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## Assuring the Public Good in Higher Education: Essential Framework Conditions and Academic Values

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### Introduction

An important concern in contemporary debates about higher education policy is the “public good.” Economists have long distinguished “public” from “private” goods. Private goods are excludable; those who own the good can exercise private property rights, preventing those who have not paid for the good from using it or consuming its benefits. Private goods are also rivalrous; consumption by one consumer prevents simultaneous consumption by other consumers. In contrast a “public good” or service is neither rivalrous in consumption, nor excludable in ownership, and is available to all. Such goods -- national defense being the classic example -- will thus either not be provided or provided in insufficient quantities by the private (market) sector and therefore must be provided or subsidized by the state.

Traditionally education, particularly higher education, has been considered by economists to provide both private and public benefits and goods (OECD, 2008; McMahon, 2009). The private benefits of higher education, which many students are willing to pay for, include post-graduate employment opportunities, higher wages, and increased income over a lifetime. Even when one calculates the private internal rate of return, which considers the opportunity costs of a university degree including earnings foregone during the time used to obtain it, higher education is financially beneficial. In addition to monetary benefits, higher education produces non-monetary private benefits: direct benefits experienced in the process of consuming higher education, and over time better health, improved cognitive development for one’s children, higher returns on financial assets, and greater job satisfaction. In addition to these private benefits there are clearly social benefits provided by university graduates: higher taxes paid, less frequent incidence of smoking/poverty/incarceration (and therefore also less consumption by university graduates of public support), as well as more frequent participation by university graduates in volunteer activities, blood donations, and voting. In addition, investments in higher education are positively associated with social benefits such as industrial innovation and

economic growth. It is worth noting that these private and social benefits exist in all OECD countries and with the recent massification and expansion of access to higher education in many countries, including the UK<sup>1</sup>, the levels of these benefits have generally been enhanced (OECD, 2008).

In contrast to this economic research recent writings on the public good in higher education by sociologists, political scientists, and educationists have been largely critical (Calhoun, 2006; Tierney, 2006; Marginson, 2007; Brown, 2010; Rhoten and Calhoun, 2011). This literature suggests the policy reforms of the last several decades, which have introduced greater “privatization” and market competition into higher education systems (i.e., so-called “neo-liberal reforms”), have also lessened the “public goods” provided by higher education institutions and are compromising academic activity within universities. This literature, written primarily by those who work within higher education institutions, makes valuable contributions, but has several limitations. First, it is largely rhetorical and qualitative, rather than empirical. When this literature is empirical, it is often focused on the views of academics themselves rather than on indicators of the outputs or outcomes of universities. Furthermore, in critiquing the impacts of current policies, many of these studies do not cite or assess the economic research on the increasing private and public returns produced by higher education noted above. While the impacts upon those actively involved in the production of higher education should certainly be included in any calculation of the public good and/or the social benefits derived from higher education, focusing primarily on the impacts upon producers may not provide a totally objective assessment of the public good. An important question policy researchers must confront is “which public” and “for whose good” (Powell and Clemens, 1998).

Concerns also have been raised that studies based primarily upon the views of academic staff may be biased by their private interests. Gläser, Spurling, and Butler (2004), commenting on interview studies of the impacts of the UK Research Assessment Exercise (RAE)<sup>2</sup>, noted such studies were often not scrupulous about reporting sampling procedures, investigating bias due to nonresponse, or constructing questions carefully to avoid passing on negative assumptions about the RAE to the respondents. Processes like the RAE that reduce researcher autonomy may create in respondents a negative bias in answering questions regarding the effect of the policy on research performance. Nor do these studies always systematically control for factors possibly influencing respondents’ replies such as type of university, field, gender, or seniority. With regard the study of the public good in higher education the sociologist Craig Calhoun (2006, 34-36), while largely critical of recent higher education policy reforms, nevertheless clearly articulates the challenge for academic researchers:

“Professors tend to think universities exist naturally, or as a gift of history, in order to employ them. ... Most academics in other words, believe they deserve their university jobs on the basis of their previously demonstrated merit....

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<sup>1</sup> Throughout I refer to the UK and UK policy, but there has been increasing divergence in higher education policy among England, Scotland, Wales, and Northern Ireland (Bruce, 2011). While I discuss Parliamentary actions, the UK Quality Assurance Agency (QAA), and the 2011 UK government White Paper, the primary focus of my analysis is on policy and research relevant to England as well as to the activities of the Higher Education Funding Council for England (HEFCE).

<sup>2</sup> The UK RAE has now been renamed the Research Excellence Framework (REF) and is being redesigned. My comments are based upon the previous administrations of research assessment in the UK and their reported impacts.

[But academic] ...productivity... depends on the larger social institutions, not simply the brilliance or other merits of individuals. It depends on a variety of support systems, of course, and also on collaboration....

My point is not to castigate professors for the self-interested misrecognition common in their understanding of academic institutions. Nor is it to support all the claims of those who think universities should exist mainly to support only marginally intellectual ends from economic development to narrow job-skills training. Rather what I want to suggest is that the academic self understanding -- the class consciousness of professors -- has inhibited adequate recognition of major transformations in universities, higher education, and the production of knowledge, and has stood in the way of focusing attention on the public purposes of universities.”

Nonetheless, the recent literature on the public good in higher education has raised some important and challenging questions regarding the potential impacts of national policies on the academic integrity of universities. In the sections that follow these issues will be explored.

Concerns regarding the negative impacts of market-based higher education policies on the “public good” have been particularly acute in the UK, where enrollments in the university system have substantially increased over the last thirty years (i.e., “massification”) and public funding per student has been substantially reduced (OECD, 2011). However, research on “nonprofits”<sup>3</sup> in every sector and society (Powell and Clemens, 1998) suggests as the nonprofit sector expands there are strong pressures to become more like governmental and for-profit organizations, inevitably challenging traditional social goals. While issues of institutional control have predictably absorbed much of the oxygen in current UK debates about higher education, the research on nonprofit organizations (Schlesinger, 1998) also suggests that the public good is less impacted by questions of ownership and more influenced by the institutional framework affecting nonprofit, governmental, and for-profit institutions alike. The primary focus of this paper therefore is how best to regulate universities to assure the public good.

In contrast to the UK the institutional framework for colleges and universities in the US has long been characterized by a market-based approach. Contemporary “neo-liberal” or market-based university reforms in other countries have therefore sometimes been described -- unflatteringly -- as the “Americanization” of higher education. However, US policies on higher education still differ markedly from those currently guiding universities in the UK and in other OECD countries (Barr 2012a). Furthermore, despite the envious glances of EU policymakers towards the “world-class” reputation of many American research universities, recent research has raised questions about possible distortions in the current market-based US system of higher education (Dill, 2010). For example, there is concern the efficiency of the overall US academic research enterprise is declining, the proportion of the relevant age group graduating from colleges and universities is shrinking rather than increasing and now has been surpassed by a number of other nations including the UK, and the per-student costs of higher education --

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<sup>3</sup> While UK universities now receive the majority of their funding from the national government, they are autonomous, property-owning institutions whose independence is guaranteed by Royal Charter or by Parliamentary Statute (Williams, 2004). Therefore their governance is more similar to non-profit, private universities in the US than to the state-controlled universities of many other countries including the US.

already the highest in the world -- are continually increasing, outpacing inflation. Indeed, in contrast to this latter cost curve, a recent and much discussed study of a national sample of US college and university students suggests American academic standards are deteriorating (Arum and Roksa, 2011).

The economist Nicholas Barr has provided one of the more systematic efforts to define the public good of higher education and articulated a national framework of policies and/or regulation to assure the public interest (Barr, 2009, 2012a, and related chapter). While acknowledging the impacts or social benefits of higher education mentioned above, Barr suggests our understanding of these impacts is necessarily limited or uncertain because of the nature of the measures employed. Therefore he bases his suggested higher education framework not on policies designed to measure or estimate the social benefits of higher education, but on an analysis of the information assumptions necessary for a truly efficient and competitive market to function in higher education. I consequently begin my analysis with a discussion of a number of the policies suggested by Barr. But given the focus of much of the public debate about higher education, Barr understandably limits his analysis to the educational mission of universities. Recent national policies for higher education, however, also have included efforts to influence or steer university research and public service as illustrated by the Research Assessment Exercise and the “3<sup>rd</sup> Sector” program in the UK (Dill and Van Vught, 2010). Therefore my analysis will examine the institutional framework for maximizing the public good of university education, research, and public service.

## **Education Policy**

My reading of the research in higher education policy is largely supportive of Barr’s institutional framework for assuring the public good in higher education. However, with regard to education there are some debatable issues regarding the design of UK policy on variable fees and tuition caps, on information provided to potential university students, as well as on regulations for academic quality assurance.

### *Variable Fees and Tuition Caps*

As part of a needed regulatory framework Barr has supported variable fees as well as a government cap on university tuition and fees. However under the tuition cap adopted in 2004 nearly all the UK universities charged the maximum permitted fee, thus undercutting the supposed efficiency and diversity of a competitive market.<sup>4</sup> UK public support for higher education is below the OECD (2011) average and, as noted above, public funding per student has been cut substantially over the last decade. Therefore it may be argued the need to sustain academic quality provides a rationale for nearly all institutions to charge the maximum permitted under the national fees cap.

But the observed lack of fee -- and institutional -- diversity may also be due to market distortions encouraged by the current institutional framework for universities in the UK. First, all universities try to increase their expenditures for research, since it is a primary determiner of university reputation and helps attract the best scholars and students. Therefore a major dynamic driving all universities is an increasingly costly and inefficient “reputation race” (Van Vught,

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<sup>4</sup> Parliament has now raised the cap to £9,000 in “exceptional cases” and the vast majority of universities -- “unexpectedly” -- have raised their tuition and fees to this new level.

2008), which prompts a permanent hunger for financial revenues (and higher fees). In this sense Bowen's famous law of higher education still holds: "in quest of excellence, reputation and influence . . . each institution raises all the money it can . . . [and] spends all it raises" (Bowen, 1980, 20).

Second, universities offer an "associative good" in which potential students choose their university based in part upon the intellectual aptitudes, previous accomplishments, wealth, and family connections of the university's other students (Hansmann, 1999). The potential student understands that these and other attributes of future classmates have a strong influence on the quality of one's education and social experiences as well as on one's future personal and professional reputation. When nonprofit firms produce "associative goods" there is a strong tendency for customers to become "stratified" across firms according to their individual characteristics. Moreover, this stratification provides market power to all competing universities. That is when the top ranked university has secured all the best students and is charging them a monopoly price the second best university has every incentive to charge its students the same price without fear of losing students to the best institution. And so on down the line.<sup>5</sup>

For these reasons a fixed tuition cap for all universities is unlikely to promote effective price competition and provide an incentive for socially beneficial institutional diversity. Economists have therefore suggested a number of alternative university fee regulations to tuition caps (Douglass and Keeling, 2008). One approach, proposed by the US Carnegie Commission in 1973 is for government to estimate the proportion of public and private benefits generated by universities and to finance universities on this basis. The Commission proposed a division of costs among students and their families, state government, and institutional sources, including federal financial aid support. At the time of this proposal in 1973 around 15 percent of all operating expenses at US four-year public institutions were covered by fees, while today it is around 20 percent. As Barr notes, measuring effectively the proportion of public and private benefits of higher education is challenging and uncertain, but McMahon (2009) has suggested a systematic method for addressing this problem.<sup>6</sup>

A second approach attempts to peg university tuition to the economy by setting fees as a percentage of a general economic index such as the consumer price index (CPI) or gross domestic product (GDP) per capita. Fees would therefore rise only in relation to what people could afford. However such percentage limits ignore both Baumol's (1996) "relative price effect," whereby the price of labor intensive commodities such as higher education may rise more rapidly than prices generally, as well as the effects of significant declines in state subsidies.

My own view is that an effective regulatory framework would control fees, not as now by institutional category or title, but rather by recognizing existing differences in the market contexts of universities. For example those universities that are successfully competing in the global market (e.g., as indicated by their ranking in a designated world league table, or by valid

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<sup>5</sup> In the market-based US system the average increase in tuition fees for all institutions over the last thirty years has exceeded the general rate of inflation and independent colleges and universities particularly exhibit market power. For example, in 2011-12 Harvard University in Massachusetts, the top-ranked private university in the US, charged \$39,849 for tuition and fees, while private Hampshire College, also in Massachusetts and ranked 110<sup>th</sup> among nationally known selective liberal arts colleges, charged \$42,900 (<http://www.usnews.com/education>).

<sup>6</sup> Based upon his analysis of public and private benefits in OECD nations McMahon (2009) estimates 52% of total investment in universities (including institutional support and some student foregone earnings) should be supported by government funding and institutional endowments, while 48% should be covered privately by tuition, fees, and some foregone earnings (in the US he estimates the latter as roughly equivalent to student expenses for room and board).

measures of their research capability such as research with international impact, high-quality research doctoral education, and attracting significant numbers of competitive research grants) would be awarded the autonomy to set their own tuition and fees.<sup>7</sup> As in UK soccer leagues, access to this level of autonomy would be permeable, based upon public measures of current performance (i.e., universities could be “promoted” and “relegated”) and therefore over time other institutions could become eligible for this authority. This type of fee differential is more equitable as students attending “world-class” universities generally gain higher lifetime earnings than those attending institutions of a more local reputation.<sup>8</sup> Furthermore, as in the UK, universities awarded the autonomy to set fees could be assigned target proportions of admitted students from lower class backgrounds and/or, as in the US, required to fund a certain proportion of need-based aid for admitted students.

A framework for regulating fees could be retained for the more teaching-oriented universities that do not initially qualify for the fee autonomy outlined above. As suggested this framework might be based upon estimates of the public and private benefits generated by higher education and/or guided by economic indicators such as the rate of inflation.

### *“Perfect” Information for Student Choice*

A standard assumption for an efficient market is that both consumers and producers have “perfect” information -- rational choice requires that economic agents are well informed about both price *and* quality (Teixeira, et al., 2004). Therefore Barr (2012a) argues because university applicants are more mature and (and along with their parents) better informed than those making school education decisions, relying on market competition in the higher education sector is a feasible national policy. Similarly UK policy makers believe if student consumers have sufficient information on the quality of university academic programs their choices will provide a powerful incentive for universities to continually improve those programs, thereby increasing the human capital that benefits society.<sup>9</sup>

However the many university guides and league tables that have proliferated around the world do not effectively address the expected information deficiencies in the higher education market (Dill and Soo, 2005). Information provision is likely to positively influence academic standards only if quality rankings utilize measures linked with societally-valued educational outcomes, students use this information in their choice of subjects, and institutions respond to student choices by improving relevant academic programs (Gormley and Weimer, 1999). But the cost and complexity of developing valid indicators of academic program quality to inform student choice are significant. Furthermore, for-profit publications already enjoy substantial sales and influence among opinion leaders, higher achieving students and even university personnel by producing *institutional* rankings utilizing indicators of academic prestige, which

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<sup>7</sup> The adoption of differential fees based upon global markets has already been endorsed in England for MBA programs at Oxford, Cambridge, and the London Business School (Douglass and Keeling, 2008).

<sup>8</sup> Barr (2012b) has also recommended a categorical differentiation among UK universities based upon market performance. However in contrast to my suggested award of greater fee autonomy for true “world class” universities, Barr has suggested continuation of T-Grant subsidies for teaching in the humanities and social sciences for all universities save those charging higher fees and possessing low price elasticity (e.g., Oxbridge). Both categorical approaches would likely lead to a similar differentiation of the university sector.

<sup>9</sup> Following the Government’s Higher Education White Paper (BIS, 2011), the HEFCE now requires all universities subject to the QAA to develop and publish Key Information Sets (KIS) on undergraduate programs in order to assist students in making better informed decisions about what and where to study.

have questionable validity as predictors of effective student learning (Pascarella and Terenzini, 2005). This focus on institutional prestige in many league tables distorts the assumed constructive link between information on academic quality and university efforts to improve academic programs. Influenced by institutional rankings many universities, including those in the UK (Rolfe, 2003; Dill, 2007), have responded to market competition primarily by emphasizing admissions marketing, “cream skimming” of high achieving student applicants,<sup>10</sup> and investing more in student amenities as well as research reputation. Some UK universities have been motivated by academic quality rankings to improve their internal data gathering (Locke et al., 2008), but since the commercial league tables are not based on any testable theory or model of university educational performance it is not clear this investment in information leads to institutional actions that actually improve the educational quality of academic programs.

While many first degree students are “myopic consumers,” whose university choices are unlikely to provide strong incentives for the assurance and improvement of academic standards, there is evidence in the US (Romer, 2000) and some other developed countries of a significant market failure in student choice. Students are choosing in societally insufficient numbers demanding academic fields such as the sciences and engineering that clearly provide substantial private and social benefits. Therefore, independent of its impacts on academic quality, there may be a public interest in a policy requiring the provision of valid information to guide student choice, similar to that now being implemented in the UK. Such a policy likely should be designed to require publication of data on student retention, student progression, and graduate outcomes (i.e., including the nature of graduates’ employment, their average salaries, and their further education) *by subject field* for all institutions of higher education (OECD, 2008).<sup>11</sup>

### *Quality Assurance Policy*

Barr also supports the need for academic quality regulation, but suggests past efforts in the UK have been overly intrusive and bureaucratic (Barr 2009). The term quality assurance in higher education is used increasingly to denote the practices whereby university academic standards, i.e., the level of academic achievement attained by higher education graduates, are maintained and improved (Brennan and Shah, 2000). This definition of academic quality is consistent with a human capital perspective on the efficiency of universities, which combines estimates of university costs with assessments of learning outcomes, particularly the specific levels of knowledge, skills, and attributes that students achieve as a consequence of their engagement in a particular education program (McMahon, 2009).

Much of the critical literature on the public good in higher education addresses academic quality assurance. Neo-liberal reforms are perceived as “privatizing” academic life, altering in a

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<sup>10</sup> The Government’s White Paper (BIS, 2011) also proposed allowing unrestrained recruitment of high-achieving applicants (those achieving grades AAB or above at A-level or equivalent), which could also increase existing incentives for a costly “amenities arms race” (Barr, 2012b) among universities designed to better attract these students.

<sup>11</sup> This argument supports some of the “key information” required by the HEFCE, but there are a number of important methodological issues that need to be addressed for any such policy to be effective (Dill and Soo, 2005). For example, assuring the validity and reliability of student performance information reported by institutions as well as the graduate outcomes reported in alumni surveys, addressing the limitations of possible differential response rates by academic fields in student surveys, the fact that graduate salaries may reflect regional differences more than university differences, etc.

negative manner the academic relationship between students and academic staff, and lowering academic standards (Calhoun, 2006; Barnett, 2011). The greater commitment to research by members of academic staff and institutions may be driven more by the desire to enjoy additional individual career benefits and advance the prestige of the university than by the desire to benefit students and society. But as noted this increased investment in research and academic specialization comes at a cost, which includes less time by academic staff to devote to improving student learning in their individual teaching, and less time and inclination to collectively assure and improve academic standards in subject programs. Furthermore the academic processes often accompanying massification -- modular teaching, continuous assessment, student surveys of instruction, program funding based upon enrollment, and university funding based upon student graduation -- all provide greater incentives for the inflation of grades or marks as well as the relaxation of academic standards. In this new context of increased privatization for both academic staff and students, better balance is needed between professorial/program autonomy and the collective actions controlling academic work. As Calhoun (2006, 35) concludes regarding the public good in higher education:

Not least of all the productivity of academe depends upon the extent to which it is internally organized as a public sphere – with a set of nested and sometimes overlapping public discussions providing for the continual critique and correction of new arguments and tentatively stabilized truths....

The answer must lie in the organization of academic institutions and academic work in fields which provide plausible boundaries to these critical debates, but boundaries which never allow for more than partial autonomy. There must also be boundary -- crossing: physicists must sometimes question chemists, sociologists must sometimes question economists.

Our analyses of national academic quality assurance processes provide some support for this concern (Dill and Beerkens, 2010, Dill and Beerkens, in press). First, developing a stronger culture of quality for teaching and student learning and creating conditions for the continual assurance and improvement of academic standards within universities will require actively engaging both the collegial leadership of an institution as well as academic staff in departments and programs. The positive impacts of studied subject assessments, accreditations, and academic audits were most clearly visible in the increased discussions about academic quality as well as changes in curricula organization, student assessment, and modes of instruction that took place within academic programs. But an effective external quality assurance process also must create conditions in which the collective university assumes ongoing responsibility for maintaining academic standards and implements rigorous and effective collegial processes for assuring and improving academic quality in all the institution's academic programs. For this to occur, the university's core academic processes for assuring academic standards must be externally evaluated by competent peer reviewers and the effectiveness of these processes must be confirmed by assessing their influence and impact on the quality of teaching and student learning in a representative sample of study programs within each institution."<sup>12</sup>

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<sup>12</sup> The issue of evaluating academic subjects as part of academic audits has been a particularly contentious issue in England, but the failure to do so undermines the effectiveness of external audits. Logically the only effective means for assessing the effectiveness of teaching or instruction is to evaluate their impact upon student learning. Similarly,



A second design principal is the core academic processes that must be evaluated. As in the Hong Kong Academic Audit process (Massy, 2010), this requires a laser-like focus on the essential processes universities employ for assuring academic standards: the design and approval of new course modules and programs of study; procedures for reviewing academic programs; procedures governing the validity of grading and marking standards; procedures influencing the evaluation of teaching; procedures affecting student assessments; as well as the university's processes for identifying and sharing best practices in assuring academic standards among its academic programs. The design of some academic audit or subject assessment processes attempt to cast such a wide net or are so heavy handed that they may deflect academic staff from needed efforts to improve student learning outcomes.

A third design consideration is the administration of these external reviews. The most effective and legitimate instruments in the views of academic staff possess characteristics similar to those exhibited by the Teacher Education Accreditation Council (TEAC) in the USA (El-Khawas, 2010), the accreditation and quality processes of the General Medical Council in the UK (Harvey, 2010), and the ABET international accreditation process in applied science, computing, engineering, and technology (Prados, Peterson, and, Lattuca, 2005). These external reviews all strongly emphasize a culture of evidence-based decision-making within institutions directly applied to the improvement of teaching, student learning, and academic programs. Accordingly they place much weight on assessing the validity and reliability of institutional measures and mechanisms for assuring academic standards. Peer reviewers are trained, supported during the review process by professional staff, and employ systematic, standardized procedures and protocols.

A final problem with academic quality assurance regulation is accountability and the typical policy response to this question is to require a public evaluation of the academic quality agency as a means of protecting the public interest in effective regulation. However, the adopted process for actually evaluating national academic quality assurance agencies provides evidence of "regulatory capture" in which those whose interests are affected by the relevant regulation gain influence over the regulatory agency and promote their private interests over those of the public (Dill, 2011). The design and conduct of quality assurance agency evaluations are often controlled by the agencies themselves in cooperation with associations of agency professionals and/or selected representatives of those regulated. Such evaluations lack independence, often fail to employ a suitably relevant and robust method of validation, and generally ignore the critical issue of value for money (Blackmur, 2008). This type of evaluation may provide inadequate evidence for improving the efficiency of external quality assurance regulations. The public interest is therefore better served if the effectiveness and efficiency of academic quality assurance agencies are evaluated by established, respected, and independent national evaluation or audit agencies similar to the Government Accountability Office in the US and the United Kingdom National Audit Office.

## **University Research Policy**

The policies recently implemented by national governments including the UK also have had direct effects on the research behavior of universities (Dill and van Vught, 2010). The combination of new financial policies for research and research evaluation instruments such as

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the only feasible means of evaluating the effectiveness of a university's processes for assuring academic standards is to investigate their impact upon and the responses by a sample of academic subjects or programs.

the RAE are leading universities to develop more specific institutional strategies, toward “focus and mass,” toward increased specialization and concentration in research. The new policies also appear to be making universities in nearly all OECD countries more productive in their output of publications, research doctoral graduates, as well as their patenting and licensing activities. Marked improvements in the organization and management of university research activities and programs were also reported in most of our OECD cases (Dill and van Vught, 2010). However, it is likely that these organizational improvements are due not only to the recently implemented policy instruments mentioned above, but also to the general reductions in funding for publicly supported universities that have occurred in conjunction with the massification and expansion of higher education in many countries including the UK (Williams, 2004). As a consequence, universities in some of our case-study countries have necessarily become highly motivated to pursue alternative sources of revenue for their research programs and therefore have been required to develop the research centers and internal research management processes necessary to survive in this more competitive market.

Several of our case studies (Dill and van Vught, 2010) noted that the increased incentives for applied research and knowledge transfer may reduce the amount of basic research and over the longer run actually retard or diminish innovation by reducing the number of significant discoveries in fundamental knowledge. However studies in both the United States and the United Kingdom, where national research funding has become increasingly competitive, do not yet indicate a reduction in the proportion of basic research being conducted (Dill, 2010; Henkel and Kogan, 2010).

Finally, the policy of allocating the majority of academic research monies through competitive government research proposals, which is the current practice in the US, requires the investment of time by researchers applying for and administering these research grants. US academic scientists now report spending 42 percent of their research time filling out forms and in meetings required for pre- and post-grant work (Kean, 2006). This suggests that an appropriately balanced dual funding model for universities may still be most efficient for society.

### *Research Doctoral Program Policy*

In contrast to the national markets for first degree-level education where the “myopic” choices of student consumers may limit the potential for user information to improve academic programs, the international market for research doctoral students appears to behave in accordance with classic economic assumptions. Many universities now provide full financial support to the best doctoral applicants in an effort to compete aggressively for the most able international students. Doctoral applicants are an older, more educationally experienced set of consumers, who are pursuing advanced degrees primarily for vocational reasons. Doctoral applicants therefore are less likely to be swayed by consumption benefits, social factors, geographical considerations, and institutional reputation in their choice of academic programs and more likely to be influenced by valid information on doctoral program quality (Van Bouwel and Veugelers, 2009).

In this more perfectly competitive market the research doctoral rankings of the National Research Council, which are in fact the only government supported university rankings in the United States, appear to have been highly influential on student choice and also motivated demonstrable improvements in US PhD programs in a number of the leading universities (Dill, 2009). With the support of the National Science Foundation and the National Institutes of Health

these research doctoral rankings have been designed by leading US social scientists and in international comparison are noteworthy for their attention to the validity and reliability of measures. Given the acknowledged positive influence of research- doctoral graduates on economic growth in the developed countries (Aghion, 2006), government support for doctoral quality rankings appears to be a particularly well-justified policy and one worthy of greater attention in the UK.

### *Technology Transfer Policy*

A much debated issue is national policy on intellectual property rights (IPR). The original changes in the IPR legislation in the United States -- the Bayh-Dole Act -- were motivated by a desire to speed knowledge to market. Patent and licensing rights were reallocated to universities through new laws designed to increase university incentives for knowledge transfer. The policy was not promoted as a major new source of funding for universities. However, with the growing international competition for academic research monies, many universities are now more aggressively seeking research revenues from other sources and, in many instances, have interpreted new IPR legislation as an exhortation to “cash in” on their research outcomes. The evidence suggests (Dill and van Vught, 2010) that the majority of universities in the OECD countries are at best breaking even and many are suffering net losses from their investments in technology transfer offices and affiliated activities. While many universities see their technology transfer expenses as a necessary investment they expect to bear significant fruit over time, research in the United States (Geiger and Sa, 2009) suggests that over the longer term the institutions that do reap some financial benefit from patenting and licensing are the most highly ranked and best-known research universities. But even in these institutions, there tends to be a natural “ceiling” or limit to the amount of such revenue that can be earned, because patents and licenses are influential on innovation and profits in a relatively small number of industries and technical fields, biotech being the most prominent example (Cohen, Nelson, and Walsh, 2002).

One unintended impact of public policies that emphasize IPR as a means of stimulating academic knowledge transfer is their influence upon the core processes of academic science (Geiger and Sa, 2009). Because of increased incentives for universities to patent and license their discoveries as a means of raising revenues, some theoretical results and research tools that have traditionally been freely available to other scholars and researchers are now being restricted. This constriction of open science may in fact lessen the economically beneficial “spillovers” that are a primary rationale for the public support of basic academic research. Policy instruments intended to provide incentives for knowledge transfer, therefore, have to be designed with particular care to maintain the benefits of open science.

### *Research Evaluations*

Performance-based funding of research has increasingly been emphasized in many OECD countries including the UK both by increasing the proportion of research monies allocated competitively by research councils and by basing institutional funding of research on evaluations of research quality including measures such as publications and citations. The most prominent example of the latter approach is the Research Assessment Exercise (RAE) in the UK. The evidence suggests that performance-based funding of UK research has increased the productivity of the academic research enterprise and possibly also its quality, stimulating latent

capacities for research that had not been previously effectively mobilized (Henkel and Kogan, 2010; Hicks, 2008). UK universities are also reported as adopting a more strategic approach to their research efforts with marked improvements in the internal organization and management of research programs and activities.

However, performance-based funding has other impacts on university research (Hicks, 2008). There is concern that the focus on peer reviewed publications may suppress excellence, inducing a certain homogenization of research at the upper levels. Furthermore the emphasis on publication counts encourages some researchers to become more calculating in their publication patterns, slicing their research into smaller topics and more numerous articles. The benefits of performance-based funding also appear to be discontinuous creating a one-time shock to the overall system, which initially motivates increased research productivity in all universities eligible for the funding, but tends to dissipate over time (Crespi and Geuna, 2004). Performance funding also further contributes to the stratification of universities, concentrating research in those institutions with richer resources, larger numbers of internationally recognized academic staff, and established reputations.<sup>13</sup>

The challenges of effectively applying an assessment instrument such as the RAE to university research also reveal a number of complications predicted by the principal-agent model (Weimer and Vining, 1996). These include the need to continually adjust the output indicators in order to address the complexities of academic research, the high costs of monitoring university research performance, and the difficulties of controlling cross-subsidies in an organization like the university, which possesses the multiple outputs of teaching, research, and public service.

In addition the attention awarded to the UK RAE has distracted policy makers and analysts from alternative research assessment approaches. For example the Netherlands has implemented a research assessment system for its universities, but it is not focused primarily on indicators of research publication and is not tied to university funding. Instead, every six years each university conducts an external peer review of its research programs involving internationally respected researchers (Jongbloed, 2010). These reviews follow a Standard Evaluation Protocol (SEP) designed by the universities themselves in concert with national research organizations. The SEPs focus on the academic quality, scientific productivity, and long term vitality of each research program and utilize a variety of information sources including on site interviews, university self-reports and bibliometric evidence. The evaluations are made public, but do not inform government funding.

Research suggests that these more formative evaluations have had similar positive impacts on research productivity, research quality, and improvements in each university's strategic management of research as the much more highly publicized summative performance funding system in the UK (Westerheijden, 2007). But the more qualitative and collegial research evaluation process developed in the Netherlands has not produced the same amount of rancor and divisiveness among the members of the academic profession, nor contributed to the same degree of research stratification as in the UK.<sup>14</sup> Furthermore, in contrast to the RAE, the system

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<sup>13</sup> Many of the academic critics of the RAE perceive research stratification in negative terms. But in mass systems of higher education greater concentration of the limited public resources available for academic research may be more efficient for society and necessary to better serve the public good. As in other areas of regulation, the issue then is the legitimacy and effectiveness of a research assessment system.

<sup>14</sup> However, unlike the UK the Netherlands has retained a binary system of higher education featuring polytechnic institutions, which offer bachelor programs closely tied to professional fields and businesses in the local region and which are not permitted to engage in research doctoral education. This binary line lessens the need for stratification

in the Netherlands has been more stable in design, likely less costly to run, and potentially provides more nuanced and useful information to each university on means of improving its research activities. As such these research evaluations can continue to make over time an effective contribution to improving the academic research enterprise.

## **Public Service**

National policies increasing the incentives for university technology transfer are also reshaping the public service role of universities. There are legitimate concerns that this emphasis on technical innovation may reduce the important but difficult to measure role universities have traditionally played in enriching their regions socially and culturally. But research also suggests that a “one size fits all” national technology transfer policy may in fact diminish the contribution universities traditionally made to fostering regional economic development (Lester, 2007).

Comparative research on a number of OECD countries, including the United Kingdom, has revealed that the knowledge transfer processes -- patenting, licensing, and new business formation -- favored by national innovation policies were often not the most important contributors to local and regional development (Lester, 2007). While some “global” universities produce technology artifacts that are transferable worldwide, effective knowledge transfer for most universities is a more local process and depends upon the nature of industrial development occurring in the regional economy. Universities do in fact contribute to the creation of new businesses, but much more commonly they help to upgrade mature industries, support the diversification of existing businesses into new fields, and assist in the transplantation of industries. In these roles traditional publications, the provision of skilled S&T graduates for the regional economy, and technical problem-solving with local business and industry through consulting and contract research are much more significant channels for influencing technical innovation than are patents and licenses (Cohen, Nelson, and Walsh, 2002). Universities also play a crucial role by providing a “public space” (Lester, 2007) in which, through meetings, research conferences, and industrial liaison programs, local business practitioners can discuss the future direction of technologies, markets, and regional industrial development in a non-collusive manner.

This contribution to regional development is potentially a role all universities with scientific and/or technical faculties, not just “world class” institutions, can perform. National policies encouraging this type of local and regional focus would therefore also help promote the development of socially beneficial diversity in higher education systems. Such policies should provide incentives for universities to focus less on their possibly inefficient investments in conventional technology transfer and more on developing a strategy for encouraging innovation in their region. This approach would encourage universities to systematically assess the circumstances and development of local industry, the research strengths of the institution, and the most appropriate channels for aligning the university’s capabilities with the needs of the local economy (Lester, 2007). The Finnish National Centres of Expertise Programme provides one well-regarded national model for developing universities as nodal points in regional networks of innovation by helping them better integrate their research expertise with local industry and business along the lines suggested here (Dill and Van Vught, 2010).

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within the university system. The Netherlands also has a smaller system of higher education and possibly a more consensual culture than the UK.

## Conclusion

Barr (2012a) has consistently argued that the welfare state will endure and adapt to social change because it not only offers poverty relief but also provides means of addressing the intractable economic problems of imperfect information, risk, and uncertainty. Similarly I conclude that the self-regulating aspects of universities will endure and adapt to social change because, as noted above, the complexity and uncertainty of academic work distort the efficiency of higher education markets and, consistent with principal-agent theory (Weimer and Vining, 1996), compromise direct government efforts to assure the public good in higher education.

One danger of inadequately regulated market competition in higher education appears to be in providing incentives for the privatization of academic work, understood as the pursuit of autonomy for individual teaching and research, for program development, and for institutional prestige, less to better serve the public and more to maximize private benefit. The most effective institutional framework for assuring the public good in higher education appears to be one that provides incentives to reform and reinforce the collegial mechanisms by which the members of the academic profession monitor, socialize, and support the values essential to effective university teaching, research, and public service. The form of these collegial mechanisms must change over time in response to new circumstances and new technologies. But one reason the university, which first emerged in the 12<sup>th</sup> century, has continued to be a vital institution for society, and if anything is of greater importance today, is that it has the capacity as a collective community to assure the integrity of its core processes. Contemporary examples such as the academic audit process in Hong Kong, the research assessment process in the Netherlands, the research doctoral rankings in the US, and the regional development initiative in Finland suggest how well designed public policies can provide incentives for universities to improve and strengthen the collegial processes necessary for assuring the public good in the changing environment of higher education.

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