Recognizing non-compete clauses as intangible assets: A step towards putting human capital on the balance sheet

ABSTRACT

Employees are increasingly essential to high-performing firms in the 'information age', but are typically not recognized as an asset in accounting. We propose that employees with non-compete clauses (restraints of trade) may meet the definition of an intangible asset. Utilizing the New Zealand setting where companies must disclose the number of employees earning over NZ$100,000, we estimate the proportion of total employee costs that could be capitalized. Recognizing our measure of an employee asset results in significantly improved return on asset and leverage ratios and reduces the "missing gap" as proxied by the market-to-book ratio. Furthermore, we show that our employee asset measure is significantly positively associated with firm value, suggesting the market currently views it as an asset. Overall, we outline and provide evidence on a step towards recognizing employees on the balance sheet contributing to the debate in a long-contentious area of accounting.

Keywords: Intangibles; Human capital; Employees; IFRS

1. INTRODUCTION

Employees or human capital have grown increasingly vital to firms' operating success. However, despite claims in business media that employees are a firm's most important asset (Hobson 2021) and academic evidence that human capital is associated with firm performance (Crook et al. 2011), they are not recognized on firms' balance sheets. The non-recognition of human capital alongside other intangible assets results in a "missing gap" on the balance sheet (Lev 2019).[1] A recent IASB (2025) survey found that 69% of users viewed the financial statements as having insufficient information on human capital. Thus, current accounting may not reflect the drivers of firm value, leading to an understatement of earnings and assets for intangible-driven firms. Proposed approaches to enhance the disclosure of human capital information include the Security and Exchange Commission's (SEC) recommendation to mandate quantitative disclosures on employee turnover, temporary worker use, total employee expenditures, workforce diversity (IAC 2023), and disclosing key performance indicators (European Financial Reporting Advisory Group 2023). However, while improved disclosure is a step forward, it does not fully address the issue of the "missing gap," as investors may not integrate all the proposed disclosures into their risk assessments (Jennings et al. 2024).

Thus, we propose the recognition of a new human capital intangible asset as a step towards reducing non-recognition and to stimulate discussion of other cases where intangible assets recognition might be appropriate. We focus on the case of capitalizing employee costs where we argue they meet the definition of an intangible asset: those with non-compete clauses (also called restraint of trade). Non-competes give the organization present control of the employees' future labor, allowing them to restrict access over where the employee can or cannot work for a period of time and to prohibit access to customers, suppliers and co-workers. As restraints of trade reduce product market competition, they result in an economic benefit to

[1] Other examples include digital technology, research and development (R&D), and brand awareness.

the firm, and anecdotally their value is reflected by them being "bought out." Furthermore, as they arise from past contractual rights, they would be identifiable, as is required for intangible assets. They are also measurable (as a proportion of the employee's salary) and are probable as they are legally enforceable. Thus, we propose non-competes as the next step to wider recognition of human capital on the balance sheet, as polling data suggests that 22% of Australians have non-competes, increasing to 39% of those classed as managerial (Andrews and Jarvis 2023).

After outlining the proposed accounting, we then provide evidence of the impact that recognizing an employee asset would have on selected financial ratios. We capitalize a firm-specific estimate of our proposed employee asset, which is important, as non-compete clauses cannot be applied unreasonably to all employees, but rather to valued and specialized employees. To create our firm-specific estimate, we use the New Zealand (NZ) setting, as Section 211(1)(g) of the (New Zealand) Companies Act 1993 requires the disclosure of the number of employees whose total remuneration exceeds NZ$100,000 in brackets of NZ$10,000, allowing the identification of specialized and valued employees. We hand collect total employee costs and employee costs for those paid over NZ$130,000, a suggested minimum threshold for non-compete clauses in NZ and double the average salary. We then assume six months (a standard non-compete period) would already be fully capitalized and recognized as an intangible asset and add it back to equity to reverse the effect of expensing in prior years. We then capitalize six months of the increase in the employee costs for those paid above NZ$130,000 from the previous year to account for the changes in the current year and subtract it from reported expenses.

We find that recognizing an employee asset increases total assets by NZ$24.1 million on average, a material increase of 14% of pre-capitalization intangible assets. This results in a significant improvement to leverage and return on assets (ROA) ratios, helping address the

problem of knowledge-driven companies having their risk overstated and performance understated. Furthermore, if the market-to-book (MTB) ratio is considered a proxy for the "missing gap," we find that it decreases significantly. We conduct sensitivity tests assuming different salary thresholds (NZ$200,000 and NZ$300,00) and non-compete periods (three and twelve months) and document similar inferences. Next, we test the value relevance of our employee asset versus other employee costs. The employee asset measure is also significantly positively associated with firm value, whilst employee expenses are significantly negative. This suggests highly-paid employees are potentially viewed as an asset by the market. This association is confined to firms whose value is more reliant on the knowledge economy, as proxied by a higher proportion of intangible assets or being in a human-capital dependent industry, consistent with the employee stock option literature (Bell et al. 2002).

The main contribution of this paper is to the debate on intangible asset recognition. Prior studies predominantly examine specific intangible assets (e.g., R&D, goodwill), with a recent trend emerging towards investigating intellectual capital disclosures, including those arising from integrated reporting. In contrast, we propose recognizing an employee asset and consider the impact of doing so on key financial ratios. Our contribution lies in outlining a step toward recognizing human capital in the case of highly-valued employees with non-compete clauses. This proposal is one of many needed to close the "missing gap" but does so in a relatively low-cost way that is largely consistent with current accounting standards. We hope this proposal may stimulate the consideration of other cases where unrecognized intangible assets could be capitalized. This contrasts with other proposed solutions for intangibles, which are either disclosure driven (and thus not focused on additional recognition) or require a fundamental revision to accounting standards (and thus are unlikely to gain support from a broad constituent group). This is important as although accounting for intangibles has long been an area of contention, in a recent speech by Andreas Barckow, the chair of the

International Accounting Standards Board commented, “Current accounting for intangibles needs improvement, yet their views differ on both the problems and their solutions” (Barckow, 2024). Therefore, our findings are of interest to standard setters, policymakers, managers, and investors, especially considering the ongoing intangible asset project.

Furthermore, although the International Sustainability Standards Board (ISSB) has human capital on its work plan (with linkages noted to the IASB intangible asset project), it emphasizes an ESG lens. Current research on human capital disclosures has also focused on proposed disclosures; for example, Li et al. (2022) find that employee turnover is related to firm performance, with the exception of the literature on the recognition of football players (see Maroun et al. 2022; Amir and Livine 2005). Thus, we add to the human capital literature by outlining the recognition of an employee asset applicable to all industries, which our value-relevance tests suggest is found to be currently viewed as an asset by investors.

The rest of this paper is structured as follows. The next section provides background to the study, leading to the research issues. We discuss the current standard-setting developments, prior research literature, and develop our research questions. Section 3 presents the proposed accounting, sample and assumptions underpinning our research design. The results are presented in Section 4, and Section 5 concludes the paper with a discussion.

2. LITERATURE REVIEW AND RESEARCH QUESTION DEVELOPMENT

Background

The IASB Conceptual Framework defines an asset as “a present economic resource controlled by the entity as a result of past events.” Furthermore, the recognition criteria require that for assets to be recognized they must be probable and measurable. The Conceptual Framework also acknowledges that there is a cost to preparing information and that the benefits of the information should outweigh the costs. Intangible assets have a further distinction based on

tangibility that is not grounded in the conceptual framework (Lev 2018). Specifically, intangible assets are defined as "an identifiable non-monetary asset without physical substance" (IAS 38 para 8). Thus, IAS 38 adds an additional requirement for the recognition of intangible-relative-to-tangible assets - that they are identifiable. An intangible asset is identifiable if it is separable or arises from contractual rights. Accordingly, there is a strong emphasis on recognized intangibles having transferability or exchangeability, whilst tangible assets appear to carry the presumption of transferability or exchangeability.

By requiring identifiability, there has been an increasing tension on whether accounting for intangible assets can recognize the drivers of firm value in the "information age," including human capital and unforeseen technological developments such as the blockchain (Jackson and Luu 2023). IAS 38 notes that it can be "difficult to assess whether an internally generated intangible asset qualifies for recognition" (IAS 38 para 51) due to issues with identifiability, the realization of future economic benefits, and measuring costs reliably. Being able to directly attribute costs is also problematic for some intangible assets. For example, the costs for developing brands, mastheads, publishing titles, and customer lists are viewed as indistinguishable from overall business costs and therefore, the recognition may be limited to a registration fee rather than the substantive expenditure involved in creating value. However, identifiable intangible assets can be recognized at their acquisition cost, and goodwill, defined as the difference between the acquisition price of a new business and the identifiable assets of the acquiree, can also be recognized. Thus, there is a large difference in the recognition of internally generated vs. externally acquired intangibles.

Literature review

Consistent with their importance and tension over appropriate accounting, there are several intangible asset literature reviews (see, Hussinki et al. 2024; Barker et al. 2022; Garanina et al.

2021; EFRAG 2020; Wyatt 2005). One research stream considers the non-recognition of intangible assets by noting the decline in the usefulness of accounting for explaining market value (Lev 2018; Lev and Gu 2016), although there is more mixed evidence from Australia (Davern et al. 2019). Supporting the idea of a "missing gap," key non-financial information is found to be value relevant in the telecommunications (Amir and Lev 1996), semiconductors (Chandra et al. 1999), and biotech (Guo et al. 2004) industries.

Another stream of research shows that disclosed intangibles are generally value relevant (Ritter and Wells 2006; Wyatt 2005). Intangibles assets including capitalized software costs (Aboody and Lev 1998), and R&D (Lev and Sougiannis 1996) are found to be value relevant. Furthermore, intangible assets seem to have become more useful post-IFRS, with goodwill becoming more value relevant in Australia, although there is no change in other identified assets (Chalmers et al. 2008). There is also an increase in the value relevance of intangible assets post-IFRS in Portugal (Oliveira et al. 2010). Barth et al. (1998) bridge these two streams by finding that external estimates of brands are more value relevant than disclosed amounts. Reliability of the measurement of unrecognized intangible assets is often questioned due to their attributes of being "sunk" costs and having "spillover" benefits. However, unrecognized intangibles have the potential to generate future economic benefits and enhance financial performance (Lev 2019; Wyatt 2008).

Thus, a related question is issue of the difference between capitalized intangible assets and those immediately expensed. This has been examined in the context of changes to the rules on what R&D expenses could or could not be capitalized and suggests that capitalization is more value relevant (Dargenidou et al. 2021). Mohd (2005) finds the capitalization of software development costs is associated with lower information asymmetry. Wyatt (2005) uses the Australian pre-IFRS setting where capitalization of applied development expenses was allowed but not mandated and finds that they are not value relevant. Other Australian evidence suggests

that goodwill is more value relevant than other identified intangible assets, whilst capitalized R&D is not (Godfrey and Koh 2001).

Research question development

We focus on one important aspect of intangible assets: human capital. Employees provide a vital role in creating value for entities; indeed, a meta-analysis finds that human capital is significantly associated with higher operating performance (Crook et al. 2011), and employee turnover is with next quarter sales growth, return on assets and stock returns (Li et al. 2022). Human capital is widely agreed to be important, as illustrated by being a suggested capital under the Integrated Reporting framework[2] and popular media writing stories such as employees are a "company's No. 1 Asset" (Hobson 2021). Human capital has also been added to the ISSB 2024-2026 work plan, although it focuses on an ESG perspective, with interlinkages noted to the IASB intangible asset project. However, employees are typically viewed as not meeting the definition of an intangible asset. EFRAG (2023) instead suggests that human capital could be disclosed via information and key performance indicators on employee competence level, employee turnover per function and geography, employee satisfaction and engagement, and whether functions were outsourced. It also highlighted the value of training and that the entity could note that employee turnover could reflect the value of training and investment in staff. Similarly, the Securities and Exchange Commission (SEC) recommended mandated quantitative disclosures on employee turnover, temporary worker use, total employee expenditures, and workforce diversity (IAC 2023).

One exception is the recognition of football (soccer) players, where the costs for the acquisition and registration of players are capitalized as intangible assets. Figure 1 shows the disclosure from the Celtic Football Club, with the book value of players recognized on the

[2] https://integratedreporting.ifrs.org/resource/international-ir-framework/

balance sheet and the value disclosed by contract expiry period. With total assets of £198 million, material player contracts (above £1 million) are over 11% of total assets and thus material. Empirical evidence from a sample of listed British football clubs provides consistent evidence by showing that transfer fees are positively related to market value (Amir and Livine 2005). However, Maroun et al. (2022) argue that current football accounting has problems similar to intangibles generally, with issues around the recognition of internally-developed players and subsequent remeasurement at fair value. In their conceptual paper on human cost accounting, Chen and Lin (2004) suggest that employees who are valued and unique and can be kept out of the reach of competitors qualify as human capital. Considering that football players are signed to a club and cannot play for another for the duration of their contract, they would seem to meet the Chen and Lin (2004) criterion.

However, could other employees meet a similar threshold to football players and thus be capitalized as intangible assets? Specifically, would the definition of a resource controlled by the entity as a result of past events, from which future economic benefits are expected to flow to the entity, be applicable to any employees more generally? In contrast to other employers, football clubs can get transfer fees if trading players, and penalties on players breaching contracts are strictly enforced. Building on these differences, we suggest that the most comparable situation is a restraint of trade or non-compete clause. These are clauses in employment contracts that can restrict employees from starting a competing business or working for competitors for a period of time. It can also prevent employees from approaching clients, suppliers, customers, or former co-workers. Confidentially and trade secrets, via a non-disclosure agreement, are also often bundled as part of a non-compete clause (Treasury 2023). Thus, a non-compete clause (broadly defined) would reflect the bundle of potential knowledge, skills, experience and connections that comprise human capital, and appear consistent with IAS 38.15, which outlines that "….specific management or technical talent is unlikely to meet the

definition of an intangible asset, unless it is protected by legal rights to use it and to obtain the future economic benefits expected from it…" Non-competes also focus in a higher valued employees, which IASB (2025) user feedback suggests there is a demand for more information about.

The rationale behind the non-compete clauses is to protect proprietary information. In NZ, these are generally enforceable for between three and twelve months and must protect the employer's legitimate business interest or the reputation of the business, with geographic limitations potentially applying. Non-competes may not be immediately enforceable and thus require the employee to work at the organization for a period of time. The employee must have held a relevant position to access the information necessary for the protection of the business, consistent with the Chen and Lin (2004) view of valued and unique employees qualifying as human capital. However, the application of non-competes does vary internationally, with the Federal Trade Commission attempting to ban non-competes in the USA and instead recommending non-disclosure agreements. International data suggests that non-competes are common, with 22% usage in Australia and similar rates in other western countries, including 18% of US companies (Treasury 2023).

Interpreted broadly, non-competes give the organization present control of the employee's future labor. They can control where the employee can or cannot work for a period after they stop working for the organization unless a mutual agreement is reached (e.g., a new employer "buys" it out). In this sense, they can be viewed as parallel to contracts in football which prohibit players from leaving one club to play for another. However, we argue that employees with non-compete clauses would likely meet the definition of an intangible asset even without an external acquisition. Because of a past transaction, the entity has present control of the employee's future labor. As a non-monetary asset without physical substance, it would be categorized as an intangible asset and thus, must also be identifiable. IAS 38 19.b

notes that an intangible asset is identifiable if it "arises from binding arrangements (including rights from contracts or other legal rights)"; as non-competes are contractual arrangements, they are identifiable. Furthermore, they are measurable (as a proportion of the employee's wages) and the benefit is probable as long it is reasonably believed to be legally enforceable.[3] IAS 38.17 does not require the future benefit to be realizable as cash, but instead it can include other benefits. We contend that denying access to the employee's human capital results in a benefit from decreased product market competition and thus would meet the criteria for being a future economic benefit. We conclude that employees with a non-compete clause could be recognized as intangible assets.

Thus, given the interest in revising intangible asset accounting, the importance of human capital accounting leads to our research question, stated as:

RQ: What is the impact of recognizing employees with non-compete clauses as intangible assets on the financial statements?

3. RESEARCH DESIGN

Proposed Accounting

To outline our proposal, we present a stylized set of journal entries with no consideration for other remuneration elements (e.g., pensions) or tax. As the base case, employee costs are currently journalized as:

Dr. Employee Costs	100	
Cr. Cash		100

[3] Alternatively non-competes could be disclosed as Contingent Assets. IAS 37 suggests that a legal claim where the outcome is uncertain meets the criterion of a possibility of an outflow. Although recognition would be unlikely due to IAS 37 33 noting that the inflow must be virtually certain, research suggests that recognized are more value relevant than those disclosed (Ahmed et al 2006).

Instead, companies would capitalize on the extent of employee costs related to a non-compete clause. In this example, we imagine a high-tech manufacturing firm where 25% of employees are subject to a six-month non-compete. This would be increased over the period over which the non-compete becomes enforceable: two years in our example. Thus, the journal entry in the initial period would be:

Dr. Employee Costs	93.75	
Dr. Employee Asset	6.25*	
Cr. Cash		100

* Employee costs x non-compete period x staff under non-compete x vesting period

100 x 6/12 x 25% x 0.5

Once fully capitalized, the employee asset would sit on the balance sheet and would then be adjusted for increases in employee costs between each subsequent year. We propose no amortization but rather writing it off, if appropriate.

Setting

Our study is based in NZ, where companies must comply with Section 211(1)(g) of the (New Zealand) Companies Act 1993. This section requires disclosure of the number of employees whose total remuneration exceeds NZ$100,000 in brackets of NZ$10,000 in the annual report, with an example from the 2023 Annual Report of The Warehouse shown in Figure 2. This allows us to accurately estimate the proportion of total employee costs that relate to higher-paid employees who are then subject to a non-compete clause, unlike other jurisdictions where granular disclosures for all higher paid employees are not public. NZ is also a strong setting for generalizable insights as it uses IFRS and International Standards on Auditing (ISA). In

addition, the NZX is mid-sized globally in terms of market capitalization (CIA 2023). NZ is also ranked in the upper middle in terms of accounting enforcement (Preiato et al. 2015). As our main sample is based on the whole population of listed companies, it includes both large and very small companies (our median sample firm has total assets of NZ$364 million). By sampling all listed companies, we provide evidence of the effect of the proposed accounting change that would be excluded for samples of solely the largest US companies.

Capitalization of employee costs

We take our cues from the lease capitalization literature (e.g., Imhoff et al. 1991; Beattie et al. 1998; Bennett and Bradbury 2003; Fahad and Scott 2022) and treat the entity as a going concern when applying the proposed accounting change. To do this, we assume that all current employees paid over NZ$130,000 have six months of their salary capitalized as at the start of 2023. We calculate this number by taking 50% of the 2022 salary costs of these employees and adding it to intangible assets and total equity (to account for the cumulative reduction in expenses over the past periods). To adjust for the current year's impact, we take the difference between the 2022 and 2023 employee costs for those paid over NZ$130,000 and capitalize half (six months) to account for the increase in the employee asset. This is then subtracted from expenses. We then test whether this results in significant differences in key accounting ratios of leverage, ROA, intangible to total assets and MTB, calculated as follows. We calculate total liabilities to total assets to proxy for leverage; return on assets is commonly calculated as earnings before interest and tax (EBIT) divided by total assets; we divided total intangible assets by total assets; and MTB is the market value of equity as at the 2023 balance date divided by total equity.

Our analysis is based on a number of assumptions. Firstly, to proxy for employees with a non-compete clause, we use all employees paid over NZ$130,000. We use this number for

several reasons. The proposed Employment Relations (Restraint of Trade) Amendment Bill in NZ limits non-compete clauses to those earning three times the minimum wage. As the minimum wage for 2023 was NZ$22.70 per hour, three times this would be an annual salary of $132,795. This is also approximately double the average 2023 salary in NZ of $66,196.[4] Thus, we conclude that those earning over NZ$130,000 would likely fulfil the requirements to have a non-compete clause and meet the rationale of being unique and valued employees. However, we also report results assuming a salary threshold of NZ$200,000 and NZ$300,000. For calculation purposes, we assume employees earn the average of the NZ$10,000 disclosed band (i.e., NZ$135,000 for the 130,000-140,000 band).

We also assume in our main tests that non-competes would be enforceable for six months. In NZ, non-compete must be reasonable to be enforceable, with six months being a common term, and those over 12 months rarely being enforceable. We again report our main results with six months of applicable employee costs capitalized and report sensitivity tests with three and twelve months capitalized instead.

Under our proposed accounting, the employee asset would not be amortized but rather impaired. We assume that this would be offset by a lower increase in the total value of capitalizable employee costs and thus does not need to be separately considered in our stylized model.

4. RESULTS

Sample

Our initial sample population is based on all companies listed on New Zealand's Exchange (NZX). Table 1 outlines our sample selection process. Firstly, we exclude listed funds and Real

[4] https://www.stuff.co.nz/business/money/133048565/heres-what-you-should-be-earning-based-on-your-age

Estate Investment Trusts (REITs). We require companies to have financial statements for the most recent two years and to make disclosure of the employee remuneration report with at least one employee paid above NZ$100,000. Companies that are also listed on the Australian Stock Exchange (ASX) are included if they report under this requirement. For each firm, we download the 2022 and 2023 annual reports, and hand-collect the employee remuneration data. This results in a final sample of 93 observations from 2023. Table 2 shows the sample breakdown in Global Industry Classification Standard (GICS) terms, although considering our small sample size we combine some groupings. The most common industries are industrials (18%), followed by consumer staples (17%), whilst energy (1%) and materials (3%) are the least common, and thus combine with utilities into one grouping.[5]

Main results

Our main results are shown in Table 3. The mean intangible assets are NZ$172 million (median NZ$28.1 million), whilst employee costs are NZ$143 million (median NZ$67 million), relative to total assets of NZ$1,800 million (median NZ$364 million). This highlights that non-recognized human capital investments are often greater than all currently recognized intangible assets, which are only 16% of total assets. However, there is a large range, with EBOS Group (a provider of healthcare, medical and pharmaceutical products) having NZ$2.7 billion of intangibles. Our proposed employee asset results in a new intangible asset of NZ $24 million on average (NZ$10 million). However, the range is again large, with Air NZ having an employee asset of NZ $337 million. To partly validate our measure, we consider the five companies for which the employee asset would be the largest proportion of total assets and find that four are software companies and one is a media company. Thus, our employee asset

[5] Financials are predominantly service companies. When we exclude the financial sector, our results remain unchanged.

measure does seem to be higher in industries traditionally thought of as having greater human capital, consistent with 37% of high skilled employees having a non-compete in Finland (Treasury 2023).

Next, we consider the impact of our proposal on some key ratios. Firstly, post-capitalization there is a significantly higher ROA and improved leverage ratio. The improvement in leverage ratio is driven by the increase in total assets and implies that knowledge companies with greater human capital would be assessed as less risky under our proposal. The recognition of an employee asset has a joint impact on ROA, with an increase in the numerator from reducing employee costs, but also an increase in the denominator from the employee asset increasing total assets. This implies that our proposal would have an even stronger effect on profit measures not scaled by total assets, such as Earnings per Share, and alleviate concerns that the performance of knowledge-driven firms is currently understated. Consistent with this, the proportion of total assets that are intangibles significantly increases from 16% to 18%. There is also a significant reduction in the MTB ratio from 2.33 to 2.00, driven by the increase in total equity. This highlights that recognizing human capital on the balance sheet reduces the "missing gap" of accounting in a relatively low-cost way, consistent with current accounting standards.

A key limitation of our approach is that it is reliant on assumptions. Thus, we also report ratios when we vary capitalization assumptions in Table 4 and find similar results to our primary analysis of an improved leverage and ROA, and a lower MTB ratio. Specifically, we assume the non-compete period could be three or twelve months, and that only employees earning above NZ$200,000 or NZ$300,000 would have a non-compete. Notably, assuming a twelve month non-compete would reduce the MTB ratio to 1.83, further reducing the "missing gap."

Value relevance tests

We attempt to provide additional insight into the usefulness of our proposed employee asset by testing whether the market currently impounds it differently from other employee costs. To do so we use the Ohlson (1995) model, stated as:

$$Price_i = \beta_0 + \beta_1 BVE_i + \beta_2 NI_i + \beta_3 Loss_i + Year + \varepsilon \quad (1)$$

Where $Price_i$ is the share price of firm i three months after its balance date, BVE_i is the book value of equity and NI_i is the reported net profit after tax. We first remove employee costs (*EC*) from and *NI* and include it as a separate component of the model. Next, we use our proposed accounting, as outlined above, and separate out our employee asset (*EA*) and adjust *EC* and *BVE*. Consistent with prior literature that highlights the importance of the deflator (Easton 1999; Barth and Clinch 2009), *BVE* and *NI* are scaled by the number of shares outstanding, and we include the binary variable *Loss* to control for losses (Hayn 1995; Burgstahler and Dichev 1997). Market data is sourced from Refinitiv Eikon. Table 5 Panel A presents the descriptive statistics used for the value relevance analysis.[6]

Panel B presents the value relevance regressions. Model 1 presents the base regression without a separate variable for employee costs or assets. The book value of equity and net income are both significantly positively associated with higher market value. In Model 2 we separate employee costs from net income and find they are significantly negatively associated with market value, as would be expected for an expense. However, Model 3 shows that our proposed employee asset is significantly positive, while other variables remain unchanged in coefficient sign and significance. Thus, we provide evidence that an employee asset is currently impounded as an asset by the market. The significant positive coefficient on our employee asset

[6] We winsorize the outlying 1% of observations.

variable is consistent with literature that finds a significant positive association for employee stock options in software companies (Bell et al. 2002). Next, we test what drives this positive coefficient, by interacting *EA* with binary variables equal to one if the firm is in the top quartile of intangible assets-to-total assets (*HIGH_ INTG*) or in a human capital-intensive industry[7] (*HIGH_HC*) in Models 4 and 5, respectively. We find that this significant positive association is driven by these more knowledge-driven companies, as the interaction of *HIGH_INTG *EA* and *HIGH_HC *EA* are both significantly positive, whilst *EA* is not. Thus, we conclude that recognizing an employee asset is useful for reducing the information gap for companies that currently have the largest "missing gap" and is consistent with current market practices.

Extensions to employee asset recognition

If employees with non-compete clauses are recognized as an intangible asset, we then ask in what other situations could human capital be plausibly recognized? In our data collection we also note that four companies (4%) currently capitalize employee costs, via R&D capitalization. We conclude that although recognizing human capital on the balance sheet is uncommon in NZ, it does currently occur under present rules.

Firstly, many employee (or collective) agreements have a formal period in which notice is required to be given by permanent employees when they wish to stop working for their employer. In NZ these are commonly between two and eight weeks, although they can be up to six months. We argue that notice periods reflect a logical extension of capitalizing non-compete clauses as they again arise from contractual rights, are measurable and enforceable (and thus probable), and give the employer control over the employee's labor for the notice period (the future benefit). However, employees can choose not to serve out their notice period, although this is less likely in highly-skilled professions where they would face a reputational

[7] Information Technology, Communication Services, Health Care, or Financials.

cost. Secondly, we note there are other situations in which an employee is very unlikely to terminate their employment, giving the organization effective control of their future labor. An example of this is when the employee has been granted a large amount of equity with a vesting period. In this case, it is unlikely an employee would leave before the equity fully vests; indeed, waiting out the equity vesting period is a well-known enough stereotype to feature as a joke in popular media such as the TV show Silicon Valley. Thus, we argue that if the equity is viewed as likely enough to vest (and thus, be journalized), it is probable (more likely than not) that the employee would not terminate their employment before it vests, giving the organization effective control of their employee. This would lead to equity payments to employees with vesting conditions being capitalized as assets rather than expensed as employee costs. A similar situation might also apply to employees who have a defined benefits pension that vests if they work for the organization for a certain period of time. Thus, although we view the case as strongest for the recognition of non-compete clauses, they present a step which leads to the recognition of notice periods, equity payments and situations which result in the employee being unlikely to leave for a certain period.

5. CONCLUSION AND LIMITATIONS

This study contributes to the ongoing debate on recognizing intangible assets by proposing the capitalization of employee costs associated with non-compete clauses as an intangible asset. Using a sample of all NZ listed companies, we show that capitalizing the value of non-compete clauses for highly-valued employees significantly impacts key financial ratios. These include an increase in total assets, improved leverage, enhanced ROA, and reduction in MTB ratio: a proxy for the “missing gap” of intangible-driven companies. Furthermore, the results suggest that the market perceives employee assets as value-relevant, particularly for intangible-driven companies and firms in human capital-intensive industries. Overall, these findings highlight

the potential for the proposed employee asset to better reflect the economic value of human capital, especially in knowledge-driven sectors.

Our paper has several implications. Firstly, for standard setters and policymakers, this approach would provide a feasible and low-cost way to address long-standing issues in recognizing human capital. Unlike other proposed solutions that require sweeping revisions to existing standards or focus solely on enhanced disclosure, our proposal largely aligns with current accounting frameworks and can be implemented with minimal disruption. Our proposal to recognize employees under non-compete clauses as intangible assets aligns with current practices in football (soccer), where the contracts of star players are recognized as intangible assets and IASB (2025) for more information about highly valued employees. Disclosure of the employee asset would also parallel football's disclosure, with details such as the duration of the contract, associated costs, and expected economic benefits.

Secondly, our findings highlight the importance of rethinking traditional accounting practices to better reflect the evolving nature of value creation in modern economies. As businesses increasingly rely on intangible and human capital assets, the prevailing framework, which predominantly prioritizes physical and financial assets, fails to capture the full range of value drivers. The proposed capitalization of non-compete clauses would offer managers and investors a clearer, more tangible representation of human capital's contribution to firm value for industries that rely heavily on human capital, such as technology, healthcare, and professional services. By incorporating the value of human capital into financial reporting, companies in these sectors can more accurately reflect their investments in specialized, high-value employees, highlight their competitive advantages, and demonstrate long-term viability. This approach also addresses the undervaluation that is often associated with knowledge-driven firms. Furthermore, it may encourage companies to reassess their recruitment, retention, and

compensation strategies, as they recognize the direct impact of human capital on financial performance.

However, our results must be interpreted considering certain limitations. Firstly, this study is confined to the NZ context, where employee remuneration disclosures enable the identification of highly-valued employees. This may limit the generalizability of the findings to other jurisdictions with differing disclosure or legal requirements. Secondly, the assumptions underlying the valuation of employee assets, such as salary thresholds and non-compete periods, are based on industry norms and legal standards. While sensitivity analyses suggest robustness, variations in enforcement or applicability across firms and industries remain a limitation. Finally, while the study focuses on the financial statement impact and value relevance of recognizing non-compete clauses as intangible assets, it does not fully address potential implementation challenges, such as valuation complexities, legal uncertainties, or the risk of managerial discretion in applying the approach.

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FIGURE 1

Extract from Celtic 2024 Annual Report

	2024 No.	2024 £000	2023 No.	2023 £000
The number of players with a book value in excess of £1m by contract expiry date is as follows:				
Contract expiry within 1 year	-	-	1	1,200
Contract expiry within 2 years	**1**	**1,846**	2	3,857
Contract expiry within 3 years	**8**	**14,988**	3	8,927
Contract expiry within 4 years	**1**	**2,339**	4	8,392
Contract expiry within 5 years	**1**	**4,035**	-	-
	11	**23,208**	10	22,376

No individual intangible asset included above accounted for more than 14% of the total net book value of the intangible assets (2023: 17%).

FIGURE 2

Extract from Warehouse 2023 Annual Report

TEAM MEMBERS' REMUNERATION

Grouped below are the number of team members or former team members, not being Directors or former Directors, who received remuneration and other benefits valued at or exceeding $100,000 during the period 1 August 2022 to 30 July 2023.

Remuneration includes redundancy payments and termination payments made during the year to team members whose remuneration would not otherwise have been included in the table reported below.

Remuneration ($ 000)	Number of Team Members
100 - 110	132
110 - 120	103
120 - 130	100
130 - 140	81
140 - 150	81
150 - 160	50
160 - 170	24
170 - 180	47
180 - 190	41
190 - 200	16
200 - 210	13
210 - 220	19
220 - 230	13
230 - 240	6
240 - 250	8
250 - 260	5

Remuneration ($ 000)	Number of Team Members
260 - 270	4
270 - 280	6
280 - 290	6
290 - 300	1
300 - 310	4
310 - 320	4
320 - 330	1
330 - 340	7
340 - 350	1
350 - 360	1
360 - 370	2
370 - 380	2
390 - 400	3
400 - 410	1
410 - 420	3
420 - 430	1

Remuneration ($ 000)	Number of Team Members
430 - 440	1
440 - 450	1
590 - 600	1
620 - 630	1
670 - 680	1
680 - 690	1
730 - 740	1
770 - 780	1
890 - 900	1
1,030 - 1,040	1
1,070 - 1,080	1
1,100 - 1,110	1
1,120 - 1,130	1
2,790 - 2,800	1

TABLE 1

Sample selection process

		N
Population at 2024 (per NZX.com)		178
Less:	Funds	-56
	REITs	-12
	Financial statements unavailable for 2022/2023 (due to non-listing/delisting)	-2
	Did not disclose employee remuneration report during 2022-2023	-5
	Firms with no employees earning above $100k (excluding directors)	-8
	Shells/No data	-2
Total firms		**93**

Table 1 outlines the sample selection process.

TABLE 2

Sample distribution by industry

Industry	N	Percent
Consumer Discretionary	14	15
Consumer Staples	16	17
Energy, Materials & Utilities	11	12
Financials	6	6
Health Care	15	16
Industrials	17	18
IT & Communication	14	15
Total	**93**	**100**

Table 2 provides the sample distribution by industry groupings.

TABLE 3

Descriptive statistics for the impact of capitalization

	Mean	Median	Minimum	Maximum
Pre-capitalization ('000)				
Total Assets	1800000	364000	3470	12500000
Total Equity	818000	208000	761	8380000
Total Intangible Assets	172000	28100	0	2740000
Total Operating Expense	795000	246000	2303	12900000
Employee Costs	143000	67000	600	1640000
New accounts ('000)				
Employee Asset	24100	10200	78	337000
Post-capitalization ('000)				
Total Assets	1830000	373000	3845	12500000
Total Equity	842000	217000	1566	8400000
Total Intangible Assets	196000	37500	88	2840000
Total Operating Expense	790000	243000	2225	12900000
Employee Costs	138000	61200	522.054	1600000
Leverage (Total Liabilities/Total Assets)				
Pre-capitalization	0.490	0.496		
Post-capitalization	0.474	0.482		
t-test	5.773***			
ROA (EBIT/Total Assets)				
Pre-capitalization	0.013	0.046		
Post-capitalization	0.021	0.046		
t-test	-2.475*			
Intangibles to Asset (Intangible Assets /Total Asset)				
Pre-capitalization	0.157	0.069		
Post-capitalization	0.182	0.094		
t-test	-8.468***			
MTB (Market value/Book value of equity)				
Pre-capitalization	2.330	1.327		
Post-capitalization	1.998	1.237		
t-test	2.922***			

Table 3 presents descriptive statistics on the effect of capitalizing employee costs. Student t-tests are also reported on the change in ratios pre- and post-capitalization. Two-tailed tests of significance: *** = <0.001, ** = <0.01 and * = <0.05.

TABLE 4

Sensitivity tests

	Mean	Median	Minimum	Maximum
Leverage				
Pre-capitalization	0.490	0.496	0.040	0.978
3 months and NZ$130,000	0.482	0.485	0.039	0.967
6 months and NZ$130,000	0.474	0.482	0.038	0.956
12 months and NZ$130,000	0.461	0.469	0.037	0.937
3 months and NZ$200,000	0.486	0.489	0.039	0.971
6 months and NZ$200,000	0.482	0.486	0.039	0.964
12 months and NZ$200,000	0.474	0.480	0.038	0.951
3 months and NZ$300,000	0.488	0.494	0.040	0.978
6 months and NZ$300,000	0.486	0.493	0.040	0.978
12 months and NZ$300,000	0.483	0.488	0.040	0.978
ROA				
Pre-capitalization	0.013	0.046	-0.778	0.297
3 months and NZ$130,000	0.017	0.044	-0.651	0.278
6 months and NZ$130,000	0.021	0.046	-0.627	0.261
12 months and NZ$130,000	0.027	0.046	-0.589	0.233
3 months and NZ$200,000	0.014	0.042	-0.739	0.273
6 months and NZ$200,000	0.016	0.043	-0.704	0.252
12 months and NZ$200,000	0.018	0.042	-0.641	0.231
3 months and NZ$300,000	0.013	0.045	-0.763	0.282
6 months and NZ$300,000	0.013	0.042	-0.749	0.269
12 months and NZ$300,000	0.014	0.042	-0.722	0.243
Intangibles to Asset				
Pre-capitalization	0.157	0.069	0.000	0.785
3 months and NZ$130,000	0.170	0.081	0.001	0.788
6 months and NZ$130,000	0.182	0.094	0.002	0.790
12 months and NZ$130,000	0.203	0.141	0.004	0.795
3 months and NZ$200,000	0.164	0.079	0.000	0.787
6 months and NZ$200,000	0.170	0.084	0.000	0.788
12 months and NZ$200,000	0.182	0.097	0.000	0.790
3 months and NZ$300,000	0.160	0.075	0.000	0.787
6 months and NZ$300,000	0.163	0.079	0.000	0.788
12 months and NZ$300,000	0.169	0.090	0.000	0.790
MTB				
Pre-capitalization	2.330	1.327	0.000	24.103
3 months and NZ$130,000	2.123	1.304	0.000	20.597
6 months and NZ$130,000	1.998	1.237	0.000	17.981
12 months and NZ$130,000	1.824	1.128	0.000	14.339
3 months and NZ$200,000	2.194	1.312	0.000	20.597
6 months and NZ$200,000	2.096	1.299	0.000	17.981
12 months and NZ$200,000	1.955	1.250	0.000	14.339
3 months and NZ$300,000	2.304	1.324	0.000	24.103
6 months and NZ$300,000	2.281	1.321	0.000	24.103
12 months and NZ$300,000	2.240	1.289	0.000	24.103

Table 4 presents descriptive statistics of varying capitalization assumptions, namely the salary thresholds and non-compete period.

TABLE 5

Value relevance tests

Panel A. Descriptive statistics

Variable	Mean	Median	SD	Min	Max
Price	4.186	1.850	8.551	0.025	65.800
NI	0.183	0.073	0.528	-0.617	4.235
BVE	2.208	1.331	2.881	0.006	17.148
Loss	0.672				
EC	0.095	0.048	0.157	0.000	1.263
EA	0.290	0.000	0.456	0.000	1.000
HIGH_INTG	0.280				
HIGH_HC	0.376				

Panel B. Value relevance regressions

	(1)	**(2)**	**(3)**	**(4)**	**(5)**
Constant	-1.769	-2.377**	-1.874*	-1.463	-1.634*
	(-1.548)	(-2.184)	5.890***	7.511***	8.050***
NI	9.293***	6.430***	(3.967)	(4.630)	(5.745)
	(7.031)	(4.304)	(3.967)	(4.630)	(5.745)
BVE	1.131***	0.969***	0.814***	0.655***	0.436*
	(4.879)	(4.348)	(3.554)	(2.759)	(1.985)
Loss	0.779	0.205	0.216	0.837	1.029
	(0.752)	(0.207)	(0.223)	(0.848)	(1.169)
EC		-5.493***	-6.572***	-7.709***	-7.011***
		(-3.057)	(-3.721)	(-4.235)	(-4.446)
EA			18.172**	11.200	3.128
			(2.340)	(1.366)	(0.410)
HIGH_INTG				-1.528	
				(-1.176)	
*HIGH_INTG *EA*				18.223**	
				(2.243)	
HIGH_HC					-2.474
					(-1.549)
*HIGH_HC *EA*					33.935***
					(4.688)
Industry FE	Yes	Yes	Yes	Yes	Yes
F	36.68	38.54	36.82	32.82	44.33
Adjusted R-squared	0.777	0.803	0.811	0.818	0.850
N	93	93	93	93	93

Table 5 presents the descriptive statistics and analysis of the value relevance. Panel A reports sample descriptive statistics and Panel B shows value relevance regressions. Two-tailed tests of significance: *** = <0.001, ** = <0.01 and * = <0.05. Where *Price* is the share price of firm *i* three months after its balance date in year *t*, *BVE* and *NI* are the book value of equity and reported net profit after tax of firm *i* as in the annual report of year *t* scaled by the number of shares outstanding of firm *i*, *Loss* is a binary variable equal to one if net profit after tax is negative, *EC* is reported employee costs of firm *i* as in the annual report of year *t* scaled by the number of shares outstanding of firm *i*, *EA* is employee asset scaled by the number of shares outstanding of firm *i*, *HIGH_INTG* equals 1 if the firm is in the top quartile of the intangible assets-to-total assets ratio and zero otherwise, *HIGH_HC* equals 1 if the firm operates in a human capital-intensive industry (i.e., Information Technology, Communication Services, Health Care, or Financials) and zero otherwise.