

**Public Funding, Markets and Quality:  
Assessing the Role of Market-Based Performance Funding for Universities**

A strong competitive and collaborative environment with resources comparable to those in competing university sectors will be the most powerful influence on quality and should receive primary attention in building the quality of Ontario's university sector.<sup>1</sup>

**I Introduction**

David Smith, former Principal of Queen's University, ends his report on quality measures and enhancement in Ontario universities with a strong statement about the benefits of competition and collaboration. He argues that the incentives from competition in the university sector must be "sufficiently strong" to promote quality.<sup>2</sup> Universities that compete in the markets for students, professors and donations will find themselves pushed to provide high quality. Our essay picks up on this theme in exploring how governments can use markets in designing funding systems for universities that provide useful incentives. Markets work directly in providing incentives to universities, in that, for example, a university that does not attract any students will not last long. But markets can also provide valuable information to governments in establishing incentives around the allocation of public monies. We argue that once the benefits of markets are taken into account and their risks mitigated, government incentive-based funding using, at least in part, information from markets has an important role in quality enhancement.

Placing incentives for quality at the centre of our analysis implies that some other potentially relevant policy considerations are set aside. Indeed, consider the fundamental question of whether public funding should disproportionately go to universities that are struggling with respect to quality, or to universities that are prospering. Cogent arguments are available to support either approach. An argument that more funding should go to underperforming universities is that the marginal social benefit of a dollar spent at a lower-level university would, all things equal, be greater than the marginal benefit of spending a dollar at a successful university. One could analogize to sprinters. Spending a thousand dollars to improve the speed of the best sprinter in the world might

possibly improve that individual's time by a tiny fraction of a second, while spending that money on a slow sprinter may improve his or her time more significantly. On average, a sprinter society would be more productive if significant resources were allocated to slower runners. One could also argue that concentrating social resources in a small handful of elite institutions is inconsistent with a society's commitment to equitable treatment of all its citizens.

On the other hand, the assumption of a declining marginal benefit of spending as merit increases implicit in the above example could well be wrong. Spending a dollar at an underperforming institution could be less productive given poor quality than similar spending at a well-run institution. For example, having two first class scholars in a field at one university could produce better results than the combined efforts of the first class scholars if they were working at different institutions. That is, there could be increasing returns to investment in first-class institutions; excellence begets excellence.

Without resolving these arguments, we take it as a starting point for our analysis that incentives matter. This implies that governments should allocate at least a portion of public funding on the basis of merit. If poorly performing universities were just as likely or more likely to receive public funding, it would create perverse incentives given that low quality is much easier to achieve than high quality. This is not to say that other concerns, such as equity, do not push for a portion, even a large portion, of public funding to be allocated on a more equal basis. Rather we simply take it as given that there is a role for some incentive-based funding, and ask how market-based mechanisms are useful in designing such funding.

In our view, a fruitful place to start in examining the role of incentive-based funding of universities is to review why it is that this is an important question for policy-makers. Government policy-makers do not even ask how best to motivate restaurants to offer good food and service, yet the question of how best to provide incentives to universities has generated considerable debate. A response, at least in the Ontario context, to this conundrum is that universities are public; therefore incentives are a public matter. This is true, but in our view at least edging towards tautology. It is fundamental in thinking about the role of incentives to universities to ask why it is that universities are not run like any other enterprise that sells goods to the public.

Our approach in this essay will be first to review the incentive schemes that are generally relied upon in the private sector. Part II presents an overview of the various market mechanisms that provide incentives to individuals, at least those at senior management levels, in the corporate context. Part III discusses how market-based incentives could be applicable in the university sector. Some generally available incentive mechanisms in the private sector are clearly inapt in the university sector, but others may be more useful, as this Part emphasizes. Part IV discusses various shortcomings of market-based incentive structures for universities. There are clearly some problems with the markets on which we propose to place some reliance. But, as we discuss, this is insufficient to reject their application altogether. The essence of our essay is to discuss privately available market-based incentive devices and to show why the appropriate set of these devices for application in the university setting is smaller, but far from empty. Many of the concerns about markets in the university sector are either unrelated to quality and/or more appropriately addressed through other instruments. In order for market-based public funding of universities to enhance university quality, it is important to be clear about what it can and should try to accomplish and what can be better dealt with in other ways. Part V draws on the analysis of both the benefits and dangers of markets in this setting to suggest some ways in which markets can play a tangible role in designing public incentive-based funding.

## **II Market-Based Incentives in the Private Sector**

In order better to understand the dilemma facing governments seeking to provide incentives to public universities, it is helpful to consider what instruments the private sector relies on to motivate workers.<sup>3</sup> Most economic activity in market economies is organized through corporations. Corporations, whether closely-held family firms with a handful of shareholders, or large publicly-traded companies, rely heavily on markets to motivate executives and employees. In a closely-held corporation the principal employees often are also significant shareholders. To the extent that the firm succeeds in the marketplace in which its products compete, the principals benefit either through the capital gains in the value of their shares or through higher dividends. Similarly, in public corporations, senior executives are generally compensated at least in part with company

stock. Awarding executives with stocks provides them incentives to increase the value of the stock. Awarding stock in a publicly traded company is an ideal kind of incentive pay. The value of a share is the present value of all profits accruing to shareholders over the life of the corporation. This value is precisely what shareholders want maximized, thus increasing pay when shares increase in value provides incentives in precisely the direction shareholders want. Moreover, while there is a debate about how well share prices in publicly traded corporations reflect the “true” value of a share, it is usually acknowledged that shares do a good, if not always perfect, job of reflecting public information about the value of a share.<sup>4</sup> After all, they are traded by literally thousands of shareholders each of whom has an economic interest in having at least a basic understanding of what value will accrue to the share over time. Share-based incentives are thus not only aimed at exactly the right target, but also accurately reflect the direction of the corporation at any point in time.

This is not to say that share-based incentives are a panacea in the private sector. There are several limitations on the efficacy of share-based compensation. For one, to give an executive the full incentives to maximize the value of the corporation, it would be necessary to give her 100% of the shares. Both because individuals are wealth-constrained and risk-averse, giving one person 100% of the shares is often not feasible. Indeed, even giving her a large number of shares will expose her to significant risk given that share prices are affected by many matters beyond the agent’s control, such as macroeconomic phenomena. As a result, optimal contracts between risk-averse managers and diversified (and thus risk-neutral) shareholders would only rely in part on incentive pay.<sup>5</sup> Shareholders cannot therefore be confident that managers face perfect incentives to maximize the value of the corporation, as opposed to pursuing other self-interested objectives. Nevertheless, paying senior managers with shares helps provide useful incentives.

Notice that the discussion has focused on senior managers. Only senior managers systematically can be expected to make decisions that strongly increase share prices. Paying custodial staff with shares is highly unlikely to provide useful incentives, but is certain to expose the staff to undiversified and thus costly risk. However, this is not to say that share incentives do not affect the motivations of lower level employees. Since

senior managers affect, and through their compensation schemes are affected by, share price, senior managers have an incentive to provide incentives to those below them in the corporate hierarchy, who in turn have incentives to motivate those below them and so on. Senior managers will typically strive to provide the optimal combinations of targets (e.g., sales targets, profit targets, clean premises), bonuses and fixed pay. In many cases optimal incentives are provided by a fixed wage and the threat of termination, or of foregone promotions and raises. Whatever incentives are struck, it is important to recognize that they are usually structured in the shadow of the stock-based incentives motivating senior managers.

Another market-based form of incentive that helps motivate managers arises from the participation of the firm in a product marketplace.<sup>6</sup> Corporations sell goods or services in competition with other firms. If senior managers do not do a good job themselves, or if they do not do a good job in motivating lower level employees, then the corporation will not compete effectively in product markets and the viability of the firm will be in doubt. Since managers generally like to keep their jobs, perhaps because of the value of firm-specific human capital that would be lost to them if the firm were to fail, product market competition disciplines managers.

There are other market-based incentives confronting senior managers. Managers may wish to earn a reputation for being good managers since they are rewarded for this reputation by competition over their services from other corporations.<sup>7</sup> There is also the “market for corporate control.”<sup>8</sup> This is the market for the acquisition of control of a public corporation. If a manager performs poorly, stock price drops and an acquiror may seek to buy the shares, oust incumbent management, improve corporate performance and realize gains on the acquired shares.

### **III Market-Based Incentives in the University Sector**

#### *(a) Shareholder Incentives*

It is immediately obvious that some important market-based incentives are not currently available in the university context. In Ontario, universities are public and do not have shares. Share-based compensation, while ideal in much of the private sector, is presently impossible in the university sector. But this begs the question: why are universities not

publicly traded? If we are worried about providing incentives to universities, should we consider privatizing universities, publicly listing them, and paying university employees with stock? The answer is no.

While there may be a wide variety of reasons against the conversion of universities into for-profit, publicly-traded corporations, in our view compelling evidence is found in the marketplace itself: even in jurisdictions where private universities flourish, such as the United States, it is rare for institutions of higher learning to be structured as for-profit corporations. While there are a variety of possible reasons for this choice of organizational form, an important factor is the risk of opportunism. A key starting point for any analysis of non-profit corporations is Hansmann's pioneering article about non-profit corporations.<sup>9</sup> He emphasizes that the defining characteristic of a non-profit is not that they do not make operating profits; they can and do. Rather, the key is that non-profit corporations face a "non-distribution constraint": any excess of revenues over expenditures cannot be distributed to the corporation's "owners", unlike in a for-profit corporation where profits are distributed to shareholders. Hansmann suggests that the non-distribution constraint exists as a check on opportunism by the non-profit corporation. In particular, he suggests that choosing the non-profit corporate form may reassure customers/donors that certain kinds of opportunism are foreclosed. A donor to a for-profit educational corporation would worry that rather than using the donated funds to improve the quality of education, the corporation may simply distribute the funds to shareholders. Similarly, students may be concerned that a university will take their tuition money and distribute it to shareholders rather than commit to providing a high-quality education. Quality is not easily amenable to contract and students are therefore vulnerable to opportunistic behaviour by a university.

Thus, private universities tend to be non-profit corporations because donors and students may be concerned that their donations or fees will simply be diverted to shareholders rather than put towards improving/subsidizing education. Such an analysis suggests that valuable incentives based on share value, including the market for corporate control, will be of little use in the university context.

*(b) Product Market Competition*

This is not to say that markets are irrelevant to a university's incentives. The university, as pointed out, competes in attracting students and also competes in attracting donations. Product market competition can be a valuable source of incentives in the private sector since if corporations cannot compete effectively, they will eventually run out of money; similarly, setting aside government subsidies, if a non-profit university cannot attract tuition revenue or donations, it too runs out of resources. But even without a private corporation becoming insolvent, product markets are helpful in conveying information about the quality of management to their overseers.<sup>10</sup> If a Board of Directors, or a controlling shareholder, observed that the corporation was consistently losing money in the product market at the same time that other firms in the market were earning handsome profits, it would be alerted to the possibility that its managers are not doing a particularly good job. Analogously, the informational cues from the markets for donations and for students can be useful indicators of the performance of a university.

There may be good reason to take an approach to promoting quality in universities based on students' choices. First, while there are limitations on students' information that we discuss further in Part IV, students often have better information than government about their own preferences.<sup>11</sup> To the extent there is a trade-off for a student in terms of job opportunities versus teaching quality or research or facilities, she is in a better position to make these decisions.

Second, individuals may have better information than the government about the job market and future job prospects in different areas.<sup>12</sup> If so and if universities are permitted to respond to these demands, consumer choice promotes greater flexibility in university programs, pushing universities to expand or develop programs that respond to these new demands. In such cases, flexibility and diversity enhances welfare, particularly in a rapidly changing environment in which it may be difficult for central administrators to adapt quickly and accurately.<sup>13</sup> Barr argues that therefore "decisions should be taken not through central planning but as a result of choices by all the major stakeholders – students, universities, employers and government."<sup>14</sup>

With respect to the donor market, universities and donors can take several steps to ensure that the donation is linked to a particular educational initiative that a university is

pursuing. At a basic level, we have discussed how universities adopt the non-profit corporate form in part better to reassure investors that the donated funds will be directed to the purpose of the donation. In addition, donors could conceivably enter into legally enforceable contracts with donee institutions. For example, a donor could offer money to a university in exchange for a promise to construct a new building and name it after the donor. On the assumption that donors seek to maximize the educational impact of their donations, the decision of a donor to donate to a particular educational institution provides valuable information about the quality of that institution.

There are important qualifications to this analysis. First, individual donors may not be motivated by educational objectives that society as a whole would share. For example, they could be interested in supporting an institution with a radical religious view similar to their own. Alternatively, they could be interested in the publicity and attention associated with a large donation rather than the actual use of that donation.<sup>15</sup> (We note, however, that the "warm glow" of publicity attendant on a donation to a high-quality prestigious university may exceed that to a second-rank school. That is, a prestige objective is not necessarily inconsistent with quality.) But as long as donors are on average motivated in part by educational quality, then the market for donors provides some feedback about quality of the donee university. Second, there may be limits on the ability of donors to assess the quality of universities, which we discuss in Part IV.

*(c) Managerial Markets*

Competition for managers in universities is likely to work differently from competition for managers in the private sector. Where there are shareholders who stand to gain materially from any increase in profits, these shareholders have incentives to hire and provide optimal incentives to first-rate managers. In the university setting, and in the non-profit sector more generally, there is no person or group who has a legal right to pocket profits, and thus no person or group with a material interest in appointing and providing optimal incentives to first-rate managers.

There are, however, important ways in which the managerial market can work in the academic setting. First, both Boards of Governors (or their equivalents) at universities and university managers are likely to be motivated by something other than

material returns from their positions. As others have pointed out, managers at non-profit institutions often share the goals of the enterprise.<sup>16</sup> They may aim at such goals as improved quality of education and increased access to education.<sup>17</sup>

Second, simply because markets for managers are likely to operate differently within the university sector from the private sector is not reason to conclude that managerial markets do not provide potentially important sources of incentives. There are two ways of thinking about managerial markets and incentives. One is to recognize that even if managers are intrinsically motivated by ideology, this does not preclude provision of material incentives as well. (Indeed, a university manager motivated solely by educational excellence could refuse a salary increase on condition that it be diverted to educational purposes.) If managers at universities were provided incentive pay, this could help motivate them to provide quality. Of course, there would be a difficulty in crafting a metric of quality that motivates the manager appropriately. But assuming incentive pay were feasible, there is another sense in which the managerial market could provide incentives. If pay were higher the more meritorious the manager, better qualified managers would be attracted by job openings. There could emerge healthy competition among universities for managers that would itself provide useful incentives. That is, incentive-based pay would increase pay for competent managers, and higher pay would invigorate incentives of managers to be noticed by the marketplace.

*(d) Summary of Market Mechanisms and University Incentives*

To summarize, stock-based incentives, which are the centrepiece of incentives in the private sector, are unavailable in the university setting. But this does not preclude the operation of other market-based forms of incentives. Product market competition, while not perfect, will take place both with respect to donors and students. And incentive pay in managerial markets can also be useful in motivating incumbent managers and in attracting meritorious university managers in the future. We turn now to discussion of the limitations on these market mechanisms in the context of universities.

#### IV The Limits of Markets

We have suggested that product market competition can be useful in providing information to governments about the quality of a university. But there are clearly some shortcomings of market-based incentives for universities. Product markets may suffer from a range of imperfections, including the presence of important externalities, information problems facing both students and donors, and capital market imperfections that distort demand for university education.

##### (a) *Public Goods and Externalities*

Assume for a moment that students have perfect information about the quality of education at a particular institution and about their goals in life, and individuals' funds were not a concern. Students will make choices based on their preferences and their information. It is clear that university education provides private benefits – that is, benefits directly to the individual students. The private economic returns (higher lifetime earnings) are high, although such returns vary according to both the discipline and level of education.<sup>18</sup> There are also private non-economic returns to education including better health, personal growth and fulfillment.<sup>19</sup> If individuals can assess these private returns, they can make reasoned choices about the relative costs and benefits of attending a particular university themselves.

However, there may be broader social benefits of (or positive externalities to) universities that are not captured in the private decisions of individual students. First, research at universities may have broad public benefits. To the extent students do not take excellence or productivity of the research of a university's faculty into account in deciding which institution to attend, a pure market-based system will not reward excellence in research and it will be under-provided.<sup>20</sup> The existence of these social benefits appears to provide a reason for public funding for universities, but this does not necessarily imply that the funding should not be based on student choice. Whether or not students value research quality raises an age-old question about whether research and teaching are complements or substitutes. It is at least arguable that institutions with excellent reputations for research also tend to attract the best students; that is, that students view teaching and research as complementary.<sup>21</sup> If so, then the information

from students' choices is valuable feedback about the institution's research and teaching quality. In addition, it could lead to valuable diversity across types of universities – with some focusing on teaching and research and some on teaching alone.<sup>22</sup> If students do not or insufficiently value research, there is a case for public funding, but that funding should address the issue of under-provision of research.<sup>23</sup> While there are concerns about the rigid and increasingly government-directed nature of research funding<sup>24</sup>, it is at least conceivably easier to establish research funding based on quality than a broad-based attempt to judge the quality of an institution.

Second, there may also be benefits to the public from students pursuing certain courses of study that are not captured by a focus on jobs or individual demand. At lower levels of education (primary and secondary school education), this may include basic concepts of citizenship.<sup>25</sup> At the post-secondary level, many of the basic elements of such citizenship benefits would likely be in place. However, there may be other public benefits such as greater understanding of the political system or of history or of philosophical views of the world or of other cultures that the individuals would not otherwise be exposed to and are not priced in the market or readily appropriable by individuals. Society may benefit from research and study in such areas, such as through the enhancement of deliberative democracy.<sup>26</sup> These broader social benefits are very hard to identify and especially hard to quantify.<sup>27</sup>

Third, there can be economic benefits to society in terms of increased economic growth and standard of living. Such benefits may stem from individuals with higher education being more productive on average and causing a “spill-over” effect that raises the productivity of those around them. It could be, for example, that a collaboration of educated individuals is more productive, even controlling for the cost of the investment in education, than the collaboration of an educated and a less educated individual.<sup>28</sup>

These latter two forms of social and economic benefits not captured by individual students suggest a role for government in subsidizing higher education. However, they do not necessarily point to a need to provide those funds directly to universities as opposed to students. Product markets themselves, or public funding based on information from product markets, may still be able to promote quality even where externalities are important.

(b) *Information*

There are a number of informational problems that may arise in either donors' or students' ability to assess the quality of post-secondary education as well as the aspects of post-secondary education that are important to them.

*Poor Information about Quality:* Product markets for university education may not work well where donors or students have poor information about the quality of universities or programs. However, even if information among donors or students is imperfect, their decision to attend or donate to a university will presumably turn at least in part on information about that institution's quality. Students and donors will consult alumni, guidance counsellors, universities themselves, newspaper rankings etc. in order better to inform themselves about the experience they can anticipate.<sup>29</sup> Admittedly, these sources may be flawed. For example, the Maclean's survey of universities has been criticized for attempting to rank universities as opposed to simply provide relevant information.<sup>30</sup> The Dean of the Wharton School of Business has recently criticized international ranking of business schools by news services on the basis that schools distort the information they provide to these services to improve their ranking.<sup>31</sup> But if donors and students value information about quality, there will be sources that on average are helpful, which in turn implies that student choices convey information about quality. The solution to poorly designed rankings may lie in more rankings, such as in the U.S. where there are a plethora of rankers of colleges and universities.

As long as students are on average better than random in discerning quality, then their decision to attend a university says something about its quality. Similarly with donors. Success in the competition for students and donors will imply something about the quality of the university.

It is important to appreciate that imperfect information could vary across types of students. Individuals with highly educated families or in communities with a high degree of individuals with higher education may have better information about the quality of

different institutions than individuals without such connections.<sup>32</sup> In addition, imperfect information may vary across programs. Individuals entering undergraduate programs may have poorer information about the quality of programs, institutions and job market prospects than individuals entering either graduate programs or professional programs. To the extent university education is a search good (individuals can get information on quality prior to entering the program) or an experience good, the market for reputation may be more finely tuned at graduate and professional level where individuals have a better understanding of universities and what quality entails.

If there are systematic variations in the information of different students about certain kinds of programs, however, this does not undermine the case for reliance on student and donor choices. Rather, these issues potentially point to a greater role for government in subsidizing information dissemination.<sup>33</sup> If information flaws exist in markets, better to remedy the information deficiencies to the extent they can be corrected than to ignore the market altogether.

*Poor Information About The Value of Higher Education:* Individuals may not enter university because they do not have any experience with or understanding of the benefits of higher education. These information problems may be worse for students from low income backgrounds who may not have family members with higher education.<sup>34</sup> Again, this issue does not necessarily suggest that the market for students is irredeemably flawed. Rather, it creates an argument for greater outreach programs to under-represented communities. It may also point to an increase in the use of grants for such students where there are income-contingent loan programs in place in conjunction with de-regulated tuition. It does not mean, in and of itself, that the government needs to design mechanisms to fund universities and tie the funding to quality measures.

A related, though separate, concern is that those who do enter university may not have a clear picture of what they want to do – either because they have not experienced a range of options or because they are focused on short term rather than longer term returns. If the initial decisions are biased in a particular direction (such as towards more technical occupations), universities may under-provide the alternatives. However, there is no reason to suppose that for many choices (especially those related to more tangible

economic benefits), students cannot take account of the scope of options available at a particular institution. It also points to ensuring that there is collaboration between universities such that individuals can transfer to where preferred programs are being offered.<sup>35</sup> Again this seems somewhat more blunted as one moves from undergraduate to graduate and professional schools, as individuals developed a better understanding of the course they wish to choose in life.

(c) *Cost Issues*

Cost issues, either from tuition or cost of living, surrounding markets for universities raise both issues of fairness and of efficiency. University education promotes equality of opportunity, and a sense of fairness militates against distribution of spaces within a market for universities based on ability to pay. In addition, there may be two important flaws of capital markets that threaten to create inefficiencies in a regime that places significant reliance on student choice. First, unlike the case in which a person borrows in order to invest in physical capital that she can offer as collateral to the lender, a borrower seeking to invest in education cannot offer her human capital as collateral. Consequently, it is difficult to borrow to invest in human capital. This makes it difficult, particularly for an undergraduate with little in the way of a credit history, to borrow in order to finance education.<sup>36</sup> Second, there are shortcomings in insurance markets that affect education. Individuals are risk-averse. The value of an education, while it may be high in expected terms, will have a large variance across individuals. At the time of choosing to invest in education, a student faces considerable risk about the value of her education, risk which is costly. However, complete insurance is not available against future earnings for obvious moral hazard reasons (once insured, the student would have little incentive to work hard). Both of these capital market imperfections hinder the operation of the market for students, since students may be reluctant or unable to pay the full cost of their education. Allocating places to students solely on the basis of willingness-to-pay would not attract the highest quality students.<sup>37</sup>

While we cannot discuss the equity and efficiency concerns about the cost of an education in detail in this paper, considerable work has been done in attempting to devise programs to overcome these issues by offering funding to students directly, rather than

universities. In particular, income-contingent loans can permit governments to aid individuals in obtaining funding for university education in the context of higher tuition fees. Such loan programs could, for example, be combined with a substantial grant program to aid those who may be otherwise dissuaded from attending university due to the “sticker shock” from the size of the potential debt.<sup>38</sup>

Instituting such a program of income-contingent loans and grants while deregulating tuition incorporates fairness concerns in a manner that preserves the market for quality in university education. It can permit individuals with the willingness *and* ability to attend university to choose where to study. Such choice can provide universities with the incentive to increase quality in order to attract students.<sup>39</sup>

## **V Connecting Public Funding, Markets and Competition**

There are a variety of ways that government can establish incentives for universities to provide high quality.<sup>40</sup> We suggest that our analysis of markets points towards tentative conclusions about the role for government in improving university’s incentives for quality. Government should:

- enhance market competition in the university sector;
- provide some funding directly to universities; and
- tie a portion of this funding to market-based indicators.

### *(a) Enhance Market Competition*

Competition is essential for raising the quality of education at universities. A theme of this paper is that competition can be fostered in the market for students or donors. A significant step that government can take to increase quality is therefore to increase reliance on and the functioning of these markets. Such action would include improving the flow of information on differences between universities and increasing information and outreach to individuals in under-represented groups.<sup>41</sup> It would also include deregulating tuition, but in combination with programs designed to ensure that individuals have funding to participate in the market so that university education is not limited simply to those with the highest willingness-to-pay. A beneficial structure appears to be

providing such funding to the student through income contingent loan programs combined with a program of grants.

*(b) Provide a Portion of Public Funding Directly to Universities*

As Part IV points out, however, not all funding may be able to follow the student. For example, there may be social benefits (perhaps related to research or broader social or economic benefits) that students do not take into account in their decisions. While not a focus of this essay, concerns about equality of opportunity may also militate against exclusive reliance on incentive funding.<sup>42</sup> It is therefore important to consider how public funding directly to universities can provide incentives to provide high quality.

*(c) Focus on Market Based Indicators*

Taking as given that some public funding is directly granted to universities, and not allocated to universities indirectly through student choice, does not preclude a role for markets in helping the government establish incentives to provide high quality. If feasible, governments could simply establish programs that provide more funding the higher the measured quality of the university.<sup>43</sup> While we would not reject a possible role for direct measures of quality, we do note that these schemes have encountered significant problems. For example, it is very difficult for governments to design indicators to measure quality, and once they do, the indicators can take on a life of their own.<sup>44</sup> As the indicators will not in all likelihood measure “quality” directly, institutions may attempt to “game” the system by focusing on improving the indicators to increase funding without increasing quality. Further, these indicators can be extremely expensive to administer – both for the government and the individual institutions being assessed. The UK appears to provide an example of such costs, with incentive based systems there leading to considerable administrative costs, and some gaming of the funding system.<sup>45</sup> For an example of the latter concern, Smith reports that in the UK, “It is said that appointments of faculty with impressive curriculum vitae are sometimes hurriedly made to meet [a quality review's] deadline, without sufficient consideration of the broader needs of a department.”<sup>46</sup>

Market-based indicators of quality, however, avoid some of these problems. Product market competition for donors and students may be attenuated in the shadow of direct public funding to universities, but only to the extent that the public monies themselves do not depend on competitive results. If public funding were allocated in part on the basis of signals from success in competitive markets for donors and students, then clearly these markets would have an indirect effect on university incentives. It may also reduce the costs of administering the system.

It is noteworthy that Ontario has historically relied on signals from these markets in allocating funding. With respect to the donor market, Ontario has adopted significant funding programs that depend on signals from donor markets. Most importantly, it has occasionally adopted matching programs pursuant to which the province matches donations that universities realize from private donors. There are clearly incentive aspects of such programs. First, they provide a greater incentive for a donor to give to a university since the marginal impact of the donation is greater when combined with the provincial matching grant. Second, they provide a greater incentive for universities to make an effort to solicit donations since the marginal return on a donation is greater given the matching grant. But it is perhaps not always appreciated that there is a powerful informational aspect to the government's reliance on matching grants. Matching grants automatically result in the government allocating more resources to universities best able to attract private donations. Public funding turns on signals from the donation market. This generally increases a university's incentives to improve quality, since higher quality will attract donors interested in contributing to educational excellence, which in turn will also attract public monies.<sup>47</sup>

Ontario also relies on competition for students, but does so in a relatively weak way. Higher quality universities, all things equal, will have greater demand from students. The province weakly captures information from the market for students in allocating funding by giving universities a per-student capitation payment.<sup>48</sup> This only faintly harnesses information from the student market, however, given that universities do not set tuition so as to clear the market.<sup>49</sup> Rather than setting tuition fees such that there is nobody demanding a spot at the university at that tuition level, universities set tuition such that there is excess demand. This lower-than-clearing price could be

relatively low because of regulation, as it is in Ontario, or it could be lower than the clearing price so that universities assure themselves of attracting high quality students.<sup>50</sup> Rather than allocating spots solely on the basis of willingness to pay, universities combine willingness to pay and merit. As a consequence, since most every university has excess demand for spots at the existing tuition level, information from the enrollment numbers at an institution is unlikely to say much about the relative quality of the university. Both mediocre and excellent universities are likely to have excess demand. This is particularly so in Ontario where tuition fees are regulated at very low rates.

Ontario when it established matching programs wisely relied on signals from donation markets in allocating resources, but in setting a capitation fee, the government fails to glean much information from competition for students. In our view more information about university quality could be available from a closer examination of the nature of demand for an institution. In what follows we assume that willingness-to-pay is not the sole criterion for allocating university spots, but rather that government programs, such as income-contingent loans, are in place in order to ensure that every qualified student could afford to go to university. We have noted that a simple head count of students attending university may not convey much about the intensity of student demand for a university. It might then be suggested that looking at the number of applications would be instructive about student demand. While this may have potential, we are sceptical. Given that there is some cost to applying to a university, either because of an application fee or even because of time and effort, applicants who do not anticipate acceptance at a very selective university may choose not apply, but this does not imply that they would not have gone to that university if they could have obtained a spot.

We suggest that examining student quality is likely to convey better information about students' perception of the quality of an institution than a head count or the number of applications it receives. Because of regulation, and/or because universities are concerned about the quality of their students, tuition fees do clear the market in Ontario; universities rely on student quality to allocate spots. It is therefore sensible to look at student quality to draw inferences about student demand, and in turn to draw inferences about university quality from student demand. Students will on average be attracted to

better schools. Universities allocate their spots on the basis of the students' ability. A measure of the demand for a university is therefore found in the quality of its students.<sup>51</sup>

If an Ontario university can attract a student that could get a spot in every other Ontario university, it is probable that the student views this university as being of relatively high quality. Conversely, if a student can only get into one university, her decision to attend that university says nothing about her perceptions of that university's relative quality. As a result, a university with higher average quality incoming students will on average be higher quality. Structuring funding to universities not only on the basis of capitation, but also on the basis of the actual quality of their students would capture information from the student market about students' perceptions of university quality. Further, it would not interfere with the quality signals from the market and would not be costly to implement either in terms of administration costs (for the government and schools) and gaming. It may also be appropriate to create competition among programs, not just among universities. Allocating funding to particular programs at different schools on the basis of student demand would enhance local incentives to improve quality. For example, allocating public funding to philosophy departments on the basis of student demand would provide some market-based incentives to encourage these programs to excel, while not requiring such departments to obtain funds purely through a market that may not fully value their social benefits.

Some qualifications are in order. Students may not have good information about quality, may (but may not) view teaching and research as substitutes rather than complements, and moreover may choose schools on the basis of something other than educational quality, like geography. As noted above, however, as long as students are on average motivated to attend high quality universities, student demand as measured by the quality of students is a valuable signal of university quality. In addition, measuring student quality may not be easy, as any university admissions committee will confirm.<sup>52</sup> Variance in grading standards across high schools, for example, makes mere reliance on incoming averages a dubious measure of quality. Such variance points to the need to reconsider standardized exit exams from high school.<sup>53</sup> But there are some other objective criteria available, like performance on standardized aptitude tests such as the LSAT. These may be helpful in informing the government about university quality.

We have suggested that Ontario could do more in harnessing the informational content of donor and student choices in their respective marketplaces. The managerial market for university administrators is likely also to stand some improvement. Like corporations, universities could reward presidents for gains realized in the donor and student markets. But it is not clear what role government can or ought to play directly here. If the government can establish background funding rules that reward universities for high quality, this should in turn spur Boards at universities to find ways of motivating their managers to improve quality. As noted above, since there are no shareholders in public universities, there is no group of people who are affected in a pecuniary way by the success of the university in the marketplace or in obtaining quality-based funding. However, we would be wary of governments directly intervening to improve managerial incentives. First, just as members of universities' Boards do not have a pecuniary incentive to get managerial incentives right, nor do provincial politicians or bureaucrats.<sup>54</sup> Second, it is more likely that university Board members understand the educational context better than individuals in government. Moreover they are on average likely to be more committed to education given their choice to dedicate time to an educational institution. For these reasons, even if there are gains to be had from changing managerial incentives at a university, we would stress the role of incentives for the university as a whole and allow these in turn to operate to spur provision of incentives to university administrators.

## **VI Conclusion**

In conclusion, let us summarize both what we have said and some of what we have not said. We have not said that there is no place for allocating some, even a considerable amount, of public funding across institutions regardless of merit. There may be efficiency reasons (e.g., similar marginal productivity across institutions even if average productivity is unequal) and equity reasons for spreading the wealth. But we have stressed that incentives matter and that as a result it makes sense to have at least a portion of public funding allocated on the basis of quality.

With respect to the subset of public funding that is allocated on the basis of quality, we have not rejected the possibility that governments should canvass explicit

indicators in order to reward quality. We have said, however, relying on explicit indicators is costly and sometimes misleading, and that either in place of or in addition to such programs, governments can learn much from the operation of markets. Capital markets are not likely to prove useful; universities are not likely to succeed as for-profit institutions. But product markets can be more influential than they have been to date in Ontario universities. Not only do these markets directly discipline universities, but governments can use information from the markets to allocate public funding. Ontario could look to the quality of incoming students as a measure of students' estimate of quality. It could look, as it has in the past, to donor choices as well in order to gather information about quality. While market-based incentive schemes are far from a complete response to concerns about quality, indeed they have several shortcomings as we have discussed, they are valuable tools for governments seeking to promote quality in post-secondary education.

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<sup>1</sup> D. C. Smith, "How Will I Know If There Is Quality?" (Report on Quality Indicators and Quality Enhancement in Universities: Issues and Experiences, Council of Ontario Universities, 2000), p. 33.

<sup>2</sup> Ibid.

<sup>3</sup> For surveys of incentive compensation issues in the private sector, see P. Milgrom and J. Roberts, *Economics, Organization and Management* (Upper Saddle River: Prentice-Hall, 1992) Ch. 12; E.M. Iacobucci with M.J. Trebilcock, *Value for Money: Executive Compensation in the 1990s* (Toronto: The C.D. Howe Institute, 1996); E.M. Iacobucci, "The Effects of Disclosure on Executive Compensation" (1998) 48 *University of Toronto Law Journal* 489.

<sup>4</sup> See, e.g., E. Fama, "Efficient Capital Markets II" (1991) 46 *Journal of Finance* 1575.

<sup>5</sup> See, e.g., B. Holmström, "Moral Hazard and Observability" (1979) 13 *Bell Journal of Economics* 74.

<sup>6</sup> See, e.g., O. Hart, "The Market Mechanism as an Incentive Scheme" (1983) 14 *Bell Journal of Economics* 366.

<sup>7</sup> See E. Fama, "Agency Problems and the Theory of the Firm" (1980) 88 *Journal of Political Economy* 288.

<sup>8</sup> H. Manne, "Mergers and the Market for Corporate Control" (1965) 73 *Journal of Political Economy* 110.

<sup>9</sup> H. Hansmann, "The Rationale for Exempting Nonprofit Organizations from Corporate Income Taxation" (1980) 91 *Yale Law Journal* 54. See also H. Hansmann, *The Ownership of Enterprise* (Cambridge: Harvard University Press, 1996).

<sup>10</sup> See, e.g., D. Harris et al., *Cases, Materials and Notes on Partnerships and Canadian Business Corporations (Fourth Edition)* (Toronto: Thomson-Carswell, 2004) at 214-216.

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<sup>11</sup> N. Barr, *The Economics of the Welfare State (Fourth Edition)* (Oxford: Oxford University Press, 2004), p. 323.

<sup>12</sup> Barr (2004).

<sup>13</sup> N. Barr, "Higher Education Funding" (2004a) 20(2) *Oxford Review of Economic Policy* 264. See also D. Cameron, "The Challenge of Change: Canadian Universities in the 21<sup>st</sup> Century" (2002) 45(2) *Canadian Public Administration* 145 (discussing the desirability of diversity).

<sup>14</sup> Barr (2004), p. 329.

<sup>15</sup> See, e.g., E. Posner, *Law and Social Norms* (Cambridge: Harvard University Press, 2000) (arguing that charitable donations can signal the donor's type to potential trading partners).

<sup>16</sup> See, e.g., S. Rose-Ackerman, "Altruism, Nonprofits and Economic Theory" (1996) 34 *Journal of Economic Literature* 701.

<sup>17</sup> G. Winston, "Subsidies, Hierarchy and Peers: The Awkward Economics of Higher Education" (1999) 13(1) *J. Econ. Perspectives* 13.

<sup>18</sup> C. Riddell, "The Role of Government in Post-Secondary Education in Ontario" (Research Paper No. 29, Ontario Panel on the Role of Government, 2003) (canvassing estimates of the significant private returns to higher education) and D. Laidler, "Renovating the Ivory Tower: An Introductory Essay" in D. Laidler, ed., *Renovating the Ivory Tower: Canadian Universities and the Knowledge Economy* (Toronto: C.D. Howe Institute, 2002) (arguing that the returns to undergraduate education are high, with some exceptions such as for fine arts for males, but the returns to graduate education are low and possibly negative).

<sup>19</sup> Riddell (2003), Barr (2004) and Laidler (2002).

<sup>20</sup> Laidler (2002) (noting the possible existence of societal spill-overs from research but arguing that there is reason to doubt that they exist in some cases based on empirical research).

<sup>21</sup> J. Chant, Comments on *Higher Education in Canada*, (John Deutsch Institute Conference, Queens University, February 2004) ("Evidence suggests, however, that many students themselves value university research." (p.5)).

<sup>22</sup> Chant (2004) and Cameron (2002).

<sup>23</sup> Chant (2004).

<sup>24</sup> D. Laidler, "Incentives Facing Canadian Universities: Some Possible Consequences" (Higher Education in Canada Conference, John Deutsch Institute, Queens University, February 2004) (discussing the risks in the focus of current research funding on research in science and technology) and Chant (2004) (discussing the shift of research funding agencies in Canada from granting agencies focused on potential for significant contribution to knowledge to research managers specifying the research that is valuable).

<sup>25</sup> See discussion in M.J. Trebilcock and E.M. Iacobucci, "Privatization and Accountability" (2003) 116(5) *Harvard Law Review* 1422.

<sup>26</sup> See A. Green, "Equality of Opportunity and University Education" in this volume for a discussion of the impact of university education on democratic decision-making.

<sup>27</sup> Riddell (2003) (discussing private benefits such as increased health and personal development and broader or public benefits such as improved outcomes for children of educated parents, reduced criminal

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activity, enhanced “social cohesion” (such increased civic participation and smaller social inequalities and lower levels of reliance on public transfers) and Laidler (2002).

<sup>28</sup> Laidler (2004) discusses the differing impact of university education on the level as opposed to the rate of growth of productivity. See also, for example, Laidler (2002) (discussing the potential role of universities in fostering growth in the standard of living by raising productivity of workers and by generating spill-overs such as from the creation and dissemination of new ideas) and Riddell (2003) (discussing the empirical evidence relating education and economic growth arising from innovation (dynamic externalities) and from interactions between educated workers and others (knowledge spillovers)).

<sup>29</sup> For example, R. Mueller and D. Rockerbie, “Do the Maclean's Rankings Affect University Choice? Evidence for Ontario” (Higher Education in Canada Conference, John Deutsch Institute, Queens University, February 2004) find that after controlling for a range of factors, Maclean's rankings of universities have a significant impact on excess demand across types of universities as measured by the entry grades of first year students. The impact varies across programs with the largest impact for medical/doctoral universities, then comprehensive universities followed by primary undergraduate universities. Further, many universities such as University of Toronto are developing a range of publicly available performance indicators (University of Toronto, *The Choice for a Generation: Investing in Higher Education and Ontario's Future* (University of Toronto Submission to the Rae Review, November 2004)).

<sup>30</sup> See, for example, S. Page, “Rankings of Canadian Universities, 1995: More Problems in Interpretation” (1996) 26(2) *Canadian J. of Higher Education* 47 discussing problems with “rank” data for universities. However, it may be that de-regulating tuition will lead to a demand for more and better information from rankings (Laidler (2004)).

<sup>31</sup> However, the Wharton School still provides some information to these services. Gordon Pitts, “Are business schools fudging their numbers?” (The Globe and Mail, November 17, 2004, B3).

<sup>32</sup> Barr (2004a).

<sup>33</sup> Barr (2004a).

<sup>34</sup> Barr (2004). See also R. Finnie, E. Lascelles and A. Sweetman, “Who Goes? The Direct and Indirect Effects of Family Background on Access to Post-Secondary Education” (Higher Education in Canada Conference, John Deutsch Institute, Queens University, 2004) on the positive relationship between family background and participation in post-secondary education.

<sup>35</sup> Smith (2000).

<sup>36</sup> See Barr (2004a).

<sup>37</sup> See Barr (2004a).

<sup>38</sup> See, for example, M. Trebilcock, R. Daniels, A. Green and R. Hrab, *Creating a Human Capital Society for Ontario* (Staff Report, Ontario Panel on the Role of Government, March 2004), Barr (2004a) and Riddell (2003) discussing income contingent loans and grants to students.

<sup>39</sup> It may, however, point to the need for government to engage in the distribution of such funding as universities may use such programs to price discriminate among students. Winston (1999).

<sup>40</sup> B. Jongloed and H. Vossensteyn, “Keeping Up Performances: An International Survey of Performance-Based Funding in Higher Education” (2001) 23(2) *J. Higher Education Policy and Management* 127 (surveying government higher education funding policies in 11 OECD countries).

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<sup>41</sup> Jongbloed and Vossensteyn (2001) (arguing governments are increasingly requiring universities to generate more information to improve stakeholder and student decisions).

<sup>42</sup> See Winston (1999); Barr (2004a) (discussing the potential need to consider both distribution and efficiency).

<sup>43</sup> Jongbloed and Vossensteyn (2001) (finding that the OECD countries surveyed tended to employ performance-based funding, although the proportion of such funding is generally low with countries relying on more than one measure and on a negotiating process).

<sup>44</sup> Janice Gross Stein, *The Cult of Efficiency* (Toronto: Anansi Press, 2001) and Michael Trebilcock, *The Prospects for Reinventing Government* (Toronto: CD Howe Institute, 1994).

<sup>45</sup> See, e.g., Smith (2000) (reviewing considerable administrative costs involved with quality assessment in the UK).

<sup>46</sup> Smith (2000), p. 23.

<sup>47</sup> For similar reasoning with respect to the role of tax deductions for charitable donations, see S. Levmore, "Taxes as Ballots" (1998) 65 *University of Chicago Law Review* 387 at 388: "The tax deduction essentially casts the government as a financing partner, with taxpayer-donors serving as intermediaries or agents who choose the providers of, or indeed the very existence of, certain services. In an important sense, private contributions are matched by the government through the charitable deduction."

<sup>48</sup> The Honourable Robert Rae, *Higher Expectations for Higher Education* (Discussion Paper, 2004, available at [www.raereview.on.ca](http://www.raereview.on.ca)) (providing a summary of the current funding model). See also D. Leyton-Brown, "Demystifying Quality Assurance" (Higher Education in Canada Conference, John Deutsch Institute, Queens University, 2004) (discussing the current systems in place in Ontario for quality assurance).

<sup>49</sup> Further, simple per capita funding provides universities with the opportunity to cross-subsidize courses – that is, accept students into lower cost courses and shift excess funding to higher costs areas (such as those requiring laboratories and equipment). This cross-subsidization may not be an issue in terms of the base level of funding (and may be attenuated by deregulating tuition such that students can decide not to attend universities that excessively cross-subsidize). However, it does not give much confidence in terms of incentives for quality. Chant (2004).

<sup>50</sup> Winston (1999).

<sup>51</sup> Mueller and Rockerbie (2004) discuss how the excess demand in the market for university admissions at current tuition levels may be cleared by student quality (as measured by GPAs). They find that excess demand for an institution leads to increased entrance standards (and GPAs).

<sup>52</sup> S. Mizrahi and A. Mehrez, "Managing Quality in Higher Education Systems via Minimal Quality Requirements: Signaling and Controls" (2002) 21 *Economics of Education Review* 53 advocate basing funding on the minimum entrance standards set by an institution. However, such standards may lead to gaming of admission standards and neglect the information provided by actual entrance quality.

<sup>53</sup> Trebilcock, Daniels, Green and Hrab (2004).

<sup>54</sup> See Trebilcock and Iacobucci (2003).