

HUMAN CAPITAL MANAGEMENT

Marketing material for professional
investors and advisers only

Research summary: people are
our greatest asset

July 2023



In collaboration with:



CalPERS

Schroders

KEY FINDINGS

The importance of human capital – how people are our greatest asset



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Companies interact with a diverse set of capitals to create value – financial¹, physical and human. The latter is increasingly talked about but rarely analysed in detail. There are multiple structural and cyclical factors underpinning the materiality of human capital. Below we outline our core views and findings so far on this topic.

To further our understanding of the value of sustainable human capital management, we have conducted detailed research into this field in collaboration with the California Public Employees' Retirement System (CalPERS) and Saïd Business School, University of Oxford.

- Human capital is a critical source of competitive advantage and fundamental resilience;
- Effective human capital management requires the stewardship of a variety of systems, including operating models, culture and inclusion, incentives, talent and learning, and innovation;
- Qualitative and quantitative analysis of human capital management allows us to ask different questions about the drivers and sustainability of value creation;
- Human Capital Return on Investment (HCROI) is an accounting-based quantitative measure that can be used alongside employee economic value added Employee Economic Value Added (EEVA) and other metrics to assess the effectiveness of human capital management;
- HCROI is positively correlated with forward excess returns over multiple time horizons and across sectors, even after controlling for a variety of factors;
- Companies with stronger HCROI create more value through the cycle;
- HCROI analysis can be used as part of a broader investment and engagement process, helping us interrogate why companies with similar levels of labour investment can achieve different fundamental outcomes;
- Corporate disclosure of human capital-related data remains poor; richer and more pervasive disclosure would benefit market participants and asset owners.

¹ There are a variety of definitions of "capital". the International Integrated Reporting Council (IIRC), for example, identifies six: natural, human, financial, manufactured, intellectual and social. In this research we focus on three forms of capital for two reasons. First, our scope here is limited to a company's own human capital – its direct workforce. The interaction between human and social capital can influence a company's licence to operate, but we are primarily investigating the way organisations can manage their human capital sustainably to generate balanced stakeholder outcomes. Second, we note research done by CalPERS into the changing drivers of growth, which concluded manufactured capital plays a diminishing role in the modern economy.





EXECUTIVE SUMMARY

How companies engage with and establish strong relationships with stakeholders is core to the sustainability of their business models. Employees are a key stakeholder for most industries and although widely acknowledged, this specific stakeholder axis has not been sufficiently analysed quantitatively. We address this and consider questions around measurement, materiality, management, best practice and application to investment. Our human capital workstreams are summarised in this paper as follows:

1 What is human capital and why should investors care?

Margin of safety

We can define and measure what the outcomes of good human capital management look like, and why we see structural and cyclical reasons to focus on this currently. In the near-term, a year on from the peak of the "Great Resignation", this implies heightened attrition risk once more.

2 How can we measure human capital and its effects on performance?

A quantitative approach

We present a framework for interrogating human capital value creation through a quantitative lens, using simple accounting metrics. While our research does not argue that all aspects of human capital management can be adequately quantified today, a mix of quantitative and qualitative techniques can be applied in the investment process.

3 Can we assess the financial materiality of human capital?

Sustainable competitive advantage

Empirical analysis highlights that human capital returns are positively correlated with forward excess returns over multiple time horizons and across the majority of sectors. We see multiple paths to human capital management affecting balance sheets and returns.

4 How can organisations drive positive change in human capital management?

Looking ahead

With key performance indicators (KPIs) to identify good human capital management, we consider the drivers of change, exploring how to optimise human capital productivity and deliver sustainable stakeholder returns. We also discuss how this analysis can be used in practice to inform engagement priorities, better understand how companies are managing human capital and use our influence to encourage improvement.

1 WHAT AND WHY?

Margin of safety

Definitions

An organisation's **human capital** refers to its people's capabilities; a cumulative, unique, path-dependent set of individual and collective attributes, including skills, experiences, and relationships, available to the organisation to create economic value. **Human capital management** consists of all the systems and processes employed by the organisation to optimise its return on human capital investments.

Effective human capital management involves the stewardship of a variety of systems, as shown in Figure 1, under governance that is aligned with an organisation's purpose, in support of its ability to deliver outcomes that either meet or exceed expectations from its diverse stakeholders.

Figure 1: Human systems at the core of an organisation affect multiple stakeholders

| | |
|---------------------|--|
| Outcomes | Financial capital: returns, productivity |
| | Human capital: quality jobs, health & safety |
| | Social & natural capital: brand equity, social & nature impacts |
| Human systems | Innovation |
| | Talent & learning |
| | Incentive & performance management |
| | Culture & inclusion ² |
| | Operating model & workforce strategy |
| Company foundations | Social & natural capital: brand equity, social & nature dependencies |
| | Company purpose & governance |

Source: Schroders.

The different human systems that, to us, comprise human capital management can simply be defined as follows:

Operating model & workforce strategy

How organisations plan and prepare their workforce to deliver on business strategy.³

Culture

"An invisible hand at work inside of each of the employees that helps to guide their decisions and judgments in a way that the overall corporation would desire it to be."⁴

Inclusion

Creating the right environment for diverse employees to thrive.

Incentive & performance management

Motivational and improvement programs (carrot and stick).

Talent & learning

How firms attract, recruit, develop and retain diverse people to deliver strategic value.

Innovation

The flow of ideas and information among people across the enterprise for product or operating model evolution (this can involve new technologies as well as new processes).

Human capital is complex; managing it effectively to drive superior economic value creation through maximisation of individuals' potential requires a holistic, organisation-wide approach, paying particular attention to synergies – the whole is greater than the sum of its individual parts. It is important to differentiate between what we describe as human capital overall and the individual features that influence it. This concept is core to attracting, retaining, and maximising the value of talent, as evidenced by numerous surveys on worker motivation for quitting.

2 This research does not explicitly focus on diversity. This is partially due to our desire to address diversity & inclusion (D&I) specifically in future work. Our intent here is to unpack the relationship between human capital returns and financial or investment returns, via empirical data where possible. In the future, as our understanding of the financial implications of human capital management evolves, we aim to use that foundation to investigate diversity with more rigour. As it pertains to the links between effective management of human capital and diversity, we believe that inclusion is critical. A company's diversity promise would ring hollow if it were not backed up by sufficient policies and systems to promote inclusion, making inclusion the human capital "system" – along with culture – that needs to be addressed at an institutional level. Companies' strategic workforce planning, their talent development and training processes – all of their human capital systems in fact – may have diversity running through them, but [research](#) and employee [surveys](#) show that inclusion demands investor attention, even with higher levels of diversity.

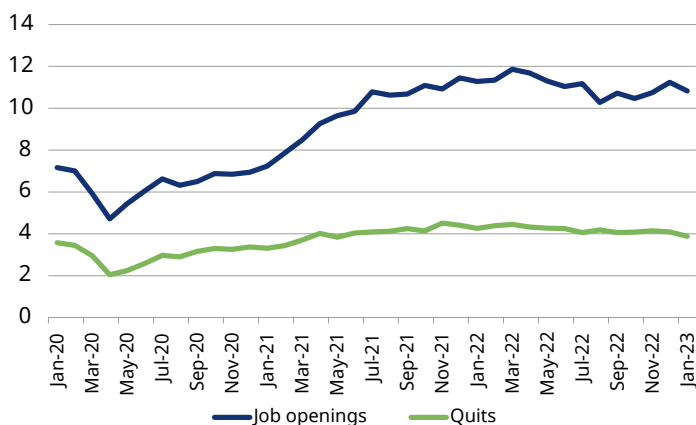
3 See [here](#) for PwC's workforce transformation strategies.

4 See: Graham et al, 2019.

1 WHAT AND WHY? (CONTINUED)

Figure 2: Job quits still close to all-time highs

Seasonally-adjusted job opening and quit rates in the US in millions



Source: BLS, Schroders.

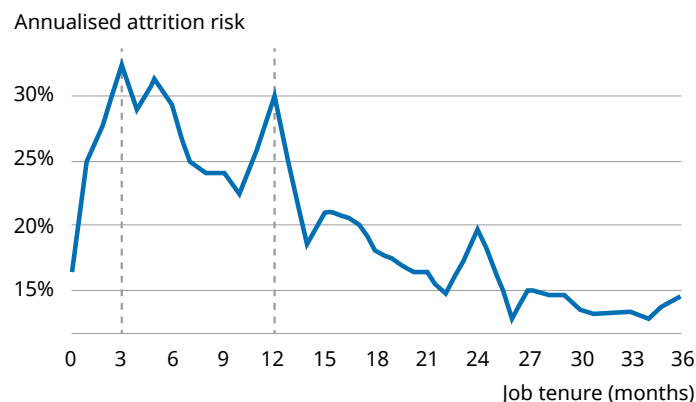
Structural and cyclical importance

There are both structural and cyclical reasons for integrating human capital analysis into investment practice. Structurally, while the long run bargaining power of labour has fallen, it is not possible for the majority of business models to reduce the bargaining power of labour into perpetuity. Further, such has been the rise of the intangible economy in recent years, with knowledge-based firms now dominating the global market cap, that we are in an era of cognitive abundance, where the effectiveness of good human capital management takes on enhanced importance. In Europe, for example, where International Financial Reporting Standards (IFRS) reporting allows stakeholders to build an – at least partial – understanding of company personnel expenditures, we see evidence of the growing importance of investing in people. Personnel expenditures have increased to outstrip capital expenditures by more than three to one.⁵

Transitions in the industrial and energy economies are also increasingly reliant on human capital management – through training and reskilling, for example. And even as the integration of generative artificial intelligence (AI) and large language models (LLMs) into services industries evolves, we believe the relevance of people – or human capital – as the stewards of value creation will remain undimmed. Cyclically speaking, fears of the "Great Resignation" may be behind us but central banks have yet to break the global labour

Figure 3: Attrition risk by job tenure

The probability of people leaving is highest at 35% at the three month mark, and then spikes again at 12m.



Source: Revelio Labs.

markets. Wages, employment and, unfilled vacancies remain above pre-pandemic levels and despite increasing layoffs, the number of unemployed per job listing is still historically low. Further, the one year anniversary of "Peak Resignation" presents cyclical risk. While Figure 2 highlights the pendulum is still in favour of labour in the US, Figure 3 implies attrition risk remains a threat on top of which the effect of recessions focuses the mind even more on identifying the best talent. We also note that the regulatory focus on human capital reporting has increased and the emphasis placed on it is growing.

Strong human capital management presents an alternative approach to margin of safety. Most companies claim that their people are their greatest asset but the significance of this has expanded as the relevance of balance sheet intangibles and the knowledge economy have grown. Human capital features like culture, trust or management quality have tended to be evaluated qualitatively with a view to understanding the "intangible" strength of an organisation and building confidence in its strategic and operational capabilities and potential. One might think of human capital management in terms of margin of safety; albeit defined somewhat differently to how the US economist Benjamin Graham may have originally intended it.

⁵ See "[Water From a Stone: the current human capital disclosure landscape](#)"

1 WHAT AND WHY? (CONTINUED)

“The function of margin of safety is, in essence, that of rendering unnecessary an accurate estimate of the future. If the margin is a large one, then it is enough to assume that future earnings will not fall far below those of the past for an investor to feel sufficiently protected against the vicissitudes of time.”⁶

As it pertains to Benjamin Graham's theory of value investing, valuation, balance sheets, Return on Capital Employed (ROCE) profiles or even long product cycles afford investors and managers high margins of safety and time, supporting investment decisions. A similar margin of safety and time could be achieved through effective controls for measuring, monitoring and managing core human systems. Companies with strong human capital management are likely to be more capable of navigating the future effectively, regardless of what is thrown at them, because they can rely on their management toolkit and their people doing right by the company and its stakeholders. Analysing a firm's human capital can provide a dynamic and operational approach to margin of safety. In this sense, people generate the organisational moat, enabling a company to withstand the vicissitudes of time and the capital cycle.



2 MEASURING HUMAN CAPITAL MANAGEMENT

Incorporating a quantitative approach

Human capital is a critical source of sustainable and scalable competitive advantage to organisations. It is a special form of intangible asset that produces economic wealth by unlocking value from otherwise inert forms of tangible capital on firms' balance sheets. Human capital management is the catalyst that permits this crucial transformation, turning assets into earnings by driving productivity.

The intangibility of human capital does not mean that it cannot be measured, or at least proxied, adequately. While we do not argue that all aspects of human capital management can be measured quantitatively, our research also indicates that

information publicly available today severely limits investors' ability to adequately quantify a variety of important human capital management practices.

In this context, we propose a simple set of accounting metrics allowing investors to refine their understanding of human capital management's contribution to a firm's returns and productivity. Our four core metrics, described in Figure 4 are intended as outcomes-KPIs, helping the assessment of an organisation's human capital management toolkit.

Figure 4: Human capital metrics

| ① | ② | ③ | ④ |
|--|---|---|---|
| Human Capital Cost Factor (HCCF) | Human Capital Return on Investment (HCROI) | Employee Economic Value Added (EEVA) | Return on People-Adjusted Capital Employed (ROPACE) |
| Purpose | Purpose | Purpose | Purpose |
| Provides the cost of human capital, both immediately and over the long run on a fully-loaded basis. This gives us an understanding of the total investment cost of a firm's human capital. | Explains the fully costed return on monies spent investing in people. This represents the leverage on pay and benefits used to identify the benefits of human capital management. | Estimates the value employees derive from working at a given organisation, adjusted for approximate corporation tax. Used to compare against proxy gain-sharing between labour and capital. | Allows for the adjustment of balance sheet, Profit & Loss (P&L) and cash flows to reflect human capital as an asset. Allows us to see a fully-loaded return on all types of human capital cost, including carving out employee "expense" versus "investment". |
| Calculation* | Calculation** | Calculation | Calculation*** |
| Salaries + benefits + stock comp + contingents + lost days + churn + training | $\frac{\text{Net Operating Profit After Tax (NOPAT)} + \text{HCCF}}{\text{HCCF}}$ | $\frac{[(\text{Employee average pay} - \text{market average pay}) \times 0.75]}{\times \text{total number of employees}}$ | $\frac{\text{Adj. NOPAT}}{\text{Adj. fixed assets} + \text{Net Working Capital (NWC)}}$ |

Source: Human Capital ROI, Jac Fitz-Entz; O'Byrne and Rajgopal, 2022; Schroders. *It is important to note that the calculation for HCCF may require an estimate for cost of contingent or contract workers if undisclosed. **This fraction is consistent with the revenue-based version used in human resources management. In Figure 5 we show how it fits into ROCE-based value creation. ***While we do not have disclosures on the splits between employee investment and employee costs (akin to growth or maintenance capex on fixed assets, for example), we can apply Pareto or Price's Law to reported numbers or our HCCF assumptions, or we can consider, we can consider stock-based compensation as the proxy for investment in future capabilities.

2 MEASURING HUMAN CAPITAL MANAGEMENT (CONTINUED)

Introducing human capital in a firms' ROCE decomposition, as shown in Figure 5, signals an important shift in the treatment of human capital-related costs; treating what is still largely considered an operating expense akin to an investment, reflecting the view that human capital is a long-term asset, with earnings power, and potential for appreciation or depreciation, linked to the organisation management abilities.

Where disclosures are limited, we have tended to use stock-based compensation as a proxy for human capital investment. This can also help us to hone in on the portion of the workforce that the company itself considers to be the high value creators.

Combining an appraisal of HCROI with EEEVA allows us to establish:

- **How a company's human capital contributes to company financial value creation**
- **How a company distributes value across the employee - company axis**

It is critical to consider gain sharing in addition to HCROI and other employee stakeholder indicators, that represent the outcomes of a whole-systems approach to human capital management. It is not as simple as saying that companies must pay more than the market average. In certain circumstances, firms that pay above market rates can see high attrition courtesy of poor culture, for example. And vice versa, companies with inclusive or strong cultures may have lower turnover, despite perhaps not paying above market.

Figure 5: Understanding how people contribute to financial returns

$$\text{Return on capital employed} = \frac{\text{NOPAT}}{\text{Fixed Assets} + \text{Net Working Capital}}$$

$$\text{ROCE} = \frac{\#Employees}{\text{Fixed Assets} + \text{Net Working Capital}} \times \frac{\text{NOPAT}}{\#Employees}$$

$$\text{ROCE} = \frac{\#Employees}{\text{Capital Employed}} \times \left(\frac{\text{NOPAT} + \text{HCCF}}{\#Employees} - \frac{\text{HCCF}}{\#Employees} \right)$$

$$\text{ROCE} = \frac{\#Employees}{\text{Capital Employed}} \times \frac{\text{HCCF}}{\#Employees} \times \left(\frac{\text{NOPAT} + \text{HCCF}}{\text{HCCF}} - 1 \right)$$

$$\text{ROCE} = \text{Business Model} \times \text{Cost Structure} \times \text{Human Capital ROI}$$

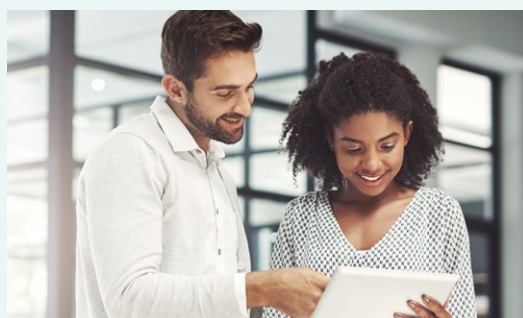
Source: Schroders. Note: we display the employee-rated derivation of HCROI here in this way to illustrate the consistency with the ROI formula typically used in HR practice – revenue less all non-employee-related cost divided by employee related cost.

3 ASSESSING MATERIALITY

Sustainable competitive advantage

Case studies for human capital analysis in returns

Here we look at two case studies highlighting the importance of human capital management and its significance to company returns. Figure 6 highlights the moving parts in the composition of ROCE according to the three people-centric components.



In 2021, two beverages companies – Company A and Company B – generated 7.6% and 6.5% returns respectively, with the same labour intensity (salaries / sales was 16%), similar capital turnover (0.63x and 0.6x respectively), but a noticeably different set of moving parts in terms of human capital. Company B operated with 18% fewer people per million of capital employed, and paid on average 17% more per head. While generating 17% higher sales per person, that premium was eaten away by the time we arrive at Net Operating Profit After Tax (NOPAT) per head, because of lower leverage on investment in people – HCROI.

Figure 6: Human capital dependencies in ROCE – illustrative scenarios

| Component | Return on capital | Business model | Cost structure | Culture |
|-----------------------|-------------------|---|-----------------------------|---------|
| Metric (2021 numbers) | ROCE (post tax) | Employees per million of capital employed (EUR) | Salaries per employee (EUR) | HCROI |
| Company A | 7.6% | 2.8 | 36,200* | 75% |
| Company B | 6.5% | 2.3 | 42,400 | 68% |

Source: Refinitiv, Schroders. *Translated at 2021 average exchange rates, for illustrative purposes.

Taking EEVA into account, the pharmaceutical industry provides another illustrative example. In 2020, Company C – a leading player in the sector – employees were earning considerably more than developed market rates. Gross employee economic value added was over \$3bn. In other words, Company C employees were benefiting from meaningful economic value terms relative to the street. Shareholders and workers might have had cause for celebration. The group had improved HCROI and wages for five years, while ROCE had grown at a clip of circa 6.6% annually. However, while economic profit had grown even faster (8% Compound Annual Growth Rate (CAGR)) over that time frame, EEVA lagged, falling at a rate that was more than twice the compound annual decline for the size of workforce (-2%). Employees were being rewarded to reflect the improvements in their productivity, but capital continued accruing proportionately more to the owners of capital and less to the workers, as shown in Figure 7, while pay across the market advanced materially.

Figure 7: Company C gain sharing breakdown

| | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | CAGR |
|--|---------|---------|---------|---------|---------|---------|-------|
| Wages/employee (\$) | 110,111 | 111,241 | 94,965 | 124,651 | 127,261 | 125,503 | 2.7% |
| HCROI (%) | 64% | 57% | 64% | 66% | 65% | 72% | 2.6% |
| ROCE (%) | 11.5% | 10.4% | 9.7% | 11.3% | 14.4% | 15.8% | 6.6% |
| Economic Profit (\$, bn) | 3.7 | 2.7 | 2.6 | 2.4 | 4.8 | 5.4 | 7.8% |
| Employee economic value added (\$, bn) | 4.3 | 4.3 | 1.8 | 3.7 | 3.7 | 3.4 | -4.4% |
| Number of employees | 122,966 | 122,985 | 126,457 | 108,422 | 108,776 | 110,738 | -2% |

Source: Refinitiv, Schroders.

3 ASSESSING MATERIALITY (CONTINUED)

Do companies with higher HCROI create more value?

We consider three paths to materiality in our human capital research: empirical evidence, translation mechanisms, and externalities. Simplistically, this involves asking the following questions:

- Is there adequate historical data to build empirical evidence suggesting this theme, represented by specific metrics, is material?
- Can we identify the translation mechanism through which through which the totality of this issue – given it is not financially denominated – becomes impactful to the company balance sheet, cash flows and P&L?
- Can we identify and create a sensible process for measuring this issue as an externality, such that we can estimate the net social value associated with it, thus in time being able to consider this as a potential future financial opportunity or risk?

Despite some limitations due to data coverage in specific areas and a relatively short sample period (2014 – 2022), our empirical results are encouraging. We have found statistical evidence that HCROI is positively correlated with forward excess returns over multiple time horizons and across the majority of sectors, even after controlling for the positive correlation between ROCE and HCROI while adjusting for a variety of factors, including momentum, valuation (book to price), size (market cap) and research and development intensity.

Our empirical testing has been guided by both our own intuition on the potential importance of HCROI and the views and opinions of key stakeholders with whom we engaged as this research has evolved. As such, we have paid particular attention to adjusting for valuation (market to book value), ROCE, labour intensity (salaries/sales), average wages (the cost structure component in our ROCE derivation) and business model (as captured by our quasi capital intensity metric – employees relative to capital employed).

There are numerous reasons for testing HCROI specifically against these control variables. Value and ROCE (i.e. a key pillar of company quality) are chosen because of the high relevance of these styles in markets and to avoid any potential pushback on the importance of human capital return on investment that it is already captured by other measures of business quality.

The introduction of labour intensity as a control variable is important because we believe that one of the most practical applications of this type of research is to interrogate companies that, for a given level of labour intensity, are underperforming on HCROI. What is it preventing them from extracting higher leverage on pay and benefits, particularly in comparison to peers which have comparable product suites, and salaries/sales?

Figure 8 highlights the long-short performance of HCROI, derived as the top tercile (high) HCROI minus the worst tercile (low) HCROI median annualized performance, measured for each tercile of variable noted on the left hand side (i.e. book value, ROCE etc) of the table.

Figure 8: Long-short performance of HCROI

| | | HCROI Median Performance (Annualized) (%) |
|------------------------|-------------------------|---|
| | | Long-short |
| | | Tercile |
| Book Value Rank | T1 (Best) | 7.27 |
| | T2 | 7.08 |
| | T3 (Worst) | 6.53 |
| ROCE | T1 (Best) | 1.39 |
| | T2 | 2.56 |
| | T3 (Worst) | 10.69 |
| Labor Intensity | T1 (High) | 11.07 |
| | T2 | 4.77 |
| | T3 (Low) | 5.25 |
| Business Model | T1 (Employee Intensive) | 2.85 |
| | T2 | 1.82 |
| | T3 | 11.79 |
| Average Cost | T1 (High) | 10.21 |
| | T2 | 3.75 |
| | T3 (Low) | 4.37 |

Source: Worldscope, Schroders. Labour intensity: staff costs over net sales, Business model: number of employee over capital employed, Average cost: staff costs over number of employee. Returns are expressed relative to the mean return of the restricted universe of stocks included in the analysis weighted by market capitalisation (with individual stock weights capped at 0.2%) over the period 2014-2022. Long short performance is derived as the top tercile (high) HCROI minus the worst tercile (low) HCROI Median annualised performances, measured for each tercile of variable noted on the left hand side (i.e. Book Value, ROCE etc). Average number of stocks per long short portfolio is 228 per month.

We can think about this in a similar way if addressing average wages – the cost structure component in Figure 8. This is particularly relevant when considering gain sharing. If a firm is paying wages that are in line with market, the opportunity costs for employees working at that company are theoretically low. However, if that one firm is generating significantly worse HCROI than its peers, despite having the same levels of labour intensity and average costs, the

3 ASSESSING MATERIALITY (CONTINUED)

human capital management systems that we are seeking to isolate by considering HCROI come into view. In this instance, we could argue objectively that poor human capital management, for example, is undermining leverage on investment in people.

We have found that markets tend to penalise companies with poor HCROI by more than they reward firms with high HCROI. This is particularly true in instances where poor HCROI is combined with high salaries per person (average costs in the table), high labor intensity and high capital intensity (i.e. low numbers of employees compared to capital employed).

We have used ROCE as a proxy to quality here, and while it seems that HCROI can be additive to ROCE, the long-short performance looks to be lower than for other less correlated cuts as we would expect. Thinking very simplistically, firms that have very high pay packages for employees or as a proportion of the P&L as a whole are potentially sacrificing

value creation if the ability to achieve a return on investment is undermined by poor culture, lack of trust, weak leadership and so on.

Turning next to consider the predictive power of HCROI after deliberately acknowledging a variety of other potential drivers within a multifactor framework, we have found that it is statistically significant across the universe for all horizons. As represented below, if we explicitly take into account the positive relationship between human capital returns, ROCE and R&D intensity in order to focus on the "pure" information attributable to HCROI, essentially isolating "excess HCROI", human capital management is incremental to shareholder returns. One possible explanation for the anomalous number in the IT sector is that for the sake of our empirical testing, we did not include stock-based compensation in our staff costs term, in order to maximize comparability and the sample size based on company disclosures in our initial testing.

Figure 9: Regression based betas of returns on ROCE, R&D intensity and excess HCROI (orthogonal to ROCE and R&D Intensity)

| | 1M Forward Returns | | | 3M Forward Returns | | | 6M Forward Returns | | | 12M Forward Returns | | |
|------------------------|--------------------|---------------|--------------|--------------------|---------------|--------------|--------------------|---------------|--------------|---------------------|---------------|--------------|
| | ROCE | R&D Intensity | Excess HCROI | ROCE | R&D Intensity | Excess HCROI | ROCE | R&D Intensity | Excess HCROI | ROCE | R&D Intensity | Excess HCROI |
| Universe | 0.26** | 0.02 | 0.18** | 0.75** | 0.10 | 0.48** | 1.52** | 0.22 | 0.84** | 2.85** | 1.12 | 1.51** |
| Communication Services | 0.11 | 0.01 | 0.13 | 0.33 | 0.10 | 0.38 | 0.83 | -0.27 | 0.43 | 1.46 | -2.00 | -0.62 |
| Consumer Discretionary | 0.29** | -0.11 | 0.20 | 0.86** | -0.47 | 0.47 | 1.48** | -0.85 | 1.07 | 3.54** | -0.99 | 2.30 |
| Consumer Staples | 0.45** | 0.09 | 0.33* | 1.46** | 0.38 | 1.06* | 2.71** | 1.06 | 1.85* | 4.63** | 2.68 | 3.58** |
| Health Care | 0.36** | -0.11 | 0.10 | 0.84 | -0.20 | 0.15 | 2.19* | -0.05 | 0.66 | 4.06** | -0.27 | 2.33 |
| Industrials | 0.14 | 0.11 | 0.14* | 0.42 | 0.10 | 0.48** | 0.49 | -0.09 | 0.65 | 0.94 | 1.50 | 1.37 |
| Information Technology | 0.26* | 0.23 | -0.05 | 1.06** | 0.86 | -0.20 | 2.59** | 1.97** | -0.62 | 5.10** | 5.03** | -0.99 |

Source: Worldscope, Schroders. *for significant T-stats at 95% and ** for significant at 99%. We explicitly take into account the positive relationship with ROCE and R&D intensity in order to focus on the "pure" information attributable to "Excess HCROI", which we define as HCROI adjusted for ROCE and R&D intensity. Time period for regression 2014-2022.

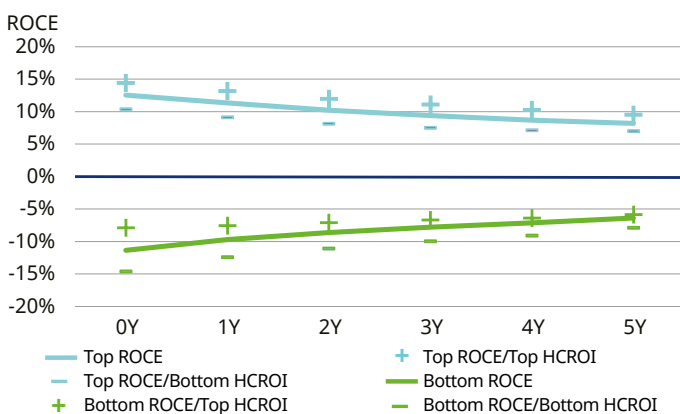
3 ASSESSING MATERIALITY (CONTINUED)



We have also investigated persistence. Notably, companies with higher HCROI create more value through the cycle. Figure 10 illustrates that companies which combine top ROCE and top HCROI (blue pluses) show consistently higher excess ROCE than top ROCE firms only (blue solid line). Conversely, those with top ROCE but bottom HCROI show consistently lower excess ROCE over time (blue minuses). There is a similar relationship for bottom ROCE firms. While high HCROI companies have higher ROCE and net margins on

Figure 10: Convergence of ROCE

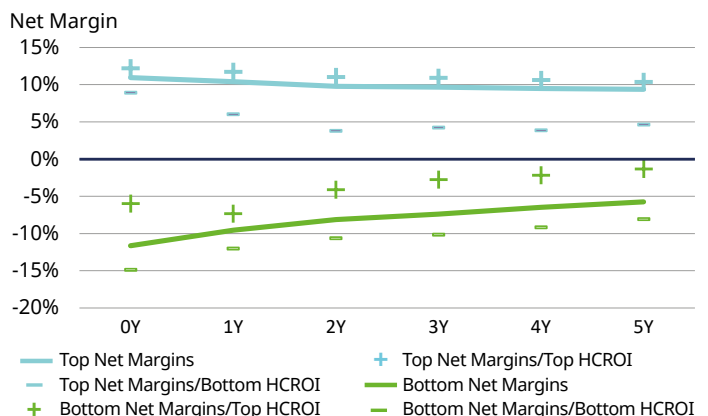
Blue series represents top ROCE companies. Pluses denote top ROCE and top HCROI. Minuses are top ROCE and bottom HCROI. Green series is bottom ROCE.



average and maintain these higher levels even after 5 years, Figure 11 also illustrates that low HCROI does contribute to faster mean reversion of companies with higher starting net margins. Given one of our priors in this work was that human capital management can help create and sustain competitive advantage, or margins of safety, it is encouraging that this is not negated by our analysis of persistence through the cycle.

Figure 11: Convergence for net margins

Blue series represents top margin companies. Pluses denote top margins and top HCROI. Minuses represent top margin but bottom HCROI. Green series is bottom margin.



Source: Worldscope, Schroders.

Using the ROCE example, at each date, we compute “relative ROCE” by removing the universe’s average ROCE. We split this new ROCE into tertiles (top/average/bottom). We then look at the value of forward 1Y/2Y/3Y/4Y/5Y excess ROCE for top (resp. bottom) ROCE tertile. Finally, we add an additional split using HCROI, looking at companies with top (or bottom) ROCE and top (or bottom) HCROI. The blue line at 0% shows the ROCE average level for the universe. Companies in the top tertile for ROCE (light blue line) have a relative ROCE of 14.4% on average at year 0 and progressively converge towards the universe average, ending at 9.5% after five years. On the opposite side, bottom tertile ROCE companies (green line) show significantly lower ROCE than the universe -14.6%, reverting to -7.9% after five years.

3 ASSESSING MATERIALITY (CONTINUED)

As we do more research into the drivers of change in human capital returns, we expect to be able to refine our views on the relative importance of the different human systems. But with current disclosures in certain sectors and regions yet to address even the basic components of HCROI, our ability to unpick the drivers of change as instigated by the different human systems is somewhat limited. For now, Figure 12 provides an illustrative indication of our views on the relative importance of different human capital management systems by sector. This is very much a blend of art and science, and something we are seeking to refine. While our quantitative

assessments on HCROI inform the relative importance at summary level, represented on the far right column, conversations with a variety of stakeholders have helped us develop starting views on the salience of the individual systems, though we would stress the qualitative nature of this illustration, as alluded to above. At a high level, this approach is helping shape our interrogation of these topics going forward, with the specific aim of helping guide our questions of companies and their stakeholders.

Figure 12: Illustrative importance of human capital management systems

The deeper the shade of green, the more our starting assumption is one of materiality for the topic and sector. VH denotes very high importance, H high, M is moderate and L is low.

| | Strategic Workforce Planning | Culture & Inclusion | Incentive & Performance Management | Talent & Learning | Innovation | Summary |
|--|------------------------------|---------------------|------------------------------------|-------------------|------------|---------|
| Healthcare | M | VH | H | H | VH | VH |
| Information Technology | VH | VH | VH | M | M | VH |
| Consumer Staples | H | H | M | H | VH | VH |
| Energy | VH | L | H | VH | L | H |
| Consumer Discretionary | H | H | M | M | M | H |
| Financials | H | M | VH | M | L | H |
| Industrials | H | M | L | M | H | H |
| Communication Services | L | M | L | M | H | M |
| Materials* | M | L | M | L | L | M |
| Utilities** | L | L | L | L | M | L |
| Real Estate Investment Trusts (REITs)*** | Minimal | Minimal | L | Minimal | Minimal | L |

*Given the broad range of activities in the materials sector, and wide variation in things like labour intensity across sub-industries, the categorisations here represent a generalised approach that may underplay certain of the nuances. Among real estate sectors, for example, housebuilding and construction companies are heavily reliant on human capital for the generation of competitive advantage through relational capital, workforce planning and networks. ** In utilities, regulated asset base and returns structures may be seen to limit the materiality of human capital, but aside from innovation, one might argue that better human capital management is one of the few levers at management's disposal for beating regulated returns. *** The qualitative view represented for REITs is reflective both of the relative importance of human capital within this space compared to others, and limited data. As with our views across the sectors, this is subject to change.

Source: Schroders. Note: this is a qualitative assessment, though we have sought to ensure the sum total of the combined systems is similar to the materiality implied by the empirical testing we did with various adjustments. We have assigned relatively higher values to the energy sector here, than would be implied by characteristics such as labour intensity and the dominance of commodity inputs in P&L, cash flows and returns. We believe Strategic Workforce Planning and Talent systems are critical to the just transition, while incentive structures must be in focus given the significance of accountability in a sector where asset lives and decarbonization outcomes are so much longer than CEO and worker tenures. We have upweighted IT given its prolific use of stock-based compensation. As stressed above, we believe a whole systems approach is important to managing human capital, so we do not consider any of these to be unimportant in an absolute sense. We also recognise the relevance of these can change depending on where companies are in their own business and life-cycles.

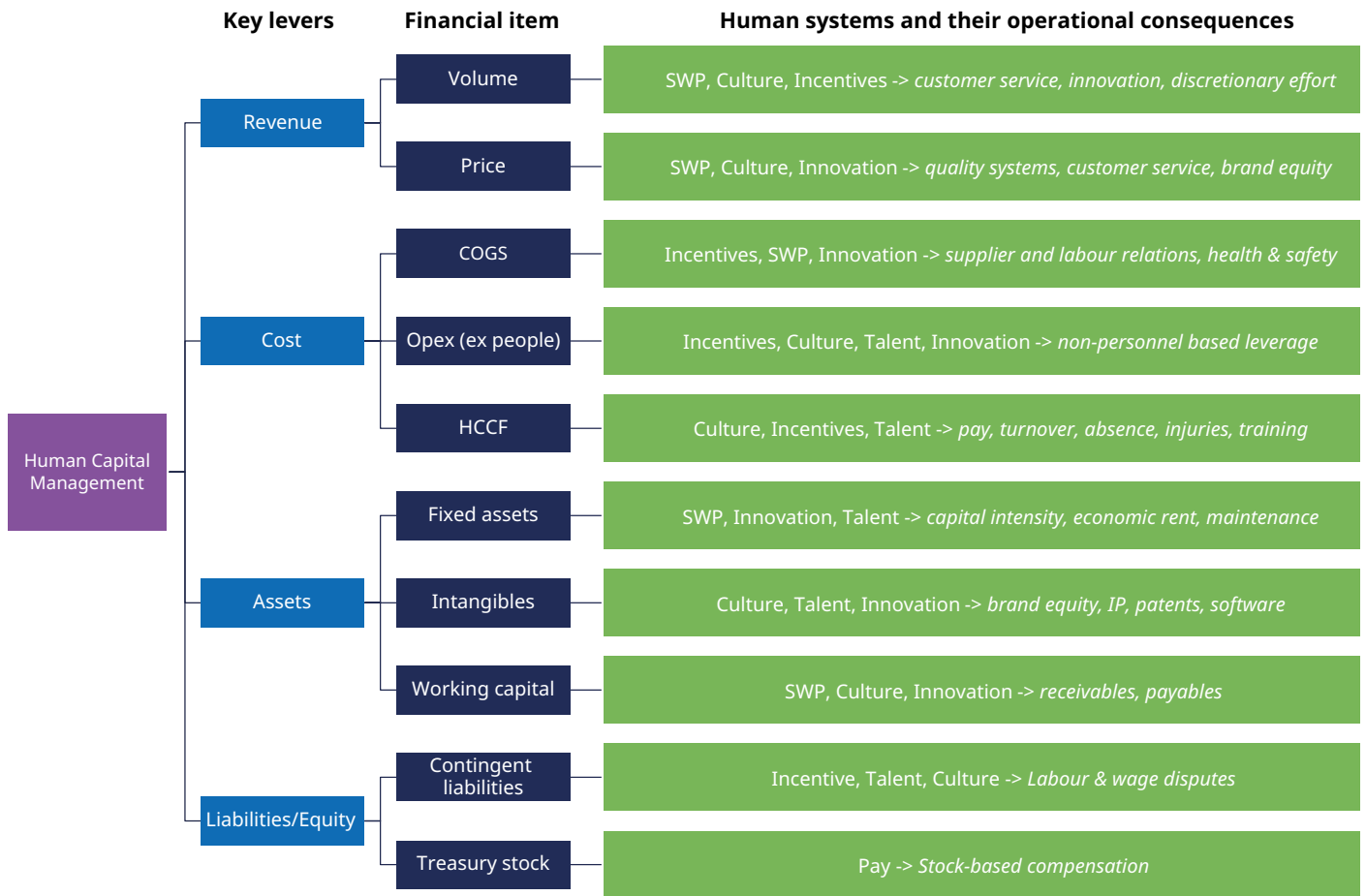
3 ASSESSING MATERIALITY (CONTINUED)

We also need to consider the translation mechanism, whereby human capital features affect different line items on a company P&L and balance sheet, as represented in Figure 13.

Scrutinising the individual line items where we would be most likely to see the manifestation of good or bad human capital management can not only help frame our understanding of

the importance of this topic to company returns (past and future), but also help shed light on possible misalignment of interests; instances where pressures cause management to extract economic rent from employees, who can go the extra mile, but cannot be run at >100% utilisation in the same way fixed assets may be "sweated" when commercial drivers dictate.

Figure 13: Translation mechanism – the paths affecting financial returns



Source: Oxford Rethinking Performance initiative (ORP), Schroders. Note: HCCF refers to human capital cost factor; SWP refers to strategic workforce planning.



4 HOW TO DRIVE CHANGE

Looking ahead

Given our views that human capital outcomes are material, it is critical to consider how one can drive change in human capital returns, to benefit stakeholders. We have analysed the history of the HR industry, the deskilling that took place as automation of factory production began in the early 1900s, and the changes in assumed bargaining power that accompanied this. Our thinking with regard to human capital and the technology-induced disruption that may be facing services industries is continuously evolving.

We have also found the work that has been done by the Center for Neuroeconomic Studies in the US to be particularly useful. Detailed work on the importance of oxytocin – the trust hormone – to performance is very relevant to our thinking on human capital management. We anticipate that a focus on human capital value creation should help steady the bargaining power of labour in services and industrial activities, with implications for unions and their membership.



In Figure 14 below, we highlight the change-makers we believe drive HCROI and move the dial on company returns. As documented in the Trust Factor (Paul Zak), compared with people at low trust companies, those in high trust organisations report 74% less stress, 106% more energy at work, 50% higher productivity, 76% more engagement, 13% fewer sick days, 29% more satisfaction with their lives and 40% less burnout – among other metrics.

Figure 14: The soft features that drive human capital returns

| Topic | Rationale |
|--------------------|---|
| Leadership | Tone starts at the top, social skills among management creates team spirit |
| Recognition | Non-financial reward through recognition can stimulate oxytocin |
| Challenge Stress | Adrenaline associated with time-bound tasks drives brain function |
| Autonomy | Flexibility as to how employees deliver results stimulates oxytocin |
| Job Crafting | Flat structures that allow self selection on projects plays to individuals' strengths |
| Communication | Transparency and regular interaction promote engagement and teamwork |
| Networks | Investment in relationship capital at individual and team level builds trust |
| Career Development | Constant career development and check-ins facilitate whole person growth |
| Vulnerability | Asking for help and listening more than speaking drives inclusion and trust |
| Inclusion | Diversity must be accompanied by inclusion to grow levels of trust |
| Ownership | Building skin in the game creates accountability and higher engagement |
| Values | These guide the evolution of culture, informing daily habits and rituals |
| Purpose | Acts to govern stakeholder relations, offering guiding post for values |

Source: The Trust Factor, Paul Zak; Schroders.

4 HOW TO DRIVE CHANGE (CONT'D)

Using this analysis in practice

Focusing on value creation

Throughout this work we have engaged with a range of consultants, former and current Chief People Officers (CPOs), Chief Human Resource Officers (CHROs), and HR practitioners. While the experts we have talked to have their own nuanced views, they are almost all uniformly of the opinion that there is risk associated with focusing too much on an objective measure for human capital. In other words, human capital analysis must combine quantitative and qualitative assessment.

While our HCROI approach is quantitative, it is designed to be used as part of a broader investment and engagement process, for example as a supplement to the human capital theme in the [Schroders Engagement Blueprint](#). Where companies are achieving different outcomes for similar levels of labour intensity, for example, we advocate using HCROI analysis in combination with this framework to shed light on why. The approach described here is focused on the human systems that we believe are fundamental to effective

human capital management, in a whole-systems context. For the purposes of our ongoing analysis of human capital management and engagement, we have developed views on the basic and best practice disclosures and activities, as we see them today, as well as the outcomes that are most relevant;⁷ see Figure 15.

It is important to emphasise: human capital is not normative. The capabilities of an organisation's people are embedded in the knowledge, skills and relationships that are built up cumulatively as a company evolves. These are idiosyncratic. We are therefore not arguing that companies should develop a certain type of workforce, culture, or talent pool, as these must necessarily reflect a firm's own industry, its stage in the lifecycle and so on. However, we do argue that there are effective and ineffective strategies for monitoring, influencing and delivering measurable human capital outcomes: human capital management. And there are base level practices that can be applied across most sectors and organisations.

Figure 15: How it works

Companies that manage human capital effectively have visibility powered by good data, enabling them to manage different human systems optimally to deliver measurable impact for stakeholders.



Source: Schroders.

⁷ Please note the framework we have developed as part of our analysis and engagement is an evolving reflection of our work. Should stakeholders have views on what good or bad looks like, we welcome the opportunity to discuss.



WHAT NEXT?

Analysing human capital management and HCROI, among other indicators, has allowed us to identify both leaders and laggards across our range of non-financial sectors.

We can use this analysis to engage with companies to ask questions about what they are doing to manage and invest in their human capital, helping uncover where there are opportunities for companies to improve their human capital management. Through engagement, we aim to build an understanding of the degree to which a firm's strategic workforce planning, for example, may carry a higher incremental return than say, improving culture or learning systems.

We are not specifically seeking out dollar values for company cultures, trust or any of the individual human systems we have identified here as being important to a company's value creation model. However, by quantifying the elements of employee investment that are dollar denominated, and measuring financial and employee outcomes in tandem, we believe one can get closer to identifying and asking better questions about the qualities, or risks, embedded within organisations that become institutionalised through human capital.

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