

# Ownership of tertiary education institutions

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# Abstract

This paper examines “ownership” arrangements for Tertiary Education Institutions (TEIs) in New Zealand, taking funding and regulatory arrangements as given. It argues that these institutions are in effect non-owned, and hence TEI ownership should better be understood as how these institutions are governed.

Key features of TEIs are their reliance on specialised staff, the bundling of teaching and research activities (varying across TEI types), faculty making specialised co-investments with funders and each other, and international competition for faculty, students and research funding. They also include TEI quality being hard to measure (and hence reliance on professional ethics – e.g. academic integrity), and students enjoying subsidies for the cost of their studies (in part due to public benefits from private study investments).

TEI governance arrangements are summarised and placed in context. This includes comparisons with university governance arrangements internationally, but also with other organisation types. We show that TEIs share certain key features with professional service firms, but that such firms involve a significantly lower degree of specialised investment in non-human capital. This limits the relevance of their governance arrangements for TEIs.

Team production theory is also explored, since it applies in situations where different parties must make specialised co-investments, the value of which hinges on the investments made by their counterparts. This is particularly relevant for university research where faculty make specialised human capital investments that depend on specialised co-investments in non-human capital (e.g. specialised labs) which are affected by funding decisions (e.g. by government). In such situations governance by a disinterested “mediating hierarch” – and not by either faculty or funders – is most efficient.

Even closer parallels emerge from comparisons of TEIs with health sector organisations. We find that multiple and coexisting forms of governance (including for-profit and not-for-profit) arise in health sector organisations. These reflect differences in the scale and specialisation of non-human capital co-investments.

We conclude that the current “one size fits all” governance regime applied to TEIs is likely to be inefficient, and that different forms are likely to better suit different TEI types, and even different activities within TEI types. These inefficiencies affect government’s risk as the leading funder of TEIs. It also lead to distortions in TEI performance, which is affected by the overall interaction between governance, contracting and regulatory arrangements.

## Acronyms

AACSB	Association to Advance Collegiate Schools of Business
AMBA	Association of MBAs
AQA	Academic Quality Agency
CRI	Crown Research Institute
CUAP	Committee on University Academic Programmes
DBA	Doctor of Business Administration
DHB	District Health Board
DGov	Doctor of Government
EFMB	European Foundation for Management Development
EFTS	Equivalent Full-Time Students
EQUIS	European Quality Improvement System (from EFMB)
GP	General Practitioner
IT	Information Technology
ITPs	Institutes of Technology and Polytechnics
MBA	Master of Business Administration
MPA	Master of Public Administration
MPP	Master of Public Policy
NFPs	Not-for-Profits
NZPC	New Zealand Productivity Commission
NZQA	New Zealand Qualifications Authority
PBRF	Performance-Based Research Fund
PHO	Primary Health Organisation
PSF	Professional Service Firm
SAC	Student Achievement Component
SOE	State-Owned Enterprise
SSPs	Statements of Service Performance, submitted by TEIs to the TEC
TEC	Tertiary Education Commission
TES	Tertiary Education Strategy, given effect to by the TEC
TEIs	Tertiary Education Institutions

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# Overview

## Key points

- New Zealand has three types of Tertiary Education Institutions (TEIs) – universities, Institutes of Technology and Polytechnics (ITPs), and wānanga. Universities bundle teaching with research, while ITPs and wānanga are more focused on vocational training.
- All three types of ITP are effectively non-owned under New Zealand’s TEI legislation. This is because TEIs are subject to a non-distribution constraint. This means their financial surpluses are not available for distribution, and must instead be applied to present or future TEI operations. Hence TEIs share an important characteristic of not-for-profit (NFP) organisations.
- Absent outright ownership, it is more meaningful to speak of TEI governance. In this paper governance is taken to mean the arrangements by which parties making specialised co-investments make credible commitments not to undermine each other’s investment.
- In TEIs – especially universities – the government as major TEI funder makes specialised investments (eg, in research facilities) that are valuable when faculty make specialised co-investments (eg, research using those facilities). Each party’s investment is therefore vulnerable to decisions made by the other party.
- Despite each type of TEI having its own characteristics, all TEIs are effectively subject to “one-size-fits-all” governance arrangements. This is despite evidence that more vocationally-oriented higher education institutions (eg, in the US) are often organised as owned, for-profits, rather than non-owned, NFPs. Under New Zealand’s TEI arrangements, the government guarantees TEI debts (ie, imposes a soft budget constraint), and in return retains significant residual and input control rights, analogous to those of lenders.
- All TEIs – especially research-focused universities – depend on the specialist human capital of faculty. In this sense they are comparable to Professional Service Firms (PSFs) such as accounting or legal partnerships. An important feature of PSFs – shared with some overseas universities – is an “up-or-out” incentive system that induces early-career human capital investments. TEIs do not share this system. Additionally, PSFs typically require little by way of specialised physical capital, so PSF governance arrangements are of limited relevance to TEIs.
- Team production theory offers insights into how best to govern undertakings requiring specialised co-investments such as those in TEIs (in particular, many university disciplines such as the sciences or medicine). This theory suggests that governance by a disinterested “mediating hierarch”, in the interests of the organisation itself, is the best way to protect mutually-beneficial specialised co-investments, and hence ensure they are made. This would imply fewer TEI control rights being held by government.
- Health sectors provide a richer set of governance comparisons for TEIs. They provide examples of activities in which for-profit ownership often arises, as well as NFP non-ownership, sometimes simultaneously. These governance arrangements protect specialised co-investments where they arise, but also enable providers of specialised human capital (such as faculty) to more efficiently contract for the funding of teaching and research bundles.
- TEIs’ “one-size-fits-all” governance arrangements are likely to be inefficient for all TEI types to some degree. More traditional “collegial” governance, or mediating hierarchical governance, is likely to be more efficient for universities. For ITPs and wānanga, different forms of non-ownership, or even for-profit ownership, are likely to be more suitable.

# 1 Introduction

New Zealand's higher education institutions – or Tertiary Education Institutions (TEIs) – are creatures of statute created following major reforms commencing in the late 1980s. The three types of TEI are summarised in Box 1. They are autonomous in some respects, but tightly prescribed in others. Government continues to be a dominant funder of TEIs, though less so than when these major reforms were introduced.<sup>1</sup> Other funding sources such as full fee-paying students, donations, and external research funding have become important in the reformed environment.

## Box 1 Types of TEI

There are three types of TEI in New Zealand:

- Universities – counting eight, they provide “extensive degree and postgraduate education of international quality”, and conduct research “in a broad range of fields”;
- Institutes of Technology and Polytechnics (ITPs) – numbering 18, focusing on “vocational education and undertaking applied research to support vocational learning”; and
- Wānanga – counting three, they “provide quality education using Māori ways of teaching and learning; contributing towards the survival and well-being of Māori as a people”.

Source: [www.tec.govt.nz](http://www.tec.govt.nz), accessed 15 July 2016. Also drawing on TEC, 2015.

Different types of TEI offer a varying mix of teaching and research, as summarised in Box 2. Universities provide relatively more research than ITPs and wānanga, and also relatively more post-graduate teaching and research. ITPs and wānanga, by contrast, are relatively more focused on undergraduate teaching, and also with a relatively greater vocational focus.

Government exercises influence over TEIs through three levers:

- Contractual – conditions associated with funding;
- Regulatory – conditions affecting market entry and exit, and product quality; and
- “Ownership” – conditions associated with capital acquisition, disposal and leasing, debt issuance, and mergers and acquisitions.

The purpose of this paper is to set out selected high-level considerations and frameworks relevant for analysing the government's ownership lever in TEIs, drawing on a sample of relevant economic literatures. It was prepared as a background resource for the Productivity Commission's *New models of tertiary education* inquiry.<sup>2</sup> In focusing on ownership considerations, we take contractual and regulatory arrangements for TEIs as given, recognising that each instrument provides government with control rights. An analysis of contractual and regulatory arrangements is beyond the scope of our study.

This study extends existing analyses of TEI arrangements.<sup>3</sup> It does so by providing a comparative analysis of TEI ownership, drawing on literatures not previously applied to the question of ownership in higher education. These include literatures on health sector organisation, the organisation of

<sup>1</sup> Figure 2 of Peterson, 1999 shows government funding constituted around 75% of universities' operating revenue in 1991. In 2013 this figure stood at 44-54% (using Tertiary Education Commission data, <http://www.tec.govt.nz/Tertiary-Sector/Performance-information/TEI-financial-performance/>, accessed 10 August 2016).

<sup>2</sup> The terms of reference and other information about the inquiry can be found at: [www.productivity.govt.nz/inquiry-content/tertiary-education](http://www.productivity.govt.nz/inquiry-content/tertiary-education).

<sup>3</sup> For example, Boston, 1997; Peters, 1998; Evans, 1997; and Evans & Quigley, 1996, 2006.

professional service firms, and team production theory. These literatures have been chosen because they provide analyses of ownership in sectors involving significant investments in human capital (eg, medical specialists, lawyers and accountants, and other professionals) which is also a distinctive feature of higher education. Much of the material we draw on is relevant mainly to universities, but where possible we also draw lessons for ITPs and wānanga.

### Box 2 **TEI products and markets**

New Zealand TEIs are engaged in producing two distinct products:

- Teaching – at undergraduate (Universities, ITPs and wānanga) and postgraduate (predominantly University) levels; and
- Research – both researcher-initiated public-good research, and research projects customised to the specific requirements of third-party contractors.

Universities, ITPs and wānanga compete for students and staff in markets for undergraduate teaching, both locally and internationally.

- Research is almost exclusively a University activity. Universities compete with Crown Research Institutes (CRIs), private research institutions, think tanks and consultancies (both internationally and within New Zealand) for New Zealand-specific contracted research. Universities compete with each other, in New Zealand and internationally, for PhD-qualified staff for both research and teaching activities.
- A significant difference between Universities on the one hand, and ITPs and wānanga on the other, is that university teaching is expected to be led by current research developments (“research-led teaching”). ITPs and wānanga, by contrast, focus on the delivery of established bodies of learning determined primarily by vocational and cultural criteria.

Undergraduate university teaching is dominated by the transfer of current knowledge. Post-graduate teaching takes two forms:

- Taught programmes (eg, MBA, MPP, MPA) which focus on the transfer and application of knowledge, but at a higher level of understanding than undergraduate programmes; and
- Research programmes (Honours, Masters, PhD and professional doctorates, eg, DBA, DGov), which focus predominantly upon the transfer of skills and knowledge associated with the research process, and the creation of original research. The higher is the level of learning, the less emphasis there is on teaching and the greater is the focus on research.

*Source:* Boston, 1997; Evans, 1997; Peters, 1998.

Our contribution is to identify frameworks and considerations that address the particular tensions that arise when multiple parties each make specialised investments in co-productive arrangements, and can either complement or undermine the value of investments made by others. In the case of TEIs, these co-investments include, in particular, those by government in infrastructure and support for teaching and research, and by academic staff in their own human capital. The investment made by each party is in some way and to some measure critical to TEI success, so it is important for TEI ownership to ensure that these tensions are well-managed.

The study is structured as follows. Section 2 describes how TEIs are currently “owned”, taking care to indicate in what sense “ownership” is an appropriate way of characterising the government’s interest in TEIs. Section 3 places TEI ownership in context. It does so by briefly describing common ownership

arrangements for higher education institutions in selected other countries. It briefly compares and contrasts TEIs and professional service firms (PSFs). This is followed by a general discussion of ownership arrangements appropriate to sectors involving substantial specific co-investments by multiple parties – drawing on so-called team production theory. Ownership arrangements in health sectors are then explored in some detail, drawing lessons for TEI ownership. Finally, for completeness, Section 3 briefly contrasts TEI ownership with other ownership models commonly employed in the New Zealand state sector. Section 4 then draws out some ownership differences between different types of TEIs. Section 5 discusses incentives and risks for government under existing TEI arrangements, while Section 6 discusses their likely impacts on TEI performance. Finally, Section 7 briefly concludes, and mentions areas for possible future research.

## 2 How are TEIs “owned”?

### 2.1 What is meant by “ownership”?

In the economic analysis of organisations, it is conventional to define ownership in terms of residual rights of control, and the right to the residual cash flows of that organisation (Grossman & Hart, 1986; Hart & Moore, 1990; Hansmann, 1996). Residual control rights refer to the ability to control use of the organisation’s assets where that use is not controlled by other means (eg, contracts). The right to residual cash flows refers to the owners’ ability to appropriate any economic surplus generated or possessed by the organisation remaining after superior claims to that surplus (eg, by lenders, employees or other creditors) have been exhausted.

This definition naturally finds application in defining as owners the shareholders of an asset-owning firm. Such shares confer a right to vote at general meetings, and hence appoint governors such as directors where firms are not closely held by one or only few shareholders. They also confer a right to participate in distributions of firm surplus such as dividends, if they are made. Implicit in such a treatment is an assumption that the firm should ultimately be governed in the interests of shareholders, who invest the capital needed for the firm to obtain or build and operate its assets, with the interests of other stakeholders (eg, employees, customers, etc.) protected through other means, such as employment contracts and regulation, competition, etc. It also hinges on the assumption that it is not possible to completely contract for all possible contingencies, or to efficiently enforce contracts even if they were complete. This then leaves space for ownership as an efficient alternative mode of firm governance.

Even for asset-owning firms, the case that firms should be governed in shareholders’ interests – ie, for shareholder primacy – is contested (Stout, 2002). Moreover, the literature on the economics of ownership recognises that there are many types of organisation other than shareholder-owned firms in which other “patrons” of the organisation exert control (Hansmann, 1996, Cordery & Howell, 2016). These include so-called cooperatives – controlled by either workers (eg, legal partnerships), suppliers (eg, farmers in the case of dairy processors) or customers (eg, depositors in the case of mutual banks). They also include organisations for which no patron is entitled to the organisation’s residual cash flows – so-called not-for-profits, or NFPs (Hansmann, 1996; Glaeser & Schleifer, 2001).

Examples of NFPs include charitable foundations, some hospitals, and many universities. Important features of such organisations include the fact that they are often funded by parties other than those who enjoy or provide the NFP’s services. Furthermore, often those who provide NFP services are motivated by a sense of mission over and above simple pecuniary reward, and the services provided by the NFP typically have some element of public good.<sup>4</sup>

The separation between funders, providers and consumers of NFP goods or services creates natural tensions. Donors, for example, prefer that their funds are used to benefit consumers of NFP services

<sup>4</sup> NZPC, 2015 (Appendix F) provides a more extensive discussion in the context of the organisation of social service delivery.

rather than the providers of those services. As a consequence, NFPs typically involve formal control rights being held by parties such as donors, with day-to-day control held by service providers (ie, NFP employees). Furthermore, they also involve prohibitions on their surplus funds or assets being distributed – a so-called “non-distribution constraint”.<sup>5</sup> Hence, while NFPs can be said to be governed, in that certain parties exercise residual control rights over them, their non-distribution constraints mean they are not “owned” as such. However, clear distinctions are necessary in NFP governance arrangements between the interests of donors and third-party purchasers of services supplied by NFPs. Donors voluntarily give funds for a wide variety of specific or nonspecific activities. Often, donations are tied to the acquisition of assets used by the NFP in undertaking its activities (eg, buildings, funded chairs). These funds are distinct from subsidies paid to offset the tuition costs of individual students (eg, government equivalent full-time students, or EFTS, funding). The latter are not donations, as they are not paid voluntarily, but instead relate to a purchase agreement. They constitute a customer stake in the institution, not a donor stake.

Below we set out features of TEIs that conform with those of NFPs, and to some extent with those of worker-owned cooperatives (specifically, professional service firms). We also describe how the government’s influence over TEIs amounts to a heavily circumscribed set of residual control rights, and how no party is entitled to enjoy TEI residual cash flows. Hence, in the discussion that follows, we treat TEIs as being “non-owned”, and instead focus on how TEI control rights are allocated. In other words, we treat TEI governance as the closest meaningful proxy for TEI ownership. Here, governance can refer variously to arrangements for identifying or resolving tensions (Sherer & Leblebici, 2015), for providing credible commitments (Masten, 2006; Blair & Stout, 1999), or aggregating stakeholder preferences (Masten, 2006). Our analysis inclines towards interpreting governance as arrangements for providing credible commitments, which we explain further below.

To further frame the following analyses, Box 3 details the different types of capital investments undertaken by different TEI parties, and briefly discusses their implications.

### Box 3 **Capital invested in TEIs<sup>6</sup>**

Capital invested in TEIs takes three distinct forms:

- Physical capital – represented on balance sheets as cash reserves, land, buildings, plant, equipment, shares in subsidiary and affiliated entities, and intellectual property with quantifiable values eg, patents, licences, trademarks. These investments (if not highly specialised to the TEI) have realisable value in the event of institutional failure.
- Institution-specific intangible capital – embodied in the investments made by parties to the processes, relationships and other activities of the institution. These include the investments made by staff in undertaking faculty and collegial activities within the institution, and the investments of alumni in the ongoing reputation of the institution awarding their qualification. These investments cannot be realised or appropriated at any time. Importantly, stakeholders (principally staff) who leave the institution cannot redeem their personal investments made in this capital – they must ‘walk away’ from it and start from scratch to build new investments in their new institution. When staff leave, institution-specific capital stock is devalued, as it takes time for new employees to build their levels of institution-specific intangible capital to match the levels of the staff who have left.
- Individual-specific human capital – the skills, experience and reputation brought to and developed by stakeholders during their association with the institution. It is by far the largest

<sup>5</sup> Contrast this with shareholder-owned firms that can pay dividends, professional service firms in which partners share in profits, and cooperatives which make distributions or grant rebates to members.

<sup>6</sup> In this paper we take “capital” to mean a stock capable of generating benefits over multiple time periods. That stock can be financial or non-financial (eg, human capital versus investment capital), and either tangible or intangible. We take “investment” to mean the commitment of resources (again, either financial or non-financial) to the production of capital, and hence to multi-period benefits. Thus the commitment of resources to produce a single period benefit would be better characterised simply as expenditure, or consumption, rather than investment.

capital stock applied to TEI production activities, but as it is physically inseparable from and appropriable by the individual in whom it is embodied, even though its value is enhanced by the application of the institutions’ other assets during that association, it is effectively non-contractible by the TEI (Hart & Moore, 1990). It leaves the institution when the individual leaves, and can be invested in other (potentially competing) institutions. Primary examples are the teaching skills and research reputations developed by staff during their employment at the TEI.

The non-contractibility of individual-specific human capital by TEIs creates particular problems for the institutions in providing incentives for employees to exert effort in developing and maintaining institution-specific intangible capital. All else held equal, employees will prefer to prioritise their efforts towards activities that will enhance their individual-specific human capital (Holmstrom & Milgrom, 1991). This characteristic is shared with other professional service and health care firms (see 3.2 and 3.3 below), but is especially acute for universities as the majority of the returns to the research activity (Box 2) are accrued to the employee’s personal human capital stock. It is compounded by the fact that the activities where effort is exerted are extremely complex, difficult to describe and not easily observed or monitored by the employer.

Whilst it may be possible to create proxy instruments that capture imperfect measures of institution-specific intangible and individual-specific human capital stocks, in order to price services accurately and incentivise employees to undertake activities that prioritise the pursuit of institutional over individual objectives, the transaction costs of doing so are typically very large. Furthermore, the proxies may not be very good approximations of the intangible stocks and flows that they seek to measure. For example, the transaction costs associated with assessing the quality of each individual academic’s research quality in order to allocate Performance-Based Research Funding (PBRF) are substantial, and the bibliometric and other indicators used are not well-suited to measuring or incentivising applied research, technology transfer and NZ-oriented research (Boston, 2008). Moreover, the incentivised activities will be pursued to the exclusion of other activities that are not incentivised or monitored (eg, research activities over teaching activities), which may lead to important activities being neglected (le Grand, 2013).

Hansmann, 1996, suggests that in these cases, it may be more efficient to forgo complex employment contracting arrangements, and allow the owners of the human capital to take responsibility for organising themselves into smaller ‘firms’ delivering the products and services to end consumers – for example as a supplier-owned co-operative. This arrangement will not be perfectly efficient, but may be less inefficient than the alternative of a single large hierarchical firm facing intractable contracting problems. Arguably, these economic theories, given the observed characteristics of the teaching and research products, provide a cogent explanation for the historic organisation of teachers and academics into small “colleges” and “schools” relying predominantly upon instruments such as “collegiality” (Box 5) to manage their internal relationships. The federation of university colleges and schools into larger entities (eg, universities) is likely also an artefact of the economic characteristics of the bundle of teaching and research products (Box 4).

## 2.2 Organisational form of TEIs

Higher education institutions such as TEIs are commonly not organised using ordinary forms such as profit-seeking shareholder-owned firms. This reflects particular features of such institutions which merit the use of other forms. These include, especially for universities:

- Higher education institutions generate knowledge and human capital, which have strong public/merit good attributes.<sup>7</sup>

<sup>7</sup> Moretti, 2004 provides evidence on the social returns to higher education, while Apatov & Grimes, 2016 provide evidence of regional growth impacts from higher education in New Zealand.

- The quality of higher education is hard to measure – possibly even after it has been consumed (ie, education has credence good attributes).
- There are perceived benefits for an individual teacher's practise from that individual's research activities, though less so in the reverse direction (eg, time spent on teaching can impede research). However, empirical evidence for any relationship between teaching and research at the level of an individual academic is weak,<sup>8</sup> and frequently contested.<sup>9</sup> At a higher level of aggregation, there is a general presumption that curriculum development informed by the latest research activity in a given discipline will lead to earlier diffusion and utilisation of new knowledge, and that the delivery of that teaching by practising researchers is perceived as more credible than if delivered by non-researchers (Spiller, 2012).
- Higher education institutions provide services to students and academics/faculty in terms of human capital development, and to business and wider society, but government provides most of the funding required for the provision of those services.<sup>10</sup> Furthermore, government implicitly or explicitly acts as residual risk-bearer in the event an institution fails.<sup>11</sup>
- Government, faculty and students make long-term investments in higher education institutions. For example, former university students (alumni) maintain an ongoing interest in the prestige of their institution because this impacts on the perceived prestige of, and financial returns to their qualifications. Likewise, faculty join institutions with the requisite specialised infrastructure (funded largely by government) required for them to engage in long-term research. This applies to financial as well as physical infrastructure. Government commitments to continue funding future students at an institution in the same manner as current students are funded provides some assurance to prospective staff and students that their long-term investment in affiliating with that institution will not be vulnerable to short-term political gaming (Spiller, 2009; 2016).
- The value of investments in higher education institutions made by government, faculty and students depends on the investments made by each other, and can be undermined if one or more such parties withdraws their investments (eg, faculty, by changing jobs, or students by studying elsewhere or working).
- These investments are often highly specialised – eg, large lecture theatres, specialised laboratories, culturally-appropriate venues and libraries that are not easily redeployed, or human capital investments in specialised research (a career-long endeavour), teaching or learning.
- Academic faculty (particularly at universities and wānanga) fiercely defend their autonomy and independence from interference or oversight by others (ie, the state, or managers), save perhaps from oversight by their peers, who exert important disciplines upon academic conduct, integrity and quality.<sup>12</sup> For wānanga this is for reasons of cultural autonomy, while for universities this reflects their role as critic and conscience of society (which cannot effectively be exercised if academics fear sanction for expressing unpopular views).
- In some countries at least, a tenure-based “up-or-out” incentives system is used, under which early-career academics are expected to invest heavily in research and teaching for a number of years and enjoy secure employment subsequently if they do so to an adequate level, but must find alternative employment otherwise. Tenure serves as a means of retaining highly-valued academic human capital over long time periods, but risks lower levels of output. Tenure review

<sup>8</sup> Qamar uz Zaman, 2004 surveys the available evidence. While only weak evidence for a relationship is typically found, the research behind these figures is itself weak. In particular, the relationship between teaching and research is likely to involve non-linearities which reduce the informativeness of simple measures like correlation. To the extent there is a relationship, it is stronger between research and post-graduate (rather than under-graduate) teaching.

<sup>9</sup> Haigh, 2010, cited in Spiller, 2012.

<sup>10</sup> In this respect education shares features with social services – see NZPC, 2015.

<sup>11</sup> An example of a soft budget constraint – eg, see Maskin, 1996.

<sup>12</sup> This is the academic equivalent of professional ethics, which serve as a discipline on conduct in other professions such as medicine and the law.

is used to ensure tenured academics continue to deliver at least a minimum level of effort towards the delivery of the institution's desired outputs.

In reflection of these particular features, TEIs have features not shared by other forms of organisation. In particular:<sup>13</sup>

- TEIs are statutory corporations and are thus not owned by the Crown per se. Residual surpluses generated or owned by TEIs cannot be distributed to third parties, and instead must be used for present or future uses (eg, infrastructure investment, or future salaries or tuition fee subsidies). Choices about the application of those surpluses are the prerogative of the governing bodies exercising legal control over the institutions, providing they are applied within the bounds identified in the TEIs' establishing statutes.
- TEIs are monitored by the Tertiary Education Commission (TEC), a government agency responsible for funding and regulating post-secondary education. The TEC also gives effect to the Tertiary Education Strategy (TES), a high-level policy document guiding the TEC and TEIs on the government's strategic policy direction and current/medium-term (ie, three-to-five years) priorities, reflecting government's policy objectives and programmes. The TES sets the policy context for government funding provided through the TEC, and TEIs are expected to pursue TES objectives. TEIs are each governed by an autonomous council which, among other things, appoints a chief executive (ie, vice chancellor) and monitors and evaluates his or her performance. Councils prepare and submit (to the TEC) investment plans and statements of service performance (SSPs) required for government funding, and ensure their TEI is managed in accordance with such plans. They can also make their own statutes (ie, rules) on matters such as appointment of council matters, provided they comply with TEIs' governing legislation.
- For universities and wānanga, government appoints three members to councils having eight to nine members, or four to those with 10 to 12 members. Remaining council members are appointed by council in accordance with its own statutes. For ITPs, government and councils each appoint four members. Universities and wānanga appoint their own chair (chancellor) and deputy chair (pro chancellor), while these are appointed by government in ITPs.<sup>14</sup>
- Council members are required to have the knowledge, skills and experience needed for councils to fulfil their functions. In addition, government appointments to TEI councils must also reflect the ethnic and socio-economic diversity of the TEI's community and the gender balance in the population, and at least one member must be Māori.<sup>15</sup>
- Members have duties to both the Minister of Education and their council. They are required to act with honesty and integrity, in good faith, and with reasonable care, diligence and skill. They must also act in the interests of their TEI as a whole, and not in the interests of any stakeholder group which may have appointed them.<sup>16</sup>
- The government funds the majority of TEI tuition costs through subsidies, grants and loans. The Student Achievement Component (SAC, over \$2 billion in 2015) pays the costs of teaching and learning based on type of study, and number of equivalent full-time students (EFTS). Additionally, government offers performance-based research funding (PBRF, around \$300 million in 2015).
- Government is liable to pay and discharge all the debts, liabilities, and obligations of a TEI in the event it is disestablished. To protect the government as residual risk-bearer, it enjoys

<sup>13</sup> This summary draws heavily on TEC, 2015.

<sup>14</sup> Current university and wānanga arrangements were implemented following changes in 2015. ITP arrangements were amended in 2009, after financial difficulties had been experienced in some ITPs.

<sup>15</sup> While this might result in TEI councils being more representative, that does not derogate from the requirement that members must have requisite skills and experience. Furthermore, requiring that councils be representative of communities is not the same as requiring council members to represent particular stakeholders.

<sup>16</sup> The latter requirement reflects that of company directors, who under the New Zealand's Companies Act 1993 must act in the best interests of their company, and not their appointing shareholders.

certain “input controls” over TEIs. These include the Secretary of Education (ie, the chief executive of the Ministry of Education) having the power to approve any TEI debt raising, asset disposals, mortgaging or placing of charges over assets, or granting of leases over TEI property.

- In the extreme, if the government has reasonable grounds to believe that there is a risk to the operation and long-term viability of a TEI, it can intervene by requesting specified information of a council, appoint an observer to that council, or even appoint a commissioner to replace the council.
- More usually, the government requires TEIs to prepare annual reports for monitoring by the TEC. These include the SSP that reports on achievements of the TEI against the performance commitments section of the investment plan. The TEC also scrutinises the capital asset management of TEIs to improve the use of existing TEI assets and ensure value for money from major new capital asset investments.
- Unlike US universities, but like in the UK, TEIs do not offer life tenure and associated “up-or-out” incentive structure for faculty.<sup>17</sup>

These arrangements reflect an attempt at balancing of the tension between government granting TEIs institutional autonomy and academic freedom in both research and teaching activities, and its desire that TEIs use government funding efficiently, effectively and accountably. This tension is explicitly reflected in section 160 of the Education Act 1989 (the Act), the principal legislation setting out TEI governance arrangements. It states that the Act aims to grant TEIs “as much independence and freedom to make academic, operational, and management decisions as is consistent with the nature of the services they provide, the efficient use of national resources, the national interest, and the demands of accountability.” However, that freedom is constrained by the implicit obligation that TEIs are instruments for delivering the government of the day’s TES. This arises because it is unlikely that TEC will approve a TEI’s investment plan unless it complies with the current TES, and renders TEIs vulnerable to political influence that would not be possible if the institution was truly independent and where the government’s engagement was confined to that of solely a purchaser of teaching and research outputs.

Aside from the above “ownership” arrangements, government also controls TEIs through any conditions attached to tuition or research funding (ie, through contracting arrangements). It also regulates teaching and programme quality. For ITPs and wānanga this is through the New Zealand Qualifications Authority, NZQA, which approves qualifications and oversees the quality of their delivery. For universities, external quality assurance is provided by qualifications being approved by the Committee on University Academic Programmes (CUAP), and also by the Academic Quality Agency (AQA) for New Zealand Universities.

However, in an increasingly global market, many TEIs are opting to seek accreditation of their courses and programmes from international quality assurance organisations. University Business Schools have been most active in this area, with three (Auckland, Waikato and Victoria) being amongst the approximately 70 institutions worldwide holding the ‘triple crown’ of AACSB, AMBA and EQUIS accreditation. Of eight universities, only Lincoln University does not have AACSB accreditation. It is likely that similar accreditation arrangements either exist or are being developed also for internationally-comparable trades-training. Arguably, the greater is the extent of international quality assurance undertaken of New Zealand TEIs, the greater is the extent that TEC and other New Zealand regulatory agencies can utilise information generated by those processes more cost-effectively than relying on its own bespoke monitoring and information-gathering activities. This approach is being pursued in Australia, where as part of the Review of Higher Education Regulation,<sup>18</sup> it is anticipated that different regulatory obligations will be constructed for institutions with and without recognised

<sup>17</sup> Williams, 2004 explains that UK universities offered life tenure to academics in some cases at the time of sector reforms in the 1980s. Such tenure created cost-inflexibilities that raised financial distress risk when university funding restrictions were introduced, and so they were ultimately banned.

<sup>18</sup> <https://www.education.gov.au/review-higher-education-regulation-1> , accessed September 21 2016.

international accreditations.<sup>19</sup> Thus, the relationships between the TEC and TEIs are likely to change in the future. However, as noted in the introduction, we consider the current sector arrangements as given in our ownership analysis of TEIs.

Box 4 explores the rationales for, and implications of, the bundling of teaching and research in TEIs.

#### Box 4 **Teaching and research: production or funding complements?**

Public good research undertaken by academics in a university context, and activities satisfying the obligation to act as the critic and conscience of society are largely solitary, largely self-initiated and self-managed activities. The academic commits human capital and effort to the endeavour. Regardless of whether or not the research leads to the creation of alienable intellectual property (eg, written reports subject to copyright, patents, etc.), the researcher obtains an inalienable return (which may be positive or negative) that alters the personal stock of individual-specific human capital, due to observable and verifiable association with results released into the public domain. Consequently, when such research is undertaken by teams of researchers, the teams tend to be small, and academics will choose their research partners carefully, to maximise personal reputational gain (or minimise potential personal losses). Public good research is funded either from existing surpluses from other activities, or from dedicated funding for public good research (eg, Marsden Fund).

#### **Market power and bundling: Courses into qualifications; teaching with research**

Historically, academics have funded research activity from surpluses generated by teaching activities (or in the case of religiously-affiliated universities and donor-dependent entities, from funds raised and donated/transferred from other activities – ie, patronage). Similar cross-subsidies are observed in other creative endeavours, such as visual arts, musical composition and performance. Artists historically have engaged in teaching to raise revenues to underwrite their creative endeavours. The more noteworthy the artist, the higher is the market power and the premium that can be charged for teaching, and the greater is the scope for creative activities. Even in the 21<sup>st</sup> century, professional artists rely on revenues from other sources (eg, merchandise sales and income from royalties and repeat performances of original renditions) to satisfy their personal new creation and performance preferences. Likewise, funding individually-generated research activities requires some market power in another activity to enable the necessary cross-subsidy.

For TEIs, teaching is an activity where large fixed and sunk costs associated with course development, demand uncertainties, thin markets for some courses and the requirement for specific investments in facilities all push towards individual academics wishing to teach in their individual areas of expertise federating into a single firm to sell their courses collectively rather than as stand-alone products. A large firm with scale economies has some market power as its average costs per student are lower. It can sell more, and more-diverse courses if they are provided only as part of a bundle (eg, degree, diploma, or certificate). Revenues raised from selling low-cost, high demand courses above average cost (eg, undergraduate) can be used to subsidise both high-cost, low demand courses (both undergraduate and postgraduate) and other activities – notably research for which there is no explicit market (because it satisfies the researcher's preferences but no specific customer or funder's priorities).

As the arrangement relies upon cross-subsidies, maintaining it is contingent upon the TEI having some market power. If the bundle of courses is perceived as more valuable than the sum of the courses individually, then the TEI has some market power over its own students once the first course is purchased. All TEIs have an incentive to ensure that government subsidies are applied to bundles and not individual courses. This leads to a preference for government funding to be tied to equivalent full-time students (EFTS) and not per-student-per-course. In the first instance, all TEIs can

<sup>19</sup> Personal communication with AACSB staff, 25 August 2016.

apply the subsidies from courses with lower-than-average costs per student to cover the costs of courses with higher-than-average costs per student.

However, market power can also be used to generate cross-subsidies from teaching activities to research. If the perception that research-led teaching is sufficiently more valuable to purchasers than teaching led by non-researchers, then higher fees can be charged and the surpluses generated over and above those available to non-researcher-led teaching can be applied to subsidise research activities.

Thus, it could be argued that the bundling of teaching and research in university TEIs has occurred not because of synergies in the micro-level production of the two different outputs by a single academic (which Hansmann, 1996, terms an efficiency in production), but because of the synergies that exist in the macro-level contracting arrangements to secure funding for a diverse range of teaching and research activities (Hansmann's efficiency in transacting). In effect, research-led universities operate as a specialised differentiated two-sided platform<sup>20</sup> bringing together students prepared to pay a premium for researcher-led teaching with researchers prepared to co-operate in the delivery of their teaching in order to generate higher surpluses to fund their research activities in a much more efficient way than if each of teaching individual courses and research were transacted separately.

Of course, this framing of the research-led university reveals one of its key weaknesses – that if students (or their funders) no longer perceive any additional benefit in research-led teaching, then degree-based education can be provided at lower cost by institutions that deliver only teaching, with no commitment to research activity (eg, degree-granting universities focusing only on first-level (Bachelors) degrees – such as observed in the US, both in the private and public sectors). The extension of degree-granting status to ITPs and wānanga in New Zealand arguably represents a challenge of this kind to research-led universities.

### **Sustaining the bundle: Managing researcher defection**

The cross-subsidy arrangement is sustainable so long as customers perceive there are benefits worth paying for from the researcher-led TEI, the researchers can be sure that those they admit to their provider group will add to (or at least not dilute) their individual-specific human capital stocks, and the risk of defection by researchers to competitor institutions (and the dilution of both institution-specific human capital and reputational loss that it may entail) can be minimised. Thus, researcher-led TEIs have strong incentives to find ways of binding academics so they do not 'defect' and take their human capital to competitor institutions. Tenure (discussed above) is one means of combatting defection. Collegiality, as is has historically applied in tertiary institutions, is another.

Finally, Box 5 explores the meaning of collegiality in the TEI context, and its role and implications.

#### **Box 5 Collegiality and the non-owned TEI form**

It is frequently argued that collegiality is a defining feature of both the academic and teaching professions. However, collegiality can mean either:

- Involvement by colleagues in a shared responsibility (Oxford Dictionary); or
- The quality of being relaxed, friendly and co-operative, as is typical amongst a close group of colleagues (Macmillan Dictionary).

<sup>20</sup> See, for example Rochet & Tirole, 2003, 2004; Armstrong, 2005; Evans & Schmalensee, 2007, 2012.

We use the first of these meanings in this report. The first meaning is frequently used to contrast the collective management within academic institutions, where academics typically are unwilling to submit to managerial control unless it is exercised by fellow researchers within the same or affiliated research discipline (eg, Schools, Faculties, Colleges, etc.), with managerialism, characterised by professional hierarchies and the exercise of control by professional managers.

In this box, we explain how the economic characteristics of research and teaching activities have led to both the formation of colleges of academics with similar interests, and how, in the absence of explicit owners of the college, ‘collegiality’ has likely evolved as a mechanism for governing the allocation of resources (and costs) amongst college members.

### **Collegiality in a federation of self-managing researcher-peers**

TEIs face significant difficulties in specifying, incentivising, observing and verifying the level of effort academics contribute towards activities that maintain and build the stocks of institution-specific intangible capital required to deliver their services. Likewise, academics face risks to their ability to maintain and enhance the value of their individual-specific human capital if they are required to prioritise activities that are of greater benefit to the institution than to themselves. They also face a risk of dilution to the returns on the effort they put into institutional activities from free-riding by colleagues whose similar activities are not easily observable. Consequently, there are strong economic justifications for academics to prefer to operate as autonomous independent contractors – as occurs for members of other professions (see section 3.2 below) and in particular, general practitioners (see section 3.3) – at least in respect of their research activities.

Generating surplus revenues from teaching to fund research activities requires co-ordination of teaching activities. One means of achieving this is for a group of academics with similar research interests to federate (form a supplier-governed co-operative, as per Hansmann, 1996) to deliver their teaching and generate revenues to fund their research activities. Typical co-operatives are non-owned entities: no one member can lay claim to a share of the residual assets. Surpluses can be accumulated, as with standard NFPs, or paid out to members in proportion with observable measures of their interactions with the collective entity. Decisions about surplus application (ie, resources for research) are made by the governing body, as are the allocation of the costs of generating it (ie, teaching allocations) and the costs of managing the governance of the federation. Consequently, all members of the federation face strong incentives to commit time and effort into federation governance activities in order to influence resource and cost allocation decisions to their personal advantage. If the federated group is small enough for the members to observe (if even imperfectly) each other’s effort in delivering teaching and research activities, and the members’ interests are sufficiently similar that they can provide an informed assessment of the quality of each other’s work (peers assessing peers), then the costs of governing this arrangement are likely less than those associated with a large hierarchical firm relying upon arm’s-length interactions based upon imperfect proxy measures to incentivise effort and allocate resources and costs. Co-operatives face lower governance costs when the members are relatively homogeneous because their interests are more likely to be well-aligned. However, the more heterogeneous is the membership, the more likely it is that interests will be less well-aligned and the costs of resolving conflicts will be higher.

Arguably, therefore, the federation of groups of academics with similar interests into ‘colleges’ has historically been an artefact of the economic characteristics of teaching and research activities rather than an exogenous institutional choice. A logical unit of federation is a small group of academics with similar interests operating together as a ‘college’ (eg, faculties, such as Arts, Commerce, Law, Science, etc. or smaller disciplinary-based units within faculties – ie, ‘schools’). Their similar interests and small group size make them the best monitors of each other’s activities (to the extent that they can be monitored). If the group was ‘non-owned’, then no one member can lay claim to the residual returns generated by the group. However, to be certain of obtaining an acceptable share of the group’s proceeds (ie, to fund individual research activities) it is necessary for each academic to participate in the governance (decision-making) of the group. This participation gives rise to

collegiality – as in the first definition above. If each individual's share of the resources could be well-specified in a contract, then there is no need to interact in the governance of the group in order to obtain it, and therefore no special merit exists in academic institutions being 'non-owned' in the first place.

Furthermore, the ownership/governance stake that academics take in the college leads to higher levels of investment in institution-specific intangible capital and provides a 'bond' that reduces the likelihood that the academic will defect and invest individual-specific human capital in a rival institution. The more uncertain (implicit, unwritten, etc.) are the college's decisions about surplus distribution, the stronger are the incentives for members to participate in governance activities (collegial interaction). The longer an academic is a member of the group, the larger is the investment in developing, and the greater is the expected influence on, decision-making. These investments must be abandoned when leaving. The academic will have to begin again to build up similar stocks of influence (institution-specific capital) at another institution.

'Collegial interaction' is thus a manifestation of an academic's investment in group governance.

### **Increased managerialism dilutes payoffs to investments in 'collegiality'**

The growth of managerialism in TEI management and governance arrangements as TEIs have expanded in size – and increasing TEC and government-funder requirements for more precise measurement of, particularly, difficult-to-measure research outputs and quality – has very likely diluted the payoffs to collegial interaction for individual academics. The more precisely academics' shares of resources to fund personal research activities and allocate teaching and other administrative responsibilities are specified in institution-wide policies and internal contracting arrangements, the smaller are the expected payoffs to (incentives for) engaging in 'collegial' activities to influence those allocations. Hence, unsurprisingly, collegial interaction in New Zealand universities has been observed to decrease in recent years.<sup>21</sup> Explicit financial remuneration for assuming managerial activities formerly undertaken under 'collegial' governance arrangements has become increasingly common. Sharp distinctions are beginning to emerge between manager-academics and researcher-academics, with a notable outcome being the reduced effectiveness of investments in 'collegiality' as a bond to limit both manager- and researcher-academics' defection to competing institutions. As manager-academics are explicitly compensated for their governance contributions, they effectively extract their shares of institution-specific capital in each period in which it is invested. As researcher-academics face few incentives to engage in activities that constitute an investment in the stock in the first place, they do not face the exit barriers that discourage co-operative members from leaving.

Hence, the more precisely-specified are individuals' activities and returns to engaging in them in contractual agreements, the less justification there is to rely upon 'competitions' for governance and control of non-owned assets and the more feasible it becomes for the firm to become 'owned' by specific interests, in the way of a classic shareholder-owned firm (Cordery & Howell, 2016). Arguably non-university TEIs, where there is no explicit expectation that surpluses from teaching will be generated to fund research activities, so no explicit processes are necessary to determine their allocation amongst colleagues, pose fewer justifications for the maintenance of a non-owned form than research-focused universities. By way of comparison, shareholder ownership of educational institutions where research is not a product (eg, early childhood) is very common, even though their activities are substantially government-funded.

Are students 'members' of colleges?

It is apposite at this point to consider whether students could or should be considered 'members' of the colleges in which they receive tuition, and therefore have a claim to participate in 'collegial' TEI

<sup>21</sup> Bentley, McLeod & Teo, 2014, report survey evidence on academics' perceived changes in the New Zealand TEI sector. They report (p. 14) strong disagreement with decision-making being collegial, and views that decision-making is less democratic and consultative.

governance activities. This question can be addressed by considering the different forms of TEI capital outlined in Box 3.

Whilst students' human capital is increased by their interaction with the TEI, this is almost exclusively a function of their participation as consumers of the education product. Except when they are participating in research degrees, they are not 'in the market' to appropriate the surpluses generated from teaching and applied to the research activity. As for the most part, courses passed at one New Zealand TEI are able to be transferred for credit towards a qualification at another equivalent New Zealand TEI, students face fewer barriers to exiting the institution than academics who have invested substantially in collegial interaction at school, faculty or institutional levels.

As students' interests as consumers are thus apparently well-protected by contractual and managerial processes, it is not clear what additional benefits they stand to gain from engaging in TEI governance activities. By way of comparison, consumers face risks that their lawyer, builder or architect may act opportunistically whilst working to enhance consumers' assets, yet it is not generally presumed that consumers should participate in the governance of the firms delivering legal, building and architectural services. Neither is it axiomatic that part or full government subsidies for relevant services justifies consumer governance rights of the firms concerned – as illustrated in the case of government-subsidised legal aid. Although there is an argument that important information about the operation of the teaching activities of the institution necessary in exercising prudent governance not well-captured or signalled with existing activities could be supplied by student-governors, it is not obvious that the provision of such information is best-managed by bundling its provision with decision-making rights extending beyond the teaching activities in which students have an explicit interest (ie, into research activities). Consultation to gather information and debate to inform decision-making and its effects on students is separate and distinct from the act of making the decision itself.

Thus, to the extent that increased managerialism and greater reliance upon more tightly-specified contractual arrangements have diluted the incentives for academics' involvement in TEI governance, particularly in research-focused institutions, so too has it likely reduced the incentives for, and potential usefulness of, student participation. However, as with academics' participation, this presumes that the benefits of the managerial approach, net of the increased transaction costs, exceed those of a collegial approach.

## 2.3 Government's relationship with TEIs

Government is naturally concerned that TEIs be well managed. It provides a large share of TEI funding, and TEIs generate social returns in excess of the private returns enjoyed by faculty and students. A key concern for government is that its co-investors in higher education – ie, university faculty or managers in particular – might appropriate undue shares of government funding, or otherwise not use it productively to generate a socially desirable level and mix of teaching, research, and innovation. For example, faculty might shirk by cherry-picking courses with relatively low workloads or greater potential to advance their research (eg, by interacting with post-graduate students). Alternatively, managers might apply government funds in ways that generate private benefits at the cost of teaching and research outputs.

Ultimately, if TEIs are mismanaged, this could lead them into financial distress. The government would then be required to either provide additional funding, or take likely unpopular decisions to disestablish all or part of the failing TEI. This could have the consequence of skilled faculty being lost to the (local) tertiary education sector. It could also result in displaced talented students pursuing their higher education and then careers in other countries. In either case this could involve significant social costs over and above the immediate costs of TEI failure. Indeed, just as financial distress creates costs for

firms even short of full bankruptcy, financial difficulties at TEIs could result in key staff choosing to take employment elsewhere, precipitating further organisational distress.<sup>22</sup>

No third parties, including government, are entitled to distributions of residual surpluses generated or owned by TEIs. As noted in Section 2.1, this reduces government's ownership role in TEIs to be more one of governance than ownership. What is clear from the above description of TEI organisational form is that government has the ability to influence the membership of TEI governing councils, though subject to ensuring that councils exhibit membership with a suitable balance of skills and experience. Furthermore, government can influence – though not formally control – university strategy through its priorities set out in the TES (the informal power to influence operations via the requirement for TEC to approve TEIs 'investment plans' in light of the TES is discussed above). While it has greater control in other respects, such as through its power to approve certain aspects of TEI operation, these powers are circumscribed, and not general. Indeed, outright legal control is only available contingently, in the event that a TEI is in distress and at risk of needing to be disestablished.

In this sense the government's relationship with TEIs is akin to that of a senior lender to a firm. Lenders provide capital to a firm without being able to directly control how that capital is applied. They face the risk that it is applied to purposes other than those for which it was acquired. These can include inappropriate investments, or simple appropriation (eg, by shareholders as dividends, or managers as salaries or perks).<sup>23</sup> Lenders also face the risk that borrowers issue superior claims over their financial resources to third parties subsequent to their original loans being made.

Conventionally, lenders protect their interests in the form of loan covenants, which are analogous to the input controls exercised by government in relation to TEIs. Such covenants specify restrictions on the purposes to which lent capital can be put. Lenders can also require financial information disclosures from borrowing firms, as government does from TEIs, including the ability to make ongoing funding contingent on meeting specified objectives. They can also use contractual provisions to stop borrowers from issuing superior claims over their resources to other lenders without the initial lenders' approval, which also reflects TEI governance provisions. In the extreme case that a borrower is unable to repay its loan, or otherwise breaches loan conditions (eg, minimum solvency levels), lenders can assume contingent control rights, including being able to take control of assets used as collateral for the loan. This too is analogous to the government's contingent intervention rights in TEIs.

Hence, just as lenders are not said to "own" any firms to which they have lent (except in the extreme case of insolvency), it is clear why government does not "own" TEIs in the usual sense. Furthermore, the governance rights of government in TEIs are likewise circumscribed, as they are for lenders in their borrowing firms. Hence, TEIs – with their inability to distribute residual surpluses to third parties – can be seen to more closely resemble "non-owned" NFP organisations, with government as major funder having circumscribed governance rights.

This comparison between government's control rights in TEIs with those of lenders helps to reveal why government might wish to possess such rights to protect its financial interests. It also highlights how those control rights are limited and/or contingent, making government's interests somewhat less than ownership per se. However, in the next section we discuss why it is not sufficient to construe government's interest in TEIs as akin to that of a mere senior lender. Instead we highlight the importance to TEI success of human capital co-investments being made particularly by faculty, in addition to government's funding investments. These co-investments shape the desirable form of TEI governance.

<sup>22</sup> This risk is particularly pronounced for TEIs, as it is for other organisations whose value hinges on the ongoing contributions of highly specialised staff. Once a critical mass of those staff are lost to the organisation, it can prove extremely difficult to re-establish that critical mass, as well as any associated collegial goodwill.

<sup>23</sup> We emphasise the government's status as being analogous to a senior lender since TEIs – like firms – may borrow from a range of lenders, with some having more senior claims and control rights than others. A literature exists on the optimal assignment of control rights among different types of lender – eg, see Bolton & Scharfstein, 1996. The efficiency of government having superior control rights to those of other TEI creditors is worthy of examination, but beyond the scope of our analysis. So too is consideration of debt governance arrangements in non-Anglo Saxon developed countries, such as lender participation in firm governance (eg, as in Germany).

## 3 TEI ownership in context

### 3.1 How are higher education institutions "owned" internationally?

The "non-ownership" of higher education institutions is common in developed/western economies. This often takes the NFP form of organisation, though variations such as TEIs being formally organised as statutory corporations also arise. NFPs are commonly the default organisational form when funders and service receivers are different, as occurs in universities (Milgrom & Roberts, 1992).

For example, UK universities are autonomous, property-owning institutions, with independence guaranteed by Royal Charter or statute. They cannot distribute surpluses to third parties (like NFPs), and face soft budget constraints (in that government can, and has, intervened to bail out institutions in distress). Like TEIs, UK universities do not involve life tenure, as is often offered in US universities. Since major reforms in the 1980s, an increased proportion of university funding now comes from fees, endowments, donations and commercial activities. University governance has become less collegial, in favour of fewer and larger committees, larger and more powerful finance offices, centralised administration, and increasing use of internal resource allocation models (Dill, 2005; Williams 2004).<sup>24</sup>

In the UK, the public interest in higher education is achieved through the terms of contracts for research and teaching funding rather than direct government ownership or control. Likewise, other governments have found that direct state control of universities – as was historically the case – is proving less efficient and effective with increasing global competition for students, faculty and research funding (Dill, 2005).

In the US, NFP-like university governance is the norm for multi-school research universities. Governance decisions are predominantly either faculty-determined, or both faculty- and administrator-determined, in larger such universities (Masten, 2006). Conversely, they are more administrator-determined (ie, "autocratic", or business-like) in institutions oriented mainly towards undergraduate teaching, or in specialist schools (such as technological institutes or music schools). In terms of decision types, administrative determination is more common for faculty status (eg, appointments), staff sizes across disciplines (ie, internal resource allocation), selection of administrators and department chairs, financial planning and policy (including salary scales and individual salaries, and budgetary planning), and student activities (including student role in governance).<sup>25</sup>

In Australia, only one university – Australian National University in Canberra – was established by an Act of the national parliament in the manner of New Zealand TEIs. Most universities and other TEIs (mainly Technical and Further Education institutions – TAFEs) are established under state parliamentary Acts. Different approaches to TEI ownership and governance are therefore possible in different states. Consequently, individual institutions have been able to engage in ownership innovation, which has not been limited to the establishment of non-state (ie, private) non-profit institutions (eg, Bond University).<sup>26</sup> Statutory institutions have also engaged in ownership innovation. For example, the Melbourne Business School (MBS), focusing on the delivery of graduate programmes in business and economics, is a jointly-owned, albeit NFP venture of the Melbourne business community (55%) and the University of Melbourne (45%).<sup>27</sup> Interestingly, this arrangement grants a greater share of governance control to the business community – as current and future employers of students – than to all of the state, academics, students and the wider public combined. Arguably, this arrangement more closely

<sup>24</sup> Recent UK reforms place greater emphasis on enabling students to make informed choices about higher education, and competition between providers, including entry by new providers (eg, see Department for Business Innovation & Skills, 2016). This reflects the fact that the majority of university funding from government is now in the form of student fees paid for using income-contingent student loans. These reforms are very much customer-focused rather than supplier-focused, so it will be informative to observe how they affect the ability of UK universities to attract faculty and provide them incentives for research.

<sup>25</sup> See Masten, 2006, Table III.

<sup>26</sup> <https://bond.edu.au/about-bond>.

<sup>27</sup> <https://mbs.edu/about-us>.

resembles the apprenticeship or guild model of industry training, where existing practitioners assume primary responsibility for educating the next generation of practitioners (or ‘craftsmen’) (Larrain & Pruefer, 2015). However, it is not immediately obvious how this model sits with the incentives for the creation and dissemination of public good research, as historically, trades and guilds have closely guarded their professional knowledge and limited entry in order to maintain market power and hence future incomes from the application of that knowledge. The explicit governance unbundling of teaching and research interests that this model invokes, relative to the collegial model where they were internalised in academics, could ultimately result in costly-to-resolve tensions between the heterogeneous stakeholders in non-owned research-focused universities. However, it is less likely to be problematic in less research-focused ITPs and wānanga. For-profit providers are a significant and growing feature in vocational, non-research focused higher education in the US (Bennett, Lucchesi & Vedder, 2010; Deming, Goldin & Katz, 2013). Such institutions emerged in the 19th century to fill gaps in vocational training left by traditional universities, which focused on theology and the liberal arts. More recently they have rapidly grown in response to falling state-funding in higher education and tightening entry requirements, instead taking advantage of increasing federal tuition subsidies. They provide student-focused offerings in response to changing employment market conditions, and cater disproportionately to under-represented and less-equipped students, though at high cost and with worse student outcomes as compared with other types of institution (Deming, Goldin & Katz, 2013).<sup>28</sup>

### 3.2 Comparisons with professional service firms

A particular feature of TEIs is that the human capital of faculty – whether applied alone or in teams (eg, research collaboration) – is key to TEI performance. Moreover, the quality of faculty outputs is hard to measure except by peers with comparable specialist expertise, and faculty are resistant to having their performance evaluated by, or being given direction by, managers or other third parties. In turn, this means faculty have the latitude to specify what is acceptable teaching quality for students, and students may not be able to judge teaching quality even after the fact (let alone before the fact). Peer review forms an important source of academic quality control, as do professional norms of academic integrity and independence. In many US universities, the tenure system also provides “up-or-out” performance incentives to both induce research by early-career academics, and provide autonomy and independence to established academics. Established academics are able to observe both the research and other institutional capital-building skills and investments of tenure-track staff, so are better-informed when making the decisions about which candidates to admit to their ‘faculty’ and thereby participate in the sharing of the gains generated collectively.

These considerations alone suggest strong similarities – though also some key differences – with professional service firms (PSFs), such as in the law and accounting.<sup>29</sup> Historically such firms have been organised as partnerships, in which senior staff (ie, partners) effectively fund required physical investments (which are typically very small compared to the human capital required). They also share in control rights through collegial decision-making (eg, regarding appointments or promotions), and residual cash flows (ie, partnership surplus). Partners are formally exposed to both unlimited and joint and several liability, meaning they are exposed to possibly severe legal claims if they or their partners provide poor quality services.<sup>30</sup> This induces strong peer monitoring to ensure service quality.<sup>31</sup> Additionally, since clients of such firms often must take advice from the firm itself as to the nature and quality of services they require, professional ethics are presumed to form an important restraint on firms acting opportunistically towards their clients (although reliance upon these may not be fully justified – see 3.3. below). Finally, PSFs have often adopted an up-or-out incentive system, such as requiring lawyers who do not make partner within a certain timeframe being required to seek

<sup>28</sup> The authors note, however, that students opting for for-profit institutions often start at a disadvantage relative to other students, and that education at for-profit institutions may still represent an improvement over receiving no formal vocational training at all.

<sup>29</sup> For descriptions and analysis, see Hansmann, 1996; Levin & Tadelis, 2002; Teece, 2003; Empson & Chapman, 2006; Sherer & Leblebici, 2015; and Hinings, Muzio, Broschak & Empson, 2015.

<sup>30</sup> In practice such liability is limited through the use of trusts, to shield personal assets from creditor claims.

<sup>31</sup> To some extent, the damage to academics’ individual reputations (human capital) from failing to satisfactorily monitor and control the quality of their colleagues’ teaching and research parallels the personal cost to partners arising from legal liability (albeit that the academics’ costs are less easily quantified, so the incentives derived from the threat of penalties are likely weaker).

employment elsewhere. This induces early-career investments in both personal and institution-specific human capital that are rewarded once partnership is achieved, representing tournaments amongst young salaried staff with admission to the partnership as the prize.

More recently, the traditional partnership model in PSFs has come under increasing pressure. PSFs often now compete at a global level, and hence are becoming larger, and often more diversified. This has necessitated a more corporate style of governance, with reduced collegial decision-making and greater use of professional managers.<sup>32</sup> Senior partners are increasingly resembling CEOs, controlling strategic agendas and internal budgets, and are separately remunerated for these activities, rather than assuming them as a collegial obligation. In many cases, professional executives employed by the partnership have replaced partner-CEOs. Labour-market competition for skilled junior workers means short-term incentives are also increasingly required to retain skilled staff, with long-term partnership rewards also steeper (partly as a consequence of increased scale of operations) to induce longevity.

Taken together, these historical arrangements in PSFs, and the increasing pressure they face to reform their governance in response to growth and changing competitive pressures, suggest lessons for TEI governance. The key role played by faculty human capital in TEI performance suggests why faculty have historically enjoyed collegial decision-making rights in universities in developed/western countries, just as partners have in PSFs. However, collegial decision-making becomes less manageable as TEIs grow (eg, with increasing enrolments). More professional management is also required as TEIs bear closer scrutiny for the use of funds provided by government and other third parties, adding extra rationale for this shift also observed in PSFs.

However, there are some key differences between PSFs and TEIs which limit these comparisons. Foremost is the limited need for financial capital in PSFs, with premises often leased instead of owned, and other physical assets being limited to office equipment. As a consequence, PSFs have not needed the same level of external funding as TEIs for their physical capital. However, those TEI activities requiring lower levels of physical capital (eg, business schools, law and arts and humanities faculties) may more closely parallel PSFs than those (eg, science, medicine and engineering faculties) requiring greater investment in laboratories and other costly specific facilities. Similarly, clients of PSFs have not traditionally required third-party funding in order to enjoy PSF services.<sup>33</sup> Both of these are significant departures from TEIs, in which third-party (mainly government) funding of physical capital and student tuition introduces external funders as important stakeholders. Hence the capacity for such third parties to affect the specific co-investments of skilled staff in human capital development is limited in PSFs, unlike in TEIs. Moreover, surpluses in PSFs are capable of being distributed (ie, to partners in partnerships), meaning they are more “owned” than “non-owned”, further departing from the situation facing TEIs.

For these reasons, PSFs offer some useful insights into the optimal organisation of TEIs, but cannot fully explain such organisation. Hence, it is necessary to draw on other models of organisation which better capture aspects of TEIs that are not reflected in PSFs. We now explore how team production theory offers insights for TEI organisation by taking into account the greater role of specialised co-investments in physical and financial capital being made by government.

### 3.3 Team production theory

TEIs involve specialised co-investments by skilled academic staff in particular (in human capital), and by government and other funders (in financial and physical capital).<sup>34</sup> Each of these parties is reliant on the investments made by the other parties for the full value of their own investments to be realised.

<sup>32</sup> As reported to have been the experience of academics in New Zealand TEIs – see Bentley, McLeod & Teo, 2014.

<sup>33</sup> Save for legal aid funding in criminal cases.

<sup>34</sup> TEI students also make specialised co-investments in their human capital, particularly at post-graduate level, though only for the duration of their studies. However, academic staff make such investments on an indefinite basis, which is why we give them priority in this discussion. Non-academic (ie, managerial) staff also make investments in their TEI employers, but these are less specialised and hence involve less investment “lock-in” than academic staff. We therefore proceed on the assumption that non-academic staff have skills that are much more easily redeployed outside of their TEI, or even academic institutions more generally. By contrast, academic staff are typically so highly specialised that their skills are often only re-deployable to other academic institutions, and only to those academic institutions in need of such specialised skills.

Moreover, each party can act opportunistically, undermining the value of other parties' investments. For example, faculty could use government funding for higher salaries, or for research funding or infrastructure investments that favour faculty over students. Risks such as these become more pronounced when there is scope for shifting effort and resources between teaching and research activities. Hence they constitute higher risks in universities – for which both types of activity are important and potentially hard to measure – than for ITPs or wānanga, for which teaching is the dominant focus. In turn, government could renege on commitments to fund research or specialised infrastructure (eg, labs with highly specialised equipment), after faculty have made hard-to-redeploy human capital investments in the expectation of access to such funding or infrastructure.<sup>35</sup>

The traditional (property rights) literature on the economics of ownership identifies firms with the physical assets they own and over which they exercise residual control (Grossman & Hart, 1986; Hart & Moore, 1990). However, in organisations in which human capital is a prominent input in the production process, the property rights view requires extension, given that human capital cannot be owned by third parties.<sup>36</sup> Team production theory provides such an extension, conceiving an organisation not as a “nexus of contracts”, but rather as a “nexus of firm-specific investments” (Lan & Heracleous, 2010). This theory applies separately, but is enhanced by theories on, the incentives for academics to invest effort in developing and enhancing the capital stocks once the decision to invest human capital in a specific enterprise has been made (see Box 5 on collegiality).

This enables analysis of the optimal allocation of control rights in a productive process in which different parties make irrevocable investments in physical and/or human capital, with the value of their respective investments tied to the relationship, and dependent on each other's investment (Rajan & Zingales, 1998; Blair and Stout, 1999). The parties gain by making such joint investments, but make themselves hostage to the other by doing so. The question then arises as to how control rights over the venture should be allocated. If to only one of the parties, then the other may be reluctant to invest. If control rights are shared, then the parties risk wasteful ex post bargaining over who should share in the venture's surpluses.

The property rights literature suggests that ownership (ie, control) of the venture should be assigned to the party whose investment is the most critical to the venture's success – for TEIs, arguably researchers and teaching staff. This means that the other party is to some extent held hostage by the owning party, and hence has reduced incentives to optimally invest in the venture. However, assigning ownership in this way might also compromise the investment incentives of the owning party (Rajan & Zingales 1998). This is because they might be maximise their own return from the other's irrevocable investment by threatening to use their resources in some alternative use instead of committing it to the venture.

In such a case, both parties can be better off by instead assigning control to a disinterested outsider, or “mediating hierarch” (Blair & Stout, 1999). The outsider makes no investment itself, but can control the team's assets and allocate output among members, and enjoys a small share of the team's output. It therefore has incentive to select team members that will make investments maximising the venture's surplus. In turn, the parties making the irrevocable investments are willing to cede control to the outsider, because this reduces their risk of having their investment value expropriated by the other investor (Blair & Stout, 1999). Additionally, they benefit by avoiding the transaction costs they would otherwise incur in trying to negotiate more complete contracts to govern their venture (Lan & Heracleous, 2010).

Thus, governance of the venture by a disinterested third party can be the optimal approach in situations where multiple parties necessarily make irrevocable and specialised co-investments in team production situations. It does so by impartially mediating disputes that can arise ex post between the investing parties as to allocating duties and rewards. This induces those parties to make greater team

<sup>35</sup> These hold-up risks can also arise due to the fact that the TEC's TES applying to TEIs reflects current government policy and hence is subject to change. Co-investments by faculty and TEIs might need to outlive current governments, and hence are exposed by a potential misalignment with political commitment horizons.

<sup>36</sup> Just as the inability to perfectly write and enforce contracts over physical asset gives rise to ownership of those assets as residual control, the inability to do so in employment contracts likewise gives rise to residual control in the form of human capital ownership.

investments than they would if control of the venture was wielded by parties with greater direct interest in the outcome.<sup>37</sup>

In the TEI context, government and faculty must each make specialised and at least partially irrevocable investments in the TEI. For example, committing years to develop a particular research programme are years an academic cannot recover if the programme's funding is withdrawn. Likewise, government financing of specialised research facilities cannot be recovered if academics fail to make the necessary human capital investments for those facilities to be properly used. If either government or faculty were assigned control over the TEI, this could induce sub-optimal investment by the other party. Hence, both government and faculty can gain additional surplus (eg, improved research and teaching quality from both physical and human capital investments in research) by ceding TEI control (ie, "governance", as proxy for ownership) to a party (eg, university council) with no direct interest in the allocation of funding or duties between the investing parties.<sup>38</sup> TEI governance represents a commitment device to avoid the expropriation of specialised co-investments (rather than a means of aggregating preferences across different stakeholder groups; Masten, 2006).

Such an approach departs from traditional hierarchical "principal-agent" incentive models. Such models treat funders (eg, shareholders for firms, or government for TEIs) as principal, with governing bodies (ie, boards of directors, or university councils) as agents of those principals, and employees (eg, faculty) as agents of governing bodies. Instead, the team production theory approach treats the organisation itself (eg, TEI) as the principal, with its governing body (ie, council) as an autonomous fiduciary with duties to the organisation itself (Lan & Heracleous, 2015). Agents of the organisation, governed by the autonomous fiduciary, include funders (ie, government), staff (ie, management and faculty), and customers (ie, students).<sup>39</sup> However, there are parallels with the appointment of high-profile public figures with no specific expertise in operating activities or accountability to agents to form the boards of and chair charitable trusts. The desire of the intermediary/disinterested governors to preserve a personal reputation for being seen to deliver fair and 'just' decisions is relied upon to counter any possible self-interested actions (James & Rose-Ackerman, 1986). Like a comparison with PSFs, team production theory also offers insights into the optimal organisation of TEIs. However, this is particular to TEIs involving specialised co-investments, such as for schools within TEIs requiring highly specialised physical capital as well as specialised human capital (eg, biological and other physical sciences). It is less relevant to schools not requiring such highly specialised physical capital, such as in the social sciences or the arts. It is even less relevant where the scope to expropriate investments is limited, such as in ITPs and wānanga where teaching is the dominant focus (with much less focus on research), and specialised physical capital is relatively unimportant.

Hence, we now draw lessons for TEI governance from comparisons with health system governance. This is because health sectors involve a comparably diverse range of activities, with some involving specialised co-investments and others not. As a consequence, health sectors should offer a richer set of comparisons relevant for TEI governance.

### 3.4 Comparisons with health sector organisations

The TEI sector contains many parallels with the health care sector. Both are services, so exhibit some of the characteristics of PSFs (section 3.2), and firms are frequently organised as NFPs. This subsection considers in turn the comparative effects on ownership and governance of: the role of third-party subsidies for service users; the use of competition between different ownership forms to facilitate the self-selection of staff into more efficiently-governed firms; and the adoption by independent practitioners of federated entities to minimise costs of contracting with powerful third-party purchasers. Arrangements for allocating ownership and governance control of entities where mutual

<sup>37</sup> An analogous example of such a mechanism is the use of compulsory third-party arbitration clauses in longer-term contracts governing specific investments (eg, oil pipelines). The parties to the contract cede control to an independent arbitrator in relation to matters that either are not specified contractually, or cannot efficiently be resolved between the parties through ex post bargaining.

<sup>38</sup> By extension, the interested parties can be extended to include others such as management and students.

<sup>39</sup> Note that the team theory view is more consistent than incentive theory with corporate law. For example, under New Zealand's Companies Act 1993, directors' duties are to the firm, not shareholders. This makes boards of directors accountable to a wider range of stakeholders, including employees and creditors.

risks of hold-up may limit the commitment of both physical and human capital are considered, and parallels are also drawn between TEIs and teaching hospitals. The subsection concludes with a summary of the implications for TEI ownership and governance.

## Non-ownership, trust and the separation of funding and consumption

Both health care and tertiary education are typically either fully or partially-subsidised by third-parties – either or both of governments or specialist insurance pools. Arguably, the NFP ownership form will result in an alignment of incentives more conducive to producing the optimal quantity and quality of services than when the relevant firms have defined ownership stakes, especially when it is also difficult for consumers to assess the quality of services provided, and for funders to assess whether they have been delivered in the manner and of the quality intended. Although superficially appealing, this argument – based upon the presumption that NFPs are more trustworthy than for-profit firms – offers neither a sound theoretical basis for empirical observations nor a good explanation for the arrangements observed to emerge in particular circumstances. The conclusions from multiple empirical studies are equivocal as to the superiority of either form in general – although there may be specific circumstances where one form or the other may be preferred (Valentinov, 2008).

When services are paid for by third parties, either or both of the quantity and quality of services supplied will likely be higher than efficient (Arrow, 1963), because consumers do not face the full costs of the services they use. Funders can endeavour to limit supply (eg, deliberately paying less than the counterfactual share of costs to induce the suppliers to constrain their output or pass partial price signals on to service users in co-payments; imposing quotas on subsidised services to limit supply)<sup>40</sup>, but this risks providers skimping or stinting on the level of effort exerted in service delivery (quality shading).

Whilst minimum quality level terms could be specified in contracts, “quality” is intangible, hard to specify and effectively unobservable by the funder due to the separation between consumers and purchasers/funders. A large health sector literature exists on the design of contracts to induce providers to engage in particular behaviours aligned with consumer and policy-maker interests (comparable with PBRF contracts), regardless of the ownership form of the firms concerned. The findings are equivocal. Substantial provider behaviour changes have been achieved with contracts offering comparatively weak financial incentives (eg, Robinson & Casalino, 2006; Ma & McGuire, 2002; Le Grand, 2013), but the transaction costs are very high (eg, Le Grand & Cooper, 2013; Howell, 2016).

Arrow, 1963, and Hansmann, 1980, proposed, as a ‘solution’ to the quality and observability problems, that NFP firms could be trusted more than for-profit firms to not to engage in quality shading, because the non-distribution constraint precludes both excessive fees being charged to third-party funders and any one set of stakeholders appropriating the consequent surpluses. If correct, then non-profit providers could be ‘trusted’ to supply more efficient service quantities and qualities, without the need for the high transaction costs required to constrain surplus extraction by for-profit providers. This argument likely supports the advocacy for non-profit TEIs in sector reviews conducted in the 1990s (citing Scott & Smelt, 1996 as the source).<sup>41</sup> Hansmann, 1996, however, subsequently refined his views on the superiority of the non-owned NFP form within his general theory of firm ownership, where firms will be owned (or governed) by the stakeholding group whose control offers the least-cost combination of the firm’s transaction costs of ownership and market contracting. He proposes non-ownership as a third-best option when costs of not having defined owners are less than maintaining a defined ownership stake. As ownership is tradeable (or new non-owned firms can emerge) changes in the costs of market contracting (eg, more precisely-specified contracts, better regulation) and ownership (eg, lower costs of co-ordinating decision-making) alter the trade-offs between the different costs, and the dominant ownership form or the stakeholding interests of the owners observed in firms in a given market may change. Whilst the non-distribution constraint may militate against the

<sup>40</sup> For a full discussion see Dranove & Satterthwaite, 2000.

<sup>41</sup> A number of papers citing this reference have been found, but the actual paper could not be located. We have inferred from the citations that this paper argued that private NFP ownership was preferable to an assumed “government ownership”. However, we argue that this ‘non-owned’ form is already the case for the vast majority of TEIs.

propensity for non-profit firms to engage in some harmful behaviours, it has negligible effect in incentivising desirable behaviours (Ben-Ner & Gui, 2003). Nor does it eliminate incentives for the firm to shirk on the quality of services supplied to consumers unable to discern the differences. 'Trusting' in the non-profit form simply replaces one non-verifiable condition (service quality) with another (altruism) (Malani & Posner, 2007). For this reason, reliance upon individual professional providers' adherence to professional ethics as a constraint against opportunism is also insufficient. In the absence of a residual claimant, powerful coalitions within the firm – notably professionals supplying the services – face strong incentives to capture the effective balance<sup>42</sup> of governance control so that resources are directed towards satisfying their preferences rather than those of consumers and funder/purchasers<sup>43</sup>. If these same professionals, via their professional organisations, also set the terms and conditions for minimum standards of ethical supply, then these can be determined to suit providers' preferences and not those of funders and consumers. The problems of over-supply resulting from non-observability and non-verifiability are as likely to be exacerbated as to be ameliorated by reliance upon professional ethics, regardless of the ownership form of the firm. Furthermore, reliance upon professional ethics is likely to be as problematic for the design and efficiency of employment contracts within the firm as it is for the design of contracts between the firm and its funders/purchasers and consumers – regardless of its ownership form.

In sum, it appears that the case for non-ownership of both TEIs and health care firms in order to better control the quantity and quality of services delivered to poorly-informed consumers and paid for by third parties unable to monitor service delivery – a demand-side cost of contracting, as per Hansmann, 1996 – is weak. Consequently, professional staff (doctors, academics) – supply-side stakeholders – face strong incentives to assume governance control of NFP firms, if they cannot actually appropriate ownership stakes. Regardless of ownership form, they are likely to rely upon collective entities – eg, the Medical Association, unions, Vice-Chancellors' Committee – to set the quality standards that they would prefer to deliver. As funders – both government and private insurers – lack effective power as governors of NFPs and cannot use ownership as a lever over privately-owned firms, financial risk-sharing contracts for the purchase of services have been their preferred method of constraining professional opportunism. Thus, capitation and price-and-volume contracts in the health care sector closely parallel the use of per-student (EFTS) funding and caps on funded places used to induce more efficient operation of tertiary institutions, so third-party funders achieve their objectives at least possible cost. In this context, regulation has been relied upon in both sectors to maintain minimum quality levels.

## Competition between ownership forms

One plausible explanation, drawing upon Hansmann, 1996, for inconclusive empirical findings about the superiority of the NFP form in health care is that the market structures in which the firms operate may be more important for economic performance than ownership form. This includes the extent to which providers in specific markets are permitted to organise themselves into firms with different ownership forms, in response to the different costs of market contracting and ownership. It also necessitates an appreciation of the fact that competition takes place in many different parts of the supply chain for both health and TEI services. Hence, limiting the organisation of all firms operating in the relevant health and tertiary education markets to a single ownership form and governance arrangement may militate against competition in, and the evolution of new, organisational ownership forms and market structures.

Much of the focus on competition in health care has been on understanding the extent to which competition provides patients a choice of care provider and (in some countries – eg, the US, Netherlands, Germany) the insurer-funder purchasing or subsidising that care (eg, Schut & Van de Ven, 2011; Gaynor & Vogt, 2000; Gaynor, Haas-Wilson & Vogt, 2000). This parallels the choice given to

<sup>42</sup> Formal control as expressed in the structure of governance arrangements does not necessarily reflect the actual processes occurring if one group of stakeholders has 'more to lose' from decisions contrary to their interests being made. These stakeholders have an incentive to commit resources up to their expected losses in lobbying and influence to alter decision-making in their favour.

<sup>43</sup> For a recent review of the relevant literature, see Howell & Cordery, 2013.

students both between TEIs of one form, and between TEIs of different forms, on the demand side of the markets in which firms participate

However, competition also exists in the markets for recruitment and retention of professional staff – a supply-side consideration. Non-profit firms are claimed to be more strongly ‘mission-oriented’ in their activities than for-profit firms, and are observed to use these differences to attract staff with personal utility functions placing higher weight on achievement of that mission than financial returns (Rose-Ackerman, 1996). Hence, the trustworthiness of the firm in its relationships with its staff may be more economically significant than its apparent trustworthiness for funders/donors and consumers, because it facilitates the efficient separation of staff with inherently heterogeneous utility functions (James, 1987). The non-distribution constraint acts as a credible signal the firm will prioritise its mission over financial concerns. The risk that the potential staff member may opt to join the firm because of a presumed alignment of objectives, and then find that the mission statement is ‘cheap talk’ because in fact financial considerations will dominate (as in a for-profit firm) is less.

If both for-profit and non-profit firms compete for staff in a market, then each can rely on the fact that the presence of the other assists in separating staff according to their different utility functions. Each firm type can customise incentives to suit the different utility functions of their staff, and rely less on costly monitoring to identify and manage staff with very different motivations. However, where statutory, regulatory or contractual requirements preclude competition in the ownership form of firms participating (eg, when funders will purchase only from non-profit firms, or government-funded care is supplied only from government-owned firms), then the signalling benefits enabling efficiency-raising staff separation are lost. Indeed, firms motivated by financial objectives can masquerade as mission-oriented by establishing a non-profit to undertake the contracting activities, but still pursue activities as if they were for-profits - eg, by subcontracting for-profit firms to undertake care delivery (Howell & Cordery, 2013, in regard to Primary Health Organisations (PHOs) in the New Zealand primary health care context). The ‘trustworthiness’ signals of the non-profit form are thus diminished<sup>44</sup> for both purchaser/funders and staff, even though multiple firms may compete for patients.

This suggests that the adoption of a single ownership form for all New Zealand TEIs is likely constraining the potential for more efficient ownership forms to emerge. The optimal form for research-driven universities is unlikely to be the same as for teaching-dominant ITPs and wānanga. It is also possible that within a single TEI (eg, a university), different optimal ‘ownership’ and governance arrangements may exist for faculties (and even schools – eg, commerce, humanities, engineering) that are able to utilise different arrangements to motivate and align the interests of staff with those of the entity. Rather than constraining all operating units within a larger entity to organise themselves in a common manner, allowing TEIs to ‘unbundle’ different operating units into separate entities with customised governance arrangements, in the manner of holding firms with multiple subsidiaries, may offer benefits, even when there is no intention to divest the holding firm’s ownership stake. It also opens up the potential for joint ventures in core activities, such as the MBS example cited above.

## **Absence of teamwork and effects on contract ownership**

Team production theory, discussed in section 3.3 above, addresses the implications of owners of different types of capital stocks (eg, financial and human) teaming up to invest in a specific venture or firm. However, within that venture or firm, different products or services may be produced by teams of individuals working together (eg, schools or faculties, as discussed in Box 4). Where products or services are created by the highly-interdependent activities of two or more individuals, it constitutes ‘teamwork’. Teamwork typically requires the application of nontrivial levels of managerial activity to coordinate the application of both physical and human resources to produce team outputs. However, both primary health care providers and TEIs face additional information asymmetries to those faced by other professional service firms in verifying the effort exerted by individual staff members because for the most part, intangible services are typically delivered by individual professionals operating alone rather than in teams (Newhouse, 1973). In the health sector, it is predominantly only in the delivery of

<sup>44</sup> Informed individuals may still be able to utilise their private information for personal benefit, so not all benefits are lost.

complex surgical operations that multiple individuals with different skills work together to deliver services simultaneously to one patient. For the most part, even in secondary and tertiary care, care is delivered by individual staff members in a serial manner, separate from the activities of other staff members. The flow of work needs to be coordinated, but it does not constitute 'teamwork' of the form observed in surgery.

Teaching, like primary health care, tends to be delivered by one academic alone, unobserved by colleagues, with few tangible artefacts available *ex post* to assess quality. Research is also a largely solitary activity, with collaboration occurring not as a formal process for the repeated production of similar products by the same people, but as informal teams assembled for specific projects, in much the same way as a team assembled for delivery of a surgical procedure. Thus academic and health care professionals are less likely to be routinely observed in their service delivery by the same group of peers as professionals operating under the aegis of a firm of solicitors, accountants, architects or engineers.<sup>45</sup> As professionals differ in both their capabilities and level of effort exerted, to the extent that future returns to personal human capital are potentially compromised by the (unobserved and unobservable) efforts of others, academics and health care professionals face greater risks from formally pooling their reputational capital stocks in partnerships than other providers.

In health care, this has led to the predominance of autonomous sole practitioners (independent contractors), who derive their income from working in a variety of different teams (in effect participating in a 'portfolio' of contracts). In both New Zealand and the UK, specialist medical practitioners work simultaneously under their own recognisance in both the public and private sectors. That a larger proportion of their income may be derived from a single contract with a large public provider is a direct consequence of historic government preferences as the third party funder/purchaser to restrict the payment of subsidies to services provided by entities exhibiting a preferred organisational form. In contexts where third party funder/purchasers have not constrained their subsidising activities in this manner (eg, private medical insurers in the UK and New Zealand, and for most health care in the US – including government-funded Medicare and Medicaid), the funder typically contracts directly with a specific provider for the specific instance of care delivery. Thus, one provider may have contracts from many funders simultaneously, often tied to the provision of separate instances of care supplied to particular patients. These arrangements contrast with the recent emergence of large firms in the law, accounting and engineering industries, where vertical integration is more common, because the client's contract for services is with the firm and not with an individual provider.

Where scope and scale economies (eg, financial risk, other transaction costs) or other factors lead funders to bundle a group of contestable contracts together, collectives of providers may form to bid for them (eg, managed care – Glied, 1999), but different collectives may form for different purposes and different contracting bundles. That is, teams (or firms) form not because they are necessary for the production of the service (as occurs when capital and labour come together to produce goods), but because they are necessary for the efficient contracting for the service. The overall efficiency of these arrangements is determined by trade-offs between the reduced contracting transaction costs and but lower productivity (higher cost per equivalent service) that is expected to occur as physicians adjust their effort levels under the knowledge that those otherwise prepared to exert high effort on their own behalf anticipate will have to share the returns from that effort with others who know that they are unobserved can exert lower effort but still enjoy the returns earned by those exerting higher effort.<sup>46</sup>

This suggests that the patterns observed in the organisation of physicians to enter into contracts with government and insurance funders may provide insights into the organisation of academics into collective entities to contract with powerful funders subsidising students' tuition.

## **Contract ownership, capital types and firm formation**

A frequently-adopted solution is for physician groups to form bespoke entities to undertake

<sup>45</sup> Dobson, Pinker & Van Horn, 2009, and Howell, 2016, argue the health care case.

<sup>46</sup> For a discussion, see Howell, 2016.

contracting with funders for the care delivered to patients and other functions benefiting from scale economies (eg, claims processing, IT system management, and professional education) on their behalf. The individual physician-owned firms are effectively consumers of the federated entity for the services it delivers, and suppliers to it in respect of the services required to be delivered under the contracts with funders. So long as the interests of the physician members are sufficiently homogeneous, it may be more efficient for the entity to be organised as a cooperative rather than a firm with defined ownership stakes. Surpluses can be distributed in accordance with the member firms' customer and/or supplier activities, or retained within the firm and applied in the same manner as by a classic non-profit firm. Each firm retains its own commercial identity, including its own decisions about its organisational form (for profit, non-profit, other) (Howell & Cordery, 2013). The benefits of sole practitioner ownership for incentivising the level of effort exerted are maintained, without sacrificing the benefits of economic scale for Examples include Independent Practitioner Associations and professional colleges for different medical disciplinary areas (eg, Thorlby, Smith, Barnett & Mays, 2012). The same rationale pertains to NZ Health Services (formerly DHB Shared Services), a federated entity formed to undertake a range of contracting purchasing services on behalf of District Health Boards in a more efficient manner than the District Health Boards (DHBs) could do themselves. Each DHB maintains its own financial autonomy, but contracts with NZ Health Services where this is more efficient.

Furthermore, contracts for the elements of care delivery that are both more easily observed and verified and more physical capital-intensive (eg, hospital accommodation, and the use of expensive operating theatres, laboratories and diagnostic equipment) are typically separated from contracts utilising physicians' human capital. That is, 'hospital firms' do not need to be vertically integrated with the 'physician firms' delivering care in them – with separate contracts being customised to take account of the different risks involved. Whilst hold-up risks may exist for hospital firms investing in expensive highly-specific equipment, or physicians investing in the specific human capital to utilise it, long-term contracts and jointly-owned subsidiary ventures (eg, legally separate but jointly owned 'specialist centres' physically located within a hospital) are frequently observed. Where high-profile physicians are an important drawcard for attracting patients (and their care subsidies), requiring the physicians to have a financial ownership stake reduces the risk for the hospital that its investment in specific capital will be 'held up' by the physician departing at short notice (as possible under an employment contract). At the same time, the physician's participation as an owner in the joint venture confers a degree of control that reduces the risk that the hospital will unilaterally redeploy the equipment (or sell it to fund another venture), thereby stranding personal human capital developed specifically to utilise it.

This suggests that it may be feasible for the different operating units within large TELs to be established as separately-governed entities federated via a coordinating entity for the purposes of contracting and for achieving scale economies in common services (eg, facilities, administration). The central entity owning physical resources can be separated from the firms supplying human capital, which can be owned and managed in a manner more consistent with PSFs. Arguably, as large TELs have increasingly moved towards internal contracting arrangements to more efficiently manage resources and share economies of scale across faculties and schools that exercise some degree of autonomy over their affairs already, it may not be a large step to formally confer governance independence on each of the units. Each unit would then be free to organise its ownership and governance in the most effective manner for its type of activities. As with primary health care firms, each would be responsible for maintaining its own affairs. The financial failure of one unit does not jeopardise the activities of other financially-viable units within the federation. It also provides potential for competition between federating entities in attracting the membership of different units – in the manner that PHOs compete for the membership affiliations of primary health providers. This would provide incentives for more efficient operation of the centralised activities than is the case currently, when individual units have no choice but to 'pay the taxes' charged by the central entity.

It is also not axiomatic under this arrangement that operating units need to federate with a geographically-based TEL entity. For example, there may be greater benefits available from the federation of units within a common disciplinary area (eg, business) over a wider geographical area than from the federation of diverse range of interests (eg, business, science, medicine, engineering)

within a single geographical location. The federal arrangement allows these alternative aggregations to emerge and evolve as both external and internal circumstances change. It also opens up the potential for vertical integration within disciplinary areas between universities and ITPs, and even secondary schools and ITPs if this is mutually beneficial. Importantly, as each unit has governance autonomy, it does not require statutory changes for such alliances to form and re-form, as is the case currently. Such flexibility may be important if institutions are to be able to respond rapidly to changes in their operating environments.

It is noted that at the same time as granting autonomy to operating units within a larger institution creates flexibility it threatens the continuation of cross-subsidies that may exist in existing operations between units generating higher revenues than their cost of operation, and those incurring higher costs, under the current funding and purchase arrangements. If the cross-subsidies are necessary because the products are not priced appropriately, then it may be necessary to address the extent to which prices reflect factors other than the costs of services delivered (eg, political preferences for a particular proportion of outputs). However in doing so, it will serve to make the link between the political objectives of the TES and TEI activities more transparent than under the current arrangement where they are implicit within TEC approval processes.

## Teaching and research hospitals

A particular feature of health care is the bundling of health care, teaching and research activities into specialist teaching and research hospitals. In some cases – notably in the US - a university will own and operate its own hospital, staff it with a mix of academic and non-academic practitioners. Students participate in a mix of learner and staff roles. In other cases – more common in the UK and NZ – a university will come to a contractual agreement with a hospital for academic staff and students to be located within the hospital. The hospital is compensated for services supplied to the university staff and students (eg, space, supervising student clinical experience). University academic staff often combine a teaching and research role funded by the university with a clinical contract with the hospital. The long-term nature of these relationships, and the engagement of university staff in hospital care delivery contracts facilitates the bilateral lock-in observed in the case of joint physician and hospital ownership of specialist centres that avoids the possibility of mutual hold-up discussed in the preceding section.

This example illustrates that, even in the New Zealand context, it is not necessary for a TEI to be the owner of the specialised investments where its teaching activities take place. Where these investments are mutually beneficial to both the university and other professional and/or community interests, it is both feasible and in some cases desirable for ownership of the physical assets to lie with an entity other than the TEI. This arrangement appears particularly applicable to tertiary education with strong links to specific professions (particularly within PTIs) and wānanga, where the local Maori community are potential co-investors. However, care must be given the ownership of the institutions where the physical and human capital are deployed.

## Parallels with TEIs

The salient characteristics relating to ownership and governance in the health care and tertiary education sectors are summarised in Table 1 below.

TEI organisation contains clear parallels with health care, although the two different products – teaching and research – lead to different economic justifications for the observations. For the most part, the health care arrangements offer insights for ownership and delivery of institutions primarily delivering teaching. It is not immediately obvious why the entities focused on teaching need to be non-owned. However, the economic characteristics of the research product provide different challenges. Arguably, the economic justification for non-profit research-led institutions more closely follows the arguments for co-operative ownership of aggregate contracting entities (with profits distributed in proportion to custom) and professional associations overseeing practitioner interests, which tend to be run as clubs (with profits applied by the executive to further the members' collective interests).

**Table 1 Ownership and governance comparisons between health sector and tertiary education institutions**

Characteristic	Health sector	Tertiary education sector
Ownership forms observed	Physician firms privately-owned Facilities often owned separately from service delivery firms Federations formed for contracting	Aggregate entities frequently non-owned Facilities and services frequently bundled together
Contractual arrangements	Dispersed – by patient for primary and private secondary and tertiary Aggregated centrally for publicly-funded secondary and tertiary	Bundled and centralised for both research and teaching Institutions, not students and academics are funded
Funding	Per procedure or per patient for primary and private secondary/tertiary Typically paid to individual providers	Budget-funded Typically paid to institutions rather than students or academics
Teamwork	Rare, except for complex surgery	Rare
Funder observability	Low	Low
Reliance on collegial oversight for quality assurance	High	Low under managerial models
Specialised co-investments by funders	High in tertiary care Low in primary care	High in some disciplines
Specialised co-investments by staff	High	High (research) Low otherwise
International competition for staff	Yes	Yes (universities and ITPs)
International competition for patients/students	Yes	Yes
Competition for aggregation of physician/academic interests	Yes	No
Default NFP controlling stakeholders	Physicians	Academics

Research, like health care, is a 'product' delivered by academics undertaking a portfolio of projects, each potentially associated with its own funding contract – albeit that each project will command a larger share of the academic's resources than a single case for a physician. Physician teams typically form in response to purchaser objectives and specifications, in the same manner as academics form teams (with fellow academics, consultants and other stakeholders) in response to explicit requests by specific customers (eg, this project). However, the reverse applies to public good research – academics form teams and then seek funding for the project, from funds established for that purpose (eg, Marsden Fund). Each research project thus functions in the same manner as a temporary physician partnership. The TEI participates in the project as a supplier of physical facilities (eg, accommodation, laboratories etc.) and support services (eg, administration) to the team – for which it is remunerated, in the same manner as hospitals are remunerated for supplying the facilities in which physicians supply care to their patients. Changes to TEI internal management processes since the 1990s have made the

payment of compensation for these services explicit, even though the prices paid are set bureaucratically rather than by market forces. The absence of the TEI's explicit interest in the residual returns to the research activity are reflected in the fact that the intellectual property created is vested in the researchers and not the TEI, although there may be spill-over effects from its association of particular academics.<sup>47</sup>

### 3.5 Comparison with other New Zealand state sector organisations

To conclude this section, for completeness we place TEIs in the spectrum of state sector organisations used in New Zealand. A full survey of such organisations is beyond the scope of this paper (see State Services Commission, 2014, for a broad overview). However, the following selection is of particular interest:

- State-owned enterprises (SOEs) – owned by the Crown via shareholding Ministers, subject to contracted performance requirements but governed by a professional board of directors, they operate as profitable and efficient businesses;
- Crown Research Institutes (CRIs) – these are Crown entity companies, also wholly-owned by the Crown, undertaking applied scientific research in specified industry sectors for the benefit of New Zealand, while generating an adequate rate of return on shareholder funds;
- Crown agents, such as DHBs – these are statutory Crown entities which must give effect to government policy directions; and
- Independent Crown entities (such as the Commerce Commission) – these are also statutory Crown entities, but with the government not having the power to direct them on government policy unless specifically provided for in legislation.

TEIs often undertake commercial ventures on a discrete basis. However, for the most part they are providing services (ie, teaching and/or research) for which either their “customers” do not bear the full cost, or there are substantial public benefits over and above private benefits of consumption. Moreover, having a strong profit motive might induce sacrifices in respect of hard-to-measure outputs such as TEI quality. Finally, the importance of human capital in the production process is relatively high for TEIs. For these reasons, the SOE form of governance is unlikely to be suitable for TEIs. Having said that, a for-profit form could be suitable for those TEI activities that are more clearly commercial, as is often the case for research commercialisation (eg, via for-profit TEI subsidiaries), or for vocational teaching with no clear links with research.

CRIs might be thought to involve governance issues shared with universities in particular, given their research focus (but much less so ITPs and wānanga). However, even focusing just on research it is clear that universities undertake a broader range of research, not being focused just on applied research of relevance to specific New Zealand sectors. Moreover, CRIs do not bundle teaching and research, so do not give rise to the same level of tensions as between faculty engaging in both on the one hand, and government providing funds on the other. Finally, CRI “customers” self-fund any research they commission, based on their perceived private (including industry) benefit. Hence the CRI form of governance is also unlikely to be a suitable model for even universities, and certainly not for ITPs and wānanga (given their dominant focus on teaching).

TEIs currently sit somewhere between Crown agents like DHBs, and independent Crown entities like the Commerce Commission. They formally have greater autonomy than the former, although as a condition of their ongoing funding they must abide by government policy priorities as set out in the TES. However, they have less formal autonomy than the latter. This positioning perhaps reflects a path-dependent balancing of the need for TEI autonomy on the one hand, and the desire of

<sup>47</sup> In this argument, universities become agents of academics when they collect PBRF revenues determined by individual academics' research activities, in much the same way that PHOs act as agents of general practitioners (GPs) when collecting capitation revenues associated with a GP's list and used to specifically remunerate GPs for the services delivered to patients.

government for value for money from its education spending on the other. DHBs may require and demand less autonomy than TEIs (they need not serve as the critic and conscience of society, for example). However, TEIs involve a far greater co-investment of physical and financial capital than independent Crown entities.

Perhaps for these reasons TEIs are a distinct category of Crown entity under the Crown Entities Act 2004. However, it is not clear why all three types of TEI should be subject to the same type of governance. Similarities and differences between these three types of TEI are explored further in the next section.

## 4 Differences between types of TEI

Universities can be distinguished from ITPs and wānanga due to their greater research focus, particularly on pure research. ITPs in turn can be distinguished by their strong vocational focus. Finally, wānanga can be distinguished by their culturally-focused purpose and methods of delivering teaching and research. All three TEI types have other distinctive features that have implications for their optimal governance. These are discussed for each type in turn.

### 4.1 Universities

Universities, to a much greater degree than ITPs and wānanga, bundle research with teaching. Moreover, while some university disciplines have strong vocational elements (eg, professional subjects such as accounting, law, engineering and medicine), many others involve the pure pursuit of knowledge, aside from vocational objectives (eg, philosophy).

Likewise, to a much greater degree than ITPs and wānanga, universities require specialised co-investments by both funders (eg, government) and academic staff (ie, faculty). Moreover, co-investments by faculty with other faculty are required to a greater degree in research-focused universities, with those co-investments exposed to loss in the event of university failure. This suggests that the soft budget constraint facing universities by virtue of the government acting as guarantor for university debts might protect against the loss of such co-investments (even well short of outright university bankruptcy occurring).

Universities compete internationally more so than other TEI types for both staff and students, and research funding.<sup>48</sup> They also compete domestically for students (most university entrants are old enough to leave home and study in another city). University faculty must therefore have a strong focus on their international reputation, particularly those focused on research. Universities must offer international-quality infrastructure and working environments (eg, research/teaching mixes) to entice faculty with international job prospects. This suggests both greater funding commitments from government, and more specialised human capital investments by faculty. Likewise, to entice full fee-paying and strong postgraduate students from overseas, universities must offer international-quality infrastructure and learning/research environments. Quality assurance is provided to a greater degree than in other TEI types by both these reputational concerns (in an international labour market), and academic ethos (ie, university norms for academic integrity and behaviour).

These features suggest the governance (ie, “non-ownership”) model implied by team production theory should find particular application in the university context. A governance model with a strong commitment not to allow specialised investments by government and faculty in particular (and by management and students to a lesser degree) to be expropriated by each other is important for enticing each to make those physical and human capital investments.

<sup>48</sup> New Zealand universities compete, in particular, for staff from Australia, Canada, UK and the US (Deloitte, 2012).

Traditional collegial governance supported by well-specified funding contracts might be sufficient to preserve academic freedom and incentives for academic quality and specialised co-investment while also protecting the government's interests as dominant university funder. However, a mediating hierarch governance model, as suggested by team production theory, supported by relational contracting for funding, could also provide a suitable balancing of these objectives. Either way, the current ability of government to use funding requirements as a means of inducing universities to reflect current government policy seems to unduly impinge on academic freedom – formally at least, if not in practice.

## 4.2 Institutes of technology and polytechnics

ITPs are much less involved in research than universities, and more involved in purely vocational teaching. As a consequence, they require less specialised co-investment by government and faculty. While non-research focused ITP faculty require fewer specialised co-investments with fellow faculty than in research-focused universities, benefits might still accrue to ITPs having reduced financial distress and bankruptcy risk via the government acting as debt guarantor (ie, providing a soft budget constraint). In this case it arises due to ITPs offering locational public benefits from vocational training to specific communities. This is because vocational training can be offered to students (ie, non-academic early school-leavers) too young to relocate for training outside of their home location. ITP failure under a hard budget constraint could result in lost vocational training opportunities for such students.

ITPs compete less than universities for faculty and students, having more a domestic than international focus. While academic ethos provides some degree of quality assurance, this is less so than in universities, including because of ITPs less international focus.

Since vocational teaching requires less specialised co-investments by faculty than does research, the risk of government, faculty or other stakeholders expropriating the specialised investments of each other are not as pronounced as in the university context, even though substantial government funding is required. As such, governance by a disinterested mediating hierarch might be workable, but the need for such governance is not as pronounced, as it is for universities.

Instead, the strong vocational focus of ITPs suggests the possible coexistence of multiple ownership forms, as experienced in other countries (eg, the US). Owned, for-profit organisations, with well-specified funding contracts and quality regulation, and also facing hard budget constraints, are one such form.<sup>49</sup> Another is non-owned, not-for-profit organisations, again with well-specified contracts and quality regulation, but with a soft budget constraint and input controls (of the sort currently applying to TEIs). Since academic freedom is less a concern for non-research based vocational training, the current ability of government policy (eg, vocational training objectives) to influence ITP priorities should not be problematic. Under either alternative, government enjoys protections in respect of its financial input, and competing ITPs should efficiently deliver quality vocational training.

The welfare impacts of for-profit ownership arrangements for vocational institutions are not clearly in favour of or against their coexistence with not-for-profits (for US evidence, see Deming, Goldin & Katz, 2013). The US evidence is that such institutions tend to offer less flexible, short-term (though highly job-market responsive) vocational training, at relatively high cost, to less-prepared students, with lower perceived student value. However, this must be compared with the counterfactual of such students possibly receiving no vocational training (instead of training in not-for-profits).<sup>50</sup>

Certainly for-profit higher education institutions have been particularly associated with lower quality qualifications and questionable student recruiting practices in the past, to which we return in Section 5. However, regulatory and market (eg, accreditation) solutions have been adopted in other jurisdictions to mitigate such issues, increasing the likely social value of such for-profit vocational training.

<sup>49</sup> New Zealand has a number of for-profit Private Training Establishments that in fact receive no TEC funding but are registered with NZQA and can award qualifications. They deliver training directly to customers (usually firms). The authors thank a reviewer for this detail.

<sup>50</sup> The authors are not aware of comparable evidence relating to New Zealand for-profit vocational training providers.

### 4.3 Wānanga

Wānanga are much less involved in research than universities, and like ITPs focus more on vocational training. Hence, like ITPs, wānanga involve less specialised co-investment by government and faculty (and by faculty with other faculty) than that in universities.<sup>51</sup>

Also as for ITPs, the government debt guarantee might offer little benefit in terms of avowing the loss of faculty co-investments with other faculty. In this case, though, the guarantee offers benefits from reducing the risk of vocational training opportunities being lost to students less-prepared for ITP-based training (eg, adult education for those with no school qualifications). It is possible that recreating these vocational training opportunities in the event of wānanga failure is simpler than for ITP (or university) failure, in which case the potential costs of a hard budget constraint will be less.

Given their distinct focus on indigenous New Zealand culture, wānanga are not exposed to the same degree of international competition for faculty, students or research funding as other TEIs. Combined with their largely vocational rather than research focus, this means faculty in wānanga are not subject to the types of international reputational concerns facing university faculty. Moreover, they do not need to provide the standard of teaching, and research and teaching infrastructure, required of universities competing for international students, faculty and research funding.

However, wānanga involve other distinct features that have a likely bearing on appropriate ownership models. In particular, Māori cultural norms can be expected to play an important role in mediating some of the tensions that arise between stakeholders in other TEIs. A particularly high level of intrinsic motivation can be assumed, with TEI faculty and many students particularly committed to the aims and teaching/research methods of wānanga.<sup>52</sup> In addition, Māori culture places greater emphasis on intergenerational concerns and hence guardianship (eg, of both Māori culture and wānanga themselves), reducing risks of short-term opportunism. Finally, other cultural norms such as emphasising collective over individual interests, and more consensual forms of decision-making (effectively, if not formally), affect the way in which governance arrangements will work in practice.<sup>53</sup>

The latter point suggests countervailing considerations regarding wānanga governance. On the one hand, consensual decision-making makes it more difficult for particular interest groups to seek advantage over others through the governance process. This reinforces the view that disinterested governance is likely to be less valuable than in universities. On the other, it also means that necessary decisions for maximising the joint value of co-investments may be more difficult to achieve. This operates in the reverse direction, suggesting disinterested governance may be more necessary, not by virtue of the nature of wānanga co-investments, but instead by how cultural norms might affect representative wānanga governance.

As for ITPs and universities, a range of governance models might be appropriate. A non-owned, not-for-profit trust (recognising inter-generational/guardianship concerns) is one approach. The government's financial interest could be protected using input controls and suitably-specified funding contracts, as well as a hard budget constraint. Another is an owned, for-profit form, with the government's interests protected through contracts and hard budget constraint. In any case, the coexistence of for-profit ownership models is also likely. In this way wānanga and ITPs are likely to differ from universities. Moreover, allowing wānanga greater freedom than under present arrangements to deviate from government policy would appear necessary. In this case not to guarantee academic freedom (as for universities), but more for reasons of cultural autonomy.

<sup>51</sup> It might be suggested that government's financial contribution to finance wānanga is reduced by virtue of wānanga often leasing instead of buying premises (as do for-profit training institutions in the US). However, this might simply reflect the fact that wānanga did not initially enjoy the same level of capital establishment funding as other TEIs, which became the basis for a successful claim before the Waitangi Tribunal (Waitangi Tribunal, 1999).

<sup>52</sup> Many wānanga students are non-Māori, perhaps reflecting limited training alternatives (eg, ITPs) in their locale. Such students need not have high intrinsic motivation for either Māori culture or Māori methods of teaching and learning.

<sup>53</sup> Additionally, close relationships among wānanga faculty, management and governors can lead to greater need for transparency in how public funds are applied. See, eg, Controller and Auditor-General, 2005.

## 4.4 Summary

What this discussion reveals is that either different or co-existing ownership arrangements could be appropriate for each type of TEI – as opposed to “one-size-fits-all.” A summary is provided in the following table.

**Table 2 Comparisons and tentative governance conclusions for different TEI types**

	Universities	ITPs	Wānanga
Research bundled with teaching	Yes	Little	Little
Teaching primarily vocational	Some disciplines only	Yes	Yes
Quality assurance	Academic ethos	Academic ethos	Cultural norms
Collegiality	Academic ethos	Academic ethos	Cultural norms
Specialised co-investments by government	High in some disciplines	Relatively low	Relatively low
Specialised co-investments by faculty	High (research)	Low	Low
International competition for faculty	Yes	Some	Little
International competition for students	Yes	Some	Little
Locational public benefits	Yes	Possibly strong	Yes
Soft budget constraint (to be weighed against incentive costs)	Avoiding loss of hard-to-replace portfolios of skills	Avoiding loss of vocational training options for young/non-mobile students	Avoiding loss of vocational training options for less-prepared (eg, second-chance) students
Suggested governance	<p>Non-owned, not-for-profit, possibly with soft budget constraint, and either:</p> <ul style="list-style-type: none"> <li>• Collegial governance and contracts; or</li> <li>• Mediating hierarch and relational contracting.</li> </ul> <p>Greater freedom from government policy, for academic independence.</p>	<p>Either:</p> <ul style="list-style-type: none"> <li>• Non-owned, not-for-profit, with contracts, input controls, and soft budget constraint; or</li> <li>• Owned, for-profit, with contracts and hard budget constraint.</li> </ul> <p>Acceptably subject to government policy (eg, vocational training objectives).</p>	<p>Hard budget constraint, with either:</p> <ul style="list-style-type: none"> <li>• Non-owned, not-for-profit trust, with contracts and input controls; or</li> <li>• Owned, for-profit, with contracts.</li> </ul> <p>Greater freedom from government policy, for cultural autonomy.</p>

## 5 Incentives and risks for TEIs and government

To assess the incentives and risks created by TEIs’ current governance (ie, “non-ownership”) arrangements it is necessary to also account for TEIs’ internal incentive structures, as well as contracting and regulatory arrangements. As noted in the introduction, we take contracting (eg,

funding) and regulatory (eg, quality assurance) arrangements as given. Likewise, we also take TEIs' internal incentive arrangements as given, and make mention of only some of them (eg, lack of tenure-based up-or-out incentives).

## 5.1 Soft budget constraint

An important incentive element of the current governance arrangements is the soft budget constraint induced by the government being obliged to act as residual risk-bearer in the event of TEI distress or failure (Maskin, 1996). This softens financial disciplines and incentives within TEIs, and can be expected to induce inefficiencies in the application of government funding. However, all organisational forms involve some degree of inefficiency, given a separation between funders and those who apply those funds. So the question is whether this involves undue inefficiency.

Foremost in this regard is the fact that TEI research and teaching output quality can be hard to measure. Conversely, financial metrics such as profitability and solvency are more easily measured. A well-known risk of creating strong incentives for good financial performance is that it can lead to "quality-shading", or the sacrifice of hard-to-measure outputs so as to achieve the more-easily and better-rewarded ones (Holmstrom & Milgrom, 1991; NZPC, 2015). Hence, if TEIs are to be rewarded for strong financial performance, this raises greater need for instruments to monitor quality (eg, through regulation of qualification or teaching quality, or ensuring academic standards are voluntarily adhered to).<sup>54</sup>

The soft budget constraint induced by the government acting as TEI residual risk-bearer – by softening financial performance incentives – may or may not be an efficient additional response to quality shading issues. However, for the reasons discussed in Section 4, the soft budget constraint might be further justified for universities on the grounds of reducing the risk of faculty co-investments in fellow faculty being lost in the event of financial distress (even short of full bankruptcy). There are similar benefits for ITPs and wānanga, though to decreasing degrees.

## 5.2 Non-distribution constraint

TEI funding surpluses are effectively ring-fenced, in that they are not clearly available for distribution to residual claimants like shareholders in a firm. This non-distribution constraint commonly arises in higher education institutions, as it does in NFP ventures such as charitable foundations in which donors provide funds that are applied by others in the provision of services to yet others.

Clearly these surpluses could, in principle, be appropriated by TEI stakeholders, such as by faculty in the form of excessive salaries, or students by way of inadequate tuition fees. However, TEI governance arrangements constrain such appropriations. As a consequence, TEIs do not offer high-powered incentives in the form of large distributions of TEI surplus. Instead they offer faculty relatively low-powered incentives (eg, flat salaries without either no bonuses, or bonuses much smaller than in other organisations such as PSFs). Autonomy and promotion opportunities provide alternative, yet still attenuated, performance incentives (as compared with large financial bonuses, for example).

Such arrangements offer reassurance to TEI funders that their contributions are unlikely to be appropriated by faculty, students or other TEI stakeholders. This preserves their incentives to provide such contributions. Also, relatively low-powered incentives for faculty avoid creating strong quality-shading risks (eg, grade inflation, or reduced teaching quality). Finally, they also provide screening benefits, in that they induce job applications by more mission-oriented or intrinsically-motivated faculty.<sup>55</sup> This also serves to support quality provision, in teaching and research.

<sup>54</sup> The largest part of government funding of TEIs comes through the SAC, 5% of which is "at risk" (TEC, 2015). To the extent that TEI costs are largely fixed, even having just 5% of this funding component at risk might be sufficient to induce quality-shading. This risk is further accentuated by the TEC's use of audited SSP target and performance data. To the extent such data provides an incomplete picture of TEI performance, strict monitoring of such data can induce the sacrifice of non-measured TEI outputs. Finally, the TEC's focus on TEIs' financial performance, risk and viability further accentuate any quality-shading risks.

<sup>55</sup> Bénabou & Tirole, 2013, discuss the interplay between labour market competition and its impact on both incentive power and the screening of intrinsically-motivated job applicants.

### 5.3 Capital investments

Ring-fencing TEI funding surpluses as above, combined with any “use-it-or-lose-it” tertiary funding, raise a related issue. Such surpluses can often be committed to capital programmes, which may be an inefficient response to a lack of committed ongoing funding by government. However, “bricks and mortar” investments by TEIs might serve as an additional commitment device to ensure both quality service provision, and to avoid expropriation of specialised investments by faculty or students. This is particularly so universities where such investments are most pronounced. In particular, committing surpluses to long-term capital developments reduces the ability for present faculty and students to secure resources at the expense of future faculty and students. This also serves to protect the interests of alumni, who rely on the long-term prestige of their TEI for their own prestige.

Likewise, committing surpluses to specialised capital investments (eg, laboratories or IT infrastructure) acts as an inducement to present or future faculty to make specialised co-investments in human capital to take advantage of those capital investments (eg, by science researchers who need specialised facilities). These inducements would be less effective if TEIs instead leased such facilities (which is more commonly the case for for-profit institutions in the US, Bennett, Lucchesi & Vedder, 2010). This is because leases are typically of fixed duration and can be broken or not renewed, and thus carry less commitment power than outright ownership of specialised assets. Additionally, committing to specialised assets also signals a commitment to quality, since it would not be in the interests of low-quality TEIs to “burn money” by investing in capital assets not required to sustain low quality outputs.<sup>56</sup>

### 5.4 Competition for non-EFTS funding sources

In recent decades higher education institutions globally have faced restrictions on government funding and hence faced a need to diversify funding sources. These include full fee-paying international and executive education students, applied research with private sector or government funding, entrepreneurial research ventures such as technology start-ups, and consulting. Since these pressures are not confined to particular countries, this has resulted in stiffening global competition for such alternative revenue sources.

On the face of it, such competition should induce improved research and teaching outputs from TEIs. However, this is an empirical question, as theoretical models of the impacts of competition on incentives provide conflicting results (for a brief survey see NZPC, 2015). Additionally, competition for such funding might induce quality shading, in the form of grade inflation or lowered entry requirements to boost international student enrolments (Dill, 2005).<sup>57</sup> To the extent that TEIs engage in more entrepreneurial activities to source additional funds, this could increase their risk of financial distress, absent good risk-management systems. However, to the extent that greater tuition revenues can be used to cross-subsidise research, this could relieve the problem that teaching of itself diverts time away from research and makes it less desirable for research-focused academics.

This competition for new funding sources has resulted in competition for prestige – so-called rankings wars (Dill, 2005; Hommel, Li & Pastwa, 2016). These wars additionally involve increasingly global competition for the best researchers, since academic prestige is often tied to the volume and quality of research outputs. It also involves competition for the best students, particularly at postgraduate level. In turn, demand for internationally-recognised rankings induces demand for similarly-recognised international accreditation, as the latter is often a prerequisite for the former.

<sup>56</sup> Belleflamme & Peitz, 2014, offer an alternative explanation for why firms might overinvest in assets that improve the likelihood of high-quality production. Doing so reduces the risk that its consumers infer all products to be of low quality when they cannot ascertain quality before purchase. It also reduces the probability of low-quality products being offered in the first place. As a consequence, a firm over-invests relative to the case in which all consumers are fully-informed about product quality.

<sup>57</sup> Bénabou, R. & Tirole, J. (2013) show that increased labour market competition can induce employers to offer increasing high-powered incentives. This in turn raises the risk of attracting employees more motivated by financial reward than intrinsic desire to produce high quality. Hence increased international competition for faculty might result in TEIs offering greater financial incentives which result in a sacrifice of academic ethos, with ambiguous implications for research and teaching quality.

Such rankings wars have ambiguous implications. As for competition, they could be expected to induce improved TEI performance, by setting a high quality standard for accreditation, and making poor quality more transparent to students. However, they are also observed to induce less desirable outcomes. Specifically, rankings wars require costly investments (eg, in accreditation, or star researchers), which increase costs. However, when all institutions engage in such wars, they can suffer a prisoners' dilemma, with reputation-enhancing investments neutralising each other at the aggregate level (Hommel, Li & Pastwa, 2016). This means the returns to such investments are long-term and uncertain, while their costs are certain and immediate. Thus costs increase without necessarily creating offsetting (short-term) benefits, increasing financial riskiness.

Also, a race for prestige could induce quality shading in teaching, with research being given greater priority.<sup>58</sup> An associated risk is the erosion of entry requirements, or deliberate misrepresentation of programme or student suitability in order to secure enrolments and associated tuition funding. This has been particularly observed in US for-profit vocational institutions, when enrolments staff have been rewarded on a commission basis (Deming, Goldin & Katz, 2013). Regulations were introduced in the US to prohibit such compensation, to reduce the incentives for such quality shading. Finally, rankings and accreditation are necessarily imperfect methods of standardising quality assessment across diverse institutions. This risks providing stakeholders with potentially uninformative quality signals which merely exacerbate selection issues for students and funders, while artificially increasing student willingness to pay (Hommel, Li & Pastwa, 2016).

While all TEIs face pressures to diversify funding sources, they face unequal pressures to engage in rankings wars. ITPs and wānanga place much less focus on research than universities, and hence compete less on prestige. Also, wānanga in particular compete less at an international level for students or faculty. They both have a greater vocational focus than universities, and hence compete more on teaching quality and qualification relevance than on research. In all cases, however, greater competition for diversified funding can induce quality shading problems to be addressed through market or regulatory means.

## 5.5 Multi-disciplinary institutions

All TEIs in New Zealand are multi-disciplinary. This offers benefits in terms of financial diversification, reducing financial distress risk and hence borrowing costs. It offers the potential for economies of scale and scope, for example in infrastructure such as IT, as well as increased bargaining power with suppliers. It also offers the potential for complementarities between disciplines, such as between pure and applied sciences, or from sciences to humanities (eg, from mathematics to economics).

Multi-disciplinary institutions – like schools which themselves comprise multiple subject areas – involve resource allocation resembling the internal capital markets of diversified firms. In some circumstances this can involve superior resource allocation than that achievable by specialist schools in external capital markets (Gertner & Scharfstein, 2012; Gatzert, Hoang & Ruckes, 2014). However, it also induces internal rent-seeking behaviour when fund allocators make discretionary decisions and hence are susceptible to influence.

## 5.6 Internal monitoring and risk management

Historically, higher education institutions have enjoyed relatively secure funding, and significant self-governance (Williams, 2004). Since major 1980s reforms, however, TEIs have needed to diversify funding sources, and also to pay greater attention to the efficiency of internal resource allocation. Increasingly this has involved the adoption of more commercial business management procedures, as part of the growing managerialism within such institutions. For example, internal reporting systems reveal which schools are financially self-supporting, which require cross-subsidy from other schools, and hence which might be restructured or shed.

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<sup>58</sup> Evans & Quigley, 2006.

However, higher education institutions are relative late-comers to the use of such systems. This extends also into the use of risk management systems, particularly as institutions engage more in entrepreneurial activities (Hommel, Li & Pastwa, 2016). Even long-established commercial entities encounter difficulties in internal monitoring and risk-management activities, particularly when large and diversified. Hence it is likely that such systems are relatively immature in TEIs, reducing their effectiveness in protecting the government as residual risk-bearer.

## 5.7 Lack of tenure-based incentives

Finally, TEIs' internal incentive arrangements are outside the scope of this study. However, particular mention is made of the lack of a tenure-based "up-or-out" system of incentives in TEIs, as well as UK universities (though unlike in US and other developed country universities). As discussed in Section 3.2, such incentives are important in professional service firms for inducing early-career investments by professional staff. Likewise, where they operate in universities, they not only provide incentives for early-career research activities, with flow-on benefits for later-career teaching. They also provide an important screening device when recruiting academics, as they tend to deter all-but highly-motivated researchers.

The lack of such incentives in TEIs – particularly research-based universities – means TEIs are at a potential disadvantage compared with rivals using tenure-based recruitment screening. The average quality of TEI researchers, all other things being equal, is likely to suffer as a consequence. For TEIs engaged in global competition for international students, researchers and research funding, this biases how (and if) they choose to compete in rankings wars. This might avoid some of the pitfalls of such competition for prestige. However, it might introduce even greater pitfalls, such as over-reliance on accreditation, which is a possibly misleading signal of quality, in lieu of rankings. In turn this could reinforce a bias towards teaching over research, given a disadvantage in competing for top researchers.

# 6 Likely impacts on TEI performance

TEI performance reflects the interplay of incentives created by government and others. The incentives created by government include those contained in contracts (eg, for teaching or research funding), those created by regulation (eg, of course and programme quality), as well as through "ownership" (ie, TEI governance). The incentives created by others include those from global competition for students, faculty and research funds (and hence from ranking wars); academic professionalism and peer review; the lack of tenure-based "up-or-out" incentives; cultural norms; and internal resource allocation, monitoring and incentive arrangements (eg, salary scales and promotion systems).

Given the interplay between all these sources of incentives, it is difficult to isolate just those created by TEI ownership, which is the focus of this study. However, the discussion in Section 5 signals relevant incentives likely to impact upon TEI performance.

The soft budget constraint inherent in the government's obligation to honour TEIs' financial commitments creates moral hazard problems. These include a possible lack of due care in undertaking new ventures, or simply in day-to-day management of government funding. Combined with the need for TEIs to diversify funding sources, this could result in inadequate care being applied in riskier entrepreneurial ventures (eg, research-based start-ups). While some increase in TEI entrepreneurialism might be inherently desirable, it creates risks to TEI funders – especially government, and particularly given its role as residual risk-bearer.

A possible benefit of the soft budget constraint is the weakening in financial incentives this creates. This should be expected to reduce issues of quality-shading (eg, teaching in quality, admissions standards, etc.) where quality is hard to measure or sustain in non-financial ways (eg, through regulation, cultural norms or professional ethos). TEIs' non-distribution constraints are expected to do

likewise, since they also limit the power of financial incentives. They further preserve incentives for funders, who need not fear outright expropriation of their contributions by other TEI insiders.

Global competition for students, faculty and research funds – to compensate for constraints on government funding – should result in greater research focus, and hence improved research performance. However, this might involve less priority being given to teaching. To the extent TEIs (particularly research-focused universities) engage in rankings wars, this could increase their cost structures while giving rise to uncertain, long-term gains. In turn this potentially raises TEIs' financial riskiness, particularly with immature internal monitoring and risk-management systems (relative to established commercial organisations).

The ring-fencing of TEI surpluses (ie, non-distribution constraint) possibly induces excessive investment in physical assets. However, this has the benefit of avoiding future faculty and students being expropriated by current ones. It further serves as a credible commitment to both long-term output quality, and to make specialised physical investments required to induce specialised, long-term human capital co-investments by faculty.

In part this might compensate for the lack of early-career research incentives facing TEI faculty absent a tenure-based up-or-out incentive system as in many overseas jurisdictions. However, the absence of such a system also removes an important screening device for attracting motivated early-career researchers. This is to the detriment of research quality, and long-term teaching quality (to the extent established researchers provide higher-quality teaching). It could, however, induce better quality in non-research based teaching by early career faculty, since they need devote less time to research.

## 7 Conclusions, and future research

This paper provides a survey of existing ownership – ie, non-ownership, or more usefully, governance – arrangements for TEIs in New Zealand, taking TEI contracting and regulatory arrangements as given. It reveals that the three different types of TEI – universities, ITPs and wānanga – are subject to a largely “one-size-fits-all” governance regime. Under this regime government guarantees TEI debts, and provides a large part of TEI funding (though less than before major 1980s reforms). In return, government retains residual control rights (exercisable in the event of TEI failure), and exercises ongoing influence over TEI operation through input controls, funding contract conditions, and regulation. This strikes a certain balance between academic freedom, and government's desire for the funds it provides to be used efficiently (and not be exposed to undesirable risk).

These TEI governance arrangements have then been placed in context. This was done by considering governance arrangements in other sectors sharing some or all of TEIs' key features. These features include the fact that TEIs, to varying degrees, involve specialised staff who bundle research and teaching, involve faculty making specialised co-investments with funders (ie, government) and each other, and compete internationally for faculty, students and research funding. Furthermore, TEI quality can be hard to measure, and TEI customers (eg, students) do not bear the full cost of their education (due to government subsidies).

We began by comparing TEI governance arrangements with those for higher education institutions in selected other countries, providing context for our analysis. We then considered governance arrangements in PSFs, since they too involve highly specialised staff. PSF governance provided useful analogues for TEIs, such as the ability to rely on professional ethics (eg, academic integrity) to ensure output quality. However, PSF clients are typically self-funding, and PSFs do not require specialised investments in non-human capital, as do some TEIs. Hence it was necessary to look further.

Team production theory provided a useful extension to the insights provided by PSFs. It explicitly allows for different parties to be making specialised co-investments, with each party's investment at risk from expropriation by others. It predicts that the optimal governance arrangement in this case is in

the form of a disinterested mediating hierarch – ie, none of the investing parties take control of the joint undertaking. We argued that this framework is likely of most relevance to universities, since research in particular requires highly-specialised human capital investments by faculty, the value of which often hinges on specialised co-investments (eg, by government, in specialised labs). However, ITPs and wānanga – as well as some university activities – are not subject to such specialised co-investments, so the mediating hierarch approach is suggested less in these cases.

We then showed that multiple governance forms co-exist in health sectors, which share certain TEI features (ie, highly-specialised staff, highly-specialised non-human capital in some areas, quality measurement issues, professional ethics, and subsidies by government). For example, owned, for-profit governance arises in cases where non-human capital investments are not large or highly-specialised. Conversely, non-owned, not-for-profit governance also arises, for example where non-human capital investments are large or highly-specialised.

This richer set of governance comparisons suggested that multiple and coexisting forms of governance could be suitable for different types of TEI, and even for different types of TEI activity (eg, within different parts of universities). In short, this suggests that the current “one-size-fits-all” approach to TEI governance is likely to be inefficient, though further analysis would be required to show that feasible alternatives can be implemented more efficiently. We tentatively suggest some possible governance variations for each of the three main TEI types, based on differences in each type. We leave it to future work to more fully explore suitable governance variations for each TEI type.

Our analysis also showed that current TEI governance arrangements give rise to risk and incentive issues that also vary by TEI type. For example, the soft budget constraint arising due to government guaranteeing TEI debts blunts performance incentives, but perhaps usefully so (by reducing incentives for quality-shading). It also reduces the risk of faculty co-investments (among other things) being lost in the event of TEI financial distress. Having multi-disciplinary TEIs provides diversification benefits which also reduces these risks.

The inability of TEIs to distribute financial surpluses provides reassurance to government that it is not going to be overtly expropriated by TEI faculty or other staff, as do input controls such as borrowing constraints. Capital investments at TEIs might be distorted by “use-it-or-lose-it” budget processes, but “bricks and mortar” investments can also serve as a commitment device not to expropriate future faculty or students, and also as a signal of quality. Competition for faculty and students was shown to have ambiguous implications for the quality of teaching and research. TEI internal monitoring and risk management systems have matured since 1980s reforms, but it is likely they need further work in order to keep pace with more established sectors. Finally, New Zealand’s lack of tenure-based “up-or-out” incentives (as offered in US universities, and also PSFs) is likely to favour teaching quality over research, with implications for TEIs’ ability to compete internationally for faculty (to the extent they do so).

This paper is a first step towards assessing the efficiency of current TEI governance, given TEI contracting and regulatory arrangements. TEI performance reflects complex interactions between each of these control “levers” exercised by government, as well as internal incentive arrangements. Hence any comprehensive examination of TEI governance should account for the full set of interactions between these levers and other arrangements, as changing any one of them could have important implications for the effects of the other. This too is left to future work.

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