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Implementing corporate tax cuts at the expense

explores whether it is more efficient to implement corporate tax cuts or an alternative reform such as an economic rent tax which may better achieve the tax policy goals of efficiency and integrity.

In doing so, this article bridges the gap between applied legal research, economic theory and practical optimisation modelling. Specifically, this research presents a simulation analysis of the behavioural responses of a tax-minimising multinational enterprise to both existing and proposed tax regimes and compares efficiency and integrity outcomes upon implementing corporate tax cuts. This is complemented by a legal comparative analysis featuring case studies of an economic rent tax; namely, the Allowance for Corporate Equity (ACE) as introduced in Belgium and Italy. These case studies will focus on the political hurdles to implementing and sustaining these reforms, which will highlight key lessons learnt from the implementation of the ACE in practice.

Key words: Tax neutrality, Corporate tax reform, Allowance for Corporate Equity

MXULVGLFWLRQV¶ WD[V\VWHPV WR PLQLPLVH WKHLU
does not improve productivity nor does it constitute µWUXH¶[9] LQQRYDWLRQ

Using intercompany transactions, MNEs can shift intercompany expenses to, and the unique complexit

Indeed, an ACE such as that introduced in Belgium and Italy presents a more robust approach to eliminating the debt distortion. These reforms are examined in turn in section 3 below.

3. CASE STUDIES OF ACE-VARIANTS: TO IMPLEMENT CORPORATE TAX CUTS OR INTRODUCE AN ACE-VARIANT?

As highlighted in the previous section, there is a marked tension commonly experienced by policy-makers between either lowering the CIT rate (coupled with tax base broadening measures) or implementing an economic rent tax such as the ACE (which is often associated with a reduction in tax revenue).[29] Further, leading commentators observe that, where a jurisdiction has repealed its ACE-variant, this was not brought about by any fundamental problem with the theoretical ACE,[30] or any technical flaw in the ACE system.[31] Rather, the abolition of these ACE-variants was simply in line with the G R P L Q D Q W W U H Q G R I U H G X F L Q J K H D G O L Q H tax- F R U S R U D W rate cut-cum- E D V H E U R D G H Q L Q J ¶[32]

There has generally been bipartisan support for a target of lowering CIT rates in the face of increasing international tax competition, 9(-2( )42((crea)4(sing)-4( )-394(in)-2(ternatio)-

While this article does not purport to enter this debate, given the global trend of lowering CIT rates it is instructive to briefly earmark the six reasons set out below against said reform.[36]

First, the home bias persists, capital markets are not perfect[37] and a CIT rate reduction in the host country only transfers tax revenues to countries that tax their MNEs on their worldwide income but allow foreign tax credits for the corporate taxes paid at source, thereby failing to change both the effective tax burden and the investment behaviour of MNEs.[38]

Second, the empirical evidence on the actual corporate tax burden borne by wages remains unclear, with the literature strongly questioning the theoretical suggestion that the tax incidence for small open economies is shifted entirely to the domestic factors of production such as labour and land. Further, reducing the CIT rate does not result in immediate flow-on benefits to workers in the form of extra capital, higher productivity and wages.[39]

Third, since the CIT is levied on both normal returns to capital and rents, a reduction in the headline CIT rate will necessarily reduce the tax on economic rents; thereby reducing the tax on investment that would occur in any event.[40]

Fourth, reducing the CIT rate will disproportionately benefit larger, more profitable firms, with no impact on already loss-making firms

Fifth, the emerging literature focusing on the real economic effects of CIT rate changes shows that while CIT rate increases uniformly reduce employment and income, CIT rate reductions are ineffectual in boosting economic activity[41] except when implemented during recessions.[42]

Sixth, further reductions to the CIT rate will widen the wedge between the highest personal income tax bracket and the CIT rate, implying that further reductions in the CIT rate likely to be above 40 per cent.[44] On the other hand, taxing only economic rents results in no deadweight loss. However, as observed by Ganghof, µWhe result was not only neoliberalism by surprise[45] EXW DOVR QHROLEHUDOLVP E\ GHID economic, partisan and institutional factors may lock countries into rather inefficient tax structures, at least temporarily¶.[46] Accordingly, it is imperative to increase the HI¿FLHQF\ RI EXVLQHVV WD[DWLRQ ZKHUH SRVVLEOH

In this context, there are many reform proposals addressing the business taxation distortion, including the ACE, Cash flow tax, Comprehensive Business Income Tax (CBIT), dual income tax (DIT) and Residence-based shareholder tax.[47] Specifically, this DUWLFOH¶V focus is the distortion between debt and equity financing. Of various fundamental reform proposals only the ACE has been experimented with in practice, so this is the focus of this article.

The ACE maintains the current deductibility of actual interest payments and adds a notional return on equity to be deductible against corporate profits, at the risk

technical aspects of these ACE-variants in practice, rather than in-depth comparative legal analysis. Accordingly, there remains scope in the literature to provide a more thorough comparative analysis, with an emphasis on legislative drafting and the underlying policy intentions for amendments over time.

As such, sections 3.2 and 3.3 below analyse the Belgian and Italian ACE-variant experiences, with a focus on the political hurdles to implementing and sustaining these reforms.

3.2 Belgium's ACE variant

The Belgian corporate tax system is considered a classical double taxation system, modified by an exemption for dividends from qualifying participations held by corporate shareholders and a reduced rate for dividends from participations held by individual shareholders.[62] Tax practitioners have long considered Belgium an interesting jurisdiction for various tax planning and structuring purposes.[63]

Even prior to the introduction of the Notional Interest Deduction (NID),[64] dividends could be received nearly tax-free, interest paid on loans taken out to acquire shares was distortion.[68] The originating explanatory notes[69] detail the political, philosophical, economic and tax policy rationales for implementing the Belgium ACE variant, and the anticipated impact of this reform.

However, it is also important to recognise that Belgium did not have wide political support for the NID reform; indeed, the green and socialist parties opposed the NID, which was criticised as being used as a weapon in the election campaign of 2004.[70] Further, the rationale of highlighting the urgency of the NID in light of the dramatic decline in investment in Belgium was criticised in the parliamentary debates as a rushed and underhanded political strategy.[71] Despite ongoing political debate for over one year, which resulted in limitations to the NID, there were only two parliamentary sittings, which was criticised as resulting in insufficient debate on the broader reform of corporate income tax.[72] This was considered especially problematic by opposition parties, who made comparisons to the reform processes in neighbouring countries such as the Netherlands.[73]

Nonetheless, the parliamentary debates indicate that a large majority of the committee subscribed to the philosophy underpinning the reform, with the proposal receiving generally positive feedback and unconditional approval by the VLD (the Flemish liberal party).[74] However, the design parameters had mixed reviews; some parliamentarians believing the design was too generous and others considering it inadequate. Finance Minister Didier Reynders interpreted this as indicating that the Bill was balanced,[75] and earmarked an evaluation period to identify areas for improvement.[76] At its inception, this Bill was touted as a pioneer in tackling tax discrimination between debt and equity finance.[77]

However, there has been much scepticism about the real motivation for implementing this reform, as observed by the National Bank of Belgium:[78]

> The memorandum put to the Parliament stresses the neutrality property of the reform because it enables corporate income tax to overcome the well-known debt equity bias. It ends by indicating that the reform also provides an alternative for financial companies using the coordination centre regime. Most would argue ±rightly ±that of the two motivations the second was the more important and the neutrality properties are more a consequence of the reform than its main policy motivation.

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[68] Decoster, Gerard and Valenduc, above n 12, 167.
[69] Loi du 22 juin 2005 instaurant une déduction fiscale pour capital à risque ± Wet tot invoering van een belastingaftrek voor risicokapitaal van 22 juni 2005 (Belgium) [Law introducing an allowance for corporate equity of 22 June 2005], 30 June 2005, 30077.
[70] Chambre des Représentants de Belgique, Compte Rendu Intégral avec Compte Rendu Analytique Traduit des Interventions ± Belgische Kamer van Volksvertegenwoordigers, Integraal Verslag met Vertaald Beknopt Verslag van de Toespraken (Belgium) [House of Representatives, Full Report with a Summary Record of Translated Interventions], 22 June 2005, 59 [15.02].
[71] Ibid [15.12].
[72] Ibid 59-60 [15.12].
[73] Ibid 61 [15.20].
[74] Ibid 53 [15.01].
[75] Ibid 53-54 [15.01].
[76] Ibid 58 [15.01].
[77] Ibid 58-59 [15.01].
[78] Decoster, Gerard and Valenduc, above n 12, 167.

extrinsic materials prepared in June 2005, one of the key anti-abuse mechanisms contained in Article 9 was reduced to three years following concerns that a period of four years would make equity less appealing than debt finance and could undermine the effectiveness of the NID. Even though the design was the subject of passionate political debate[87] and was ultimately a compromise, the parliament considered that Article 9 should be further relaxed in subsequent legislative amendments.[88] Nonetheless, this provision was amended even before the commencement date of the NID, with Belgian Prime Minister Guy Verhofstadt delivering a public announcement on 17 November 2005 that this obstacle to the NID would be lifted.[89] While this revision arguably aligned the NID more closely to its theoretical underpinnings in the ACE, it is largely an administrative issue rather than one of tax policy design which encourages the use of equity financing at the risk of making the system more vulnerable to abuse from aggressive tax planning. The key criticism was that the NID was largely agreed to in principle, but the provisions and administrative aspects were unnecessary to the point that it was criticised as largely missing its objectives in practice.[90] This highlights how translating ACE theory into practice through a robust tax reform design is one of its most challenging aspects, as anticipated by the wider ACE literature[91] and as experienced by jurisdictions in the past.[92]

Separately, there was political opposition to the limited scope of the NID, which some parliamentarians argued ought to be extended to personal income tax.[93] This reflects the ACE literature, which anticipates that one key challenge in designing and implementing ACE reform is that it does not operate as a backstop to the personal income tax system.[94] Even though leading commentators have suggested that tax neutrality cannot be achieved unless there is a personal-level ACE,[95] the domestic shareholder position is less relevant in a small, open economy where the marginal investor is likely to be a foreign investor.[96] While it is difficult to pinpoint the non-resident investor as the marginal investor, it is plausible for a small, open economy like Belgium.[97]

3.2.2 The Belgian NID: subsequent amendments and economic, political and administrative issues

The NID has been continually amended by the Belgian parliament since its introduction in 2005, culminating in the continued reduction in the NID rate and the abolition of carry-forwards further limiting the scope of the NID. These two legislative changes have taken the NID further away from its original legislative purpose and underlying ACE

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[87] Parliamentary reports show dialogue such as: 'Mr Bogaert, I suggest that you take the sequel to the market stand, because you are very good at selling apples that look like pears': Ibid 57 [15.02].

[88] Ibid 69 [15. BT 7Tm 0 G [(Ibid)-5(69)7( )-2([15. BT 7Tm 0 G [(Ibid)-5(6(T)4(hG [(Im 0 G [(Th)-078.82 256.4

principles. First, reducing the tax deduction provided for equity financing risks eliminating the neutrality properties of the ACE and simply providing a sweetener for equity financing;[98] and second, abolishing carry-forwards exacerbates the asymmetric treatment of profits and losses.[99]

However, when considering any subsequent legislative amendments to the NID reform, a holistic understanding of the political landscape is an imperative starting point. From 2007, Belgium was confronted by an ongoing political crisis at federal level.[100] During that time, the outgoing conservative/socialist government continued to handle current affairs, and in October 2007, following much political pressure, decided to conduct an investigation into alleged abuses by Belgian companies and Belgian banks of the NID.[101]

A key political issue in practice is that the NID is thought to benefit the larger MNEs more so than small and medium enterprises (SMEs). This is because the larger MNEs are able to put substantial amounts of equity capital into their treasury arms or internal finance companies thereby eroding their corporate tax base.[102] This challenges whether the NID is genuinely beneficial for the domestic economy or whether it presents a tax break for the most profitable MNEs who are able to tax plan and bypass anti-avoidance rules and maintain very low effective tax rates. However, leading practitioners and economists observe that the NID also benefit SMEs by incentivising business capitalisation and thereby protecting businesses during the global financial crisis (GFC).[103] Further, it is arguable that this is an obvious feature of the NID which is why it was such an attractive investment reform to begin with. Some legal practitioners have observed that 'the purpose of introducing the notional interest deduction was just to

MNEs currently have an average tax rate of approximately 34 per cent and 5 per cent respectively. This has resulted in industry lobby groups such as Le Syndicat des Indépendants & des PME calling for reform to the NID to reconcile the existing blatant discrimination between hundreds of small SMEs that pay 3-4 times more taxes that multinational companies'.[105]

Political concerns regarding aggressive WD[SODQQLQJ OHG WR WKH EURD thin capitalisation rule, which specifically targets inter-company loans with a 5:1 debt to equity ratio limitation. Further, subsequent explanatory notes[106] reveal a link between the reduced scope of the NID and the increased incidence of thin capitalisation rules in Belgium. The relationship between reducing the scope of the ACE-variant and the increased implementation of thin capitalisation rules in Belgium suggests an inversely proportional relationship between these two reforms which has not been addressed in the English-language literature. Future research by the author will explore this aspect in further detail.

corporate profits.[113]

growth, with leading commentators highlighting the µneed for stability and completion of reforms for greater coherence and rationality of the system¶.[123]

3.3.3 The Italian ACE: political hurdles to implementation

Parliamentary transcripts provide detailed insights into the political spectrum and background rationales for why the Italian ACE was implemented in the midst of a recession.[124] Specifically, parliamentarians from centrist parties observed in the explanatory materials that µtoday¶s speakers clearly witness the change in the political phase, which led to the opening of scenarios that seemed unthinkable just a few months ago.¶[125] There is specific reference to the fact that the new reforms such as the Italian ACE are µR Z L Q J W R W K H K H W H U R J H Q H L W \ R I W K H -F R D O L W L Law is only justified in light of this particular political and institutional framework¶.[126]

This political solidarity culminating in the legislative reform under pressure of a µvery dangerous¶ economic situation appears to have resulted in a renewed confidence in the Italian financial markets; µthe political stability provided by the new government has had a positive impact on the financial markets with a reduction in the order of 200 points on the yield spread between Italian government bonds and German ones¶.[127]

The Italian ACE[128] was introduced to stimulate the capitalisation of companies by reducing tax on income from capital funding risk; reduce the imbalance in the tax treatment between companies that are financed with debt and companies that are financed with equity, thereby strengthening the capital structure of Italian companies; and to encourage, more generally, the growth of the Italian economy.[129]

However, the Italian ACE was not implemented without political opposition.

Piemont, who believed that this reform would further depress growth, especially in their electoral areas in the North.[131]

As originally drafted, the Italian ACE evokes the Italian DIT in some respects. A substantial improvement on the Italian ACE is that, while the Italian DIT incentivised capitalisation by applying a reduced rate to the portion of profit identified by the notional return on capital, the Italian ACE provides a tax deduction in respect of the notional return on new equity. Further, the Italian ACE was introduced with retroactive effect, or to also apply for the whole of 2011. This ensured the Italian ACE was more closely aligned to the original ACE principles,[132] directly and immediately allowing deductions for equity financing and not providing an upper limit to increases in equity financing.[133] Importantly, the Italian ACE also applies to corporations, individual firms and limited partnerships, the inclusion of which promotes neutrality in organisational form.[134]

3.3.4 The Italian ACE: subsequent amendments and economic, political and administrative issues

While the Italian ACE is still in a relatively early stage, commentators praise the reform as a comprehensive package consistent with preventing MNEs from under-capitalising their Italian operations.[135] Indeed, the introduction of the Italian ACE has not led to the modification of Italian rules on the deductibility of interest. Currently, interest barrier rules are in place instead of thin capitalisation rules, whereby the limitation of interest deductibility is now based on an operating income test, rather than debt-equity ratios.

An equally promising development was announced in October 2013, with the government releasing a list of measures it intends to implement to make Italy more attractive for foreign investors and to strengthen business conditions. Most relevant is Measure 19, which proposes the introduction of the 'super ACE' which targets companies intending to go public. Although there is currently little detail surrounding this proposal, the government has announced that the approach would be the same used LQ WKH FXUUHQW $&(ZKLFK effectiveness and transparency FRPSDQ\¶V after listing.'[136] It will be very interesting to observe whether this reform is implemented and, if so, whether in practice it more closely aligns the Italian ACE to the original ACE principles.

Operationally, the new benefit results in a deduction from the total income of an amount corresponding to the notional return of new equity. This return, for the first three years of application of the rule (2011-2013) is fixed at 3 per cent; however, since 2014 the rate which is determined by decree of the Minister of Economy and Finance account the average financial returns of public bonds,[137] and there was the option of the notional return being increased by a further percentage point to more closely align with the risk-free nominal return. However, the 10-year Italian government bond yield has declined considerably in the past five years. Currently 10-year Italian government bonds

FRQFHSWXDOLVLQJ 01(V¶ IXQGLQJ GHFLVLRQV DV D[140] Specifically, the Multinational Tax Planning model (MTP model) was introduced by the author in previous research and its application to this article is outlined in Annexure 1.[141] The MTP model utilises linear programming to simulate the cross-border intercompany tax planning responses of an MNE to both existing and proposed tax regimes.

Even though the literature suggests that international tax planning decisions can be approximated as an optimisation problem,[142] the use of mathematical optimisation remains largely unexplored in the international tax planning context.

Yet mathematical optimisation is one of the most powerful and widely used quantitative techniques for making optimal decisions. It is possible to utilise mathematical optimisation in the international tax planning context by formulating the tax PLQLPLVDWLRQ REMHFWLYH GHVFULEHG FDVLW KH WRWDO EDVHG RQ WKH UHODWLRQVKLS EHWZHHQ WKH µGHFLVLRQ DQG WKH µFRQVWDQWV¶ (whether through minimisation or maximisation, where ?5, ?6 «?á are constants).

This can be expressed as follows:[143]

/EJEIE:K A=TEIE;0<L ?5T5 E ?6T6 E ® E ?áTá

2QFH WKH REMHFWLYH IXQFWLRQ KDV EHHQ IRUPXODWHG, the limitations ±need to be determined. Applied in the context of observing how an MNE may structure its internal affairs in a tax-minimising manner, the linear programming SUREOHP H[SUHVVHV WKH µREMHFWLYH¶ e.g. the total tax payable for the 01(7KH µGHFLVLRQ YDULDEOHV¶ UHSUHVHQWV WKH 01(KDV D VXEVLGLDU\ DQG WKH µFRQVWDQWV¶ DUH W income tax rates.

Further, given that the focus of this article LV RQ µSXUH¶ SURILW VKLIW PLQLPLVLQJ 01(WKURXJK LQWHUFRPSDQ\ ILQDQFLQJ flows from intercompany transactions that can increase or decrease the profit figures for HDFK MXULVGLFWLRQ UHIHUUHG WR DV µSLQWV¶ DQG VHFRQG W

†bPD\ FROVW`UDPOHP

builds on this previous work by simulating a tax-P L Q L P L V L Q J 0 1 (¶ V E H K D Y response to introducing an ACE and/or reducing corporate income tax rates, and compares the respective integrity outcomes of both reforms

4.2 Comparing the impact of corporate tax cuts coupled with reducing the scope of ACE variants in Belgium and Italy

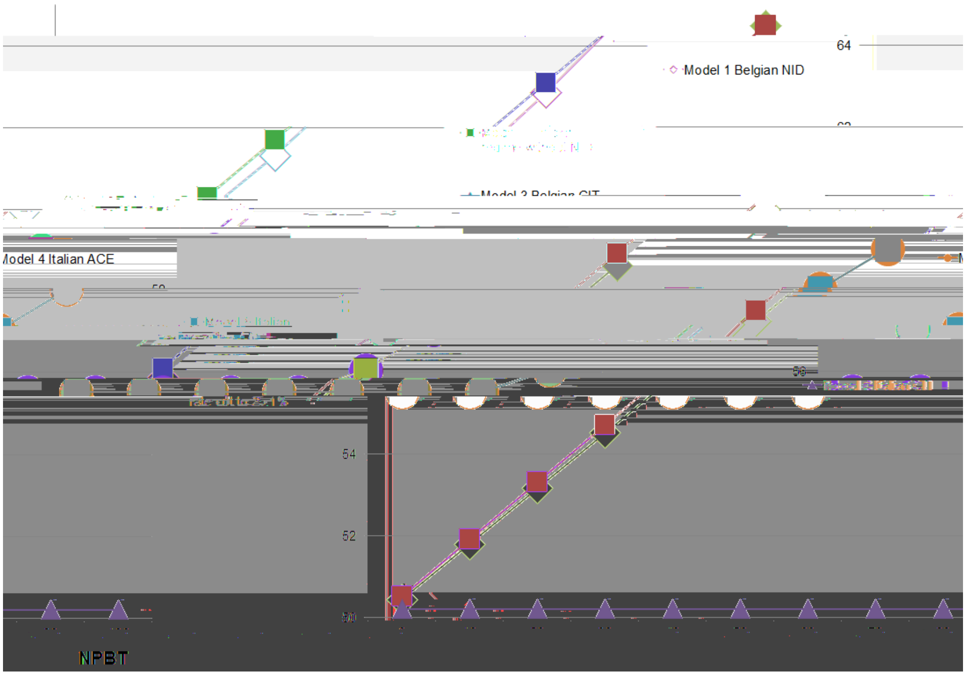
In an increasingly globalising and internationally competitive business environment, governments are under considerable pressure to lower their headline CIT rates. Belgium and Italy are no exception and there has been much political pressure to lower their CIT headline rates.[144] The justification is that Belgium and Italy will be able to collect more tax revenue by being more regionally and internationally competitive. However, it is important to concede that the economic rent portion of funds may escape tax.

Th L V P R G H O ¶ V D E L O L W \ W R L V R O D W H D Q G R E V H U Y H W objective assessment of whether, *ceteris paribus*, a reduced CIT headline rate in Belgium or Italy can benefit the taxing jurisdiction, using the change in global Total Tax Payable (TTP) as proxy for this measure. The proxy for MNE tax-aggressiveness is when the Net Profit Before Tax (NPBT) booked in the taxing jurisdiction (either Belgium or Italy) is between 0-20 out of a total of 100 (where 100 is the least tax-aggressive).

For completeness, it is necessary to acknowledge that modelling generally involves a trade-off between realism in scope and simplicity to facilitate meaningful analysis. So, the results extracted below may not necessarily reflect the only behavioural responses suited to each variation. Rather, these figures simply reflect optimised TTP results which are based on simplified assumptions to present an abstraction of reality. This does not make the observations any less meaningful, since the purpose of modelling is to learn about relations between variables.

In relation to the Belgian subsidiary, even if the ACE-variant is abolished the TTP falls only marginally. Upon the 0 G [/1126(ashed)-3(beiTm 9(gl)p562(tal)-11059u)-2(I 0 T /F4 1

Fig. 2: Results of Modelling a Headline CIT Rate Cut on the Belgian and Italian Subsidiaries



It goes without saying that international tax competition issues cannot be eliminated. However, the findings of this model question whether jurisdictions such as Belgium and Italy would benefit from coordinated multilateral reductions to their CIT rates. This model assumes that coordination would only occur between higher tax jurisdictions; that is, the Belgian and Italian subsidiaries, and the US. The findings are that while TTP behaves in the way illustrated by the above Fig. 2, the most tax-aggressive MNE never nominates to place any NPBT into the Belgian and Italian subsidiaries, rather it channels its profit shifting into the very lowest taxing jurisdictions available to it, ie, specifically, in the context of this model, to Singapore and Hong Kong. This indicates that Belgium DQG ,WDO\ ZRXOG QRW EH WKH µZLQQHUV¶ IURP D FRP

5. CONCLUSION

This article approaches the extensive lit HUDWXUH H[SORULQJ 01(V¶ DJ planning behaviour from a novel perspective by exploring the tension commonly experienced by policy-makers between lowering the headline CIT rate as opposed to implementing tax reforms which aim to reduce economic distortions such as ACE-variants. In doing so, through a comparative legal analysis of the Belgian and Italian ACE-variants in section 3, this article identifies four key recurring trade-offs that present political challenges to the implementation of such fundamental reforms: first, the trade-off between revenue neutrality and ACE system integrity; second, the trade-off between implementing an ACE (at the expense of tax revenue) as opposed to reducing the headline corporate income tax; third, on a domestic level, that politically the ACE is perceived to benefit MNEs disproportionately more so than

SMEs; and fourth, on an international level, that there is a trade-off between the desire to make inbound investment more attractive and the risk of base erosion from aggressive tax planning by MNEs.

Since economic distortions are likely to increase incentives for tax-induced behaviours, in particular, aggressive tax planning, there is an urgent imperative for tax rules impacting cross-border intercompany transactions to be designed such that efficiency and integrity outcomes are both prioritised and attained. Through an optimisation modelling approach in section 4, this article demonstrates that simply implementing corporate tax cuts will not

In the present analysis, the objective function is the minimisation of total tax payable µ6¶ IRU WKH FRUSRUDWH JURXS the group.[146] The modelling will occur in two concurrent iterations: ILUVW %HOJLXP µ&R %¶ DQG VHFRQG ,WDO\ µ&R ,¶
rates are 33 per cent

For completeness, in

Table2 andTable3 where one form of intercompany funding may be subject to varying rates of

the initial rate of return of 10 per cent), N Í¼ ÚÝþ represents the amount of tax attributable to the foreign source income and N Þ Á Í þÝÚ represents the actual amount of foreign tax paid.

Both Belgium and Italy provide some level of relief from double taxation of foreign VRXUFH LQFRPH[161] %HOJLXP¶V)7& is limited to a lump sum amount equal to 15/85 of the amount of the net foreign source income, with a separate calculation applying to interest withholding tax, with it too capped at 15 per cent 2Q WKH RWKHU KDQG FTC is calculated on a country-by-country basis.[162] However, for simplicity, none of these nuances are included in the initial iterations of the optimisation model.

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[161] &DOOHG WKH 4)(R WKH 4X\RWWH IRUIDLWDLUH Patrick ¶LPSDQW\Vanhaute, Belgium in International Tax Planning (IBFD Publications, 2nd ed, 2008) 91-92, 159.

[162] See further, Avella, above n 154.

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Superannuation and economic inequality among older Australians: evidence from HILDA

Helen Hodgson[1] and Alan Tapper[2]

Abstract

This article seeks to identify the effect that the current superannuation system has on economic inequality in later life. The analysis uses income and wealth data from the Household Income and Labour Dynamics in Australia (HILDA) survey, collected between 2002 and 2014 to examine wealth inequality, which includes the balance of a superannuation accumulation account, and income inequality, which includes private pension income. The main findings are that inequality in superannuation holdings is considerably higher than wealth inequality among older Australians and that inequality increases with age, but overall the age pension and home ownership have had a moderating effect on income and wealth inequality over this period.

Key words: Economic inequality; superannuation; income distribution; wealth distribution

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LQ $XVWUDOLD HYLGHQFH IURP +,/'$¶ 'DWD DQG SUHOLPLQDU\ I
research note: Helen Hodgson, Alan Tapper and Ha Nguyen, 'Inequality in Later Life: The Superannuation Effect', Research Report No. 11/18, Bankwest Curtin Economics Centre (BCEC), Curtin University, 2018.
This article uses unit record data from the Household, Income and Labour Dynamics in Australia (HILDA) Survey. The HILDA Project was initiated and is funded by the Australian Government Department of Social Services (DSS) and is managed by the Melbourne Institute of Applied Economic and Social Research (Melbourne Institute). The findings and views reported in this article, however, are those of the authors and should not be attributed to BCEC, DSS or the Melbourne Institute.

1. INTRODUCTION

This article examines the extent of economic inequality among Australians over 65 years of age, and seeks to identify the effect, if any, that the current superannuation system is having on economic inequality in later life. It examines inequality by reference to wealth, which includes the balance of a superannuation accumulation account, and by reference to income, which includes private pension income. It uses income and wealth data from the Household Income and Labour Dynamics in Australia (HILDA) survey, collected between 2002 and 2014.

Economic inequality encompasses income inequality and wealth inequality. Income inequality refers to the distribution of income across a given population. Wealth inequality is a measure of the distribution of net worth across a population. Wealth is concentrated among older age groups as it represents surplus earnings accumulated during working life. However, a significant proportion of this wealth is locked into non-SURGXFWLYH DVVHWV DQG VR ROGHU $XVWUDOLDQV D

Superannuation is represented in both income and wealth distributions. Superannuation accumulation funds form part of the wealth data. However, if the purpose of superannuation is to support a person in their retirement (Financial System Inquiry Panel, 2014), the asset must be converted to an income flow as an annuity or pension, and this income flow will appear in the income distribution data.

The retirement income system in Australia is built on three pillars: the Age Pension; the Superannuation Guarantee; and other retirement savings. Savings through the superannuation system, whether mandatory or voluntary, is supported by tax concessions. Recent debate has highlighted the unequal distribution of superannuation, and the consequential unequal distribution of tax concessions (Australian Treasury, 2015b, p. 90; Daley & Coates, 2015).

Government policy in a number of areas will need to address the aging of the population: the age dependency ratio (the ratio of those age 65 and over to those aged 15 to 64) is expected to decrease from 4.5 in 2014–15 to 2.7 in 2054–55 (Australian Treasury, 2015a). The extent of inequality among older Australians is important in designing policy in a number of core areas, including the age pension; health and aged care; housing; and – most importantly for this article – superannuation.

A recent report by the Organisation for Economic Co-operation and Development (OECD, 2017), *Preventing Ageing Unequally*, highlights concern that modern economies are tending to increase economic inequality in general and amongst the elderly in particular. The report (OECD, 2017, p. 15) says:

> ³$JHLQJ XQHTXDOO\´ UHIHUV WR LQHTXDOLW\ WKD and materialises in old age. It is often the result of specific episodes during SHRSOH¶V OLYHV WKDW mental effects on health and FXPXODWH WK income at old age. Ageing unequally is not a new phenomenon, but while the current generation of older people is experiencing higher incomes and lower poverty risks than previous ones in most countries, the younger generations are likely to face again higher inequality in old age. They are expected to live longer, but have been experiencing more unstable labour market conditions and widening inequalities in the distribution of earnings and household income.

The present study can be seen in this context as part of the necessary monitoring of inequality trends amongst the older population. It provides some benchmark data against which future trends can be measured.

This article proceeds as follows. Section 2 discusses the state of economic inequality in Australia in recent years. Section 3 reviews the development of the superannuation system, identifying the significant reforms and when they occurred. Section 4 sets out the methodology we used in our examination of the effect of superannuation on inequality among older Australians. Section 5 details our findings. Finally in section 6 we present our general conclusions and identify the implications of our analysis on the development of retirement income policy.

2. INEQUALITY IN AUSTRALIA

It is generally understood that income and wealth are each related to age but the two trajectories are importantly different. Income generally peaks in mid-life and falls in later life. Wealth rises with age more slowly than income and levels off or falls less sharply in later life. A typical life-cycle moves from an asset poor but income rich phase in early life to an income poor but asset rich phase in later life, with an income rich and asset rich phase in mid-life. The joint effect can be thought of as age-related economic well-being.

There has been much recent debate over economic inequality trends globally (Keeley, 2015; Piketty, 2014). The Australian data show that neither income nor wealth inequality overall is increasing in the period since 2000, although there does seem to be an increasing share of income and wealth at the top percentile level (Fenna & Tapper, 2015; Leigh, 2013; Wilkins, 2015 and OECD data (OECD.Stat)). However, there has been little analysis of trends in inequality among older Australians as a subset of the population. Two very different questions arise here. One, are older Australians more or less

This extended framework acknowledges the importance of housing and social services in maintaining well-being into retirement.

The three pillars formalised in the Australian retirement income system are the basic income safety net, mandatory retirement savings, and self-provision. Contributory pensions were rejected as a policy option in Australia in the first half of last century. In 1972 the Hancock Inquiry recommended the introduction of earnings-related supplementary contributions to the age pension that could raise the pension to levels of around 30% of average weekly earnings (AWE) (National Superannuation Committee of Inquiry, 1976), but this proposal was rejected by the Fraser government. Accordingly the age pension is funded through general revenue and is not calculated by reference to pre-retirement income, occupation or contributions. In the Australian system self-provision is encouraged through voluntary additions to the mandatory level of superannuation.

Superannuation in Australia is often described as a maturing system. It has long been a feature of the Australian retirement income system, with schemes for white collar, public sector, and self-employed workers having been in place for many years, however by 1986 less than 40% of employees had superannuation coverage (Australian Treasury, 2001). Superannuation has been supported as a savings retirement vehicle through the federal income taxation system since its introduction in 1915. The Income Tax Assessment Act 1915 allowed tax deductions for superannuation contributions paid by employers in respect of employees, and exempted the earnings of a superannuation fund, to the extent those earnings supported pension payments.

Employees paid under award agreements were included in award-based schemes from 1987 following the Accord Mark II agreement under which the unions deferred 3% of cost of living wage increases into superannuation: the precursor of the Superannuation Guarantee. The mandatory superannuation guarantee based on a proportion of employee contributions from sources that have not been taxed, notably superannuation guarantee contributions and other voluntary contributions directly from salary (salary sacrifice contributions). As these contributions are taxed at a flat rate of 15%, where a person is paying a marginal tax rate that is over 15%, there is a tax advantage in directing income into superannuation. However the second tax expenditure, 15% on the earnings of superannuation funds, creates a potentially greater opportunity to exploit the difference between personal marginal tax rates and the concessional tax rate paid by the superannuation fund. This arbitrage is increased when the fund goes into retirement phase as the earnings on assets set aside to provide a pension are exempt from income tax under section 295-385 of the *Income Tax Assessment Act 1997*.

Superannuation funds D U H X V H G W R ‘VXSHUSRUW LRQK¶HU µHWLUHPHQW allowing members to make contributions from other forms of savings. The concessional rate of tax creates incentives to use superannuation as an investment vehicle, an outcome that is specifically encouraged by the policy, but also encourages the use of superannuation accounts as a form of wealth creation rather than as a retirement product.

Clearly somee W* T /F4 10 g entee.H59(retir.yeu)-3(p)s. The p met, generally at retirement, death or upon reaching age 65. A retiree may draw on this as a lump sum or use it to generate an income stream as a pension or annuity.

A minority of retirees are entitled to a pension from a defined benefit scheme, which is µD VXSHU IXQG ZKHUH \RXU UHWLUHPHQW EHQHILWV D Retirement benefits are usually calculated using your average salary over the last few years before you retire and the number of years you worked in the company or public VHUYLFH¶[4] These retirees are likely to be either former public sector workers and/or older retirees who were a member of a defined benefit fund before the changes consequential on the introduction of the superannuation guarantee.

For the purposes of this study, which is examining wealth and income inequality, this raises questions over the relationship between superannuation as an asset and the resulting income stream. Superannuation as an asset is a factor in wealth inequality, but as an income stream it is reflected in income inequality. This limitation is also noted by the OECD when discussing the high income inequality rate among the elderly in Australia (OECD, 2017, p. 249).

4. METHODOLOGY

The article identifies and examines trends in inequality from 2002 to 2014 amongst Australians over the age of 55, using the Gini index and the P75:P25 ratio. The Gini index or Gini coefficient is an index of the inequality among values of a frequency distribution. A Gini coefficient of zero represents perfect equality, while a Gini coefficient of one represents perfect inequality. The P75:P25 ratio compares wealth or income at the 75th percentile with wealth or income at the 25th percentile of the population (with the 75th being the wealthier/richer). Both the Gini coefficient and the P75:P25 ratio can be applied to give an indication of the inequality of the distribution of wealth or income.

The wealth module of the HILDA survey is released every four years, with data appearing in waves 2, 6, 10 and 14, collected in 2002, 2006, 2010 and 2014. The time period examined in this article is based on these data waves. The sample size is 36,848 observations over the four waves. For this analysis older Australians are grouped by age in five age bands: 55–59, 60–64, 65–69, 70–74, 75–79 and 80 and over. The resulting sample sizes are considered to be adequate for the level of analysis undertaken.

All monetary data used in the analysis is adjusted to the consumer price index (CPI) in 2014 dollars. Where the data is household data it has been equivalised for household size using the modified OECD equivalence scales which assign a value of 1 to the household head, 0.5 to each additional adult member of the household and 0.3 to each child (aged under 15).

The analysis uses both cross-sectional analysis and panel data to examine trends. The crosssectional data provides a snapshot of the wealth and income of the participants at the time of the survey, and is used to examine changes across the survey population between each survey wave. Cross-sectional analysis is used to examine trends between age groups across the four waves of data.

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Chart 1: Household Net Wealth P75:P25 Ratio by Age: HILDA 2002±2014

Table 3: Distribution of Household Equivalent Net Wealth by Age, 2002±2014, HILDA, P75:P25 Ratios

	Age Cohort	55±59	60±64	65±69	70±74	75±79	80 and over
Data Wave	2002	4.64	4.78	3.98	3.45	3.14	5.70
	2006	3.65	4.09	3.75	3.50	3.07	3.76
	2010	3.70	4.32	3.71	3.57	3.73	3.27
	2014	4.31	4.09	3.77	4.39	3.92	3.48

5.1.1 Superannuation

The relevant HILDA variables identify superannuation holdings as a component of household net worth. For superannuation holdings to be valued as an asset the superannuation must either be held as an accumulation account or the capital value of the retirement income stream must be able to be determined, as in a case where an annuity has been purchased. However, it is problematic to determine the capital value of a defined benefit scheme as such a scheme provides an income stream for life, based on factors determined at the time of retirement. Accordingly, the value of defined benefits will not be included in the wealth data.

Table 6: Proportion of Assets held in Superannuation by Age, HILDA 2002–2014

	Age Group	55–59	60–64	65–74	70–74
Data Wave	2002	22%	17%	12%	8%
	2006	26%	22%	14%	11%

Chart 2: Trends in Financial Assets by Panel, HILDA 2002–2014

Source: HILDA 2002–2014

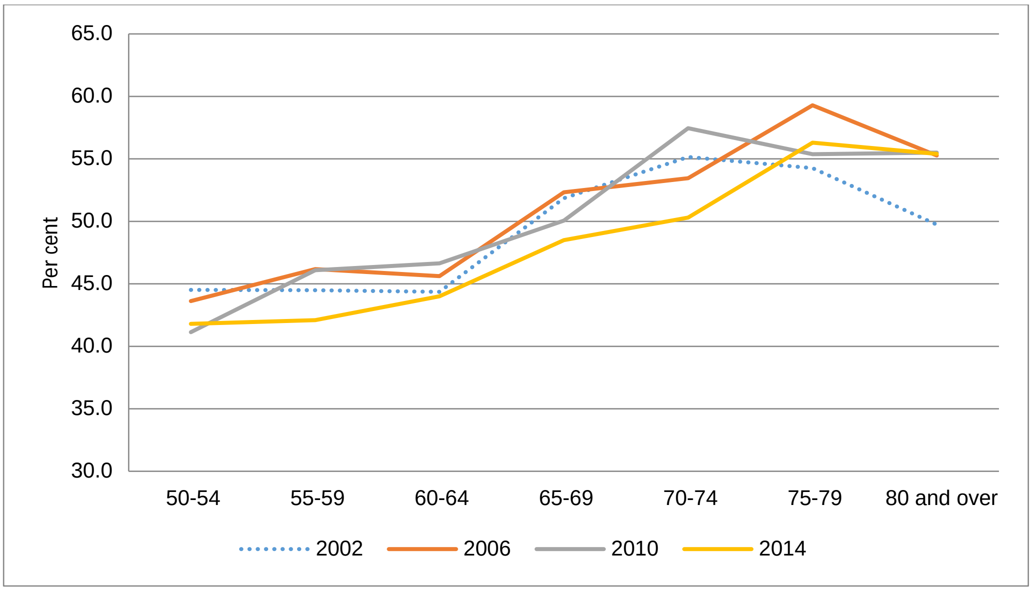
5.1.3 The home

Given that the level of inequality in superannuation holdings significantly exceeds the overall Gini coefficient, the data were then re-examined to identify other asset holdings that may have an equalising effect in later life.

HILDA identifies the home as an asset separately from investment properties, and mortgages on the home are also recorded separately from mortgages on other property. The data in this analysis is based on the home and excludes investment properties. The net value of the home is the market value reduced by the mortgage attributable to the home.

Consistent with the literature (Dockery et al., 2015, p. 58; Productivity Commission, 2015b), we found that the most valuable asset held by most older Australians is the home. Home ownership levels among Australians aged 65 and over were 85.5% in 2014 (Australianle le if0.98 Tf 1 0 0 1F4 10.98 Tf stage it levels off or decreases slightly. This reflects the reduction in housing debt among older age groups and the increased value of residential property relative to more liquid assets that will be consumed first in retirement.

Chart 3: Net Value of the Home as a Per cent of Net Wealth by Age, HILDA 2002–2014



Source: HILDA 2002–2014

Table 7 shows the Gini coefficients for equivalent net housing assets by age. In general these are below the Gini scores for equivalent net wealth by age, as can be seen by comparing them with the findings in Table 8.

ABS data (see Table 9) show that over this period the Residential Property Housing Index grew at a substantially faster rate than CPI and the increase in house prices was widespread despite regional variations in timing.

Table 9: Increase in Residential Property House Index, ABS

Increase from June quarters	2002–06	2006–10	2010–14
Increase in Residential Property House Index: 8 capital cities	31%	35%	11%
CPI			

Table 10: Equivalent Disposable Income Distribution by Age, HILDA 2002 ±2014, Gini Coefficients

	Age	55±59	60±64	65±69	70±74	75±79	80 and over	Total population aged 55 and over
Data Wave		0.38	0.38	0.39	0.34	0.29	0.35	0.34
	2006	0.37	0.42	0.45	0.42	0.31	0.30	0.34

Table 11: Proportion of Respondents Retired in Each Wave by Age, HILDA 2002–2014

	Age	55–59	60–64	65–69	70–74	75–79	80 and over
Data Wave	2002	31%	58%	79%	89%	93%	93%
	2006	25%	50%	78%	84%	92%	93%
	2010	19%	41%	73%	89%	90%	94%
	2014	19%	38%	69%	87%		

Table 12: Distribution of Equivalent Final Income by Age, Gini coefficients, 2003±04 and 2009±10, ABS

All households	55±64	65±74

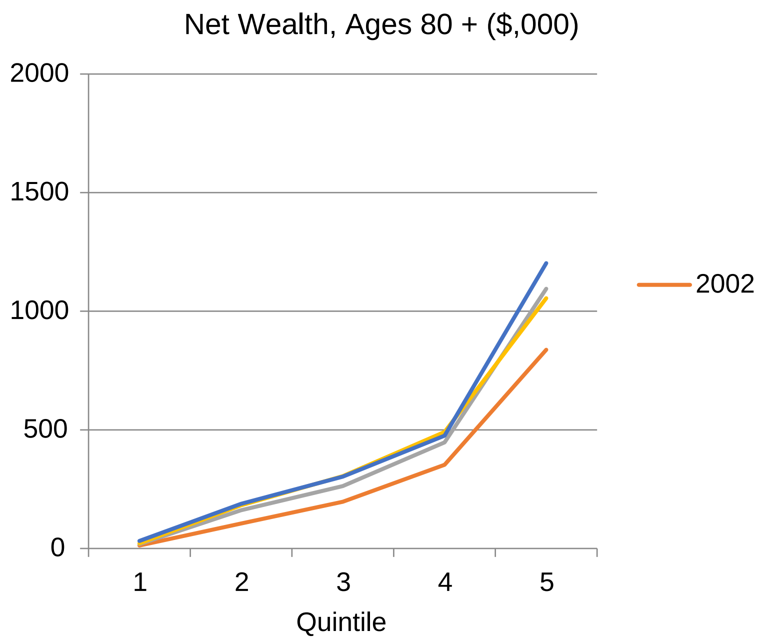


Chart 7: Quintile Analysis of Disposable Income for Certain Age Groups, HILDA, 2002-2014

Source: HILDA 2002±

First, as the inequality measures used are the Gini coefficient and the P75:P25 ratio, our findings are not informative about the outliers: the top 5% and the lowest 5% of the population. Regardless of whether the superannuation changes are reducing inequality among the population as a whole, policy measures need to address the circumstances of those in most need.

Second, the data spanned the period of the Global Financial Crisis (2007–2009). To the extent that superannuation balances are affected by changes in the value of investments, this external shock will be reflected in the data. As growth in superannuation balances is a combination of investment growth and mandatory contributions, we have not been able to control for this factor.

Third, the relationship between wealth inequality and income inequality is complex, and out of scope of this research. We do not know how closely the two forms of material well-being are correlated at the household level (OECD, 2017, p. 249). Superannuation assets are identified as wealth, but the purpose of superannuation is to support the

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