

Chapter 2

Public Policy Design and University Reform: Insights into Academic Change

David D. Dill

Introduction

I recently walked past the Sorbonne and was reminded of the first trip my wife and I made to Europe in June of 1967. As we passed the Sorbonne that summer day workers were covering the paving stones in the street with Tarmac to prevent the University students from stoning the police. In much of Europe and North America that year, as now, there were student protests about higher education. The literature on higher education of that time was peppered with terms such as “reform” and “revolution” and there were calls for dramatic change in universities. In response to those student uprisings faculties were reorganized in France and in many countries changes were made in the internal processes of university governance. Students, and in Europe staff as well, were provided greater opportunities to participate in university decision-making. However, over time the significance of those supposedly major changes in governance faded as students discovered what their professors already knew – that university decision-making is a rather boring activity. Eventually the energy of university students returned to their age old pre-occupations with eating, drinking, political argument, university fees, and sex, not necessarily in that order.

In retrospect it is apparent during that period of supposed fundamental reform, European universities changed only modestly. European academics in the 1970s still looked upon American universities as truly foreign entities, with highly influential but clearly superfluous university administrators, with an abnormal interest in private fund raising, and with bizarre policies like tuition fees. American academics in turn were still confused by the novel degree structures of European universities,

D.D. Dill (✉)

Department of Public Policy, University of North Carolina at Chapel Hill,
917 Emory Drive, 27517 Chapel Hill, NC, USA
e-mail: david_dill@unc.edu

they were envious of the supreme authority granted university professors, and they were amazed by the extraordinary autonomy accorded supposedly state-funded universities in Britain – what one wit of the day described as “the private management of public monies.” I briefly mention this history because in contrast to that period of alleged radical change, the reforms implemented in European universities over the last 25 years have been truly revolutionary.

What has caused these recent significant changes and what are the impacts of these reforms on universities? Some suggest the contemporary changes in universities have been caused primarily by new government policies and regulations. But current theories of institutional change (Greif and Laitin 2004) argue that “institutional refinements” evolve out of exogenous shocks such as the globalization of higher education markets as well as alterations in endogenous processes such as the technology of information. I will explore these assumptions in the following analysis from the perspective of how the study of university change may help inform the design of more effective public policy for higher education.

Clark’s Triangle

I begin with the general framework first articulated by our late and revered colleague Burton Clark (1983), the notion that university behavior is influenced or controlled by the respective forces of the state, the market, and the academic profession. In the study of higher education it is ritualistic to cite this framework, but echoing the remarks of the American writer James Agee, I would like to consider Clark’s triangle of forces not as a sociologist, a political scientist, an economist, or lawyer – but seriously. My reason for this is that Clark’s model is clearly derived from the earlier American Institutional School of political economy, which perceived organizational change to be a result of the complex interactions among the regulations of the state, the forces of the market, and social norms. This institutionalist framework has again become significant because many argue that the current policies of national governments, including higher education reforms, have been influenced by the theories of what has been termed the “new institutional economics” (Barzelay 2001; Scott et al. 1997). These new theorists have re-emphasized the broader institutional explanation of organizational change, but they have done so by merging the earlier institutionalist framework with neoclassical economics, emphasizing transaction costs, property rights, and principal-agent relationships (Weimer and Vining 1996).

I have recently completed, with the assistance of a number of international colleagues, two comparative studies of national policies influencing higher education (Dill and Beerkens 2010; Dill and van Vught 2010). The first is a study of the new regulatory instruments for assuring academic quality and the second is a study of the impact of national policies on the academic research enterprise among the leading OECD nations. In the analysis to follow I will draw upon these two studies and related research to discuss what we are learning about the institutional framework

of university change and of the influence on academic behavior of state reforms, market forces and the norms of the academic profession.

The Influence of State Reforms

The role of the state in recent university change is frequently characterized by terms such as “neo-liberal reforms,” “managerialism,” and the “new public management” (NPM). Of these concepts the “NPM,” a term first attributed to Christopher Hood (1991), has been the most widely cited and studied. However, the concept of the “NPM” is not systematically defined (Barzelay 2001). In addition the policy reforms associated with the NPM appear to vary significantly from country to country. That is, they are path dependent, shaped by the particular history and institutions of each nation. Therefore I would like to focus my discussion of the influence of the state by articulating some of the core assumptions of the new institutional economics that appear to be influencing public sector governance (Hood 1991; Weimer and Vining 1996):

- first is the assumption that competition among independent organizations is superior to state monopolies as a means of achieving the social benefits of increased innovation and efficiency;
- second is the public choice assumption that rational user choice is more efficient than government bureaucracy as a means of controlling the rent-seeking behavior of government supported organizations;
- and third is the principal-agent assumption that transaction costs, including monitoring the self-interested behavior of professionals, can be minimized through better specified contracts.

In the case of higher education reforms these assumptions are most visible in the following types of policies:

- the facilitation and freeing of market forces by the adoption of competitive mechanisms for the allocation of government support for universities and by the reallocation of intellectual property rights;
- empowering users by mandating the provision of academic quality information to students as well as by increasing utilization of tuition fees for university funding;
- and specifying contractual relations between government and the universities by tying research funding to clearly defined indicators of university output.

The central contribution of the new institutional economics to the design of public policy consequently is to make assumptions about the nature and distribution of information in human behavior much more explicit (Weimer and Vining 1996). In examining the impact of contemporary government reforms on change in universities, I would therefore like to explore what we are learning about the role of information in the functioning of higher education.

Rivalrous Competition

James D. Watson's (1968) personal account of the discovery of the structure of DNA over 30 years ago clearly demonstrated that rivalry is intrinsic to the academic life. Academics have long competed for research grants from national research councils as well as for academic prestige via peer reviewed publications and international scholarly awards such as the Nobel Prize. But government support for universities in most countries other than the US was provided primarily by institutional block grants allocated to institutions on an incremental basis. This has changed (Dill and van Vught 2010) and now most of the leading OECD countries are allocating some portion of their general university funds (GUF) competitively for designated purposes such as:

- research doctoral students
- distinguished faculty chairs
- grants for research infrastructure
- research centers of excellence
- graduate or research schools
- and funds to achieve institutional “world-class” status

Less visibly, academic rivalry is also increasing in many countries because in dual funding systems the proportion of research funds allocated via institutional block grants is declining and the proportion allocated competitively through research councils is growing (Dill and van Vught 2010).

One obvious impact of the new emphasis on competitive allocation by government is the growing stratification of higher education systems with an increasing concentration of resources in research-intensive universities. Many have criticized this new emphasis on research concentration as violating the established norm of “egalitarian homogeneity” among universities, or what the British have termed the “gold standard” of academic quality. But our recent comparative study of national policies (Dill and van Vught 2010) clearly revealed that in most OECD countries, including the pre-1992 universities in the UK, research doctoral production and research funding were as in the US much more concentrated in certain universities than was publicly acknowledged. The more recent policy emphasis on the competitive allocation of institutional support (GUF) has made this hierarchy much more visible, but did not create it. In contrast it is worth noting that The Netherlands (Jongbloed 2010), which has retained one of the most homogenous university sectors, has been able to accomplish this by maintaining a clear differentiation between teaching-oriented and research oriented higher education – a binary line – so that much of their recent national enrollment growth in tertiary education is absorbed in a separate, vocationally-oriented, polytechnic sector.

From an economic perspective, the introduction of greater competition into higher education should lead, not only to increased productivity, but also to greater allocative efficiency for society as universities become more diverse in their missions, because rivalry supposedly requires universities to respond more effectively to the needs of their relevant users.

Although the evidence of increasing research concentration is readily apparent in many countries (Dill and van Vught 2010), the competitive allocation of government support has not yet led to the expected increases in socially beneficial institutional diversity. Instead, most national university systems are increasingly influenced by what I will humbly term “Dill’s Iron law of Academic Reputation,” which may be stated as: “While not all universities are world class, all members of academic staff believe *they* are world class.” This professional belief may be admirable at the individual level, but when broadly shared among academic staff in increasingly autonomous universities, this collective academic norm becomes a major driver of institutional homogeneity. The eagerness to increase individual and institutional academic reputations impels all universities in the new, more competitive environment to imitate the leading research universities rather than to diversify their missions and profiles. All universities try to recruit and employ the best scientists, that is, those scholars with the highest recognition and rewards, the highest citation impact scores, and the largest numbers of publications. To better compete for reputation, all universities seek to increase their research expenditures and attract the most talented PhD students, creating a continuous need for extra resources. In the US, for example, the fastest growing component of national expenditures on research is institutional expenditures (Dill 2010), a category that includes institutional revenues derived from other sources – including student tuition – that are cross-subsidizing research. In sum, a major dynamic driving all universities is an increasingly costly and socially inefficient “academic arms race” for research reputation (Brewer et al. 2002; Van Vught 2008), in which academic norms appear to play a significant role.

As previously suggested the nature of academic information may be relevant to achieving the allocative efficiencies expected of greater competition. For example, recent econometric studies in the US suggest that research funds allocated competitively to universities through peer review by the National Science Foundation are associated with research publications and patents, but increases in industrial support for university research are positively associated with research output only when competitively awarded federal research funds remained dominant (Adams and Clemmons 2009; Foltz et al. 2005). In short, US corporate support for university research may not be efficiently allocated. Similarly subnational and regional governments are increasingly investing in research at their local universities as a means of stimulating economic development. But our comparative analysis also suggests local governments frequently lack the political will and/or the expertise to allocate their research funds to the most worthy projects through competitive awards and merit-based peer review (Geiger 2010; Zumeta 2010). Instead they “scatter” their funds in response to the demands of more proximate stakeholders. Therefore as national policies encourage more diverse sources of financial support for publicly funded universities, public policies that clearly identify through rigorous peer review national centers of excellence in teaching, research, or service can provide valuable information – a market signal if you will – that may lead to more socially beneficial investments in academic research by subnational governments, corporations, and other patrons.

Finally, in evaluating the effectiveness of competitive allocation policies it is important to assess the true transaction costs of these processes. In the US for example over two-thirds of the funds expended on academic research are allocated by the federal government on a competitive basis to individual researchers and teams (Dill 2010). But a recent survey suggests that the time spent on applying for and administering these research grants may be contributing to observed declines in American research productivity. US academic scientists now report spending 42 % 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.

Intellectual Property Rights

Another example of national higher education policies influenced by the new institutional economics is the attempt to create new marketable goods by the reallocation of intellectual property rights. The much imitated intellectual property rights legislation in the US, known as the Bayh-Dole Amendment, was motivated by a desire to more rapidly transfer basic university research to the market. Therefore patent and licensing rights for government sponsored academic research were re-allocated to universities to increase incentives for knowledge transfer. The Bayh-Dole policy was not implemented in order to create a major new source of funding for higher education, but in the now more competitive global market for higher education, the adoption of similar knowledge transfer policies in other countries has motivated many universities to create technology transfer offices as a means of “cashing in” on their research outcomes. The evidence from our comparative study (Dill and van Vught 2010) suggests 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 activities. While many universities expect their technology transfer investments to bear significant fruit over time, the institutions that do reap some financial benefit from patenting and licensing are the most highly ranked research universities. Even in these institutions there tends to be a natural limit to the amount of revenue that can be earned from technology transfer. Patents and licenses are influential on technical innovation in a relatively small number of industries, biotech being the most celebrated case (Cohen et al. 2002).

One unintended impact of the new intellectual property rights policies is their influence upon the core processes of academic research. By increasing incentives for universities to patent and license their discoveries as a means of raising revenues, some research tools and theoretical results traditionally freely available to other scholars and researchers are now being restricted. This “anticommons,” or constriction of open science (Heller and Eisenberg 1998), may lessen the economically beneficial “spillovers” that have been the primary justification for public subsidies of basic academic research.

Furthermore national policies with a “one size fits all” emphasis on the “hard” outputs of academic research may undercut the institutional diversity that benefits society. A recent comparative study (Lester 2007) revealed that the knowledge transfer processes emphasized in current national innovation policies – i.e., patenting, licensing, and new business formation – were not the most important contributor to local and regional development. Although some “world class” universities produce technology artifacts that are transferable globally, for most universities effective knowledge transfer is a more local process, contingent upon the nature of industrial development in the regional economy. Universities do help create new businesses, but more commonly they help to modernize mature industries, support the expansion of existing businesses into new fields, and assist in the relocation of industries. In these roles the provision of capable science and technology graduates for the regional economy, traditional publications, and consulting and contract research on technical problems with local business and industry are much more significant channels for influencing technical innovation than are patents and licenses (Cohen et al. 2002). Universities also provide a unique “public space” (Lester 2007) for local business practitioners, in which they can meet during research conferences and industrial liaison programs to discuss the future direction of technologies, markets and regional industrial development in a non-collusive way.

Potentially all comprehensive and technical universities, not just “world class” institutions, can make this contribution to regional development. The critical factor in designing effective national policies for regional development appears to be a more nuanced understanding of the role information plays in technology transfer. As noted most influential on local innovation are the “softer” knowledge transfer processes such as publications, meetings, consultants, and the hiring of new PhD graduates, whose added expertise is a primary means of transferring academic knowledge to industry (Cohen et al. 2002). Therefore universities need incentives to engage in studies and consultations designed to better understand their own research strengths, the development and circumstances of local industry, and the most appropriate channels for aligning the university’s capabilities with the needs of the local economy (Lester 2007). The Finnish National Centers of Expertise Program (OECD 2007) provides one highly regarded model along these lines, helping universities to better integrate their research expertise with local industry and business, and thereby serve as nodal points in regional networks of innovation.

Information and Student Choice

The national policy that reflects the second major assumption of the new institutional economics is the emphasis on empowering users both through a greater reliance on tuition fees to finance universities and through provision of better information on academic quality. Given my recent comparative study of national quality assurance policies (Dill and Beerkens 2010), I will therefore focus this analysis on current assumptions about the role of information in student choice.

The customary assumption for an efficient market is that consumers and producers possess “perfect” information – truly rational choice requires economic agents who are well informed about both price *and* quality (Teixeira et al. 2004). Consequently it is believed that if student consumers have sufficient information on the quality of university academic programs their choices will provide a powerful incentive for universities to improve those programs, thereby increasing the human capital that benefits society.

However, the accumulating evidence suggests the many commercial league tables now developing around the world fail to address the identified information deficiencies in the higher education market (Dill and Soo 2005; Hazelkorn 2011). Developing valid indicators of academic program quality to inform student choice is a complex and costly challenge. Moreover, for-profit league tables already enjoy substantial sales and influence among higher achieving students, university personnel, and opinion leaders, by producing *institutional* rankings based primarily upon indicators of academic prestige, which have doubtful validity as predictors of student learning (Pascarella and Terenzi 2005). Furthermore the emphasis on institutional prestige in these commercial rankings corrupts the presumed link between information on academic quality and university efforts to improve academic programs. In pursuit of institutional rankings, many universities have instead responded to market competition by emphasizing admissions marketing, “cream skimming” their applicants to focus on the admission of the highest achieving students, and increasing institutional expenditures on research reputation (Dill and Beerkens 2010). As a result many universities have made a limited investment of academic staff time and institutional resources in improving the academic standards of programs in which recruited students enroll.

The failure of the commercial sector to adequately address the need for valid user information on the quality of academic programs has motivated a number of non-profit initiatives to provide more socially beneficial information. These include the well-designed academic program rankings developed in Germany by the Center for Higher Education (CHE) and now being adopted in a number of other countries (Beerkens and Dill 2010). These rankings present information on academic subjects rather than whole institutions, information truly relevant to student choice, and the rankings were carefully developed by knowledgeable professionals utilizing existing research as well as surveys of student needs.

But even these rankings have limitations as a guide to effective student choice (Beerkens and Dill 2010). For example, the reliability of the program-level surveys of students is debatable given the low and/or highly variable response rates among the students surveyed in different fields. There is also an association between rankings scores and institutional size. Finally the reported differences among subjects or institutions are modest and scores tend to be stable over time, thereby providing limited guidance to student decision making.

Furthermore international research on student choice does not lend much support to the presumed association between information on the quality of academic programs and student enrollment (Dill and Soo 2005). In mass higher education systems quality rankings and ratings influence the educational decisions of a relatively small

segment of the student population, primarily those of high ambition and achievement. The education choices of most students are influenced by a wide variety of educational, social, and personal factors, including the immediate consumption benefits of education, which suggests that the individual decisions of even well informed potential students are unlikely to provide a strong incentive for the improvement of academic programs. To summarize this point in the simplest possible terms, how many parents of potential university students believe that the rational choices of even better informed teenagers is the best way to preserve civilization? Instead, as I will suggest below, information on the quality and performance of academic programs is most likely to lead to beneficial improvements if we focus on its use in the rational choices made by the producers of higher education – that is the academic staff. Recall that a necessary assumption of efficient markets is that *both* users and producers have access to “perfect” information on cost and quality.

Finally, in contrast to the market for first degree-level education where the orientation and maturity of student applicants limits the influence of user information on improving academic programs, the global market for research doctoral students appears to reflect classic economic assumptions (Dill 2009). Many universities compete aggressively for the most able international students and provide full financial support to admitted research doctoral applicants. Doctoral students, who pursue advanced degrees primarily for vocational reasons, are older and more educationally experienced consumers. Consequently in choosing academic programs doctoral applicants are less likely to be influenced by consumption benefits, social factors, or geographical considerations and more likely to be swayed by valid information on doctoral program quality. In this more perfectly competitive global market, the well-designed National Research Council rankings of research doctoral programs in the US, which are the only university rankings subsidized by the federal government, are not only highly influential on student choice, but have motivated measurable improvements in research doctoral programs in a number of leading US universities (Dill 2009). Given the demonstrated positive influence of research- doctoral graduates on economic growth in developed countries (Aghion 2006), the adoption of research doctoral quality rankings appears to be a particularly well-justified public policy and one worthy of greater attention in Europe (Van Bouwel and Veugelers 2009).

Performance Funding

The third national policy that reflects the assumptions of the new institutional economics is performance-based funding or contracting. Performance-based funding of university research, based upon measures of outputs such as publications and citations, has been adopted in a number of countries. The most frequently cited example of this policy is the Research Assessment Exercise (RAE) in the UK (Henkel and Kogan 2010). Performance-based funding appears to have increased academic research productivity and possibly also its quality, stimulating research

potential that previously may not have been effectively mobilized (Hicks 2008). Universities are adopting more strategic approaches to their research activities with reported improvements in the organization and management of research programs (Dill and van Vught 2010). However, performance-based funding may also have negative impacts on university research (Hicks 2008). The focus on peer reviewed publications may limit excellence, motivating a greater similarity of research at the upper levels. The emphasis on publication counts may also encourage some researchers to become more manipulative in their publication patterns, slicing their research into smaller topics and more numerous articles. The impact of performance-based funding also appear to be spasmodic, creating an initial jolt to the overall system, which initially motivates all universities eligible for the funding to increase research productivity, but lessens over time. Performance funding also appears to promote the previously identified stratification of universities, concentrating research in those institutions with greater numbers of internationally recognized academic staff, more resources, and already-established global reputations (Crespi and Geuna 2004).

The challenges of applying effectively performance-based funding to university research are consistent with several problems clearly predicted by the principal-agent model (Weimer and Vining 1996). In the case of the RAE for example (Henkel and Kogan 2010), the complexities of measuring academic research have required continual adjustments in the output indicators, the costs of regularly peer monitoring university research performance have been high, and there have been continuing concerns about controlling inefficient cross-subsidies in universities, which produce the multiple outputs of teaching, research, and public service. A problem mentioned previously as well with regard US research funding.

In addition the attention awarded to performance-based funding has distracted policy makers and analysts from more viable research assessment approaches. For example the Netherlands has implemented a different research assessment system for its universities, one not focused on indicators of research publication, nor linked to university funding (Jongbloed 2010). Alternatively, every 6 years each university is required to carry out an external peer review of its research programs by internationally respected researchers. These reviews must follow a Standard Evaluation Protocol (SEP) designed by the universities in collaboration with a national research organization. The SEPs emphasize the scientific productivity, academic quality, as well as long term vitality of each research program and employ a variety of information sources including on site interviews, university self-reports, and bibliometric evidence. This research assessment system appears to have had very similar positive impacts on research productivity, research quality, and improvements in each university's strategic management of research as the much more highly publicized performance funding systems in the UK and Australia (Jongbloed 2010). But the more collegial and qualitative 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 these other countries. Furthermore compared to the RAE, the system in the Netherlands appears to have been more stable in design,

possibly less costly to run, and likely provides more nuanced and useful information to each university on means of improving its research activities. Consequently this type of research evaluation will likely make a more effective and durable contribution to improving the academic research enterprise over time.

The Influence of Market Forces

To this point I have followed the traditional narrative that suggests university change has been influenced primarily by government reforms. But as noted at the outset, I would like to take seriously Burton Clark's assertion that there are three forces influencing university change. Therefore we need to examine the independent effects of market forces on universities.

Economists who study industrial organization (Scherer and Ross 1990), which is the relationship between market structure and firm performance in an industry, have traditionally acknowledged the important role of government regulation on firm behavior, but have also emphasized that the nature of relevant technology influences the basic conditions of industry structure. Over the last 30 years technological change, the nature and pace of which is itself shaped by market forces, has had a significant influence on the degree of rivalry in higher education. A number of economists have argued that the rapidly declining costs of international travel, of communication, and of information storage, as well as the development of the Internet and the world-wide adoption of English as the language of commerce and higher education, have contributed significantly to increasing competition among universities and among academic researchers (Hoxby 1997; Kim et al. 2009; Black and Stephan 2010). The new technology is also fundamentally altering the basic techniques of teaching, learning and research within universities.

Changes in communication and air travel for example have clearly increased competition among universities by making overseas and web-based academic programs economically viable, but they have also fostered global competition for the best students, especially at the research doctoral level, which is so important to national innovation. These new basic conditions of the higher education industry have also altered what may be termed the "technology of discovery." For example, collaboration in research has markedly increased over the last 30 years as measured by the mean number of authors of published papers (Black and Stephan 2010). The rate of growth of collaboration among academic researchers correlates with the expansion of e-mail, the diffusion of the internet, and the development of low cost access to large data bases in the sciences and social sciences. We now also have a common language of research as increasing numbers of European academic journals in the sciences and social sciences have switched from their native language to English. One important effect of this change is the greater access to publication now provided to non-native researchers. As a consequence the playing field among academic researchers has been leveled and this has further increased the degree of academic competition worldwide. For example, a recent study of research productivity

in economics and finance (Kim et al. 2009) revealed that the locational advantage of academic membership in an elite university has declined over time. While being affiliated with a top university provided a positive effect on research productivity in the 1970s, this effect weakened in the 1980s, and disappeared in the 1990s. The researchers attribute this decline to innovations in communication technology.

These changes in the technology of discovery are paralleled by significant changes in the technology of instruction. Innovations in communication technology are substantially altering the way even the most traditional universities teach and assess their students. World-wide we are seeing the rapid adoption of modular instruction and continuous assessment as the primary means of organizing student learning (Dill and Beerkens 2010). Is this change being driven by the exponential growth of academic knowledge, by the need for academic staff to focus on specialized research, by government reforms? Each of these forces likely makes some contribution to the observed reorganization of university instruction, but I would suggest that as in research the primary driver of change in instruction is market forces.

In summary, as we recently experienced with national policies designed to restore financial markets following the 2008 global recession, much of government regulation is best understood as a reaction to alterations in market structure influenced by technological change. In this light it is well to recall the original [Sorbonne Joint Declaration](#) signed in Paris in 1998 by the assembled ministers of education. The ministers called for “Progressive harmonization of the overall framework of our degrees and cycles ... aimed at improving external recognition and facilitating student mobility as well as employability” (p. 3). In other words degree reform was needed in order to create a more easily “readable” set of qualifications so that European graduates could better compete in the new, more global labor market. In short, the Bologna reforms of higher education were a reaction to market forces that are beyond the control of individual universities or nations.

The Influence of the Academic Profession

If, as I have briefly tried to suggest, market forces are a primary driver of change in universities, what then is the contemporary role for the third force in Clark’s triangle, the academic profession? In a fascinating analysis of the evolution of the French university Musselin and Paradeise (2009) note that prior to the reforms of 1968 the “university” in France was only a territorial gathering of faculties. In the immortal words the poet Gertrude Stein once used to describe the city of Oakland, California, there was “no there, there.” The university as a collective actor did not in fact exist in France. Since the 1968 reforms the French university has increasingly become a collective enterprise, with greater autonomy and authority over its academic activities. While as a consequence French university presidents have become more active and influential leaders, thereby suggesting the “managerialist” stereotype, Musselin and Paradeise (2009) suggest the new university collective decision making bodies

that evolved also have become influential mechanisms, exerting greater collegial control over university strategic planning, resource allocation, and curricula.

This evolution of the university into a more corporate entity with greater collegial control over its core activities provides I believe the critical insight into the nature of change and reform in contemporary higher education. In a recent study on controlling public services, the NPM scholar Christopher Hood (2004) outlined three primary means of control that correspond with Clark's original triangle: "oversight," or controlling individuals through government regulation; "competition," or controlling individuals through rivalry; and "mutuality," or controlling individuals through the horizontal influence of peers. In higher education we would term "mutuality" collegial control. Hood's comparative study, which included current national policies on academic research, led him to challenge the prevailing view that government reforms have caused a decline in the academic profession's control of universities. Rather he suggests that collegial control of universities may have actually increased over time, but in a different form. That is, a move away from "mere coexistence – peaceful or otherwise – among autonomous scholars," and a shift toward greater collegial control of the individual in the form of "more peer review of performance in teaching and research" (Hood 2004, 197–198). Let me illustrate Hood's point with some recent examples of the development of collegial controls over research doctoral education and academic quality assurance.

In an effort to improve the scale, productivity and quality of research doctoral programs a number of European countries encouraged the creation of research or graduate schools that were actually collaborative doctoral programs in a particular subject field among a number of universities. In an evaluation of such graduate schools in Finland (Dill et al. 2006) we discovered substantial variations in performance within and between such network schools because of the obvious challenges of coordinating policies and practices across subject faculties in different universities. We noted that in the US a "graduate school" is not a collaborative mechanism across universities for delivering a particular doctoral degree, but rather a collective mechanism of the academic staff within a single institution for assuring the quality of research and training in all of a university's research doctoral programs. As such a graduate school is a collegial mechanism for developing and enforcing policies and procedures on issues such as the approval of new doctoral programs, doctoral admissions processes and criteria, the award of university-based financial support for doctoral students, the supervision and research experience of doctoral students, and the reviews and defense of doctoral theses. Because of a desire to better control the quality of their research doctoral degrees, universities in a number of EU countries, including France, are now implementing similar institution-based collegial mechanisms for the control of doctoral education. As Hood notes such mechanisms may lessen the autonomy of individual professors and faculties, but increase collegial control by the overall university faculty.

Recent government reforms have also led to the adoption of external quality assurance mechanisms designed to maintain and improve academic standards in all university programs. Our research (Dill and Beerkens 2010) suggests that the policy

instruments that have had the greatest impact, in that they increase incentives for collective action by academic staff to improve program quality, are subject-level external reviews or accreditation processes. The most effective and legitimate such quality assurance processes in the views of academic staff have adopted methodologies featuring carefully trained peer reviewers, who are supported during the review process by professional staff, and employ systematic, standardized procedures, and protocols. An important contributor to the effectiveness of these approaches is the application of widely accepted norms of scholarly inquiry in an evidence-based approach to quality assurance. For example the teams conducting accreditation reviews for the Teacher Education Accreditation Council (TEAC) in the US (El-Khawas 2010) apply traditional scholarly rules of evidence such as the consistency and representativeness of the data provided by institutions as well as the validity and reliability of student assessment methods.

However, external reviews or accreditations of all subjects, which are more typical of European quality assurance policy, are costly to sustain for an entire system, their benefits tend to decline over time, they do not assess the effectiveness of the university's own collegial mechanisms for assuring quality, and these processes are in conflict with the general trend toward increased university autonomy. Therefore it is likely that most countries will move toward an academic audit type of review of the core collegial processes by which universities themselves assure the standards of all their academic programs. The academic audit process developed in Hong Kong offers one useful model of this approach (Massy 2010). The Hong Kong audits review each university's processes for approving and evaluating academic programs, the processes for evaluating and improving teaching and student learning, and the processes for assuring the integrity of grading and marking standards. The audits evaluate the effectiveness of these collegial processes by assessing their impact on the academic quality of a representative sample of academic programs.

As I noted earlier, information on the quality and performance of academic programs might therefore prove more socially beneficial if we focus on its responsible use in the collegial processes for assuring academic quality within universities. The availability and systematic application by collegial bodies within universities of valid and reliable information on student retention, student progression, and graduate outcomes by subject field could thereby help improve the performance of all academic programs.

In sum, public policies that provide incentives for universities to develop and reform their core collegial processes strengthen the capacity of the academic profession to improve the performance of higher education.

Conclusion

In conclusion, I have tried to suggest throughout this extended tour of the forces influencing change in higher education that assumptions made about the nature and role of information in higher education crucially influence the effectiveness of

policies designed to steer universities in the more competitive global environment. An important variable in the principal-agent model that is at the heart of the new institutional economics is task complexity. As noted the obvious complexity of university-level education, research, and service contributes substantial uncertainty to current efforts by governments to specify the outcomes of universities and to monitor their performance. For these reasons the most effective institutional framework for the university appears to be one that helps to improve the collegial mechanisms by which universities monitor and regulate their own behavior. The form of these collegial mechanisms must necessarily change over time in response to new circumstances and new technologies. But one reason the university, which first emerged in the twelfth 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, and the regional development initiative in Finland suggest how well designed public policies can provide useful incentives for the necessary internal reforms universities must make in the new environment of higher education. I believe the available evidence supports the view that as universities become increasingly autonomous, the public interest will best be protected by strengthening the collegial processes by which universities themselves maintain their academic standards, validate their research, and assure the value of their service to society.

References

- Adams, J. D., & Clemmons, J. R. (2009). The growing allocative inefficiency of the U.S. higher education sector. In R. B. Freeman & D. L. Goroff (Eds.), *Science and engineering careers in the United States: An analysis of markets and employment* (pp. 349–382). Chicago: University of Chicago Press.
- Aghion, P. (2006). A primer on innovation and growth. *Bruegel Policy Brief*, 6, 1–8.
- Barzelay, M. (2001). *The new public management: Improving research and policy dialogue*. Berkeley: University of California Press.
- Beerens, M., & Dill, D. D. (2010). The CHE university ranking in Germany. In D. D. Dill & M. Beerens (Eds.), *Public policy for academic quality: Analyses of innovative policy instruments* (pp. 65–86). Dordrecht: Springer.
- Black, G. C., & Stephan, P. E. (2010). The economics of university sciences and the role of foreign graduate students and postdoctoral scholars. In C. T. Clotfelter (Ed.), *American universities in a global market* (pp. 129–161). Chicago: University of Chicago Press.
- Brewer, D. J., Gates, S. M., & Goldman, C. A. (2002). *In pursuit of prestige: Strategy and competition in U.S. higher education*. New Brunswick: Transaction Press.
- Clark, B. R. (1983). *The higher education system: Academic organization in cross-national perspective*. Berkeley: University of California Press.
- Cohen, W. M., Nelson, R. R., & Walsh, J. P. (2002). Links and impacts: The influence of public research on industrial R&D. *Management Science*, 48(1), 1–23.
- Crespi, G., & A. Geuna (2004). *The productivity of science*. Brighton: SPRU Report prepared for the Office of Science and Technology (OST), Department of Trade and Industry (DTI), UK. <http://akgul.bilkent.edu.tr/inovasyon/crespiost2.pdf>. Accessed 20 Aug 2012.

- Dill, D. D. (2009). Convergence and diversity: The role and influence of university rankings. In B. M. Kehm & B. Stensaker (Eds.), *University rankings, diversity, and the new landscape of higher education* (pp. 99–118). Rotterdam: Sense Publishers.
- Dill, D. D. (2010). The United States. In D. D. Dill & F. A. van Vught (Eds.), *National innovation and the academic research enterprise: Public policy in global perspective* (pp. 387–437). Baltimore: The Johns Hopkins University Press.
- Dill, D. D., & Beerkens, M. (2010). *Public policy for academic quality: Analyses of innovative policy instruments*. Dordrecht: Springer.
- Dill, D. D., & Soo, M. (2005). Academic quality, league tables, and public policy: A cross-national analysis of university ranking systems. *Higher Education*, 49(4), 495–533.
- Dill, D. D., & van Vught, F. A. (2010). *National innovation and the academic research enterprise: Public policy in global perspective*. Baltimore: The Johns Hopkins University Press.
- Dill, D. D., Mitra, S. K., Jensen, H. S., Lehtinen, E., Mäkelä, T., Parpala, A., Pohjola, H., Ritter, M. A., & Saari, S. (2006). *PhD training and the knowledge society: An evaluation of doctoral education in Finland*. Helsinki: The Finnish Higher Education Evaluation Council (FINHEEC).
- El-Khawas, E. (2010). The Teacher Education Accreditation Council (TEAC) in the USA. In D. D. Dill & M. Beerkens (Eds.), *Public policy for academic quality: Analyses of innovative policy instruments* (pp. 37–54). Dordrecht: Springer.
- Foltz, J. D., Barham, B. L., Chavas, J., & Kim, K. (2005). *Efficiency and technological change at US research universities* (Agricultural and Applied Economics Staff Paper Series, No. 486). University of Wisconsin.
- Geiger, R. L. (2010). State policies for science and technology: The Commonwealth of Pennsylvania. In D. D. Dill & F. A. van Vught (Eds.), *National innovation and the academic research enterprise: Public policy in international perspective* (pp. 438–479). Baltimore: Johns Hopkins Press.
- Greif, A., & Laitin, D. D. (2004). A theory of endogenous institutional change. *American Political Science Review*, 98(4), 633–652.
- Hazelkorn, E. (2011). *Rankings and the reshaping of higher education: The battle for world-class excellence*. New York: Palgrave Macmillan.
- Heller, M. A., & Eisenberg, R. S. (1998). Can patents deter innovation? The anticommons in biomedical research. *Science*, 280(5364), 698–701.
- Henkel, M., & Kogan, M. (2010). National innovation and the academic research enterprise: The UK case. In D. D. Dill & F. A. van Vught (Eds.), *National innovation and the academic research enterprise: Public policy in international perspective* (pp. 337–386). Baltimore: Johns Hopkins Press.
- Hicks, D. (2008). *Evolving regimes of multi-university research evaluation* (Georgia Institute of Technology, School of Public Policy Working Papers #27). <http://smartech.gatech.edu/bitstream/handle/1853/23496/wp27.pdf?sequence=1>. Accessed 20 Aug 2012.
- Hood, C. (1991). A public management for all seasons? *Public Administration*, 69, 3–19.
- Hood, C. (2004). Conclusion: Making sense of controls over government. In C. Hood, O. James, B. G. Peters, & C. Scott (Eds.), *Controlling modern government: Variety, commonality, and change* (pp. 185–205). Cheltenham: Edward Elgar.
- Hoxby, C. M. (1997). *How the changing market structure of U.S. higher education explains college tuition* (National Bureau of Economic Research (NBER) Working Paper No. W6323). <http://www.nber.org/papers/w6323.pdf>. Accessed 20 Aug 2012.
- Jongbloed, B. (2010). The Netherlands. In D. D. Dill & F. A. van Vught (Eds.), *National innovation and the academic research enterprise: Public policy in global perspective* (pp. 286–336). Baltimore: The Johns Hopkins University Press.
- Kean, S. (2006). Scientists spend nearly half their time on administrative tasks, survey finds. *Chronicle of Higher Education*. <http://chronicle.com.libproxy.lib.unc.edu/article/Scientists-Spend-Nearly-Half/23697/>. Accessed 20 Aug 2012.
- Kim, E. H., Morse, A., & Zingales, L. (2009). Are elite universities losing their competitive edge? *Journal of Financial Economics*, 93, 353–381.

- Lester, R. K. (2007). Universities, innovation, and the competitiveness of local economies: An overview. In R. K. Lester & M. Sotarauta (Eds.), *Innovation, universities, and the competitiveness of regions* (pp. 9–30). Helsinki: TEKES.
- Massy, W. F. (2010). Academic quality audit as applied in Hong Kong. In D. D. Dill & M. Beerken (Eds.), *Public policy for academic quality: Analyses of innovative policy instruments* (pp. 203–225). Dordrecht: Springer.
- Musselin, C., & Paradeise, C. (2009). France: From incremental transitions to institutional change. In C. Paradeise, E. Reale, I. Bleiklie, & E. Ferlie (Eds.), *University governance: Western European comparative perspectives* (pp. 21–49). Dordrecht: Springer.
- Organization for Economic Co-operation and Development (OECD). (2007). *Higher education and regions: Globally competitive, locally engaged*. Paris: OECD.
- Pascarella, E. T., & Terenzi, P. T. (2005). *How college affects students: Vol. 2. A third decade of research*. San Francisco: Jossey-Bass.
- Scherer, F. M., & Ross, D. (1990). *Industrial market structure and economic performance*. New York: Houghton Mifflin.
- Scott, G., Ball, I., & Dale, T. (1997). New Zealand's public sector management reform: Implications for the United States. *Journal of Public Policy Analysis and Management*, 16(3), 357–381.
- Sorbonne Joint Declaration. (1998). *Joint declaration on harmonisation of the architecture of the European higher education system by the four Ministers in charge for France, Germany, Italy and the United Kingdom*. Paris, the Sorbonne, May 25. http://www.bologna-berlin2003.de/pdf/Sorbonne_declaration.pdf. Accessed 20 Aug 2012.
- Teixeira, P., Jongbloed, B., Dill, D., & Amaral, A. (2004). *Markets in higher education: Rhetoric or reality?* Dordrecht: Kluwer.
- Van Bouwel, L., & Veugelers, R. (2009). *The determinants of student mobility in Europe: The quality dimension*. Department of Managerial Economics, Strategy & Innovation, Katholieke Universiteit Leuven: https://lirias.kuleuven.be/bitstream/123456789/256921/3/MSI_0912. Accessed 20 Aug 2012.
- Van Vught, F. A. (2008). Mission diversity and reputation in higher education. *Higher Education Policy*, 21(2), 151–174.
- Watson, J. D. (1968). *The double helix: A personal account of the discovery of the structure of DNA*. New York: Simon and Schuster.
- Weimer, D. L., & Vining, A. R. (1996). Economics. In D. F. Kettl & H. B. Milward (Eds.), *The state of public management* (pp. 92–117). Baltimore: The Johns Hopkins University Press.
- Zumeta, W. (2010). The public interest and state policies affecting academic research in California. In D. D. Dill & F. A. van Vught (Eds.), *National innovation and the academic research enterprise: Public policy in international perspective* (pp. 480–526). Baltimore: Johns Hopkins Press.