workers' wages (rather than being paid by the employer), the same result is attained (consistent once again with the neoclassical finding of incidence equivalency; see Figure 6). The pre-tax (gross) wage is unchanged, but the after-tax (net) wage falls by the full amount of the tax, and there is no change in employment.

It is thus clear that the claim that wages will decline by an amount that fully and completely offsets the value of compulsory employer-paid superannuation contributions is doubly dependent on unrealistic assumptions. First, the entire neoclassical partial equilibrium model itself depends on the existence of market-clearing wage determination – which in turn depends on a whole set of far-reaching and unbelievable assumptions about competition, markets, and prices. But even that (unrealistic) model does not expect a full offset between wages and superannuation contributions (contrary to the claims of Potter and Coates, among others), except in the extreme case of perfectly inelastic labour supply. Even in the rarefied world of neoclassical economic theory, therefore, the claim of a perfect trade-off between wages and compulsory employer-paid social contributions is not generally justified.



Figure 7. Adjustment to Employer-Paid Payroll Tax with Labour Supply Response.

An elaboration of the neoclassical model with particular application to Australia's superannuation system is provided by Freebairn (2004). He notes that unlike payroll taxes that are used to fund the general activities of government, compulsory superannuation contributions have a direct and personal connection to the compensation of covered workers. The contributions are paid into a personal fund, which workers will be able to draw down when they reach retirement age. Those contributions should therefore have an impact on workers' labour supply decisions: since workers receive this compensation on top of their (pre-super) stated wage, they should actually be willing to supply a great amount of labour for any given wage rate than would be the case if compensation consisted only of that wage. (A similar logic could also apply to public insurance or benefit programs funded with payroll taxes, where worker's access to the benefit is contingent on their employment or wage history.) This incentive effect of the funded social benefit can be modeled in the standard neoclassical framework as a downward shift in the labour supply function (Figure 7): a given level of labour supply can now be elicited with a lower wage, since workers also receive superannuation in addition to that wage.

Freebairn describes a special case in which individuals with perfect foresight and certainty view superannuation savings as a perfect substitute for their own voluntary personal savings from current income. This is unlikely for several reasons: the savings propensity implied by the SG rate is unlikely to perfectly match workers' independent willingness to save (especially since savings propensity varies greatly across the various income levels that make up the aggregate labour market, and few would choose to voluntarily save exactly at the rate specified by the SG system); individuals with relatively short time-horizons (ie. who discount future consumption greatly) or who are facing difficult immediate financial circumstances might prefer to have access to more income immediately;³³ and tax rules and volatile investment returns will cause the realised future value of superannuation contributions (with accumulated investment income) to deviate unpredictably from the up-front value of employer contributions. However, if the assumption of perfect substitutability between superannuation contributions and voluntary savings were true, then it is possible that the introduction of compulsory superannuation contributions would have no net labour market impact at all. Since workers are indifferent to the allocation of compensation between wages and superannuation contributions, they are as happy to to work in return for wages plus super contributions as to come to work for the same (total) amount solely in wages. Employer labour costs would increase by the amount of

³³ If the SG system collects savings at a higher rate than workers would voluntarily choose to save (which is likely, and indeed is one of the goals of compulsory superannuation), then the compensation provided in retirement will be less appealing than current compensation, and labour supply will shift only partially in response to the SG contributions.

the guarantee, reducing employment. But more labour supply is forthcoming because of the incentive of superannuation; the wage would fall by the exact amount of the required contribution rate. Employment is unchanged, and the decline in wages perfectly offsets the superannuation contributions (as in the case of perfectly inelastic labour supply). The only change is that individuals now save through their superannuation funds, rather than through individual accumulation of assets.

Freebairn acknowledges this is a limiting and unrealistic assumption; in practice, superannuation savings are an imperfect substitute for voluntary personal savings (in part because of the incentive effect of lower tax rates on superannuation contributions), and hence he concludes that only some of the cost of the SG is passed through in the form of lower wages. And again, even this finding is still dependent on the regular underlying assumptions of the competitive neoclassical model (including a flexible wage rate that equalizes labour demand and supply and eliminates unemployment).

Another possible labour supply effect of compulsory superannuation is that having access to adequate retirement incomes is likely to reduce the labour supply of older workers. This would incrementally reduce overall labour supply in the market and hence lead to higher wages. This is another practical reason why, even in a competitive neoclassical model, superannuation contributions might not be fully offset by lower wages.

ADAPTATIONS OF THE COMPETITIVE MODEL

In the real-world economy, no labour market matches the competitive ideal described in these conventional neoclassical models. Unemployment is a normal feature of labour markets, not a passing or frictional problem. Many so-called "frictions" or market imperfections influence wage determination, presumably interfering with the expected flexibility required to equalize supply and demand. These frictions include various labour market regulations and institutions – such as minimum wages or union activity. Under these circumstances, the expected response of labour markets to compulsory social payments by employers and/or workers will be quite different than under the assumption that flexible wages always adjust after a policy change to maintain full employment.

The simplest example of how real-world "rigidities" wreak havoc with traditional neoclassical analysis is the case of a uniform minimum wage. Imagine that a government, pursuing a social objective, imposes a minimum legal wage that "binds": that is, it is higher than the wage rate that would be determined (under neoclassical
assumptions) by market forces in a competitive labour market. Now the wage is no longer determined by a market-clearing process; unemployment is a normal outcome (though could presumably be addressed through complementary expansionary macroeconomic policy). The outcomes of a payroll tax are now very different.



Figure 8. Employer-Paid Payroll Tax with Minimum Wage

If paid by the employer, the payroll tax has no impact on pre-tax wages, which are determined by the legal minimum (W_{min}) both before and after the imposition of the payroll tax (as illustrated in Figure 8). Labour costs increase by the amount of the payroll tax, and hence the labour demand function (still assumed to be "well-behaved", in line with standard neoclassical assumptions) shifts downward. This will reduce employment and increase unemployment (represented by the now-larger distance between the labour demand and labour supply functions at the level of the minimum wage). The size of the decline in employment depends on the elasticity of labour demand; if labour demand is relatively responsive to wages, then the decline in employment will be greater. An example of this kind of analysis of the effect of payroll taxes under a minimum wage is provided by Lee and Saez (2012).

If the tax is paid by the employee, however, then total labour costs paid by the employer do not change, and hence employment does not change. The minimum wage continues to apply at the previous level. Workers bear the full burden of the tax through deductions paid out of their (minimum) wage, leaving them with a smaller net



Figure 9. Employee-Paid Payroll Tax with Minimum Wage

wage (W_{net}, see Figure 9). Notional labour supply declines, since workers need a higher pre-tax wage to elicit a given amount of labour supply. But that shift in labour supply doesn't affect employment (which is constrained by the minimum wage); it can only serve to reduce the amount of *recorded* unemployment (since with reduced labour supply, there are fewer non-employed people who would actually be willing to work for the given pre-tax wage). This scenario seems somewhat unlikely in political terms, since collecting a payroll tax from the incomes of minimum wage workers would seem to defeat the original purpose of the minimum wage (namely to boost incomes for low-wage workers) – although if the payroll tax was used to fund a social benefit that enhanced the consumption possibilities of those same minimum wage workers, then it might be considered justifiable. In any case, once the assumption of market-clearing behaviour is relaxed, then the neoclassical finding of incidence equivalency is no longer valid: it now matters greatly whether the tax is paid by the employer or the employee. This perhaps explains why in real-world policy-design, payroll taxes are almost always imposed at least partly if not wholly on employers (whereas conventional neoclassical models argue that is merely an "illusion", and does not reduce how much of the tax is ultimately borne by workers).

This simple adaptation of the neoclassical model (which still retains the other underlying assumptions of neoclassical equilibrium, including well-behaved labour

demand functions) would seem to have considerable implications in Australia. After all, Australia's labour market is governed by a unique, historically entrenched and farreaching system of wage regulation. In addition to a standard minimum wage (which directly applies to only a small proportion of workers), the Modern Award system extends direct wage regulation to a much larger share of the workforce: in excess of one-fifth of employees are paid according to wage rates specified in a Modern Award. There is strong evidence, moreover, that the compensation of many workers paid according to individual contracts also closely follows changes in Award wages. For example, Wright and Buchanan (2012) estimate that the wages of many workers on individual contracts track wage rates directly regulated (and publicly posted) under the Modern Awards, effectively doubling the reach of minimum wage decisions. Finally, an estimated 40 percent of employees are paid according to enterprise agreements, which are typically negotiated for several years at a time.³⁴ In sum, most Australian workers have their wage determined by some kind of institutional mechanism, rather than by "market forces."



Figure 10. Employment by Wage-Setting Method, 2018

Source: Author's calculations from ABS Catalogue 6306.0.

³⁴ As described by Pennington (2018), many of those enterprise agreements have expired and not renewed; but under Australian law the wage provisions of even an expired enterprise agreement continue to apply unless the agreement is formally terminated.

Figure 10 illustrates the dominance of regulated wages in Australia's labour market, on the basis of data compiled (for 2018) by the Australian Bureau of Statistics. Various forms of wage regulation are indicated by shades of red; more market-sensitive forms of wage determination are indicated in shades of blue. Almost 60% of workers have their wages directly regulated by an Award or an enterprise agreement. Another significant share of workers are employed under individual contracts which tend to mirror Award wages.³⁵ That leaves about one-third of workers who are employed under more market-sensitive individual contracts or have their incomes determined by the returns of small businesses which they own and manage. Even in that portion of the labour market, it is not at all clear that wages are set by market "clearing" (as discussed further below). But the influence of market forces on wages across most of the labour market is certainly constrained by Australia's interventionist system of wage regulation. This casts considerable doubt on the robustness of the conventional neoclassical conclusion (which depends on the assumption of market-clearing wage determination) that automatic wage adjustments will offset at least some of the impacts on labour costs of compulsory employer social contributions.

This analysis of payroll tax incidence under a minimum wage is only the simplest way to incorporate institutional rigidities into a neoclassical analysis. There are many more complicated models that aim to account for the absence of market-clearing in observed labour markets, the complex and unpredictable impacts of institutions and social norms on wages, and the potential existence of excess business profits (or "rents") in the absence of perfect competition and general equilibrium. The latter point is particularly relevant to understanding the incidence and distributional effects of payroll taxes. In the absence of general equilibrium, it cannot be assumed that each factor of production is paid according to its marginal productivity, nor that those normal payments to factors perfectly exhaust total output.³⁶ In this case, at least some businesses are likely to receive excess profits (or "rents") over and above the normal returns to the factors of production which they hire; indeed, in the real world there is no point starting a business unless its owners think that such profits can indeed be captured. Institutions, regulations, and social norms then become crucial factors in wage determination – as workers strive to capture a larger share of total output, including some of those rents that would otherwise be appropriated by business. Employers may desire to keep wages above their market-clearing level in order to reduce turnover and elicit more effort from their employees ("efficiency wages").

³⁵ Figure 10 assumes that one in four workers on individual contracts have wages linked to Award rates; that is conservative, as the research cited above (eg. Wright and Buchanan, 2012) suggests that portion is higher.

³⁶ This is also the case under increasing returns to scale, another more realistic variation to the standard neoclassical model.

Alternatively, under conditions of "monopsony" power in labour markets, whereby large firms influence the wage rate through their own hiring decisions, wages will be kept above market-clearing, unemployment may exist, and excess profits are captured by businesses.³⁷

Under any or all of these "imperfect" market conditions, efforts by workers (including operating through the political sphere) to extract higher wages can be understood as an effort to capture a share of economic surplus that would otherwise be received as profits by employers. This description also applies to efforts to strengthen non-wage benefits (like pensions or superannuation). Saez *et al.* (2012) summarise the farreaching implications that arise when the impact of these "frictions" is introduced into standard neoclassical analysis:

"In models with frictions such as search models, employees and employers share a surplus so that there is typically an interval of wages that are acceptable to both the employee and the employer. Hence, wages are not systematically equal to marginal product as in the standard model and are in part determined by other factors such as bargaining power, wage setting norms, or pay fairness norms." (Saez *et al.*, p. 527)

Falk *et al.* (2006) describe how minimum wage policies not only establish a floor below which wages cannot fall (negating the automatic market mechanisms that underpin the neoclassical finding that wages will decline to at least partially offset payroll taxes), but also powerfully influence entitlement effects and normative judgments about what wage is "fair." This will also influence wage determination in the absence of market clearing.

The simplest so-called "special case" of a minimum wage (a policy that applies in virtually every industrialised labour market) confirms that even in a neoclassical understanding, it is not likely or possible that wages would decline to fully offset the impact of compulsory employer-paid social contributions. Of course, minimum wages themselves are a reflection of active policy decisions, and those policy decisions are likely to consider the state of other relevant labour market and policy variables (including the level of and changes in payroll taxes);³⁸ but that chain of causation relies on active and discretionary policy judgments, and is not consistent with the

³⁷ An implication of the monopsony case is that total employment can be increased thanks to increases in the minimum wage, by constraining the extent to which monopsonies can suppress wages; this would also apply to the case of higher superannuation contributions.

³⁸ As discussed above, this is one of the mechanisms suggested by Coates (2019) to explain why he thinks wages will decline (or grow more slowly) if the SG rate is raised.

neoclassical conclusion that automatic market adjustments will offset (and frustrate) movements in payroll taxes.

POWER, INSTITUTIONS, AND INCOME DISTRIBUTION

What if the impacts of minimum wages, unions, institutions, and social norms are accepted as normal and essential features of any labour market – rather than as "imperfections" or special cases? In historic reality, wages have never been determined purely by market-clearing forces. And unemployment is a normal labour market condition.³⁹ Perhaps reality is not well-described as some kind of deviation from the assumed perfect competition and efficient markets of neoclassical theory; perhaps it should instead be described and analysed directly on more realistic theoretical and empirical grounds.

Indeed, there is a diverse and creative heterodox (or non-neoclassical) tradition in economics which dispenses with the assumption of labour market clearing as the starting point of understanding wage determination. Instead, wages are described as the result of an ongoing and conflictual process within society over income distribution. The outcomes of that central distributional conflict depend on the relative bargaining power of employers and employees, influenced by institutions (like collective bargaining and wage regulation), productivity, profitability, technology, competitiveness, and social norms and expectations. These alternative models can explain why unemployment is a normal economic outcome, why demand-side constraints are a permanent (not cyclical) factor, and why income distribution varies with many economic, political and social trends (rather than being determined solely by technology and tastes).⁴⁰

In a typical heterodox description, employment is dependent on aggregate demand conditions, led by business investment decisions (reflecting companies' hopes and expectations for profit, not the automatic "clearing" of a market for capital), exports,

³⁹ Many neoclassical theorists try to deal with this inconvenient truth by defining observed unemployment as voluntary non-employment, and equate "full-employment unemployment" with a so-called natural rate or non-accelerating inflation rate of unemployment. These approaches have been unsuccessful in both theoretical and empirical terms; see Richardson (2019) for a critique in the Australian context.

⁴⁰ Many different economic approaches describe labour market outcomes without relying on neoclassical market-clearing mechanisms, including Keynesian, post-Keynesian, structuralist, and Marxian traditions. For representative descriptions of non-neoclassical approaches to wage determination see Bowles *et al.* (2005), Fine (1998), and Stanford (2015, Chapter 8).

government injections of spending power, and swings in consumer spending. Those demand conditions will not generally be sufficient to fully employ labour; unemployment is a normal condition. Pro-active macroeconomic policy can reduce unemployment – but in modern times that policy generally aims to preserve a "desired" cushion of unemployment, so as to restrain wage pressures and maintain labour discipline. Profit is not a normal, market-determined "return" to capital; it is the residual or surplus left over after wages and other costs are paid out of production.⁴¹ There is a wide range of potential wage levels possible: from a bare minimum sufficient only to provide for the subsistence and reproduction of workers, to a ceiling at which point profits disappear. The precise distribution of income within those limits depends on the relative economic and social power of the respective factors of production.

In this approach, there is no normal, natural, self-regulating wage level. Labour compensation always depends on the state of institutions and relative power. Total labour compensation consists of various components: including wages, paid time off, non-wage benefits, and pensions. Workers and their unions will typically aim to make progress in all of those areas -- and historically they have. Of course, workers' efforts to improve compensation are constrained by economic and political limits: they can never win everything they want, and hence have to make differing strategic judgments about what components of compensation to pursue in various times and circumstances. But in the context of an ongoing political-economic contest over distribution in general, there is no reason to expect an automatic and complete tradeoff between any particular components of compensation. This is fundamentally different from the neoclassical approach in which total compensation is determined, at some efficient and natural level, by self-regulating market forces; if workers want more of one particular component of compensation, they must therefore give up something else. That assumption of market-clearing wage determination ultimately underlies claims of an automatic and complete trade-off between wages and superannuation. In an alternative framework in which income distribution is determined by ongoing structural, institutional and political processes, there is no reason why workers cannot have some of both.

A central goal of workers' movements historically has been winning the right to retire with a pension. Employers consistently resist those efforts; they argue it is up to individual workers or governments to provide for workers' retirement incomes (through individual savings or public pensions). But workers understand that winning

⁴¹ The heterodox understanding profit as a "surplus" is analogous to the analysis of excess profits or "rents" in some modern mainstream theories – except heterodox theorists understand this as a normal outcome, not an exception or market failure.

the right to stop working in retirement, free of economic compulsion, is crucial both to their general quality of life, and to the power balance between workers and employers throughout working life. A world in which workers must "work until they die" is one in which employers exercise a more all-encompassing power over their employees; a world in which workers have the power to leave that relationship, at some point in their lives, is one where they have more capacity to resist employer demands and demand more from work (including higher wages while they are working⁴²). Workers' efforts to win decent pensions have been historically fought at the same time as they strived for and won higher wages: historically they are complements, not substitutes. Internationally, too, it is evident that countries where workers have been able to win stronger current wages and better working conditions, are also countries where retirement protections are more generous and secure.

In this understanding, it is quite natural that wages and superannuation contributions move in the same direction over time, not opposite directions – always shaped by the balance of economic and bargaining power in the labour market. Indeed, this is already visible in the coincidence of weak wage growth with the new upsurge in demands to cancel scheduled increases in the SG rate. If wages and superannuation contributions were truly substitutes – separate specific items purchased from a unified, marketdetermined bundle of total compensation – then the recent historic slowdown in wages should strengthen the argument for superannuation improvements. Instead, some business lobbyists and sympathetic researchers are now setting their sights on reducing that component of labour compensation, too – on top of prevailing low wage growth. In a labour market in which employers already have the upper hand, exploiting underemployment and lax labour market regulations to drive down wage growth to post-war lows, it is not surprising that many are now keen to reduce their contributions to post-retirement compensation, as well. It would be folly, in that context, for workers to assume they could win stronger wage growth by giving up their historic demand for better retirement incomes.

EMPIRICAL STUDIES OF PAYROLL TAXES AND NON-WAGE BENEFITS

There is a vast published literature on the economic effects of payroll taxes and related labour market policies. Hundreds of papers have been published tracing the effects of payroll taxes, pension funding arrangements, and other policies (including wage subsidies, which are the opposite of a payroll tax) on wages and employment levels. As

⁴² This is another example of how winning stronger superannuation benefits, which allow workers to leave the labour market sooner, gives them bargaining to demand higher wages as well.

described above, even in most neoclassical models the final incidence of payroll taxes on wages is indeterminate, dependent on the specific nature of labour supply and demand responses. In models which relax neoclassical assumptions of market-clearing and competitive wage determination, an even wider range of outcomes is possible. It thus becomes an empirical question whether and to what degree payroll taxes are indeed reflected in lower wages.

In this empirical literature, just as in the theoretical approaches surveyed above, there is no consensus regarding the effects of compulsory employer social contributions on labour market outcomes. Individual empirical studies produce starkly different conclusions, depending on the specific quantitative methodologies followed and the specific case studies considered. Some research finds that payroll taxes are fully reflected in lower wages (such as Deslauriers *et al.*, 2018); others find no impact on wages (Engelbrecht *et al.*, 2001); others (perhaps seeking a compromise!), find a 50-50 split in the incidence (Korkeamäki and Uusitalo, 2009). This diversity of empirical findings should be expected, given the theoretical indeterminacy described above.

The time frame chosen also affects the results. Estimated effects are generally expected to be larger over a longer term time horizon – although as Arpaia and Carone (2004) find, the "long term" can take many years to arrive. Adam *et al.* (2018) find a complex mixture of labour supply and wage responses that depends on age, occupation, and who pays the tax (contrary to the incidence equivalency hypothesis). Lee and Saez (2012) find that pass-through of payroll taxes to wages is prevented under a minimum wage.

Several surveys of this vast literature on the wage and employment effects of payroll taxes have been conducted, including by Meyer (1995), Nickell and Layard (1999), Hart (2010), and Melguizo and Gonzales-Paramo (2013). In general, these surveys indicate that a majority of studies find that most (but not all) of the ultimate incidence of payroll taxes is experienced via lower wages (as opposed to in employment effects, or in changes in business rents). Melguizo and Gonzales-Paramo propose, after reviewing over 50 empirical studies,⁴³ a composite estimate of the long-run elasticity of wages with respect to changes in payroll taxes of around -0.7: that is, around 70 percent of the value of a payroll tax is ultimately paid by workers through lower wages, although estimates still vary greatly depending on the country, methods of measuring taxes, and time frame. However, even these literature surveys cannot be interpreted independently from the theoretical starting point of the studies that they review. Most conventional studies utilise a neoclassical framework which assumes market-clearing

⁴³ Melguizo and Gonzales-Paramo perform a "meta-regression" on their surveyed studies: in essence performing a second-order regression on the individual regression estimates.

wage determination and other hallmarks of competitive equilibrium; hence any "consensus" among them that most of the incidence of payroll taxes falls on wages is contingent on their (broadly shared) theoretical starting point. Studies which adopt more flexible theoretical approaches (such as Lee and Saez, 2012, Saez *et al.*, 2017, or Hargaden and Roantree, 2019) are more likely to reject the "consensus" views that statutory incidence doesn't matter and that the incidence of a payroll tax is mostly reflected in lower wages.

Many empirical studies have also been conducted of the effects of wage subsidies – in which employers are compensated for a portion of labour costs, usually with the goal of stimulating stronger employment among targeted groups of workers.⁴⁴ In a neoclassical understanding, a wage subsidy should have opposite effects to a payroll tax: it should lead to some combination of wage increases and employment increases, depending on the relative elasticities of labour supply and demand. Most empirical studies of wage subsidy effects find at least modest positive employment effects – implying that no automatic one-to-one trade-off between payroll taxes/subsidies and wages is visible in this context, either.

In sum, the empirical literature on the labour market effects of payroll taxes is immense and diverse; it is beyond the scope of the present study to comprehensively review it all. But even this brief overview generates some important conclusions relevant to the discussion of the relationship between compulsory superannuation contributions and wages in Australia. First, there is no settled consensus among economists regarding the labour market impacts of compulsory employer social contributions; research continues to generate a wide range of findings. Second, empirical findings depend on the theoretical framework adopted by the investigator; models which allow for non-market-clearing effects (such as minimum wages, distributional norms, and business rents) are more likely to generate outcomes that vary from the conventional neoclassical view. Finally, very little support exists in this empirical literature for the extreme assumption (incorporated into the Potter and Grattan simulations) that changes in compulsory social contributions will be fully and immediately reflected in lower wages.

⁴⁴ Overviews of this literature are provided by Katz (1996) and Marx (2001).

III. The Historical Evolution of Wages and Superannuation Contributions

Australia's superannuation system is the historical result of decades of economic and political debates and struggles, as working people and their unions fought to win a degree of economic independence and security for workers in retirement.⁴⁵ Public age pensions were introduced in most states in the early 20th Century, replaced by a national means-tested flat-rate age pension that came into effect in 1909. The public pension was expanded and reformed several times in intervening decades, including with the introduction of cost-of-living indexing, and various income and asset tests. But it did not provide a sufficient level of income replacement to maintain living standards for most workers after retiring, and reliance on voluntary individual savings to adequately supplement the public pension was never successful. Hence workers agitated for occupational and employer-based pension benefits to supplement the public scheme.

Occupational superannuation programs began to be widely negotiated and arbitrated in collective agreements and industry awards in the 1970s and 1980s. Employers resisted demands that they pay toward the retirement incomes of their workers, but gradually the practice became standardised across most industries – including through precedent-setting agreements negotiated by relatively stronger unions (in industries such as construction, manufacturing, and the public sector), and then extended through the arbitration and awards system. Expanding employer-funded superannuation contributions became an important priority for unions during the years of the successive Prices and Incomes Awards from 1983 through 1991.⁴⁶ Compulsory superannuation contributions were sought as one of the trade-offs for the voluntary wage restraint which unions accepted in support of the Hawke government's efforts to reduce inflation and reduce labour costs.⁴⁷ By 1988, industry-wide compulsory superannuation schemes had been negotiated or arbitrated in dozens of major industries (Mees and Brigden, 2017, p. 85).

⁴⁵ A rich description of this history is provided by Mess and Brigden (2017); see also Dept. of Social Services (1988) for a review of early pension policy debates in Australia.

⁴⁶ See Mees and Brigden (2017), Wright (2014) and Forsyth and Holbrook (2017).

⁴⁷ Other improvements to social benefits included in this overall "package" included universal medicare and stronger income support benefits for lower-income Australians.

The introduction of enterprise bargaining under the last version of the Accords (Accord Mark VII, 1991), implemented under new Prime Minister Paul Keating, led to a shift in strategy regarding superannuation. The fragmentation of bargaining power under the new system, and the phasing out of centralised arbitration, made it harder for unions to continue to negotiate stronger superannuation benefits on a firm or industry basis. Hence the government introduced a new universal superannuation guarantee, effective 1 July 1992, which would require essentially all employers to make minimum contributions to individual superannuation accounts, starting at 3% or 4% of eligible earnings.⁴⁸ A timetable was established for annual or biannual increases in the required rate of contributions, which reached 9% by 2002. An original plan to increase total contributions to 15% of earnings (including employee contributions planned to reach 3%) was scrapped by the John Howard government after 1996. The SG rate was frozen at 9% until 2013, when a timetable for smaller annual increases was implemented by the then-Labor government. The first two small increases (of just 0.25% each) came into effect in 2013 and 2014. Originally annual increases were





Source: Australian Taxation Office (2019) and *Superannuation Guarantee* (*Administration*) *Act 1992*. Pre-1992 rates (under awards) estimated; 1992-1996 rates shown as average of small and large business rates. Rate changes effective 1 July.

⁴⁸ Until 1996 the contribution rate depended on the size of the employing company, with larger firms (measured by revenue) required to pay a higher rate.

intended to continue until the SG rate reached 12%, but in 2014 the new Coalition government of Tony Abbott deferred the increases by six years – freezing the rate at 9.5% until 2021 as part of a deal to eliminate the previous mining profits tax (Cox *et al.*, 2014).

Figure 11 illustrates the evolution of compulsory superannuation rates from 1992 through to the present. The figure also provides an approximate illustration of the gradual phasing in of superannuation contributions before 1992 through collective agreements and industrial awards. At the time the universal superannuation system began, many industries were already paying superannuation at comparable rates, and hence the initial introduction of the new system (at initial rates of 3% or 4%) had modest impacts on employer costs (since most large employers were already paying superannuation at broadly compatible rates). Since the start of universal superannuation, phased increases in the SG rate (from 1992 through 2019) have amounted to the equivalent of a compound average annual increase of 0.2% of wages per year.

As indicated in Table 1, that represents a small proportion (about one-seventeenth) of the average compound annual increase in nominal wages experienced over that same period (3.4% per year). Moreover, most of the increase in SG rates occurred before 2002; since then, the two modest additional increases in the compulsory rate have

Initial superannuation guarantee rate, 1992	3%/4% ¹			
Superannuation guarantee rate, 2019	9.5%			
1992-2019				
Annual compound increase, SG rate	0.2%			
Annual compound increase, avg. weekly earnings	3.4%			
2002-2019				
Annual compound increase, SG rate	0.03%			
Annual compound increase, avg. weekly earnings	3.52%			
Estimated employer contributions				
APRA superannuation review, 2017-18	\$94.8 billion			
Share of total wages and salaries paid	12.2%			
Source: Author's compilation from APRA (2019), ABS Catalogues 5206.0,				
Table 7, and 6302.0, Table 2.				

Table 1. Dimensions of Compulsory Superannuation, Australia, 1992-2019

added less than 0.03% to average wages on an average annual compound basis, and hence have not been a significant component (less than one-hundredth) of overall changes in labour costs during that time. Despite the aggregate financial and macroeconomic importance of the superannuation system, therefore, changes to the SG rate have not been a significant factor in labour cost trends since the turn of the century.

In practice, actual employer superannuation contributions differ from the statutory SG rate. Some employers have agreed to pay higher rates than required under the SG (through enterprise agreements). Some workers do not receive superannuation contributions: for example, if their monthly wages fall below \$450 per month,⁴⁹ or if they are not considered "employees" (such as contractors or nominally self-employed - including new forms of self-employment such as on-demand workers through digital platforms). Some forms of income (such as some overtime payments or bonuses) do not attract compulsory superannuation contributions; and very high incomes (above a current threshold of \$55,720 in a quarter) also do not incur compulsory superannuation contributions. Finally, investigations have identified a growing problem of non-payment of required superannuation by employers: recent estimates suggest that \$6 billion per year in compulsory superannuation contributions are evaded by employers (Industry Super Australia, 2018), equivalent to over 6% of collected employer contributions. For all these reasons, the effective rate of employer superannuation contributions differs from the SG rate. In the financial year 2017-18, employer contributions to superannuation totaled just under \$95 billion (Table 1).⁵⁰ That was equal to 12.2% of all wage and salary payments recorded that financial year through Australia's national income accounting system.⁵¹

The long-term rise in total employer superannuation contributions since 1997⁵² is illustrated by the blue line in Figure 12. Two distinct phases are visible in this data. From 1997 through 2007, total contributions grew very quickly (by an average of 13% per year), and the effective rate approximately doubled (from over 7% to 14%). After the onset of the global financial crisis in 2008, however, the growth of total employer contributions slowed considerably (to just 3.25% per year since then), and the effective rate has actually declined slightly. It is interesting to note the imperfect correlation between those trends and the change in the statutory SG rate. The steady increases in

⁴⁹ ASFA (2018) estimates that 365,000 employees, or around 3% of employees, lose superannuation benefits because their income falls below the monthly threshold.

⁵⁰ APRA (2019).

⁵¹ Author's calculations from ABS Catalogue 5206.0, Table 7.

⁵² Consistent data on employer superannuation contributions is available from APRA only back to 1997. Employer contributions may fluctuate in specific years due to particular factors such as lags in payments, unusual contributions, and other factors.

the SG rate up to financial 2003 translated into observed rapid increases in both superannuation contributions and the effective rate. However, the effective rate continued growing from 2003 through 2007, despite the freeze in the statutory rate in that period. And after 2008 the effective rate remained steady, despite the small increases in the statutory SG rate in 2013 and 2014. The growth in overall superannuation contributions slowed down dramatically – in part because of the historic slowdown in nominal wage growth that took hold after 2013. This imperfect relationship between change in the SG rate (which serves as a broad benchmark for overall employer practice) and actual observed contributions suggests that any effect of changes in the SG rate on nominal wages may be even weaker than suggested in the preceding review of theoretical and empirical evidence – since changes in the SG rate translate only indirectly and imperfectly into changes in actual contributions.



Figure 12. Superannuation Contributions and Effective Rate, 1997-2019

Source: Author's calculations from APRA (2019 and previous editions) and ABS Catalogue 5206.0, Table 7. Financial years ending 30 June.

Another perspective on the actual realised impact of changes in the SG rate on total employer labour costs is provided by ABS national income accounts data. The ABS reports total employer payments into social benefit programs, as a form of labour compensation (in addition to direct wage and salary payments to employees). This data on "employers' social contributions" (from ABS Catalogue 5306.0, Table 7) includes two primary components: employer superannuation contributions and employer-paid premiums for workers compensation programs (most of which are run by state governments).⁵³ Workers compensation premiums have declined in recent years for various reasons: including reductions in benefits and a long-term reduction in the frequency of workplace accidents.⁵⁴ That trend has served to further insulate overall labour costs from the impact of increases in the statutory SG rate.



Figure 13. Effective Rate of Employer Social Contributions, 1986-2019

Source: Author's calculations from ABS Catalogue 5206.0, Table 7.

As illustrated in Figure 13, the overall effective rate of employers' social contributions (measured as a share of direct wage and salary payments) has increased from around 9% in 1990 (before the universal superannuation system was introduced) to 12% at present. That 3 percentage point increase in the effective average contribution rate is only about half of the increase in the SG rate – which grew by about 6 percentage

⁵³ It may seem odd that compulsory workers' compensation premiums, intended to compensate workers for workplace injuries (and to serve as an incentive for employers to improve workplace safety) are treated in national income statistics as "compensation" for workers; the stated logic is that these premiums constitute an employer-paid insurance benefit which is tied to the employment status of those covered by it. Among other ironic implications of this accounting treatment is the fact that the decline in workers compensation premiums that has been observed in recent years, in part resulting from a decline in workplace accidents, is interpreted as a reduction in labour compensation.

⁵⁴ See Watson and Stanford (2018) for a discussion of the causes and consequences of this decline.

points between 1992 and 2019.⁵⁵ The muted impact of changes in the SG rate on average effective supplementary labour costs reflects both the imperfect relation between the SG rate and actual employer contributions (weakened by the factors indicated above), and the offsetting decline over the same time period of changes in workers compensation premiums. For all these reasons, the impact of changes in the statutory SG rate over time on total non-wage labour costs by employers – let alone their eventual correlation (if any) with wage growth – has been partly diffused.





Source: Author's calculations from ABS Catalogue 6345.0, Table 1. Seasonally adjusted, excludes bonuses.

We will now consider the broad dimensions of wage growth over the same historical period covered by the introduction and expansion of compulsory superannuation contributions. There are various ways to measure wage and salary compensation for Australian workers. One common measure, illustrated in Figure 13, is the ABS's quarterly Wage Price Index (WPI, Catalogue 6345.0). This index reports change in wage costs for a representative bundle of jobs; the methodology strips out the effect of

⁵⁵ As noted above, we estimate the SG rate in the early years of universal superannuation as the average of the small and large employer rates; for 1992 that was 3.5%. Prior to 1992, the effective rate of superannuation contributions is impossible to measure, being the composite of numerous firm- and industry-specific rates as specified in collective agreements and awards.

changes in job quality, skills, hours of work, or labour market composition (such as changes in the occupational or industry make-up of employment), in order to construct a hypothetically "pure" measure of wage inflation. The WPI tends to understate true wage growth during periods of strong economic growth (when average hours of work increase, and job quality improves due to employer competition for scarce labour), and overstate wage growth during weaker periods (when average hours and job quality decline). The trend in annual growth in the WPI is illustrated in Figure 14. From 1998 through 2013, wage inflation by this measure fluctuated between 3% and 4% per year (with a temporary downturn visible during the 2008-09 financial crisis); since 2013, WPI growth has decelerated well below that traditional pace (averaging about 2% per year). Since the WPI has only been reported by the ABS since 1997, this data does not cover the full period of time corresponding to the introduction and expansion of universal superannuation.



Figure 15. Average Annual Growth in Weekly Wages, 1982-2019

A more consistent, longer-term, and realistic measure of wages is provided by the ABS's survey of average weekly earnings (Catalogue 6302.0), currently conducted on a semi-annual basis (Figure 15). This survey measures the actual earnings received by employees in Australia, and includes the impact of changes in hours worked, compositional changes in employment, and other factors excluded by design from the

Source: Author's calculations from ABS Catalogue 6302.0, Table 2, and RBA Occasional Paper #8, Table 4.18. Annual averages.

WPI. Data is available for all employees (dotted line in Figure 15), or for only the ordinary-time earnings of full-time employees (the solid line). The latter is often viewed as a more reliable measure of "core" wage trends, but it excludes the impact on realised wages of the historic shift toward part-time work in Australia's labour market. This data provides a more complete historical perspective on the potential relationship between wage growth and changes in superannuation contributions. The trend is dominated by the sharp deceleration of nominal wage growth in the 1980s: from around 15% per year at the beginning of that decade, to half that or less in the wake of the initial Prices and Incomes Accord signed in 1983. Nominal wage growth decelerated further after 1990, for various reasons: including the recession experienced in 1992-92, the adoption of inflation targeting by the Reserve Bank of Australia, and the shift to an enterprise bargaining system. Wage growth picked up modestly in the 2000s, on the strength of very strong labour market conditions (associated with the resource-led economic expansion). Growth in average weekly wages then decelerated sharply after 2013 – to under 2%, before rebounding partially since 2017. In general, the average weekly wages data reveal a similar trend to the pattern visible in WPI data: in particular the marked deceleration of wages after 2013.

Several other measures of wage inflation are also available, including labour compensation and labour cost series derived from the national income accounts, and average wage increases specified in enterprise agreements.⁵⁶ Despite differences in methodology, these other series also generally confirm the same historic pattern of wage inflation in Australia (including the historic deceleration of nominal wage growth in the 1980s, the modest strengthening of wage growth during the 2000s, and the deceleration of wages to postwar record lows after 2013).

We will now consider the observed correlation (if any) between changes in the superannuation guarantee rate and the pattern of wage growth. The rise and fall of nominal wage growth in the years since universal superannuation was first implemented bears no obvious correlation to changes in the SG rate. The average annual growth in ordinary weekly wages for full-time workers from 1992 through 2019 was 3.9% per year. Since the introduction of universal superannuation, wage growth fell below that average in 12 years; in 15 years it exceeded the average.⁵⁷ The SG rate

⁵⁶ Wage trends in federally registered enterprise agreements are reported quarterly by the Attorney-General's Department, in its bulletin *Trends in Federal Enterprise Bargaining*.

⁵⁷ We do not include 1992 in this analysis since we do not know the effective difference between the initial SG rate and the effective contributions that were already in place (through awards and collective agreements) before 1992. We compare SG changes to average wage growth in the calendar year in which the SG rate increased; since SG rate changes are announced well in advance, and take effect midway through the calendar year, this is appropriate for analysing their potential impact on wage growth (since employers have ample time to anticipate and adjust their wage offers). We include 2019

was increased in 9 of those years; it did not change in 18 of the years. Every possible combination of these two dimensions of change has occurred in practice over this period: weak wage growth occurred both when the SG rate increased and when it did not change, and strong wage growth has occurred when the SG rate increased and when it was frozen. The matrix illustrated in Table 2 summarises the frequency of these permutations.

		Super Guarantee	
		No Increase	Increase
Wage	Below Average	1997, 1999, 2004, 2006, 2015, 2016, 2017, 2018, 2019 (9)	1993, 1996, 2014 (3)
Growth ¹	Above Average	2001, 2003, 2005, 2007, 2008, 2009, 2010, 2011, 2012 (9)	1994, 1995, 1998, 2000, 2002, 2013 (6)

Table 2: Correlation of	Wage Growth	and Superannuati	on Changes	. 1993-2019
	wase drowen	and Superannout		, 1999 2019

Source: Author's calculations from ABS Catalogue 6302.0, Table 2, and RBA Occasional Paper #8, Table 4.18.

1. Ordinary time earnings for full-time workers.

In the 18 years when the SG rate was not increased, it was just as likely that wage growth fell *below* average as above. Clearly, therefore, freezing the SG rate should provide no confidence of strong wage growth. Perhaps more surprisingly, in years when the SG rate *was* increased, it was twice as likely that wage growth would be above average, as below it. In six of the ten years when the SG rate was increased, wage growth exceeded its post-1992 average. In only 3 years (1993, 1996 and 2014) was an increase in the SG rate accompanied by wage growth that was below its post-1992 average rate.

In the latter 2000s, wage growth in most years exceeded its post-1992 average, and that coincided with a long freeze in the SG rate. But this outcome was obviously attributable to very strong labour demand conditions at the time (with an unemployment rate that fell to just 4% by 2008), along with rising terms of trade for

in the comparison; even though the calendar year was not over at time of writing, it was clear that wage growth will fall well below its post-1992 average.

Australian exports (which produced very strong profits for Australian businesses, especially in the resources sector, some of which were then captured by workers in higher wages). By the same token, for the last five consecutive years, wage growth has languished well below traditional averages, despite another long freeze in the SG rate. This time the weakness in wages is clearly attributable to bigger cyclical and structural factors affecting Australia's labour market: including elevated underemployment, and the erosion of traditional institutional supports for wages (especially the rapid disappearance of active collective bargaining in Australia's private sector).⁵⁸ In both those periods, the impact (if any) of changes in superannuation contributions on wage determination was overwhelmed by other factors affecting wage growth (for better or for worse).





Source: Author's calculations from ABS Catalogue 6302.0, Table 2, and RBA Occasional Paper #8, Table 4.18. Ordinary weekly wages for full-time employees; annual averages. 2019 data for first half.

Another unexpected finding of this simple historical analysis of wage growth and changes in the SG rate is provided in Figure 16. It shows the average annual rate of wage growth through the 1993-2019 period, disaggregated into two categories: years

⁵⁸ See Pennington (2018) for details on the extent of that erosion and its connection to the deceleration of wage growth.

in which the SG rate was increased, and years in which it was unchanged. Across the full period, average annual wage growth was slightly higher (4.2%) in years in which the SG rate was raised, than when it was unchanged (3.9%). Once again, the assumption that increases in the SG rate will automatically be reflected in lower wage growth is not consistent with observed history.



Figure 17. Wage Acceleration and Changes in the SG Rate, 1993-2019

It may be that the impact of changes in the SG rate is experienced via the direction of change of wage growth, rather than in the rate itself. In other words, a higher SG rate might cause a downward shift in nominal wage growth, but resulting growth might still be higher or lower than average based on other factors (such as general inflation conditions, other labour market factors, etc.). However, comparing the acceleration or deceleration of wage growth with changes in the SG rate (rather than the average rate of wage growth) leads to similar results. Figure 17 indicates the acceleration or deceleration in wages each year (from the previous year, shown in blue) along with changes (if any) in the SG rate (in red). There is no obvious correlation between whether the SG rate was raised in a particular year, and whether wage growth accelerated.

Source: Author's calculations from Source: Author's calculations from ABS Catalogue 6302.0, Table 2, and RBA Occasional Paper #8, Table 4.18.

Indeed, curiously, wages were slightly more likely to accelerate in a year in which the SG rate was increased (5 times over this period) than they were to decelerate (4 times). The years of greatest deceleration in wages throughout this period (2004 and 2006) were years in which the SG rate did not change; and the single biggest acceleration of wages (in 2000) occurred in a year in which the SG rate was increased by a full percentage point. Perversely, the statistical correlation between changes in the rate of annual wage growth and changes in the SG rate is slightly *positive*: that is, wages were more likely to accelerate in a year when the SG rate is increased, than decelerate.⁵⁹



Figure 18. Real Wages and Real Labour Productivity, 1985-2019

Source: Author's calculations from ABS Catalogues 5206.0, Table 1; 6401.0, Table 1; 6302.0, Table 2; and RBA Occasional Paper #8, Table 4.18.

Throughout the ups and downs of wage growth illustrated in Figures 14 and 15 above, one overarching trend in income distribution has asserted itself – whether wages were growing quickly or slowly. Throughout the period since superannuation arrangements began to be negotiated (first in individual collective agreements and industry awards,

⁵⁹ That correlation, 0.2793, was not statistically significant. We also tested for correlation using lagged changes in the SG rate, in case it takes more time for wage acceleration/deceleration to adjust to changes in the SG rate; in this case the correlation was negative but very close to zero (-0.1606) and not statistically significant.

later universalized through the SG system), wages have lagged well behind improvements in labour productivity, and workers' aggregate share of national income has declined as a result. For example, as shown in Figure 18, since 1985 real wages have increased in Australia by less than half as much as real labour productivity: real weekly earnings have increased by less than 25% since 1985, while real output per hour has grown by 60%. The gap between productivity and compensation has continued to widen in recent years, even though Australian productivity growth has slowed notably since 2016. But even those unspectacular efficiency improvements are not being reflected in improvements real wages – casting doubt on the standard prescription from business lobbyists and others that the solution to weak wage growth is to improve labour productivity. Without measures to recreate a reliable link between productivity growth and real wages, higher productivity alone offers little prospect of re-igniting wage growth.



Figure 19. Labour Compensation as Share GDP, 1958-2019.

Source: Author's calculations from ABS Catalogue 5206.0, Table 7.

When workers are not being proportionately compensated for improved productivity, then the share of labour compensation in total output (a ratio which is also reflected in real unit labour costs) must decline. This trend is indicated in Figure 19, which illustrates the rise and fall of labour's share of GDP through the postwar era. Through the initial vibrant decades of postwar growth, wages, salaries, and supplementary labour compensation increased faster than productivity growth – and hence expanded

as a share of total GDP, reaching a peak of 58% in 1975. For several years, policymakers then became consumed with the supposedly excessive nature of wage demands, which were blamed at the time on strong unions, the centralised wage arbitration system, and rising expectations among workers. In response to this socalled "wage overhang," various measures were implemented in a deliberate effort to restrain wages and enhance business profits.

Since the mid-1970s, labour compensation has declined steadily and dramatically as a share of total GDP. The period of the Prices and Incomes Accords, and the subsequent introduction of enterprise bargaining, were associated with significant drops in relative labour compensation. But the decline of the labour share of GDP has continued since then – even alongside the expansion of compulsory superannuation contributions from employers. Indeed, in the most recent financial year (2018-19), the labour share recorded its lowest yearly average since the Australian Bureau of Statistics began to gather quarterly GDP data in the late 1950s.⁶⁰ At the aggregate level, output is being redistributed from labour to other factors of production: primarily the corporate sector, which has benefited most directly from the long-term decline in unit labour costs.⁶¹ And at the household level, this shift in income from labour to capital has also been reflected in growing inequality between individuals – largely because of the very unequal distribution of capital ownership (which means the proceeds from the shift toward capital income are captured disproportionately by a small group of well-off households). Despite short-run fluctuations arising from macroeconomic factors (such as changes in the terms of trade), this negative structural trend in the labour share of GDP is continuing.

The decline in labour compensation as a share of GDP is fully attributable to a decline in direct wages and salaries as a share of GDP. In contrast, employers' social contributions (including both superannuation contributions and workers' compensation premiums) have been stable as a share of GDP, at around 5%, since the mid-2000s – and they increased only fractionally over the two decades prior to that.⁶²

⁶⁰ For a more detailed analysis of the decline in the labour share of GDP in Australia, see Stanford (2018a).

⁶¹ Indeed, the ten percentage point increase in the share of GDP reflected in corporate gross operating surplus between 1975-76 and 2018-19 is the mirror image of the ten-point decline in the labour share of GDP over that same period. More recently, the reciprocal relationship between a falling labour share and a growing profit share is even more vividly apparent: the labour share of GDP has declined by over 2 percentage points of GDP in the last 4 financial years, while the share of GDP paid in gross operating surplus to corporations has grown by almost 4 percentage points in the same period.

⁶² This relative stability in the share of GDP represented by employers' social contributions seems at odds with the significant increase in the SG rate over most of this period. As noted above, some of this is explained by the relative decline in workers' compensation premiums, which are also counted in the

Rising employer contributions to social benefits (mostly superannuation contributions) have thus served to incrementally stabilise total labour compensation; but they have not been adequate to offset the much larger erosion of wages and salaries relative to overall economic output.

Instead of the long-feared "wage overhang," therefore, it seems that Australia's economy is now beset by a "wage underhang": real wages consistently lag behind productivity, undermining consumer spending, macroeconomic conditions and household financial stability. The very weak condition of recent retail sales and current consumer spending (Pandey, 2019), for example, is just one manifestation of the negative spill-over effects of weak labour compensation.

The downward shift in overall labour compensation (*including* the value of employer superannuation contributions) attests to a profound and lasting shift in power relations in Australia's labour market over the past generation. The ability of workers to demand and receive a stable share of the proceeds of economic growth has been steadily eroded, in large part because of deliberate policy choices.⁶³ This decline in labour compensation has occurred *despite* the requirement under the SG system that employers must make significant payments toward the post-retirement incomes of their workers. But can it be credibly argued that the erosion of relative labour compensation was the *result* of superannuation?⁶⁴ Hardly. Even in the extreme case of a full and automatic one-to-one trade-off between wages and superannuation contributions (a finding which, as noted above, is expected only in an extreme special case of neoclassical theory), the labour share would not be *reduced* by the introduction of new superannuation contributions (or other compulsory social contributions). In most neoclassical models, the labour share is expected to be stable

labour compensation measure. It is also explained by the fact that superannuation contributions are calculated as a proportion of wages; a decline in the wage share of GDP will thus partly or wholly negate the impact of higher SG rates on superannuation contributions measured as a share of GDP. ⁶³ A comprehensive description of the sea-change in Australian labour and macroeconomic policy since the 1970s, and its impact on the distribution of national income, is provided in Stanford (2018b). ⁶⁴ Coates (2019) advances a version of this argument, claiming that the observed decline in the labour share of GDP even as the SG was rising confirms that wages naturally decline as an offset to increases in superannuation contributions. This does not seem consistent with the theoretical models underpinning the assumed one-to-one trade-off between wages and compulsory non-wage social contributions: even if such a trade-off was automatic and complete, it should be reflected in *stability* in the labour share of GDP, not its long-run and substantial *decline*. The profound shift in the factor distribution of income apparent in Australia since the 1970s is more consistent with a model in which structural and institutional factors normally and centrally determine income distribution – a view which is inconsistent with neoclassical presumptions about the market-clearing determination of wages.

over the long-run,⁶⁵ potentially influenced only by gradual changes in technology or relative factor endowments.⁶⁶ The observed reality that labour's total compensation (including both superannuation and wages) has fallen well behind ongoing economic growth is evidence of the importance of structures, institutions, and power to the determination of income distribution – factors which are not taken into account by the neoclassical models which expect an automatic trade-off between compulsory social contributions and wages.

In summary, this overview of the broad historical trends in wage growth and superannuation contributions in Australia has failed to find evidence of a clear or consistent correlation between changes in the SG rate and wage growth. The increase in employer labour costs resulting from the introduction and expansion of the universal superannuation system has been modest. Even the increases in the statutory rate imply an average annual increase in costs equal to just 0.2% of wages per year from 1992 through the present. And the actual effective increase in superannuation costs seems to have been smaller than this, measured relative to base wages and salaries and relative to GDP (due to numerous offsetting factors: including the role of voluntary employer contributions, shifts in the share of income subject to SG contributions, the decline in workers' compensation premiums, and others). Wages were more likely to accelerate, and to grow faster than average, in years when the SG rate was increased, than to decelerate or fall below average growth rates. In short, there is no observable or statistically significant negative correlation between changes in the SG rate and the growth of wages.

Overlying all of these findings is an immense and ongoing structural change in Australia's labour market, reflected in a long-run historic redistribution of income (and power) from workers to employers over the last generation. Since the mid-1970s the share of total output allocated to labour has declined, by a cumulative total of over one-tenth of GDP (a shift currently worth around \$200 billion per year in foregone labour compensation and extra corporate surplus). That shift largely reflects a deep restructuring of the institutions and regulations governing Australia's labour market. This problem was not caused by the introduction of compulsory superannuation, but neither was this problem "solved" by it. Whatever impact superannuation contributions have had in stabilising workers' share of total output, was overwhelmed by a much larger decline in relative wages and salaries. From the perspective of

⁶⁵ In fact, in one common popular formulation of the neoclassical model, incorporating the famous Cobb-Douglas production function, factor shares of total output are constant by design.

⁶⁶ Again, in traditional neoclassical growth theory the wage share, if anything, should increase as an economy develops and accumulates more capital, and labour consequently becomes a relatively more scarce factor input; the opposite has occurred in Australian history.

workers' concern with winning a fair share of the output they produce, the more important question is not how superannuation contributions affect wages (if at all). It is why wages have been so weak in the first place. Employers, meanwhile, have benefited from a long-term decline in unit labour costs, and a corresponding long-term expansion in the profit share of total output. In that context, it is clear that there ample economic space exists to provide for *both* a recovery of wage growth to traditional levels *and* increases in compulsory superannuation contributions. We simply need to make sure that policy, regulatory and institutional preconditions are aligned with that goal.

IV. Three Tests of the Relationship Between Wages and Superannuation

The previous section broadly reviewed historical trends in the evolution of wage growth, in search of evidence of an inverse correlation between changes in the SG rate and wage increases for Australian workers. No obvious correlation was observed; if anything, wage growth appeared to be stronger in years when the SG rate was increased. This section will now consider three more formal statistical tests for a negative impact of changes in the SG rate on wage growth: on the basis of time-series data in Australia, cross-sectional comparisons across Australian industrial sectors, and international comparisons of other industrial countries.

TESTING THE HISTORICAL CORRELATION BETWEEN WAGES AND SUPERANNUATION CONTRIBUTIONS

We have examined historical data in search of broad correlations between changes in required superannuation contributions and the pattern of nominal wage growth in Australia, without finding direct evidence of a negative trade-off between these two forms of compensation. Of course, wages reflect the simultaneous influence of many different causal factors, so a simple test for correlation might be inadequate given the numerous other determinants at work – such as labour market conditions, the general state of inflation, and the degree of institutional support for wage growth. To see if a negative impact of the SG rate on wage growth is visible within a more complete description of Australia's historical wage trends, we construct a simple multivariate regression model that incorporates several other wage determinants.⁶⁷

We begin by constructing a "base" model of wage determination for the period from 1985 through 2018 that reflects the normal wage determinants commonly identified in other empirical studies of wage trends in Australia.⁶⁸ Average annual growth in

⁶⁷ Taylor (2019) also considers the relationship between changes in the SG rate and wage growth in a multivariate regression, and also fails to find evidence of a consistent or significant negative correlation.

⁶⁸ See, for example, the econometric estimates of wage growth specified in Kennedy and Borland (2000), Jacobs and Rush (2015), and Bishop and Cassidy (2017).

nominal weekly wages is regressed on a matrix of traditionally accepted wage determinants including expectations of consumer price inflation,⁶⁹ the unemployment rate, proportional changes in an index of Australia's terms of trade (capturing the effect of higher export prices on domestic profits and hence potentially on wages), and proportional changes in the legislated minimum wage rate.⁷⁰ We also include a shock variable to account for the temporary effects of the global financial crisis on wage growth in 2009. This base model is estimated; the minimum wage and global financial crisis variables were never statistically significant and hence were eliminated from the regressions. Results are presented below. Table 3 reports results for weekly wage growth for all employees; Table 4 reports results for growth in average ordinary time earnings for full-time employees. Both equations are reasonably effective, explaining 45-60% of the variation in nominal wage growth over the period 1985 to 2018. The regression for all employees is more successful, with a higher explanatory power and a larger negative coefficient on the unemployment rate than the regression for ordinary time earnings of full-time employees.⁷¹

Table 3. Base Regression Results: Growth in Average Weekly Earnings, All Employees

Method: Least Squares Sample (adjusted): 1987 2 Included observations: 32	018 after adjustme	ents		
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C CPIEXPECT(-1) UNEMP D(LOG(TOT))	0.039435 0.006369 -0.003757 0.053681	0.008114 0.001078 0.001278 0.028922	4.860253 5.907713 -2.938796 1.856063	0.0000 0.0000 0.0065 0.0740
R-squared Adjusted R-squared S.E. of regression Sum squared resid Log likelihood F-statistic Prob(F-statistic)	0.614503 0.573200 0.010779 0.003254 101.6940 14.87785 0.000006	Mean depende S.D. dependen Akaike info crite Schwarz criteri Hannan-Quinn Durbin-Watson	nt var t var erion on criter. stat	0.038349 0.016500 -6.105874 -5.922657 -6.045143 1.736511

Dependent Variable: WGROWALL

Source: Author's calculations as explained in text from ABS Catalogues 5206.0, 6202.0, and 6302.0; RBA Statistical Tables G3.

⁶⁹ As calculated on the basis of interest rates on real-return government bonds, reported by the Reserve Bank of Australia, Statistical Tables G3.

⁷⁰ Consumer price inflation expectations and changes in the minimum wage rate are lagged a year to account for time lags and to reduce the risk of simultaneity between those variables and current wage growth. Minimum wage data from Bray (2011) and Fair Work Commission.

⁷¹ The unemployment rate variable is not quite significant at the 10% level in the full-time ordinary time earnings regression.

Table 4. Base Regression Results: growth in Average Ordinary Time Weekly Earnings,Full-Time Employees

Dependent Variable: WGROWFTOTE Method: Least Squares Sample (adjusted): 1987 2018 Included observations: 32 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C CPIEXPECT(-1) UNEMP D(LOG(TOT))	0.038965 0.004745 -0.002149 0.055371	0.008663 0.001151 0.001365 0.030882	4.497621 4.121954 -1.574420 1.792989	0.0001 0.0003 0.1266 0.0838
R-squared Adjusted R-squared S.E. of regression Sum squared resid Log likelihood F-statistic Prob(F-statistic)	0.454428 0.395974 0.011510 0.003709 99.59617 7.774093 0.000628	Mean dependent var S.D. dependent var Akaike info criterion Schwarz criterion Hannan-Quinn criter. Durbin-Watson stat		0.042789 0.014810 -5.974761 -5.791544 -5.914029 1.278967

Source: Author's calculations as explained in text from ABS Catalogues 5206.0, 6202.0, and 6302.0; RBA Statistical Tables G3.

To these two base regressions, we then add a series reporting annual changes in the SG rate, to see if any additional explanatory power is added to the analysis by considering the spillover effect of higher superannuation contributions on wage determination (after accounting for the effects of other wage determinants).⁷² The included variable measures the percentage-point change in the statutory SG rate (if any) within each calendar year.⁷³ The results are reported in Table 5 for all workers, and Table 6 for ordinary full-time incomes. In both cases, the change in the SG rate appears in the equation with an unexpected positive sign: that is, implying that wage growth is *faster*, even after adjusting for other factors, when the SG rate is increased. This reinforces the simple analysis of bivariate correlations analysed in the previous section.

⁷² The overall results of this approach are no different than if changes in the SG rate were included in the original equation, and then insignificant variables dropped; this sequential approach is adopted here merely to highlight that considering the SG rate does not incrementally improve the explanatory power of the model.

⁷³ Since SG rate changes occur in the midpoint of each calendar year (on 1 July), and since the changes are announced years in advance, it is appropriate to consider their impact on wages in the concurrent year. Allowing for a 1-year lag on changes in the SG rate did not affect the sign or significance of the results. The growth of compulsory SG contributions by employers in the years prior to the creation of the SG rate in 1992 (through collective agreements and awards) is proxied by a gradual phase-in of 0.5 percentage points per year from 1987 through 1992. From 1992 through 1996, the effective SG rate is assumed equal to the average of the small-firm and large-firm rates.

In the regression for wages of all employees (Table 5) this variable is not significant, and it should be discounted as a causal factor. In the regression for ordinary time earnings of full-time employees, the SG rate is significant (at the 10% level, Table 6), and with a *positive* sign (implying SG rate increases lead to faster wage growth, not slower). It seems counter-intuitive to conclude from this evidence that higher SG contributions *cause* faster wage growth; but the statistical evidence certainly indicates that higher wages and a higher SG rate are correlated in historical experience.⁷⁴ In neither case is there evidence, even in the context of a multivariate analysis, that increases in the SG rate cause a significant reduction in the rate of growth of nominal wages. If anything, the evidence suggests the opposite: increases in the SG rate tend to be associated with faster wage growth, not slower.

Table 5. Regression Results with SG Rate: Growth in Average Weekly Earnings, AllEmployees

Dependent Variable: WGROWALL Method: Least Squares Sample (adjusted): 1987 2018 Included observations: 32 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
С	0.041290	0.008795	4.694989	0.0001
CPIEXPECT(-1)	0.006252	0.001109	5.638139	0.0000
UNEMP	-0.004135	0.001445	-2.862610	0.0080
D(LOG(TOT))	0.052783	0.029305	1.801114	0.0829
D(SGRATE)	0.003964	0.006734	0.588660	0.5610
R-squared	0.619388	Mean depende	nt var	0.038349
Adjusted R-squared	0.563001	S.D. dependent var		0.016500
S.E. of regression	0.010908	Akaike info criterion		-6.056127
Sum squared resid	0.003212	Schwarz criterion		-5.827105
Log likelihood	101.8980	Hannan-Quinn criter.		-5.980213
F-statistic	10.98460	Durbin-Watson	stat	1.813314
Prob(F-statistic)	0.000020			

Source: Author's calculations as explained in text from ABS Catalogues 5206.0, 6202.0, and 6302.0; RBA Statistical Tables G3.

⁷⁴ The inclusion of changes in the SG rate (with the opposite-to-expected sign) also improves the explanatory power of the regression for ordinary time earnings of full-time workers. Interpretation of the behavioural meaning of this finding is difficult; it is likely that increases or freezes in the SG rate were coincident with other factors which influenced wages in other directions but are not captured by other explanatory variables in the model – including, perhaps, macroeconomic developments. For example, in the full-time ordinary time earnings regression with the SG rate included, the unemployment rate becomes a stronger determinant of wage growth; hence it is possible that increases in the SG rate happened to occur in years in which a higher unemployment rate should have exerted a stronger negative effect on wages than was observed (and vice versa for years in which the SG rate was frozen – such as in 2015-2018)

Table 6. Regression Results with SG Rate: Growth in Ordinary Time Average WeeklyEarnings, Full-Time Employees

Dependent Variable: WGROWFTOTE
Method: Least Squares
Sample (adjusted): 1987 2018
Included observations: 32 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C CPIEXPECT(-1) UNEMP D(LOG(TOT))	0.044809 0.004376 -0.003341 0.052540	0.008915 0.001124 0.001464 0.029705	5.026428 3.893493 -2.281783 1.768715	0.0000 0.0006 0.0306 0.0882
D(SGRATE)	0.012482	0.006826	1.828625	0.0785
R-squared Adjusted R-squared S.E. of regression Sum squared resid Log likelihood F-statistic Prob(F-statistic)	0.514550 0.442631 0.011056 0.003301 101.4643 7.154612 0.000460	Mean dependent var S.D. dependent var Akaike info criterion Schwarz criterion Hannan-Quinn criter. Durbin-Watson stat		0.042789 0.014810 -6.029018 -5.799997 -5.953104 1.534753

Source: Author's calculations as explained in text from ABS Catalogues 5206.0, 6202.0, and 6302.0; RBA Statistical Tables G3.

Economic policy debates are rarely resolved through econometric regressions. There are many choices that can be made in specifying the models estimated: variable selection, sample period, data frequency, estimator choice, and lag structure. Econometric results depend on those choices. Further research is justified to explore the statistical relationship (if any) between changes in compulsory superannuation contributions and observed wage growth in Australian economic history.⁷⁵ However, this initial econometric analysis of wage growth in Australia since 1985 (when superannuation systems began to be negotiated) suggests that there is no evidence, even when other potential wage determinants are considered, that increases in compulsory superannuation contributions over this time have suppressed wage growth. If anything, increases in the SG rate have been associated with stronger (not weaker) wage growth (a correlation which should not be imbued with causal significance). This is consistent with the simpler bivariate analysis of historical evidence conducted in the previous section.

⁷⁵ In critiquing the work of Taylor (2019), who similarly finds no econometric evidence of a negative impact of SG rate increases on nominal wage growth, Nolan *et al.* (2019) argue, "Econometric timeseries modeling ... is notoriously hard to do well, and easy to get badly wrong." That may be true, but in the absence of robust empirical evidence for the *existence* of a negative trade-off between wages and the SG rate, the challenges of time-series analysis hardly constitute a reason to accept a proposition that has not been confirmed in real data.

TESTING FOR CROSS-INDUSTRY CORRELATION BETWEEN WAGES AND SUPERANNUATION CONTRIBUTIONS

Using cross-sectional rather than time-series analysis can help to identify the impact of longer-lasting economic relationships, which may take considerable time to be fully felt. In this spirit, we consider here variations in wage growth and effective superannuation contribution rates across different industries in Australia. While the base SG rate applies equally to employees in all parts of the economy, there is nevertheless a limited variation in effective superannuation contribution rates across different industries in Australia. These differences result from several factors:

- The differing importance of overtime and some bonus payments (which do not attract compulsory superannuation contributions).
- The number of workers in each industry who earn below the minimum threshold for SG payments (\$450 per month) and/or who earn incomes above the maximum threshold (\$55,720 per quarter).
- The share of work in each industry accounted for by various forms of selfemployment, contracting, or "gigs" – jobs which generate income (in some cases reported as wage income) but which do not qualify for compulsory superannuation contributions.

Industry-specific data on effective superannuation contribution rates can be calculated from public ATO data on corporate tax payments. We therefore compare the different effective superannuation rates across industries, to see if they are systematically related to recent patterns of wage growth. We utilise the most recent increases in the SG rate (of 0.25% of wages in each of 2013 and 2014) as a natural experiment, to see if industries which incur a relatively larger incidence of superannuation contributions experienced weaker wage growth in the wake of those increases.

The horizontal axis of Figure 20 measures the effective rate of reported superannuation payments as a share of total reported wages and salaries in 18 different industries defined at the 2-digit level by the ABS.⁷⁶ This rate was calculated on the basis of company tax returns for the financial year 2012-13, immediately before the first of the two SG rate increases considered (which was effective on 1 July 2013). The effective super contribution rate varies widely across sectors, for the reasons identified above: from a low of 6.7% in the mining sector, to a high of almost 11% in

⁷⁶ Agriculture is excluded from this analysis because of a lack of data on weekly wages in that sector.

the education and health care sectors (where collective agreements specifying superannuation contributions by employers in excess of SG minimums are especially common). These significant variations in the effective "burden" on employers of superannuation contributions provide an opportunity to consider the possible spillover effects of changes in the SG rate on wages.





Source: Author's calculations as explained in text from ABS Catalogue 6302.0, Table 10I, and ATO Taxation Statistics 2012-13, Companies, Table 4.

The vertical axis of Figure 20 measures the average annual rate of increase in weekly wages (for all employees) in each sector, in the six years following that 2012-13 starting point. This allows for ample time to consider the full adjustment of wages to the two consecutive increases in the SG rate. Figure 20 confirms that there is no relationship between the intensity of superannuation contributions at the time of the two announced SG rate increases, and the subsequent pattern of wage growth. The linear trend line illustrated in the figure has a slope that is almost exactly equal to zero. Some industries with relatively low effective superannuation contribution rates (such as mining) experienced relatively weak wage growth in the intervening years. The sectors with highest superannuation contributions (education and health care) experienced relatively faster wage growth. Not coincidentally, those are two sectors with among the highest union density of any parts of Australia's economy, and where workers have enjoyed a relatively stronger degree of bargaining power – which they

have used to extract *both* relatively stronger wage increases and above-minimum superannuation contributions from their employers. This provides a good example of the importance of bargaining power considerations in wage determination, and how incorporating those facts into the analysis can explain why strong wages and higher superannuation contributions might very well go together.

The other industries pictured in Figure 20 reveal the full range of possible combinations of wage growth and superannuation intensity: sectors with relatively high or relatively low superannuation contributions have experienced both relatively fast or relatively slow wage growth. The lack of any systematic correlation visible in this analysis merely confirms that wage growth depends on a wide array of more powerful determinants, that will normally overwhelm the impact (if any) of changes in superannuation policy. Again, there is no evidence of an automatic and significant negative trade-off between changes in the SG rate and changes in wages.

TESTING THE INTERNATIONAL CORRELATION BETWEEN WAGES AND SOCIAL CONTRIBUTIONS IN INDUSTRIAL COUNTRIES

Another cross-sectional strategy for exploring the long-term relationship (if any) between compulsory employer social contributions and wage growth can be conducted with the use of international data. Across the set of industrial countries there is a wide variety of institutional and policy practice regarding employer social contributions – which are used in many countries, most commonly to fund post-retirement benefits for workers.⁷⁷ This variation provides another opportunity for a natural experiment to consider whether requiring higher employer contributions necessarily results in lower or slower-growing wages.

Average effective rates of compulsory employer social contributions vary enormously across OECD countries. Some countries (like Denmark) have no such contributions, financing social programs through other revenue sources (such as income taxes or value-added taxes). Other countries have very high rates of employer contribution – exceeding 30% of wages in countries such as France, Italy and Sweden. If the presumed

⁷⁷ We focus here on employer-paid social contributions, since this is the case of relevance to the debate over SG contributions in Australia – and our preceding review of theoretical and empirical research found that the impact of changes in payroll taxes on wages may indeed depend on whether they are paid by the employer or the employee. However, similar results prevail if the comparison is conducted for total social contributions (including those deducted from workers' wages).
one-for-one trade-off between direct wages and employer social contributions was valid, these differences should be reflected in wages as well.⁷⁸

The OECD publishes comprehensive data on the incidence of payroll taxes (levied on both employers and employees) relative to pre-tax wages.⁷⁹ We consider the prevailing level of employer-paid social security contributions as a proportion of labour compensation in each country, among a set of 28 Western industrial countries.⁸⁰ We then compare that rate of employer payroll taxes to the level of pre-tax wage compensation in each country. To allow for comparability among countries with different levels of development and productivity, we use a measure of unit wage costs as an indicator of labour compensation. Unit wage costs are calculated as gross (pre-tax) wages per worker as a ratio of GDP per worker (both expressed in terms of purchasing power parity exchange rates).⁸¹

Figure 21 illustrates the relationship between unit wage costs and the intensity of employer-paid social security payments. Country combinations are scattered across the graph, with no obvious relationship between the two variables. The slope of a linear trend line fitted to the scatter plot is almost zero (slightly negative, but not statistically significant). Some countries with high employer payroll taxes have relatively high wages relative to productivity (such as Germany, Austria and Belgium); and some countries with low employer payroll taxes (like the U.S. and Ireland) pay wages that are relatively low relative to productivity. Across the whole set of 28 industrial countries there is no clear relationship one way or the other between the two variables.

⁷⁸ It could be suggested that the level of payroll taxes should affect the level of wages, and/or that changes in payroll taxes should affect the rate of change of wages. We consider both potential formulations below.

⁷⁹ See the OECD dataset "Taxing Wages," comparative tables:

https://stats.oecd.org/Index.aspx?DataSetCode=AWCOMP.

⁸⁰ Our analysis excludes the eight new members of the OECD in Eastern Europe, where normal democratic and collective bargaining processes are still evolving, and where for historical and political reasons reliance on payroll taxes as a general source of government revenue is very high.

⁸¹ Unit wage costs are thus a measure of the extent to which workers in each country are compensated relative to average productivity.



Figure 21. Wages and Social Contributions, Industrial Countries

Figure 22. Wage Growth and Changes in Employer Social Contributions.



Source: Author's calculations as explained in text from OECD "Taxing Wages" and "Economic Outlook" datasets.

We conduct a similar international comparison using data on cumulative changes in employer payroll taxes over the past five year period, and the average annual rate of growth of nominal wages over the same period. This comparison is illustrated in Figure 22, and similarly provides no support for the hypothesis that increases in compulsory employer social contributions will necessarily be offset by a deceleration of wage growth. To the contrary, this time there is evidence of a weak (statistically insignificant) positive relationship between changes in employer payroll taxes and the rate of wage growth: some countries which cut employer payroll taxes in this time (such as Belgium and Greece) actually experienced relatively slower wage growth, while three of the countries with the fastest wage growth in the sample (Korea, Israel, and Turkey) all increased employer-paid payroll taxes during this period. Again, across the whole sample there is no indication of any consistent or significant relationship at all between employer-paid payroll taxes and either the level of wages or the rate of wage growth.

Neither in Australia nor internationally, therefore, is there evidence of any automatic or significant trade-off between wage payments and employers' compulsory contributions to the social security (including after they retire) of their workers. Where workers benefit from strong economic and institutional bargaining power, they tend to fight for and win both: higher wages now, and stronger income security after they retire.

Conclusions and Policy Implications

This report has considered numerous dimensions of the potential relationship between compulsory superannuation contributions and wage growth in Australia. Those who have argued that increases in the SG rate will be automatically and fully reflected in a decline in wages have not advanced concrete empirical evidence in support of that claim in Australia; instead, they have simply repeated assertions to that effect in a circular and repetitive exercise in "group think." Economic theory (in contrast to the assertive claims of some analysts and newspaper columnists) does not expect a full and complete offset between wages and superannuation contributions. Even within competitive neoclassical models (which depend on far-reaching and unrealistic assumptions about efficient market-clearing behaviour in the labour market, and indeed in the entire economy), that finding is valid only in particular special cases (namely, with perfectly inelastic labour supply and/or perfect substitutability between voluntary and policy-induced savings). More realistic models which acknowledge the ongoing role of institutions and labour market regulations in determining wages, and do not assume automatic full employment, do not expect a perfect inverse relationship between wages and compulsory non-wage benefits; they may not in fact expect any relationship at all.

The assumption of a complete and immediate trade-off between compulsory employer social contributions and wages is not supported by economic theory or empirical evidence, and should be rejected. Policy simulations based on that assumption are invalid.

Examination of actual empirical data on wage growth and superannuation contributions in Australian economic history finds no evidence of a significant or stable negative relationship between the two forms of labour compensation – let alone the perfect one-to-one trade-off assumed in the CIS and Grattan simulations. To the contrary, Australian empirical evidence suggests a slight (but statistically insignificant) *positive* correlation: wages have been more likely to accelerate, and to grow at fasterthan-average rates, when the SG rate was raised, than when the SG rate was held stable. More formal statistical tests – using Australian time-series data, Australian inter-industry data, and comparative international data – similarly reject the existence of a significant negative relationship between changes in the SG rate⁸² and the level or

⁸² Or other compulsory employer social contributions, in the case of the international comparisons.

growth of wages. Throughout the period of rising compulsory superannuation contributions, total labour compensation (including those contributions) has declined substantially relative to productivity and total output. This attests to profound changes in the structures and institutions governing labour markets and wage determination in Australia, and a lasting shift in wealth from workers to corporations. The swollen profit margins that are the legacy of that shift provide ample economic space to contemplate a multi-dimensional recovery in labour compensation: including both stronger current wages and expanded contributions to workers' post-retirement income security.

The decline in labour's share of national output was not caused by compulsory superannuation. To the contrary, the modest increase in the relative importance of superannuation contributions in macroeconomic aggregates offset a small portion of the overall decline in relative labour compensation. By the same token, cancelling scheduled increases in the SG rate – let alone making employer contributions voluntary for some groups of workers – would not reverse the decline in labour compensation; rather, it would almost certainly make things worse.

Legitimate concern about the stagnation of real wages, the growing gap between real wages and real labour productivity, and the resulting macroeconomic, financial, and social consequences should be addressed through targeted measures aimed at strengthening nominal wage growth and restoring a normal relationship between real wage improvements and labour productivity. Policies which have been proposed by other writers to restore healthier wage growth in Australia include:⁸³

- A reorientation of minimum wage policies, to ensure that minimum wages meet their original goal of ensuring a "living wage" for workers – according to which permanent full-time workers could be guaranteed a standard of living that exceeds the poverty line.
- Strengthening and expanding the Modern Awards system, so that a greater range of jobs and occupations would benefit from regular Award-determined wage improvements (rather than positioning Awards solely as a minimum "safety net" for lower-wage workers).
- Measures to restore the influence of collective bargaining in wage determination, particularly in the private sector – including measures to extend the scope of collective bargaining (to multi-employer and industry-wide tables), relax harsh restrictions on union activity, and ensure that collective agreements are enforced.

⁸³ Discussion of broad policy options for addressing wage stagnation and achieving faster wage growth is provided by Stewart *et al.* (2018), Chapter 20, Isaac (2018), Bornstein (2019), and Stanford (2019).

 Align government fiscal policies to be consistent with restoring wage growth, rather than suppressing it – including by lifting arbitrary caps on wage increases for public sector workers, and ensuring that fiscal support for state-funded service delivery (in areas such as child care, disability services, and aged care) is adequate to ensure healthy wages.

The historic decline in wage growth in Australia in recent years is not an automatic or inevitable market-determined outcome. Rather, it is the product of deliberate policy choices which have aimed to weaken traditional institutional supports for wage growth for decades. This negative aspect of Australia's present labour market condition bears almost no relationship to parallel decisions regarding the superannuation system. Neither increases in the SG rate, nor freezes in that rate, have had a visible impact on wage growth – and that lack of correlation will almost certainly continue to prevail in the future.

Australians rightly concerned with the stagnation of real wages, and the resulting economic and social consequences, should support these direct and powerful measures to strengthen wage growth. Meanwhile, Australians concerned with enhancing the income security of workers after they retire should also support direct and powerful measures to strengthen the retirement system. That system, including the superannuation component of it, is far from perfect – despite the proven successes of many aspects of Australian retirement policy. Australia's superannuation system would be strengthened by a range of potential reforms to improve coverage, efficiency, and fairness, including:

- Reducing opportunities for employers to evade superannuation contributions.⁸⁴
- Expanding coverage of the superannuation system to more workers such as requiring superannuation contributions to be made by businesses which use various forms of dependent or "sham" contracting, "gig" workers, and other workers in precarious jobs.
- Addressing the long-standing gender inequity of superannuation savings, with measures to address absences from work and other factors contributing to the gender super gap.⁸⁵
- Ensure that the superannuation system fairly benefits low-wage workers including through stronger tax offsets for low-income workers, and reforming the taxation of superannuation to make it fairer (see Grudnoff, 2015).

⁸⁴ See Industry Super Australia (2018) for evidence on the scale of unpaid superannuation contributions.

⁸⁵ See Hetherington and Smith (2017) for discussion.

- Addressing certain aspects of the interaction between the superannuation system and the Age Pension (including potential reforms to the 50% reduction rate and the asset test).
- Measures to improve the efficiency of superannuation management, such as reducing the number of funds, establishing an effective default system, and reducing management fees.

None of those goals will be furthered by freezing or reducing the rate of superannuation contributions by employers. And policy decisions regarding future changes in the SG rate should not be distracted or diverted by false claims that historically weak wage growth could somehow be fixed by foregoing post-retirement compensation, in order to provide a supplement for current incomes.

If wages are successfully reinvigorated through deliberate policy measures to support wage growth, and compulsory superannuation contributions also grow in line with the currently agreed schedule, there could conceivably come some point in the future when the growth of labour compensation encounters fundamental economic constraints. In particular, if and when the growth of labour compensation exceeds the growth of labour productivity on a sustained basis, if and when consumer price inflation rises to and beyond the targeted range for an extended period of time,⁸⁶ and if and when profit rates are suppressed below levels necessary to elicit required investment, then perhaps a case could be made that labour compensation has reached a limit. At that point, and not before, it may become sensible to discuss pragmatic trade-offs between further wage growth and further increases in compulsory superannuation contributions. Such a trade-off would need to be facilitated through active policy dialogue and decisions - not by automatic market mechanisms. Until then, however, the overarching concern of workers is to rebuild their share of economic output, using every lever available to them. That quite rightly involves demanding higher wages and greater employer contributions to their well-being after retiring.

Workers will need to build bargaining power to achieve those parallel goals. Bargaining power is not a simplistic, one-dimensional variable. It reflects a complex mix of economic, regulatory, political and normative factors. One crucial component of bargaining power is the state of popular expectations within society (including expectations internalised by working people) about what is considered fair or legitimate. Through the gradual expansion of the superannuation system, Australian workers have built a normative expectation that employers should be obliged to

⁸⁶ Realised year-over-year consumer price inflation in Australia has fallen below the 2.5% midpoint of the RBA's target range for the last five and a half years.

contribute to the well-being of workers in retirement; while this view is widely accepted today, it is not self-evident in the realm of pure market transactions, and it continues to be energetically resisted by some segments of the business and policy communities (including by businesses who redefine their workers as "contractors" to avoid superannuation costs, or who simply evade their legal SG responsibilities entirely). The widely-held normative expectation that employers should pay into workers' super funds is an important component of workers' economic power in Australia; it has been reinforced by the evolution of regulatory instruments which compel employers to make these payments. It is folly to imagine that workers' successful historical effort to extract employer contributions for retirement could be costlessly converted into a sudden and lasting increase in what employers are required to pay in current wages. Those current wages also reflect a complex mix of regulatory, institutional, economic and normative determinants. Once employers are no longer required to make those contributions, it would soon be forgotten that wages are "supposed" to be 9.5% (or 12%) higher than what the labour market is delivering – because workers gave up their right to superannuation in return for a 9.5% or 12% supplement to their current incomes. Instead, wages would once again evolve on the basis of the balance of power in the labour market: a balance of power which would then have shifted significantly by virtue of abandoning the principle that employers owe something to their workers after retiring (not just while they are producing).

The historical record shows that there has been a trade-off between wages and superannuation contributions only when workers have accepted it, as a condition for a broader economic and political compromise. The conditions for repeating such a compromise do not remotely exist today. Ample economic space exists for workers to demand and win both higher wages and higher superannuation contributions. They deserve a better standard of living now, and after they retire as well. And Australia's policies and structures governing both wages and superannuation should be aligned to help achieve those complementary goals.

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