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Higher Education Forum

Volume 7, March 2010

The Limits of Market Reform in Higher Education *

Simon Marginson **

Abstract. In the last two decades the dominant policy model in higher education has been the NPM market model. Most national governments have introduced reforms such as corporatization of institutions, intra-system competition, entrepreneurship, private income raising, contractual planning, output formats, performance reporting, accountability and audit mechanisms. Some features of the model such as competition, output formats and increased private funding have been widely adopted. But functioning capitalist markets have not and will not be created. Commercial tuition markets have been created only in marginal vocational training, and international education. WTO-GATS driven trade liberalization has stalled. Research remains largely in the public domain. The NPM market model is a *cul-de-sac*. It is blocked by the economic and social character of higher education and research: the public good nature of knowledge, the indirect character of most of the economic effects of education, and the character of status competition.

Keywords: accountability, competition, public goods, education markets, new public management, private funding, research policy

Introduction

In managing higher education systems, most national governments now use a variant of the new public management (NPM) market model as their guide to policy. This model rests on a neo-liberal conception of public administration and education which derived originally from Milton Friedman and F.A. Hayek (Hayek, 1960; Friedman, 1962). The practical governmental mechanisms were first developed by the 1980's Thatcher governments in the UK (Marginson, 1997). The goal of NPM market reform is to remake educational institutions as business firms producing economic products

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within an open competitive market. The reform objective is sustained by critical reflexivity and an is/ought ambiguity (Gordon, 1991). The NPM market model is treated as both a goal to be achieved and a description of actually occurring higher education systems, as in the customary description of American higher education as a 'market' regardless of its empirical features. The NPM market model is presented as the normal and expected mode of operation. Real world education systems are compared to an ideal model using polemical descriptors (for example 'taxpayer inequity', or 'producer rents') combined with quantitative economic measures (for example the projected lifetime earnings of degree holders). Where there are differences between real life higher education practice and the ideal NPM market model — where higher education systems have failed to achieve the forms of a fully evolved capitalist economic market — this suggests the need for reforms to close the gap. In this manner the NPM model functions as a template or framework to guide policy. The critical reflexivity is intrinsic to the model and provides it with momentum for continuous transformation until the goal is achieved.

Though this policy framework has been subjected to repeated critique,¹ after two decades it remains hegemonic in the economic ministries which tend to dominate education ministries in government. NPM-inspired reforms continue to emerge. Moves such as the selective deregulation of vocational programs, the substitution of increases in tuition fees for part of government funding, competitive bidding for state projects, performance-based contractual negotiations between government and public institutions, and more comprehensive output and 'impact' measures in research, all of which take higher education towards the NPM market model, are routine to governments. But the passage of time is a useful resource that enables a new question about the NPM market model to be posed. Certain NPM features have been installed in most national systems; certain systems have adopted most features of the model; but NPM market reform has failed in its essential project, the creation of functioning economic markets in higher education. Why has the ultimate goal not been achieved, especially in those higher education systems where NPM reform has gone deep, such as the Westminster countries (UK, Australia, New Zealand), part of Eastern Europe and Hong Kong SAR in China? And if the ultimate goal will not be achieved, so that NPM critical reflexivity can never be satisfied, what is the point of the continuous piece-meal market reforms? Is half a loaf and continuing hunger truly better than none? Might not another policy serve better?

The goal of this paper is to explain the failure of the NPM market model. While the paper is another critique of the model, unlike previous critiques it does not focus on the assumptions of the model, nor its potential social consequences. It focuses on the failure of implementation.

A second problem of the NPM market model is that it is nation-bound. Again, the passage of time has highlighted the deficiency. The model was developed prior to the communicative globalization triggered by the Internet and the subsequent growth of global knowledge flows and

¹ An extended critique and discussion of other critiques is provided in Marginson, 1997.

networks, and the global referencing and ranking, that have transformed the higher education sector (see among others Held, McLew, Goldblatt & Perraton, 1999; Castells, 2000; Marginson & van der Wende, 2007; Peters, Marginson & Murphy, 2009). Arguably all research intensive universities, and some other institutions, are implicated to a growing extent in the global dimension of higher education. This global dimension is heterogeneous to the national dimension (Marginson & Rhoades, 2002; Marginson, 2010). It cannot be fully understood, controlled or reformed in the terms of an NPM market model. There is no comprehensive global market in higher education, or global policy space. Nor can the global elements be marketized or controlled using one nation-based NPM reform. The concerted attempt to create a global market in education services through the WTO-GATS negotiations has been unsuccessful. Among the global factors that make a single nation NPM market model unworkable is the leakage of economic values from the national dimension into the global dimension. For example, when graduates take their labour abroad, the value of their human capital is captured by other national economies. Something similar happens when basic research is sourced by companies from other nations that use it to develop saleable intellectual property. In addition such research knowledge can be freely accessed in scientific publications or on Internet sites disseminated on a global basis. It is not possible to create buyer - seller relations and price signals comprehensive of all research activities in a single country for this reason alone.

The trajectory of the WTO-GATS process and the open source aspect of knowledge are discussed below. However, the paper will concentrate largely on the first problem of the NPM market model, its failure of implementation. Arguably, even in the absence of the national/global problem the model still fails.

The NPM and economic markets

In the NPM market model, public higher education institutions are corporatized so as to more closely resemble private firms in their organizational design and culture. In some national jurisdictions the process has been extended to a formal legal definition as private institutions (*e.g.* the UK) or a major enhancement of the role of private entities within the national system (*e.g.* universities in Chile, and training colleges in Malaysia and Australia). Institutions are encouraged to raise their own income. In the ideal form of the NPM market model they charge for tuition at commercial rates and their objectives are to maximize revenue, market share and unit profit. Institutions become attuned to the desires of students as consumers (clients, customers) through student choice of institution, mediated by product quality and price. Institutions market themselves and their programs and are subject to quality assurance. Their products are open to objective description and quantification, enabling performance monitoring and reporting. Incentives to perform are economic. Institutional leaders, who are modelled as entrepreneurs, pursue the economic ends of their institution as the primary end, rather than the public good for its own sake. Likewise their employees are driven not by mission

(love of teaching or students, or desires to make discoveries or solve social problems through research) but by pay incentives and career goals. Customarily the NPM market model also includes a range of business-like and market-type mechanisms such as prospective contracts between government and institution in relation to outputs, product diversification, brand development and management, due diligence and risk management processes, audit of performance against prior objectives, and the competitive ranking of outcomes.

The typical NPM reform package includes corporatization reform, growth in student fee-charging (often accompanied by reductions in government support to encourage income raising), an expansion of the role of private institutions; encouragement of commercial business activity in research; the creation of competition for parcels of government-provided resources, and output modeling. Some countries have deregulated parts or all of vocational and international education so that commercial fees can be charged. Through performance and output modelling, the complex real world activities of higher education institutions become de-bundled as quasi-market commodities, distinct products with their own clients, lines of accountability and efficiency measures. Larger aggregated outcomes, such as the contribution of liberal education to citizen formation, or the long-term effects of basic research, fall out of the picture.

As numerous scholars have pointed out, NPM reform is associated with a transition from direct bureaucratic controls to system management on the basis of 'steering from a distance' using a mix of competitive incentives, planning and audit mechanisms, and goal and output specifications. As the same scholars often also state, the NPM is associated with more effective central control (see among others Teixeira, Jongbloed, Dill & Amaral, Eds, 2004; de Boer, Enders & Jongbloed, 2009; Mok, 2009). The actual mix of mechanisms and implications for a coherent NPM system varies from country to country.

Constituents of an economic market

Only some of the above features of NPM systems are essential to a self-functioning profit-oriented economic market in higher education. At the minimum such a market requires the following elements:

- a field of production, constituting the boundary of the market (defined geographically as national, regional, city-based or global; or defined in terms of institutions, products or clients);
- protocols governing entry or exit of producers to or from the market;
- the production of scarce and individualized commodities, *i.e.* goods or benefits that can be described in output formats and constitute private goods in the economic sense (see below);
- monetary exchange, and price-based coordination of production and distribution;
- the generation of unit revenues surplus to unit costs, that is, the category of profit;

- competition between autonomous producers for revenues, and market share;
- deregulation of direct policy controls and ideally, a shift from public institutions to privately owned institutions;
- human behaviours appropriate to economic markets such as entrepreneurship, the drive to extend and expand production, the drive to reduce unit costs of production, consumer shopping, *etc.*

To what extent have NPM markets been implemented?

When these core features of an economic market are compared to actual existing higher education systems, it is evident that nowhere have the expectations of 1980s neo-liberal reformers been met. There are individual institutions that are capitalist businesses as imagined by the model, but there is no example of a functioning capitalist market that takes in the mainstream of degree-level higher education — meaning first-degrees and basic research — in all institutions. Further, with a tiny number of exceptions the leading comprehensive higher education institutions in all countries continue to be non-profit institutions.

Certain features of the NPM market model have been widely adopted. In some countries the notion of higher education as a business, and the use of business-derived terminology in its management, are widely though not universally accepted. A second feature is the use of field boundaries, though sector boundaries in higher education mostly pre-date the NPM. Third, there is competition between institutions for at least some private and public revenues. Competition for prestige is long-standing in higher education, but in the NPM reform period, economic forms of competition have become more important than before. A fourth feature that has become widespread is the use of product formats to describe teaching (student places, graduate numbers) and research (projects and publications), though these product formats are used as actual market commodities only in rare instances. A fifth feature is entrepreneurial behaviour. Some executive leaders exhibit this, and for part of this group economic revenues *per se* are the primary motivating factor (Clark, 1998; Marginson & Considine, 2000).

However, that is it. The deviations from the NPM market model are more significant than the adherences to it. Teaching and research will be considered in turn.

Teaching

Few higher education systems offer free market entry to potential universities, though in some countries entry into vocational training is more liberal. In relation to product, all systems produce private goods, to the extent that at least some student places confer income earning and/or status-building advantages. However, these private goods are rarely produced and sold as full cost market

commodities. Full blown market exchange does not exist in the mainstream university education of domestic students in leading comprehensive universities, with the exception of a small number of students in a handful of national systems. In almost every case, the first-degree education of citizens is subsidized by governments and/or private philanthropy, largely the former.

Organization for Economic Cooperation and Development (OECD) data for 2006-2007 in *Education at a Glance* OECD, 2009, pp.242-260) demonstrate marked variation between countries in tuition arrangements, suggesting tuition is policy determined not market-driven. Tuition charges mostly fall well below costs. The provision of higher education is dominated by public institutions and government-dependent private institutions. The proportion of students enrolled in independent private institutions, which are mostly non-profit institutions, exceeds 30% only in Poland (32.3%), Mexico (33.9%), Japan (75.7%) and Korea (77.9%). In the United States the proportion is 28.4% (OECD, 2009, p.306). In the five Nordic countries, Ireland, the Czech Republic and Turkey, students in public institutions pay no fees. In one third of the OECD countries public institutions and government-dependent private institutions charge local students in excess of US\$1,500 *per* year (OECD, 2009, p.242), and fees in independent private institutions are higher. But most local students have access to subsidized tuition loans or other support. Japan and Korea exhibit relatively high levels of household expenditure on higher education, but “cost sharing is extensive and broadly uniform across students” (OECD, 2009, p.250). Even in the United States few students in either public or private institutions pay the full ‘sticker price’ for first degree education because of public and philanthropic subsidies. On average the American student pays less than half the unit cost of tuition (Winston, 2003). There is no market for cars, washing machines or financial security where the average consumer pays half the cost of the product.

In the ideal market, state controls are deregulated as far as possible and the consumer is sovereign. In higher education, government is a full presence and there is no strong evidence of buyer power. In most nations the number of students in each public institution is determined not by demand and supply but by government and institutions. Student choice of institution is constrained by limited places in each institution and academic competition for entry. High-status institutions have limited places and are over-subscribed. Thus they are under little economic pressure to meet the requirements of ‘customers’; though they may respond to students to maintain status. The operations of economic competition are framed not by the interaction of supply and demand mediated by price signals and buyer-seller relations, but by government, which sets arbitrary prices or limits on prices and uses political and social criteria as well as economic criteria in doing so; and ‘holds the ring’ for competitive bidding games and formula-based allocations of monies based on performance in competition with all institutions. Government sets the rules of competition and ostensibly steps back. The competitive process is represented as neutral in intent and form. But game-setting and formula-setting are readily manipulated to secure policy outcomes. However presented, these processes

incorporate blatant policy choices and bear little relation to competition in a deregulated economic market.

In the absence of market prices and full producer dependence on revenues from ‘customers’, prices and revenues do not drive allocative efficiency. Significantly, the vast majority of higher education institutions are not profit maximizers. The fundamental driver of a capitalist market, the autonomous profit motive, is largely absent from mainstream first-degree education of local students. Nor are higher education institutions volume maximizers. Few expand production to meet effective demand; enabling capture of a larger market share, revenue base and surplus; and improved economies of scale in the manner of an ordinary business. The laws of motion of higher education diverge from the market model.

The exceptions to these generalizations are the *bona fide* commercial institutions and commercial sub-sectors in higher education. On an international scale these are a numerous minority. But in every case they are subordinate or marginal to the dominant socially recognized forms of higher education. There are three main types of commercial institution. The first is the low status private universities in countries such as Brazil, the Philippines and Japan. These are profit maximizers, though their scope within the total sector is modest². There is also a very small number of high-status commercial institutions, but these do not seek to maximize profitability. In Japan the stellar private institutions led by Keio and Waseda are not marginal. But notwithstanding their formal legal character, these are not commercial businesses as that notion is generally understood. They have more in common with the elite non-profit liberal arts colleges and private universities in the United States than *bona fide* commercial institutions. Like the American non-profit private sector, their main objective is not to generate profit for stockholders, or even revenues *per se*, it is to secure social leadership and prestige. Second, parts of vocational training operate commercially in numerous countries, including the English-speaking world. A notable example is the University of Phoenix, the largest private university in the United States, which works a niche market in middle-level business studies and professional training for working clients who dropped out of mainstream education before completing a college degree. Phoenix has succeeded because it built a market on the margin of mainstream higher education. It has not sought to compete directly with the non-profit providers. The third example of commercial higher education is full fee profit-making education of international students in the UK, Australia, New Zealand, Malaysia, Singapore, China and a small number of other countries. Approximately one third of the students who cross borders for higher education do so within the commercial zone which is the fastest growing part of international education. For-profit international students are enrolled in universities and study alongside non-profit local students in the same classes. The international students provide supplementary revenues that help sustain the non-

² Legally, private universities in Japan may not declare a profit. A special “Accounting Standard for Private Schools” allows a financial surplus to be transferred to the “Basic Fund”, which functions to support the institution’s endowment (see Maruyama, Higher Education Forum, 2010, Vol.7, pp.53-67 – Ed.)

profit operation. They do not shape the nature of production, although when they are in large numbers relative to the local student population, as in Australia, they can affect the developmental priorities of institutions.³

The WTO-GATS process

The WTO-GATS negotiations are designed to create an open global trading regime in designated service sectors, including educational services (OECD, 2004a; OECD, 2004b). The intention is to open the policy settings governing national systems so as to encourage commodity-production, enterprise and trade. The reform agenda developed out of successive rounds of global trade talks. It defines four aspects of cross-border educational provision: cross-border supply, for example online education; consumption abroad, for example students who cross borders to access education; commercial presence, for example transnational education; and movement of natural persons, for example temporary migration as a guest worker or education provider. It also distinguishes the different sectors of education, including higher education. In the GATS round, nations are expected to negotiate with each other to establish free trade in these areas, or adopt a general regulatory regime to the same end, registering their position with the WTO. The process also offers them the option of exempting some or all parts of their education systems on grounds of 'national treatment'. A nation can agree to create free trade in, say, English language teaching programs, while maintaining national treatment for research universities. The *prima facie* bias in favour of trade deregulation meant that a separate case for exceptional treatment has to be made in each case.

However, in the outcome a large number of nations have deregulated market entry in just one area, the on-line delivery of programs (where national governments cannot control cross-border delivery in any case). The limitation of the WTO-GATS process is that most national governments do not want higher education to be holistically remade as a tradable commodity. Unlike other areas, the subject of multi-lateral trade negotiations, such as agriculture and financial services, most of education is produced in non-commercial settings and not deployed for the direct creation of economic revenues. Further, all governments want to retain policy control of their national education and

³ Nevertheless higher education is a large sector and even peripheral commercial markets can constitute a significant business. The value of international education is estimated at US\$40 plus billion worldwide and seems to be largely recession proof. In Australia, the extreme case of the growth of this market *viz a viz* local education, education 'export' generates about US\$12 billion *per annum* in student fees and spending on accommodation, transport, food and other consumption (ABS, 2009). Education is the third largest Australian 'export' after coal and iron ore. There are 530,000 foreign students in Australia, equivalent to 2.5% of the Australian population. China is the largest importer (*i.e.* the largest supplier of foreign students to Australia), followed by India, Malaysia, Singapore and Indonesia. Foreign student fees provide 15% of the direct revenues of Australian universities and foreign students constitute 26% of all enrolled students (DEEWR, 2009). The international education industry is fully commercial, with competitive marketing and recruitment, a service rather than a product orientation, and regulation *via* consumer protection laws and quality assurance. International education in the UK and New Zealand is similar.

research sectors, which are seen as strategically significant to national economic competitiveness and development, and cultural identity. Entry to foreign providers continues to be restricted in most countries and local institutions and/or their students have continued to benefit from public subsidies unavailable to foreign or commercial providers. Market-based providers are unable to compete economically against mainstream subsidized institutions. Export nations such as Australia and the United States called for deregulation in other countries but showed no interest in creating a level playing field for foreign providers in their own systems. The WTO-GATS process has led to little change in the *status quo*. Where there are commercial arrangements governing international education these have been largely unaffected by WTO-GATS.

Research

Since the late 1980s - early 1990s, national governments have sought to foster a commercial market in intellectual property and establish a client relation between university research systems and industry. In many countries the policy settings in higher education have been adjusted so as to drive a partial shift of university research activity from basic research programs, which are curiosity driven and controlled by faculty, to commercial research and applied research expected to generate commercializable products in which university research companies or external clients have played the driving role.

In the outcome there has been significant development of university research companies, patent regimes and university research for industry. In higher education in some countries there has been a partial shift away from basic research programs towards commercial and commercializable research projects often of shorter average duration (*e.g.* for Australia see Cutler, 2008). Public research funding is distributed on a competitive basis and *via quasi-economic* performance formulae that reward policy-determined outputs such as patents, publications and doctoral students with additional monies. However, after two decades of policies and incentive systems based on the NPM market model the proportion of the actual cost of university research paid by business and industry is little more than 5%, even in the United States which has the most dynamic commercial R&D sector. Most universities have to subsidize their commercial research companies. Basic research funding is sourced from government and, to a lesser extent, philanthropy. Much of the production of commercializable knowledge in universities is also publicly subsidized and shaped by policy, not demand, supply and market prices. Again, competition and university-industry relations primarily take the form of *quasi-market simulacra*, not *bona fide* markets.

Despite the growing knowledge-intensity of production in manufacturing and services, and the weight of R&D activity outside the universities in many countries, given the explosion in open source knowledge *via* the Internet (webometrics, 2009) it is possible that in higher education the relative role of non-commercial research and dissemination has increased (Marginson, 2009). The OECD now

argues that the principal role of higher education in research and innovation lies in the production and dissemination of 'open science' not the direct production of marketable knowledge. A "common criticism of commercialization is it takes at best a restricted view of the nature of innovation, and of the role of universities in innovation processes" (OECD, 2008, Vol.2, p.120). The strengthening of intellectual property rights (IPRs) "contains a number of problems", for "commercialisation requires secrecy ... whereas universities may play a stronger role in the economy by diffusing and divulging results. It should be remembered that IPRs raise the cost of knowledge to users, while an important policy objective might be to lower the costs of knowledge use to industry" (OECD, 2008, Vol.2, p.102). Further, universities rarely have the capacity to maintain long patent chains on a comprehensive basis, and few university-controlled IPRs generate lucrative returns. For the most part IPR-protected science is better left to venture capital, commercial R&D and product development. Universities should focus on their own distinctive contributions, which are the creation, interpretation and dissemination of knowledge, and research training. The OECD is also concerned that the short-term decision cycles and product formats inherent in NPM systems may inhibit fundamental creativity. This, too, is a change in policy thinking and again signifies disillusionment with the NPM market model.

The shift to project-based research funding in TEIs [tertiary education institutions] raises a number of issues that need to be considered in relation to the long-term development of the research and innovation system. Competitive funding may promote more *ad hoc* and short-term research in cases where evaluation mechanisms and incentive structures focus on quantifiable and 'immediate outputs'. As a result, researchers may be reluctant to engage in research that will not produce results that can be demonstrated over short time-spans. In addition, precisely because project-based funding is competitive, sustained funding is not guaranteed, which may impede the autonomy of researchers working in controversial fields. Geuna (2001, p.623) notes that short-term research and less risky research may reduce the likelihood of 'scientific novelty'. Furthermore, Geuna and Martin (2003, p.296) argue that research may become 'homogenised' because 'safer' research is rewarded (OECD, 2008, Vol.2, p.114).

The OECD's notion of role of higher education in 'open science' is not the reassertion of the old non-market collegial modes of research separate from society. Rather it is a *post-market* vision in which research is grounded in a networked and interactive global knowledge creating environment in which universities and industry share a common information system. Links to industry are more important than in the high collegial era, and creative people are alive to financing opportunities; but even more important in driving inquiry are cross-border links between knowledge producers. The post-NPM approach reasserts the autonomy of research without collapsing its transparency or neglecting the potential economic payoffs.

A control system not an economic system

Thus the great bulk of teaching and research continues to occur in an unambiguously non-profit world. In the absence of a functioning economic market of the capitalist type, an NPM-based system is a control regime not an economic system. Comprehensively reformed systems like those of New Zealand and Australia take the form not of economic markets but government controlled *simulacra*, 'quasi-markets' in which the policy discourse is more market-like than the reality. NPM reforms lead to the modernization and strengthening of government steering, coupled with a downward devolution of political responsibility for outcomes from government to institutions, under terms and conditions set from above with predictable outcomes. Nikolas Rose (1999) calls this 'responsibilization'.⁴ This suggests that the primary outcome and intention of the reform process is political rather than economic: the reproduction and tightening of state control in higher education and research. As noted, governments have not deregulated themselves out of higher education as a pure market model would suggest. The neo-liberal market discourse, with its talk of deregulation together with the feint of deregulation that devolution represents, provides an ideological legitimization for the control system. Devolved systems generate less resistance than direct rule.

Why have markets not been created?

Why has the goal of the NPM market model faltered in higher education and research?

The common explanations given for this failure by supporters of the NPM market model (e.g. Norton, 2002) are insufficient political will to implement reform, the 'capture' of government agendas (Buchanan & Tullock, 1965) by universities and interest groups such as publicly-funded scientists, and the control impulses of nation-states which are unable to exit higher education. These arguments have some merit, especially the last, but share a common limitation. They all suggest the triumph of politics over economics without explaining why, and they leave the premises of the NPM market model unexamined. Given the dominance of the model in policy over a long period it does not seem plausible that everywhere governments had a similar paralysis of will just when genuine implementation was within reach.

The counter explanation is that to see the failure of the NPM market model as politically driven is to confuse symptom and cause. The limits of economic market reform are set not by political factors but by the intrinsic economic and social nature of higher education and research. Education and research cannot be turned into profit-based markets without a reduction or transformation that is widely deemed unacceptable. This in turn has shaped political decision making. Such is the argument of this paper.

⁴ See also further discussion in Marginson, 2008.

In summary, there are three intrinsic limits to capitalist economic markets in higher education:

1. Knowledge is predominantly a public good not a private good (Samuelson, 1954). Hence both the outcomes of research, and the content of what students learn, are also predominantly public goods (though the degree certificates received by students at the end of teaching programs, and the networking benefits of attendance at elite institutions, are mostly private goods). Public goods are typically under-provided in commercial markets. To shift higher education and research out of the production of public goods would drastically reduce the desired outputs.
2. Further to this, a major and probably principal economic outcome of higher education and research is that they provide conditions for production of profit-making industry, and government and civil organization, across society. These conditions include the contributions of higher education to social literacy, to all of the attributes of educated labour not rewarded in individual remuneration, and to the productivity of persons who work with graduate labour. They also include the contributions of basic research in sourcing industry innovations. Because of the indirect and elusive character of these outcomes, and the public good character of learning (to the extent that it rests on knowledge) and research, it is impossible to render these outcomes in commodity form and produce them to the required level in markets.
3. To the extent that degree certificates and networking benefits are private goods, these are status or positional goods (Hirsch, 1976; Frank & Cook, 1995; Marginson, 2004). Status production is highly competitive but status competition operates in a peculiar sub-capitalist manner. Fully capitalist production would negate the character of the status goods. For example, if an elite university expands to soak up all of the possible student demand in the manner of, say, Toyota in the automobile market or Dell in the computer market, it devalues the positional, status value of its own degrees and thereby ceases to be an elite university. No elite university has done this yet.

The remainder of the paper will now expand on these three arguments.

Public and private goods

Paul Samuelson (1954) systematized the notion of ‘public goods’.⁵ Samuelson identified public goods as economic goods that are non-rivalrous and non-excludable and tend to be un-produced or under-produced in commercial markets. Goods are non-rivalrous when they can be consumed by any

⁵ Note that the boundary between public and private *goods* (which goes to the social nature of the goods) as distinct from the boundary between public and private *institutions* (which goes to legal ownership and is usually a state – non-state distinction). For example, elite public sector institutions with free tuition produce private goods: selective and valuable degrees for students, and commercial intellectual property. At the same time all private sector institutions produce at least some public goods, by contributing to graduate literacy and productivity to the extent these are unrewarded in individual remuneration in the workplace.

number of people without being depleted, for example knowledge of a mathematical theorem. Goods are non-excludable when the benefits cannot be confined to individual buyers, such as national defence. Private goods are goods which possess neither quality, *i.e.*, are neither non-rivalrous or non-excludable.

More than forty years later Joseph Stiglitz (1999) found knowledge is close to a pure public good. Except when it is artificially rendered a commodity as in copyrights and patents, the natural price of knowledge is zero. Stiglitz also noted that a large component of knowledge consists of global public goods. The mathematical theorem is useful all over the world. Its price everywhere is zero. In the Internet age most knowledge can be freely accessed at low or no cost, providing the user has access to the communications system, and it is created and disseminated freely. But not only does most knowledge never become a commodity; even knowledge goods in their commercial form are shaped by the logic of public goods. Knowledge goods are naturally excludable at only one moment, creation. The original producer holds first mover advantage. At that point knowledge is a temporary private good. But this is a one-sale *per* item market (*e.g.* unlike ball-bearings, land or labour). Further, unlike consumable goods (*e.g.* an ice-cream) or services (a medical consultation) knowledge retains use value after the initial sale and can be recycled infinitely. Knowledge takes the form of either a permanent public good, or a momentary private good that becomes a permanent public good. Its public good character is primary.⁶

This means it is impossible to turn university research as a whole into a capitalist market. It also means teaching cannot be wholly marketized either, as one of its functions is the transmission of knowledge. MIT recognized the public good nature of the knowledge aspect of teaching and learning when it launched the Open Courseware initiative. The MIT website is now the most visited in the university world (webometrics, 2009). This does not prevent MIT providing private goods to its enrolled students in the form of the pedagogical function itself, the labour market and status benefits of the degree, and elite networking. University teaching combines public and private goods. The private value of the MIT degree is probably enhanced by the reputation building effects of Open Courseware.

Indirect economic benefits

The indirect benefits of teaching and learning in higher education are of two kinds. First, there are collective universal benefits that typically constitute advanced modern societies, such as common language, common cultural knowledge and the capacity to communicate. These shared qualities are

⁶ Once the first mover advantage has disappeared and the knowledge is in circulation, any attempt to hold down commodity forms at this point is artificial. This is true also of knowledge or culture-intensive goods produced by commercial industries. The vast bulk of recorded music and film circulates in pirate form at low or zero cost. American-style copyright is not just difficult to police, it is violated at every turn and impossible to enforce.

foundational to stable conditions for government, economic production and consumption, and cross-border international relations. In part modernization consists in the advance of the threshold level of sociability through education and communications. The economic payoff is the contribution of higher education to technological adaptation. The indirect collective benefits also include the short- and long-term contributions of basic research in sourcing industry innovations, and modernizations in all spheres. From the point of view of governments, one indirect benefit of higher education is the provision of an orderly and credible system of social selection, one that does not greatly disturb the *status quo*. If social selection was mediated by commercial tuition markets it would appear more closed and less equitable. As noted in the discussion about WTO-GATS, for most governments the curriculum in higher education in part embodies national values, ethics and traditions. Again these are collective public goods.

Second, there are more individualized economic ‘spillover’ benefits from the education of one person to others. The knowledge and skills that graduates bring to the workplace not only make the graduate more productive, they make other workers more productive as well. Such benefits are partly but not fully or consistently rewarded in labour markets and must be subsidized by the public funding of education and training. Among economists there is little disagreement about the public good character of both collective goods and spill-overs, though there is disagreement about their value.

Because the indirect benefits are conditional, in that they depend for their realization on the other sectors in which they are manifest, they are notoriously difficult to define and measure.⁷ For example, the contribution of higher education and research to aggregate productivity, value creation, profitability and growth in all sectors is mediated by factors such as work organization and the utilization of graduates, the capacity of businesses to access research knowledge for the purposes of innovation, the state of the macro-economy, global developments, social and cultural factors and so forth. The indirect contributions of education and research cannot be predicted in advance. But clearly they are very important. Modern societies could not function without them. Because of the indirect and elusive character of these outcomes, and also the public good character of learning (to the extent learning rests on knowledge) and research, it is impossible to render these outcomes in commodity form and produce them effectively in markets. If educational participation and knowledge creation were driven by market forces the indirect contribution of higher education to productivity and innovation would be under-provided.

Status markets

All student places in higher education that provide entry into occupations with superior income streams and/or status are pathways to private teaching goods. In elite institutions, the places themselves provide status benefits that can be translated into further economic benefits, again

⁷ For a useful discussion see McMahon 2004; 2009.

constituting private goods. As noted, networking benefits also constitute private status goods. The fact of private goods means that a commodity market could be sustained in teaching, though the knowledge content of the indirect public goods would be neglected. But such a market would not function as a fully-fledged capitalist market.

Status markets have special characteristics. First, they are constituted not only by competition between producers but by competition between consumers for access to high-value scarce student places in sought-after institutions.⁸ Second, as noted, elite institutions do not expand to meet all possible demand, they do not seek to maximize revenues and market share. Their core objective is not profit or shareholder-value, it is social prestige and power. No elite university has tried to leverage its brand by turning itself into a giant multinational producer. Not only do they have ends other than economic revenues in sight; such an exercise would be self-defeating as the unit-value of the degree would decline sharply. Third, status production is highly competitive within the group of high status institutions, but this group is largely closed to outside competition. Once elite institutions become elite, they find it relatively easy to sustain the role and block the 'wannabees'. University status reproduces itself. Producers of high-status research and sought after student places attract government support and high volume student applications, which maintain the resources for research and the scarcity and high value of student places. The number of high-status producers is limited in absolute terms. The result is that lists of top universities are very stable. For all these reasons it is impossible to establish a fully commercial market in high-status institutions.

Conclusions

Higher education produces a mix of public and private goods. While NPM reform in many countries has increased the relative role of private goods, always policy sensitive, it has not transformed this mixed character of education. Nor has it necessarily diminished the role of institutions in producing public goods, though arguably this role has been insufficiently recognized by policy. Public goods have been enhanced in research, global cooperation, and the lifting of literacy thresholds. Much if not most of the contribution of higher education and research is indirect rather than direct. It provides conditions of production in the economy and conditions of reproduction in society. These conditions derive from the public good functions. If research and the knowledge content of teaching were produced solely as private goods they would be dramatically under-provided. Hence the continuing role of state funding, regulation and, to a lesser extent, state provision; the potential contribution of philanthropy to public goods in education and research; and the inability of the NPM market model to meet economic and social needs.

⁸ It seems poor teaching is a tolerable price for a high-status degree. Research finds that when asked whether they would prefer indifferent teaching in a high-status institution or excellent teaching in a medium-status institution, nearly all students choose the former. For example see James, *et al.*, 1999.

A key problem of public goods in education and research; and the indirect economic contributions of higher education; is the difficulty of tracking, computing and comparing them. Complex collective goods can only ever be apprehended by synthetic judgement. No model is complex enough, no calculations suffice. Despite these reservations some aspects of public goods can be measured: for example, the quantitative extension of networked communications; the volume of web publishing (webometrics, 2009); the contributions of professors to policy making, in quantity of hours or quantity of papers; patterns of industry innovation and their location in fields of knowledge; the contribution of higher education to social opportunity. More thought needs to be given to defining and monitoring the public goods.

When used as a system descriptor for national higher education, the term 'market' confuses analysis because it implies a conventional economic market. It should no longer be used. The fact should be faced squarely that the ambition to turn education systems into functioning capitalist markets has failed. It had to fail. Mainstream education institutions will never behave like capitalist firms though they can assume some of the features of firms. Further, though the aim of the NPM market model is to maximize the contribution of higher education to economic growth, it is unable to comprehend the economic potentials of higher education, and its fuller application would undermine that potential. The NPM market model is self-limiting and in that respect internally contradictory. Rather than the road to continuous improvement, 'the market' is a *cul de sac*. The problem does not lie in the use of a reflexive framework for systematic improvement. An organized, transparent kind of reflexivity is a necessary response to social demands, if not to modernity itself. Many features associated with the NPM have succeeded in themselves and bettered the systems in which they were applied: for example the focuses on objectives and performance, value for money, openness and transparency of operation, relativization of professional oligopoly, external connectedness, and strategic leadership. But the central objective of economic markets has not worked in higher education and research. This suggests that it is time to sort the good from the dross, and to move on from the NPM market model, devising a new reflexive framework for continuing system reform.

The impossibility of the NPM market has been apparent for at least a decade. Further, policy-related economics has long had the tools to explain that impossibility to itself, and to begin the process of devising something more apposite to the character of higher education and effective to its ongoing reform – Samuelson (1954) and Stiglitz (1999) on public and private goods and the nature of knowledge; Romer (1990), Lichtenberg and Siegel (1991) and others on the indirect contribution of higher education and R&D to endogenous growth and continuous technological transformation; and Hirsch (1976), Frank (*e.g.* 1985) and others on the laws of motion of status competition. Given that the market blueprint does not provide satisfactory tools for policy making, and given that it is impossible to implement, why do governments persist with it? Inertia is one possible reason: the resistance of neo-classical economists to any departure from market purity; resistance of governments

to undo systems and discourse. The persistent interest of some business sectors in the creation of commodity markets in education is another. The most telling hypothesis is that the primary intent was always state control of universities and not a deregulated market. The market was and is merely the ideological justification for the NPM as a system of rule. But state power as an end in itself is scarcely sufficient as a basis for policy making in higher education.

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From Government to Governance: new mechanisms of steering higher education

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Abstract: This article begins with an attempt to answer the question “what is governance” by discussing the development of the concept, its definitions and the approaches, research as well as policy areas, in which it is used. Following this, the application of the concept of governance in research about higher education is described by a theoretical framework. In the second part the methodological approach and a few selected results of a research project are introduced. The project analyses the impacts of new forms of governance on research and research management in universities in four countries (Austria, England, Germany, Netherlands) and in two subject areas (medieval history, biotechnology). In the conclusions some critical perspectives are discussed and a few proposals are made for further studies and analyses.

Keywords: Governance, higher education research, institutionalist perspectives, new public management (NPM), research management.

1. What is Governance? An Attempt at Conceptualisation

At a recent conference the author was asked whether governance research is an applied science. This had to be answered negatively because governance research is not a science (neither basic nor applied) nor a discipline but a domain of interdisciplinary knowledge and research.

Governance is a concept which not only constitutes an object of research in various disciplines but is also used as an analytical category to explain the mechanisms of coordinating the activities of different although interdependent actors within a given field. The notion of governance was first used in the discipline of economics to describe mechanisms of coordination and steering in the framework of economic processes (key term: ‘corporate governance’). It was then picked up by parts of the political sciences, namely international relations, in which the notion of ‘global governance’ was developed. With new definitions of the role of the state and its tasks in western welfare societies

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since the 1980s, the final entrance of the governance concept into political and social sciences followed accompanied by key terms such as 'modernisation of public administration' and 'lean state'.

The governance perspective focuses on changes in the relationship between state, economy, and society that were hardly taken into account in the classical steering theories due to their focus on the state and a strict separation of state and society. In the beginning, the actor-centred steering theory as developed by Mayntz and Scharpf (*cf.* Mayntz 2004) also assumed a clear separation between state, economy, and society, *i.e.* a steering actor (state) and objects who or which were steered. In contrast to this, the institutionalist governance perspective widened the focus to processes of societal self-regulation and forms of cooperation between public and private actors (for example, public-private partnerships), thus taking into consideration the role of private societal actors in decision-making processes who nowadays are called 'stakeholders'. The notion of a shift from 'government' to 'governance' typically means today the participation of such actors in important decision-making processes and their inclusion in (previously mostly state dominated) decision-making structures.

1.1 Main Issues in Governance Research

The main issues in governance research are related to decision-making structures, processes, and objects. For example, one question is the shape of leadership and administrative structures in a higher education institution, a hospital, or in public administration. Are internal and external stakeholders involved in decision-making processes? Does the inclusion of stakeholder groups vary according to the objects of decision-making? Which state and private actors intervene in the decision-making processes? From the answers to these and similar questions on the one hand was derived the concept of 'multi-level governance,' and on the other hand, meant in a quite normative sense, the concept of 'good governance'. So far the latter has remained relatively vague. It was coined by experts of the World Bank and in this political context is related to demands for efficiency and legal actions of the state in developing countries and so-called 'failing states'. However, there is currently no unified and broadly accepted definition of 'good governance'. The concept includes notions of transparency, efficiency, participation, responsibility, rule of law, and justice. In the context of policies for cooperation with developing countries 'good governance' is defined along three central categories: (a) efficient management of the public sector; (b) control mechanisms and accountability in the context of elections, constitution of government, and the practice of government; (c) establishment of decentralisation and transparency including participation of civil society. So, if governance means the coordination of different but interdependent actors in the framework of decision-making structures and procedures, then it is necessary to find out which actors have sufficient legitimacy to participate in particular (all or just selected) decision-making processes in a higher education institution, or a school, or a hospital, *etc.* But in governance research this question is not posed. Mayntz (quoted in Schuppert 2006, p.54) postulates that the steering theory is actor-centred

while the governance theory argues at the institutional level. The governance perspective asks about the ‘how’ of steering but not who steers and why. Therefore, it does not have an inherent power-critical perspective *per se*.

1.2 *Forms of Coordination*

Governance means exclusively intended processes of regulation and coordination with a welfare orientation which help to solve societal problems. Apart from the two coordination modes of the hierarchy and the market, the social science perspective has also identified networks and communities as further modes of coordination. In communities, coordination is based on reciprocal adaptation grounded in communication and shared values. Hierarchy as a mode of coordination is almost self-explanatory: decisions are taken at the ‘top’ and passed down to the ‘bottom’. Coordination through markets is somewhat more difficult. Essential elements are supply and demand as well as price. However, competitive elements are also of importance in the framework of market coordination. Coordination through networks is also rather complex and participation in decision-making processes is dependent on the status of the actors within a given field constituted, for example, through power relationships or reputation and on the question of whether the network is loosely or tightly coupled. Communities differ as well according to their degree of coupling. Furthermore, in networks and communities access and exit options are relevant.

1.3 *Multi-Level Governance*

The withdrawal of the state from the detailed control of many public institutions, in particular higher education institutions, which can be observed in the majority of European countries in the last 15 to 20 years, has provided higher education institutions with a higher degree of autonomy. However, this autonomy was not granted without conditions. Instead of process control, new forms of output control were established (*e.g.* through performance and goal agreements the fulfilment of which is monitored and evaluated), and new forms of reporting and public accountability were introduced; external stakeholders have become involved in strategic decision-making through boards of governors or university councils; competition has intensified through rankings or other tools such as the British Research Assessment Exercise or the German “Excellence Initiative”. These examples are supposed to demonstrate that the modes of coordination and the configuration of actors have changed. However, starting from the changed conditions of state steering in the field of higher education, governance research has identified further shifts in the modes of coordination which have been summed up in the concept of multi-level governance. These shifts are characterised as ‘moving up’, ‘moving down’, and ‘moving to the side’. ‘Moving up’ means a shift of processes of agenda setting and policy formulation from the national to the supra-national level. If we think of the increasing

influence of the European Commission on national higher education and research policies or of the equally increasing influence of the internationally comparative tests of student performance in schools (TIMSS, PISA, PIRLS¹) initiated by OECD, then we know what is meant by ‘moving up’ (also cf. Martens, Ruscone, & Leuze, 2007). ‘Moving down’ basically means the decentralisation of decision-making powers from the state level to the universities and within universities from the central level to the level of departments and faculties. Finally, ‘moving to the side’, a lateral shift, means the delegation of steering and decision-making powers from the state level to (independent) agencies that frequently determine standards. The best examples of this are the accreditation agencies which have been established in many European countries in the framework of the Bologna Process and have taken over assessing the quality assurance of newly established degree programmes from previous forms of state approval.

With the concept of multi-level governance the concept of governance has been extended and can take phenomena such as internationalisation and globalisation into account. We will now move on in a more systematic way to the use of the governance concept in the field of higher education research.

2. The Concept of Governance in Research about Higher Education

The use — or maybe better — the application of the concept of governance in higher education research is considerably determined by approaches in the sociology of organisations.

The main focus is the question of how universities, as organisations, react to changed or changing conditions in their environment, or to external challenges. Braun and Merrien (1999) have characterised these changes as a shift in modes of coordination in most of the continental European higher education systems that traditionally consisted of a combination of strong state control and strong academic self-control (or in Burton Clark’s words: a strong academic oligarchy) with weak university leadership, hardly any competition or market coordination, and without influence from external stakeholders (the notion of universities as ‘ivory towers’). The shift has been to weaken the two previously strong modes of coordination (state and academics) and to strengthen the previously weak modes of coordination (institutional leadership, competition, external stakeholders). In this context we typically find three different ideas about the ways in which universities react to this shift and the resulting challenges.

- (a) In a *universalistic* perspective higher education institutions are regarded as special organisations characterised by a high degree of autonomy and loose coupling of their internal components. Both characteristics are needed in order to generate high quality in education and research. The *empirical* assumption connected to this perspective is that higher education institutions with

¹ TIMSS: Third International Mathematics and Science Study; PISA: Programme for International Student Assessment; PIRLS: Progress in Reading Literacy.

weakened autonomy and tighter coupling of their internal components will loose their capacity to produce high quality teaching and research. The *normative* assumption connected to this perspective is that autonomy and loose coupling should be defended in order to protect higher education institutions as places of free and critical thought as well as places of high quality research, teaching, and learning. A hierarchical mode of coordination would not fit well to this perspective while the idea of coordination through networks and communities (the community of scholars) would provide a much better fit. This perspective is frequently adopted by trade unions in the field.

- (b) In an *instrumentalist* perspective, higher education institutions are regarded as similar to all other kinds of organisations. The development from an institution to an organisation and hence to a more or less independent actor implies tighter internal coupling, shared goals, and management structures that are able to implement organisational goals. In short, a development that is regarded as necessary for the modernisation of higher education in the framework of the emerging knowledge society. This perspective forms the basis for the following *empirical* assumption: if an organisation is confronted by its environment with expectations in terms of output efficiency, strong leadership, and accountability, then it is likely that it is successful as an organisation if it implements policies which increase the likelihood of goal fulfilment or performance. From this the *normative* assumption is derived that individual higher education institutions should shape their efforts of reform in such a way that their organisational performance conforms as much as possible to the expectations of their environment. While coordination through communities and shared values would not fit well to this perspective, coordination through hierarchies, competitiveness (market) and also networks in form of strategic alliances would be closely related to it. This perspective is frequently adopted by economists and in business administration by managers.
- (c) In an *institutionalist* perspective higher education institutions are regarded as organisations the characteristic features of which must be understood in terms of the shared values and normative expectations dominant in the internal institutional environment (*i.e.* of the scientific community). The *empirical* assumption linked to this perspective is that the success of specific organisational forms is not dependent on the forms as such but on the question of whether the forms are compatible with the dominant values and norms. From this the *normative* assumption is derived that organisational reforms must find a balance between change and the existing norms and values of the organisation. This perspective does not necessarily exclude a mode of coordination through hierarchy but strong leadership should be complemented by the inclusion of academics in decision-making processes. Equally the views of external stakeholders can be accommodated if they do not overlook the norms and values of the researchers and teachers. Finding a balance is of importance in this respect. A good fit for this perspective would be

network governance. This perspective is frequently shared by sociologists and higher education researchers.

What has been presented so far are basically various aspects of a theoretical framework. In the actual analysis of modes of governance and concrete governance regimes (*i.e.* the combination of the various elements and their respective weights, which can be found in practice) the approaches of the sociology of organisations are dominant in which instrumentalist perspectives (*e.g.* the resource dependency approach; Pfeffer & Salancik, 1978) are combined with institutionalist perspectives (*e.g.* actor-centred neo-institutionalism; DiMaggio & Powel, 1983). In the following part of this contribution, the analysis of modes of governance and governance regimes will be demonstrated by providing a concrete example from a still ongoing but almost finished research project² that is studying the impacts of new forms of governance on research carried out in universities. The study compares governance models in universities in four countries (Austria, England, Germany, and the Netherlands) and their impact on research in two subject areas — medieval history and biotechnology — the former producing knowledge dominantly in “mode 1”, the latter dominantly in “mode 2” (*cf.* Gibbons, Limoges, Nowotny, Schwartzman, Scott & Trow, 1994).

3. New Forms of Governance and Research Management

3.1 Methodological Approach

For the study, a qualitative research design was chosen which also enabled the group to carry out a longitudinal analysis. In a first step, document analysis and descriptions of the two research and knowledge domains (medieval history and biotechnology) formed the basis to analyse reforms of higher education governance during the last 10 to 15 years (*cf.* Kehm & Lanzendorf, Eds., 2006). A bibliometric analysis provided criteria for the selection of case studies aiming to identify departments with medium or weaker reputations and with high reputations in each subject and in the four countries. The sample consisted of two to four university departments *per* country in each of the two subject areas.

In a second step, semi-structured interviews were carried out in each of the selected departments with representatives of three groups: university management and deans or heads of departments, professors, and postdoctoral research workers. About 3.5 to 4 years after the first interview series the same groups of people were interviewed again to find out about possible changes during the time

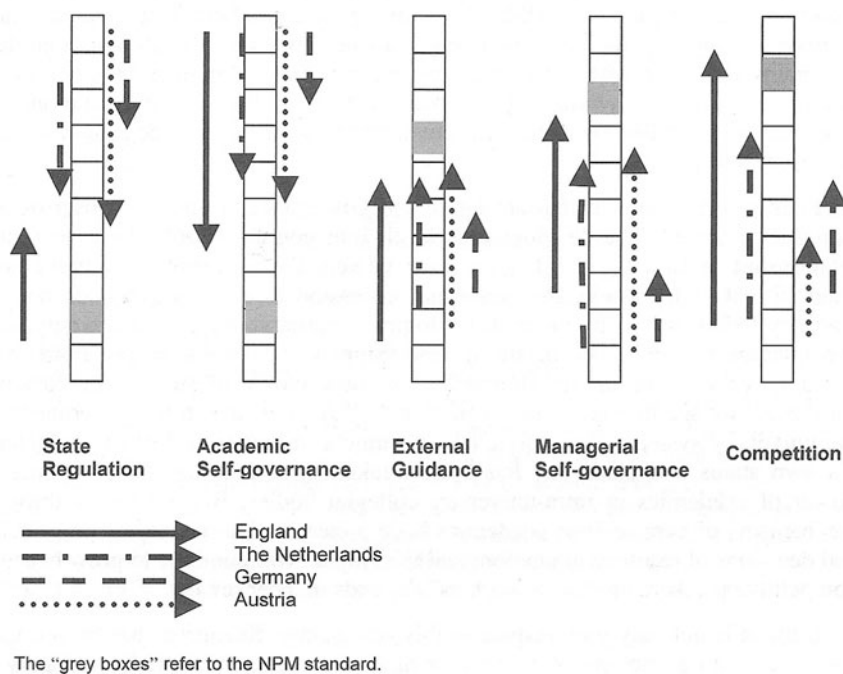
² The project is headed jointly by the author, Uwe Schimank (Distance University Hagen, Germany) and Jürgen Enders (CHEPS, University of Twente, The Netherlands). It has received funding from the German Research Council (DFG) since 2003 and is part of a larger, interdisciplinary research group studying new forms of governance in higher education from the perspectives of sociology, economics, law, and public administration (*cf.* Jansen 2007).

between the first and the second interview (longitudinal approach). Interviews were recorded, transcribed and then analysed with special software (QSR NVivo) identifying selected central terms and their contexts.

3.2 Results

In the following five pages some selected results of this study are presented. We start with the macro level, *i.e.* the implementation of management-oriented reforms in the area of higher education steering. The level of comparison is by country. In the framework of the study, a heuristic instrument was developed, called the “governance equalizer”, which offers a visualisation of the changes and the direction of reforms in the five main governance dimensions in each of the four countries:

Figure1. Shifts in university governance of the four countries compared



Source: de Boer, H., Enders, J., & Schimank, U. (2007). On the Way Towards New Public Management? The Governance of University Systems in England, the Netherlands, Austria, and Germany. In D. Jansen (Ed.), *New Forms of Governance in Research Organizations. Disciplinary Approaches, Interfaces and Integration* (pp.137-152, here p.149). Dordrecht: Springer.

As can be seen the direction of reforms concerning the role of the state in England is opposite to those of the three continental European countries of comparison. In England the role of the state was strengthened while in the Netherlands, Austria, and Germany it has withdrawn from detailed control of higher education. The dimension of academic self-governance has been weakened in all four

countries, while the other three dimensions — participation of external stakeholders (external guidance), institutional management, and competition in markets — have been clearly strengthened. But there are further differences. England has progressed most in the implementation of market oriented and competitive elements and of hierarchical management instruments in the internal governance of universities. In the Netherlands this type of change in governance regimes has also progressed relatively far but has taken — and still takes place — in a much more consensual form than in the other countries included in the comparison. Austria has changed its higher education system to a managerial model in a very short time, by giving a rather strong role to external stakeholders who are represented on university boards but also granting its universities full legal independence. What is currently not (yet) in the foreground of higher education governance in Austria is competition. Instead, the importance of public accountability of universities is emphasized. Concerning the changes towards a managerial system of university governance, England and the Netherlands can be characterised as forerunners, while Austria and Germany can be characterised as latecomers (*cf.* Kehm & Lanzendorf, 2006). However, the short and legally induced implementation process in Austria (beginning in 2002 with the new university law) has moved Austrian higher education much more closely to a managerial governance model than has been the case for Germany. The situation in Germany is more fragmented and heterogeneous because responsibility for higher education lies with the individual states rather than with the federal government. Despite the fact that in German higher education too the role of the central level in higher education institutions has been strengthened and goal and performance agreements between the state and each individual higher education institution have been introduced, the role of external stakeholders remains ambivalent (mostly with no decision-making power, only an advisory function) and the state has withdrawn from detailed control of the institutions to a lesser extent than is the case in the other countries included in the study. However, with the German “Excellence Initiative”³ the competitive elements in the system have increased. Their actual effects will only be known in a few years; however, experts fear that the “Excellence Initiative” might have similar effects to those of the British Research Assessment Exercise.

In summary, it can be said we can observe managerial governance reforms in all of the four countries selected for comparison, although the starting points and the progress in implementation are different in each of the countries. The reforms in all four countries have similar goals and point in a similar direction. The instruments chosen to support the implementation are however different again.

For reasons of space the *meso* level (*i.e.* the level of central institutional management, deans, and heads of departments) will be omitted here because this level is very heterogeneous and complex. Even so, I would like to indicate briefly which dimensions we have analysed more closely in this context. In the context of the project we were particularly interested in the perception of changes in

³ The Excellence Initiative is a form of competitive research funding financed by the federal government and by the states aiming to identify and support those German universities that have the potential to become ‘world class’ (*cf.* Kehm & Pasternack, 2009).

research funding (*i.e.* part of resource dependence theory), for example increased pressure on individual researchers to attract third party funding, performance-related allocation of resources and salary components, changes in working conditions and contracts, perception of management actions and related instruments, forms of research evaluation, experiences of an intensification of work-load and performance expectations, and the relationship between cooperation and competition. Concerning this last issue there have been clear changes in the traditional patterns in all four countries included in the study. However, I would like to present some selected results from the micro level, *i.e.* the effects of new forms of governance on research activities of individual researchers or research groups. In this context we have analysed mainly the following dimensions:

- choice of research topic or theme,
- relationship between main stream and ‘risky’ or unorthodox research,
- publication strategies,
- relationship between teaching and research (teaching-research nexus).

Despite the existence of differences in our four countries, there are certain overarching trends in these four dimensions which are the same in all of the countries included in the study.

- (1) Concerning the *choice of research problem or topic* the principle of ‘freedom of research’ is still deemed to be important and deans or heads of departments often take over a bridging function to defend it. However, the principle is increasingly affected by the expectation or challenge with which individual researchers or research groups are confronted, namely to attract as much third party funding as possible – in biotechnology more from industry and the private sector, in medieval history more from national research councils. Funding organisations increasingly integrate their funds into strategic programmes so that research topics or problems which do not fit into these programmes have growing problems in legitimizing their relevance. Furthermore, the pressure to attract third party funding has led to a considerable increase in applications and thus to a decrease in funding opportunities and successful applications. Concerning individual research activities this development leads only rarely to an actual change of topic or problem choice but more often to a higher amount of time and effort put into the writing of proposals and applications. Furthermore, we could observe strategies of ‘symbolic compliance’ among individual researchers or research groups, *i.e.* a symbolic attention to the rules for support to which a preferred topic is tailored to fit. This is certainly understandable because it is a form of keeping up and defending individual expertise which has been accumulated over many years.
- (2) Altogether we observe a clear trend towards *mainstream research*. In particular, junior researchers who are still in the process of getting their PhDs are advised by their supervisors not to take the risk of choosing *unorthodox questions* or approaches. ‘Risky’ research is

more often carried out by senior professors with high reputations who pursue unorthodox questions or approaches on the stable basis of third party funded mainstream topics. In general, it turned out in our interviews that departments, research groups, or individual chairs are more independent from direct management interventions if they are strong and successful in attracting third party funding. No university wants to lose its 'stars' and thus they are granted more freedom. However, we also found a trend in the other direction in this dimension which is more visible in medieval history than in biotechnology. Increasingly the university management integrates existing smaller institutes or research groups to form larger often interdisciplinary units outside the departmental structure and with extra allocation of resources in the hope that innovative ideas and approaches will be generated in such a context. This does not really fit the traditional research culture in the humanities, of which medieval history is a part, as the main scenario is the lone scholar who digs up documents in libraries and archives and produces a book. But quite a number of medieval historians stated that working in larger interdisciplinary units has provided them with new and exciting ideas and that cooperation processes with researchers from other but possibly related disciplines were fruitful.

- (3) In all four countries *publication strategies* in medieval history have clearly changed. Despite the fact that a book is still the crowning result of long years of research, the trend to measure and evaluate research output has led to the practice of publishing results faster and in smaller pieces in peer-reviewed journals. In this context journals to which a manuscript is submitted are selected according to strategic criteria (e.g. reputation or impact factor). But medieval historians are also increasingly encouraged to present their results in such a way that they become interesting to a wider range of lay audiences. Another problem concerning publication strategies emerged for researchers in the field of biotechnology. In this field research is frequently carried out in cooperation with industry and results in findings that can be patented or licensed. In such cases the company that sponsors the research wants the results to be kept secret for competitive reasons until a patent or license has been granted.
- (4) In three of the four countries included in the study the *unity of teaching and research* is slowly eroding. England has progressed most in this respect by pushing all academics whose research performance is deemed to be unsatisfactory into teaching-only jobs. The Netherlands is tending to follow this example to some extent but here professors who are strong in attracting third party research funding can buy themselves out of teaching. In Germany this is the case with research groups who have been successful in the "Excellence Initiative". Professors who are part of research clusters which won in the competition can negotiate a reduction of their teaching load or even a research-only contract. Only in Austria does the teaching-research nexus still seem to be untouched, although some of our interviewees in that country stated that the teaching load has become negotiable to some extent.

Despite the fact that all over Europe national higher education systems have increased the attention given to the issue of teaching quality, the trend described here demonstrates that in the context of academic work teaching tends to be regarded as a second class activity or — in the case of England — even a punishment for not being good enough in research. The trend has also repercussions for the general organisation of studies and teaching. At the Bachelor level, teaching will tend to be done by lowly paid graduate or doctoral students while the masters' level becomes increasingly the taught part of doctoral programmes. This might result in a model of organisation of teaching and learning at European universities which is rather similar to those in America.

4. Discussion and Conclusions

A few years ago the author still held the opinion that research cannot be managed, at least not without violating the principle of academic freedom. The only possible way for a university management to intervene in research might be in small steps by re-defining the denomination of a professorship when a chair had to be filled or by creating a new chair. In the meantime the author has had to change her opinion and is surprised about the diversity of instruments and mechanisms which are being used to steer and manage research. This development is probably unavoidable in the emerging knowledge societies in which the production of new knowledge becomes an ever more important economic factor. But the high and often exclusive weight put on research output in national as well as international university rankings has also contributed to this development. Such rankings mostly measure what can be measured and quantified; the rest is neglected. The interviews in the framework of our project have, however, made it clear that this trend is accompanied in many cases by a perceived loss in quality or a neglect of rigorous basic research. The latter normally will need time in order become solid and mature. An American colleague in the field of higher education research, David Dill, has characterised this trend critically as an “academic arms race” (Dill, 2009, p.113). With this term he meant the imitation of universities with high positions in such rankings by less well placed universities that can lead to ruinous competition and investment.

But the results of the study presented here also open up avenues for further research because they show what we still do not know. One interesting angle to analyse would be the impact of the new modes of managerial governance on academic culture and identity. Another interesting perspective in this context would be studies about changes in the professional role of academics, *i.e.* their job satisfaction, their time budgets for teaching, research and other tasks, their interaction with newly emerging and increasingly professional actors within higher education institutions who exercise bridging functions between the shop floor of academic work and the central management — professional staff such as quality managers and evaluators, research planners and staff developers. Finally, it would be interesting to analyse the role, the self-understanding and the ideas of what a

university is about among the representatives of the external stakeholders who are members of university boards. Even if they still have frequently only an advisory function, it can be expected that they will acquire increasing decision-making power, *i.e.* appoint the rector or vice-chancellor, and decide about strategic plans and other issues concerning the profile and competitiveness of a given institution.

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National Initiatives for Building World-Class Universities: comparison between Asian and European experiences

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Abstract. The development of world-class universities is high on the policy agenda of various stakeholders across the globe. Many national governments in Asia and Europe have formulated policies to develop and support such universities, which is considered to be a necessary step to enable both universities and countries to compete at a global level. This paper provides a comparative analysis of different national initiatives for building world-class universities in countries in Asia and Europe. It begins with a brief review of the contested concept of world-class universities and their features. Selected national initiatives of Asian and European countries are analyzed and their similarities and differences compared. Drawing on the comparison, this paper concludes by discussing the impact of national initiatives and their implications for building world-class universities.

Keywords: comparative analysis, national initiatives, world-class university

Introduction

The development of world-class universities is high on the policy agenda of various stakeholders across the globe (Altbach & Balán, Eds., 2007; Huisman, 2008). To enhance their global competitiveness in the age of knowledge-based economies, governments in Asia and Europe have developed policies and plans to restructure their higher education systems and to transform them in the image of the world-class university (Deem, Mok & Lucas, 2008; Salmi, 2009). Special initiatives have been proposed and implemented in many countries to build world-class universities. This paper will compare and analyze the national initiatives in Asian and European countries, and will then discuss their impacts on and recommendations for building world-class universities.

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Defining World-Class Universities

The term ‘world-class universities’ has been firmly embedded in governmental policies; the paradox, however, is that this concept has been widely employed without an explicit or clear definition — as Altbach (2004) states “Everyone wants a world-class university ... , no one knows what [it] is, and no one has figured out how to get one.” A few scholars have attempted to define what world-class universities are through the proliferation of league tables, such as those published by the Times Higher Education Supplement (THES)¹ and Shanghai Jiao Tong University (SJTU)². Despite different methodologies being used in evaluating international rankings of universities, it is not difficult to find that the indicators focus heavily on universities’ quality of education, internationalization, research output, prestige and impact (Salmi, 2009).

Some scholars have attempted to identify key attributes that world-class universities have which regular universities do not possess, such as highly qualified faculty, excellence in research, quality teaching of international standard, high levels of government and non-government funding, talented students, academic freedom, autonomous governance structures and well-equipped facilities for teaching, research, administration and student life (Altbach, 2004; L.Liu, Cheng & N. C. Liu, 2007; Yang, Liu, Huang & Fu, 2007). Based on the above elements, Salmi (2009) proposes that three complementary sets of factors are at play in world-class universities: a high concentration of talent (faculty and students), abundant resources (to offer a rich learning and research environment), and favourable and autonomous governance (to encourage strategic vision and innovation). These characteristics, or rather indicators, have also been identified by governments and universities for developing and improving their higher education systems.

By integrating these concepts and ideas, Liu (2009) has given a working definition of world-class universities: “A world-class university is a higher education institution which carries out international-standard education and research in a wide range of disciplines, and makes great efforts to serve both national needs and international public good.”

In order to perform well in the international university rankings, governments in Asia and Europe have adopted various national initiatives and reform measures to enhance their research performance. These strategies in practice can be categorised into three broad approaches: upgrading existing institutions, merging existing institutions and creating new institutions (Salmi, 2009). International

¹ THES’s ranking focuses heavily on international reputation, combining subjective inputs, quantitative data and the influence of faculty. Specifically, the crucial elements are academic peer review (40%), student to staff ratio (20%), research citations (20%), employer recruiting survey (10%), the number of international students (5%) and international faculty (5%) (QS-Top Universities, 2008).

² SJTU’s ranking applies a methodology focusing on the academic and research performance of faculty, alumni and staff. Specifically, these indicators include alumni winning Nobel Prizes and Fields Medals (10%), staff winning Nobel Prizes and Fields Medals (20%), ‘highly-cited researchers in 21 broad subject categories’ (20 %), articles published in Nature and Science (20%), the Science Citation Index and Social Sciences Citation Index (20%) and the *per capita* academic performance (on the indicators above) of an institution (10%) (SJTU, 2008).

experiences suggest that these strategies have been effective in terms of encouraging competitive behaviour among higher education institutions (Deem, *et al.* 2008; Salmi, 2009). It should be noted that these approaches are not incompatible and countries need to carefully assess their needs, resources and long-term interests in order to design their strategies based on these models (Altbach, 2004). The next section will analyze and compare the national initiatives adopted in Asian and European countries.

Some National Initiatives for Building World-Class Universities

The Asian Experiences

China: “985 Programme”

China’s “985 Programme” reflects the government’s goal and effort to develop a tertiary education system of international standing. On 4th May 1998, President Jiang Zeming declared that “universities should play a critical role in implementing the strategy of invigorating the country through science, technology and education” and that “China should have several world-class universities of international standard.” To put these ideas into practice, the Ministry of Education (MOE) (1998) issued the “Action Plan for Education Revitalization for the 21st Century” and agreed to pursue the “985 Programme” to establish a number of world-class universities and to develop a number of key research centres of excellence. This project aimed at exploring new mechanisms for higher education governance, improving universities’ global competitiveness and developing a path for building world-class universities with Chinese characteristics.

The “985 Programme” has been implemented in two phases: 1999-2001 and 2004-2007. Altogether, 39 selected universities have benefited from this project, with 34 universities selected for Phase I and another 5 universities added in Phase II. Nine of the 39 universities were top of the list to be developed into world-class universities, and the rest were expected to be built into world-known universities (*i.e.* a slightly lower level of achievement but still possessing an international reputation), as stated in the “985 Programme” policy document (MOE, 2008). The government played a dominant role in the selection of universities, with the selection process being organized and conducted by the Ministry of Education.

The Ministry of Education, the local governments of the provinces in which these selected universities are located, and other governmental organizations collaborated to provide extra financial resources³. The total amount of funding received by a selected university depended on different factors, such as the university’s position, its goals and the status it is expected to achieve in the world

³ Only Tsinghua University and Beijing University (Peking University) received financial support solely from the Ministry of Education. The rest of the 39 universities are funded by both the Ministry of Education and local governments or other funding bodies.

system, and the local government's financial situation⁴. In Phase I, the total financial support for the 34 universities was about 26 billion RMB (about US\$4 billion), with about 50% of the funding provided by the central government. The nine top listed institutions⁵ were offered about 40% of the total funding. In Phase II, the total funding reached 41 billion RMB (about \$6 billion), with about 50% of this coming from the central government. Again, the top nine universities received about 40% of the funding. However, with an increased number of selected universities in Phase II, the average amount of funding for each project was slightly less than in Phase I.

In general, the "985 Programme" has enabled those selected institutions to improve their research performance and competitiveness and to narrow the gap with world-class universities (N. C. Liu, L. Liu, Cheng & Wan, 2003). The experience and achievement from Phase I offered a strong base for the further development in Phase II. Key national bases for humanities and social sciences research and major national laboratories have been established to enhance research. The selected universities have played an increasingly critical role, both in higher education and in socio-economic reform, in China. More specifically, the nine top-listed institutions have greatly improved their positions in the world rankings⁶. These nine universities have also drastically improved their international publications, not only in quantity but also in quality⁷.

The Ministry of Education is responsible for evaluation of the "985 Programme" and for assessing the performance of each of the selected universities. Although the evaluation procedures and results for Phase I were not made available to the public, the overall conclusion was that the universities were considered to be "performing well" (MOE, 2008). The evaluation of Phase II is underway and expected to be completed in the summer of 2009 and published by the end of 2009, when Phase III is due officially to start.

Japan: Centres of Excellence (COE) and the World Premier International Research Centres (WPI)

The Japanese Government has explicitly designed higher education policies and science and technology policies to develop world-class education and research centres, such as the "21st Century COE Programme" (COE21), the "Global COE" (Global COE) and "World Premier International

⁴ Generally speaking, the financial contributions from the Ministry of Education and the local governments are largely similar. However, in relatively developed area, the expenditure from the local governments is more than that of the Ministry of Education; and *vice versa* for those in less developed areas.

⁵ The nine universities are Fudan University, Harbin Institute of Technology, Nanjing University, Peking University, Shanghai Jiao Tong University, Tsinghua University, University of Science and Technology of China, Xi'an Jiao Tong University, Zhejiang University.

⁶ For example, according to the Academic Ranking of World Universities (SJTU, 2008), the number of Chinese universities in the top 300 increased from none in 2000 to six in 2008; and the number of Chinese universities in the top 500 increased from four to eighteen respectively.

⁷ The average number of publications by these universities indexed in the ISI database increased to 2400 in 2008, ten times more than that in 1999. Their quality has also improved significantly.

Research Centre Initiative” (WPI). Since the 1990s, Japanese universities have been increasingly challenged by competition from foreign universities in the context of globalization (Yonezawa, 2007; Oba, 2008). Meanwhile, the government also identified its weakness in developing basic, fundamental and innovative research activities (Song, Yang & Liu, 2007). Under these circumstances, the government has implemented a series of funding policies based on competition, with a strict evaluation process.

In 2002, the Ministry of Education, Culture, Sports, Science and Technology (MEXT) launched a new funding scheme, COE21, in response to calls for much more competitiveness in funding allocation among Japanese universities (Yonezawa, 2007; Oba, 2008). COE21 aimed at creating world-standard education and research centres within Japanese universities by giving targeted support (Japan Society for the Promotion of Science (JSPS), 2007a). The project proposals submitted by universities were screened by the COE21 Programme Committee against principal selection criteria according to their disciplinary fields. Up to 2007, 274 projects proposed by universities had been selected and offered five-year funding of ¥10–¥500 million (about \$0.1-5 million) *per* year. Total funding for the year 2002 to 2006 was ¥164 billion (about \$1.37 billion). These adopted projects were assessed and evaluated every two years, the results of which determined the continuation of the project and the amount of funding offered subsequently. COE21 ended in March 2007. A retrospective assessment of these selected projects was conducted — 99 COEs out of 113 were evaluated as having met their objectives and 31 as achieving more than expected (Oba, 2008). It concluded that COE21 had made a contribution to promoting higher education reform, improving the capabilities of young researchers and developing the research standards among universities⁸ (Gong & Chen, 2007).

To further enhance and strengthen the achievement gained in COE21, MEXT launched the Global COE programme in 2007. This programme also seeks to establish world-class education and research centres and proposes a further concentration of resource allocation (Oba, 2008). It ultimately aims at strengthening the education and research functions of graduate schools and in turn at enabling highly creative young researchers to become world leaders in their respective fields through experiencing and practicing research of global excellence (JSPS, 2007b). JSPS organizes the committee that screens applications. Selected programmes are funded for a period of five years, with ¥50–¥300 million (about \$0.5-3 million) *per* project every year. However, the funding may be terminated depending on an interim assessment conducted after two years. Compared with COE21, Global COE targets and values a wider range of disciplines; in particular, humanities and interdisciplinary subject areas have been encouraged to apply to the funding programme. In addition,

⁸ For example, the number of PhD students enrolled increased by 14% since the implementation of COE21. There has been a 31.8% increase in graduate students’ publications and a 10.8% increase in teaching staff’s publications between 2002 and 2005. In addition, the number of international collaborative research projects increased by 53%.

the Global COE programme is more selective in terms of the number of adopted projects — only 63 projects were selected in 2007, compared with 113 for the COE21. This enables the selected universities to gain a higher proportion of financial support. The funded institutions are mainly the former imperial universities, *i.e.* those that were already recognised as elite institutions.

In addition to the Global COE, another competitive funding programme entitled WPI was launched. This programme provides priority support to establish world-class research centres, which “will create an excellent, vibrant, high-standard research environment to attract world frontline researchers” (JSPS, 2007; MEXT, 2007). A limited number of selected proposals are to be provided with concentrated support for a period of 10 years and with a possible five-year extension to achieve outstanding results. The selection committee, established by MEXT, defines the selection criteria and conducts document reviews and interviews. In contrast to COE21 and Global COE, WPI, with a longer grant period, is much more highly selective and provides more concentrated financial resources with an emphasis on applied and interdisciplinary research.

Even though not all the funding policies have come to an end or have been evaluated, these national initiatives have significantly changed the higher education institutions’ way of thinking and patterns of behaviour, involving reformed internal management and governance and have revitalized the entire education-research environment (Oba, 2008).

Korea: “Brain Korea 21” and “World-Class University” initiatives

Facing development of the global knowledge economy, the Korean government identified several weaknesses in its higher education system, especially after the economic crisis in the late 1990s (Moon & Kim, 2001; Song, *et al.*, 2007). The low level of academic competence of Korean universities assessed by international standards caught the government’s attention most. In addition, a problem lay in its over-dependence on universities abroad to develop its human resources for socio-economic development. The government also noted that its investment and expenditure on higher education was lower than in other developed countries (Lee, 2005; Dai, 2006). To enhance the nation’s global competitiveness, the Ministry of Education and Human Resources Development (MEHRD) initiated the higher education reform project “Brain Korea 21” (BK21). The overall objectives were to foster world-class research universities, which would function as infrastructure in producing primary knowledge and technology and promote specialization among local universities; to introduce professional graduate schools in order to cultivate professionals in various fields; and to transform the higher education system in order to facilitate competitive growth among universities based on the quality of their students and academic productivity (MEHRD, n.d.). International collaboration has been encouraged in the BK21 project, to make use of internationally recognized institutions as a source of reference in their special areas so as to improve the management and governance in the Korean higher education system (Song, *et al.*, 2007).

The first period of BK21, 1999-2005, was made up of three major reform components with a total

budget of \$1.2 billion to upgrade graduate education to attain excellence in teaching and to promote local universities, to enhance the research capability of graduate schools, to build infrastructure for academic research, and to provide financial support to all academic areas with a particular emphasis on basic disciplines (Moon & Kim, 2001). The selection process was organized and conducted by the Ministry of Education, Science and Technology (MEST), and was open to public scrutiny. Altogether, 564 research centres and project teams were selected on the basis of the departments' and the universities' merits⁹. According to the MEHRD's summary of BK21 (MEHRD, n.d.), the research capacity and achievement have been improved remarkably¹⁰.

Based on the achievements of the first-phase, the Korean government decided to design a further second-phase BK21 for the period of 2006-2012, so as to enhance the establishment of at least 10 research-oriented universities. The total funding is about \$2.1 billion, shared by 568 research centres and project teams from 74 universities. To stimulate the competition among universities, an annual evaluation with stricter standards is carried out among the selected research centres and project teams. The funding for low performance institutions is to be reduced or even cancelled, and will then be re-allocated to other programmes with better evaluation results. Although there have been controversies nation-wide that the implementation of BK21 may widen the gap between those selected universities and research centres, the winners, and the non-selected universities, the inevitably losers (Song, *et al.*, 2007; Deem, *et al.*, 2008), the government has insisted on its implementation and considered it as a national endeavor to reform the Korean higher education system and to cultivate highly-skilled human resources for the global knowledge economy.

In addition, a project, "World-Class University," (WCU) was launched by MEST (2008) in June 2008. This WCU programme invites international scholars with advanced research capacities to collaborate with Korean faculty members and establish new academic programmes in key growth-generating fields. The focus is placed on supporting new technologies that will enhance national development and priority is given to inter-disciplinary studies that consolidate the fields of basic sciences, humanities and social sciences. The project will ultimately contribute to national, social and academic development¹¹. A total of \$800 million has been provided for 30 universities on this five-year project.

⁹ The number of graduate students, postdoctoral fellows and contract professors who benefited from BK21 Phase 1 was 89,336 (MEHRD, n.d.). In addition, each masters' student was offered a financial aid of \$400 each month, \$600 for PhD students, \$1,250 for postdoctoral fellows, \$2,500 for contract professors and researchers.

¹⁰ Up to 2005, Korea's ranking on SCI publication increased from the 18th to 12th. The number of the SCI publications in 2005 was double that in 1999. Also, the impact factor of these SCI publications was 2.43, a 28% increase from that in 1999.

¹¹ According to the MEST, chosen from 477 applicants, WCU decided to invite 81 world-class scholars to teach and conduct research in 30 Korean universities in 2009, including 9 Nobel Laureates, 12 members of the U.S National Academy of Sciences and 18 members of the U.S. National Academy of Engineering.

Other Asian Countries' Experiences

To build world-class universities and research centres, other Asian countries have endeavoured to create a favourable policy environment and direct public initiatives and support.

The Malaysian Ministry of Higher Education (MOHE) has proposed the “Accelerated Programme for Excellence” (APEX) in its National Higher Education Action Plan 2007-2010 as its approach towards achieving world-class status. It aims at developing one or two universities to be in the top 100 of world universities by 2010. Universities with APEX status will stand atop the pyramid of institutions in Malaysia and will be the nation’s centres of academic distinction (MOHE, 2007). Ultimately, these universities will have the best university governance and management, the best faculty to teach and conduct research, the most academically able students and the best facilities to enhance teaching, learning and research. After a rigorous audit process, Universiti Sains Malaysia (USM) was selected as the nation’s first APEX university in 2008. Regarded as having the greatest potential among universities in Malaysia, USM is to be given additional funding from government and therefore will be expected to move up to the top 100 in the world university ranking by 2010 and to the top 50 by 2020.

Singapore has long attempted to become the ‘Boston of the East’, a global knowledge-based hub associated with innovation, creativity, informed debate, and significant university-industry linkage (Olds, 2007). The Economic Development Board (EDB) launched the “World-Class Universities” (WCU) programme in 1998. It intended to reform higher education in Singapore by introducing foreign institutions and providing foreign-led or foreign linked educational services. The programme aimed at attracting “at least ten world-class universities to Singapore within ten years” (Higher Education Division, 2005; Olds, 2007). Since then, many foreign universities have established campuses, research centres and laboratories, or joint-degree programmes in Singaporean universities¹². A series of higher education reforms was extended after this WCU programme, such as the development of autonomous universities. This aimed at improving the universities capacity to compete in the global environment and to become world-class institutions. The National University of Singapore, the Nanyang University of Technology and Singapore Management University, selected as autonomous universities, have received concentrated investment from the government to build world-class institutions. Similarly, the Vietnamese and Thai governments have also issued plans for developing and upgrading higher education through collaborating with international partners and universities of world-standard quality and high reputation (Ministry of Education and Training, 2007; Asian Development Bank, 2006)

The Indian government also plans to establish 14 world-class universities in its Eleventh Plan. These leading universities will be expected to act as benchmarks of excellence for other universities and colleges to improve their quality and to play an important role in turning India into a global

¹² The universities include Duke University, Johns Hopkins Universities, University of Chicago, *etc.*

knowledge hub (Altbach, 2005).

European Experiences

Germany: “Excellence Initiative”

For the purpose of strengthening cutting-edge research in Germany and improving its international competitiveness, an “Excellence Initiative” was launched by the Federal and State Governments in June 2005. The German or Humboldtian model of universities had influenced higher education development around the world by the end of 19th century but German universities’ performance has been less impressive in recent years, compared with other developed countries. For example, Germany has no universities ranked in the top 50 in the world league tables. With continuously decreasing funding from the government, young talented researchers tend to work at research centres abroad, which offer a better environment (Zhang, 2007). Facing these dilemmas, the German Research Foundation (Deutsche Forschungsgemeinschaft [DFG]) and the German Council of Science and Humanities (Wissenschaftsrat (WS)) joined together and organized a competition to strengthen research sustainably and to raise the visibility of German science and research in relation to its international counterparts. The ideology behind this initiative shows a departure from the traditional concept in Germany that all universities are equal and hence should be treated equally (DFG, 2008).

The initiative selects outstanding projects in three categories: graduate schools to promote young scientists and researchers, clusters of excellence to promote cutting-edge research, and institutional strategies on projects to promote top-level research. A total of €1.9 billion is expected to support selected projects over five years. The selection process was held in two rounds: a preliminary selection (2005/2006) and a final selection (2006/2007). All proposals were reviewed by internationally appointed panels of experts. Only universities and research centres chosen from the preliminary selection were able to present their full proposals subsequently. At the end of the first round, in October 2006, 38 projects at 22 universities were selected for funding (with 18 Graduate Schools, 17 Clusters of Excellence and three Institutional Strategies). They will be funded up to November 2011 with a total of €873 million. At the end of the second round, in October 2007, a further 47 projects at 28 universities were selected for funding (with 21 Graduate Schools, 20 Clusters of Excellence and six Institutional Strategies). They will have received €1 billion in total by November 2012 (*ibid*).¹³

The “Excellence Initiative” project has been strongly expected by the German Government to raise its national competitiveness. There are however concerns over the issue of equality among

¹³ The nine winning universities in both rounds are identified as ‘elite universities’ and will be granted extra funding to build world-class universities. The nine universities are Technical University of Aachen, Free University of Berlin, University of Freiburg, University of Göttingen, University of Karlsruhe, University of Konstanz, University of Heidelberg, University of Munich, and the Technical University of Munich.

universities in Germany (Zhang, 2007; Zhu, 2007; Deem, *et al.*, 2008).

UK: Funding for Excellent Units

The Research Assessment Exercise (RAE) was an evaluation administered every five years on behalf of the four UK higher education funding councils¹⁴ (RAE, 2008). The primary purpose of the RAE was to assess the research activities of higher education institutions throughout the UK. The evaluation results were used by the four funding bodies to determine the funding for research to the institutions in order to further develop world-standard research. A total of \$8.6 billion was disbursed following the RAE in 2001 (Salmi, 2009). Only those units with high RAE scores were eligible for funding. As a result, the so-called Russell Group of institutions¹⁵ currently receives more than 80% of the total HEFCE's research funding (Taylor, 2009). Mills (2007) claims that, in general, the RAE has improved research quality and raised research income, and it has become one of the strongest influences on higher education management policies in the UK and on the research attitudes of academics themselves. The results have also been used in producing league tables of institutions and disciplines in the UK (Corbyn, 2008).

Any higher education institution that is eligible to receive research funding from one of these funding councils is invited to participate in this evaluation exercise. The RAE is a discipline-based expert review process, in which researchers and experts active in that discipline give a ranking to participating departments. The latest RAE (RAE, 2008) took place between 2007 and 2008 and the results were published in December 2008. RAE 2008 focused on the quality of research outputs (such as publications in academic journals and conference proceedings), the research environment and indicators of esteem. A four-point quality scale was used to score each departmental unit as: world-leading, internationally excellent, internationally recognised, or recognised nationally in terms of originality, significance and rigour (RAE, 2008).

The RAE has been criticised as being labour-intensive, time-consuming and costly. A 'radical simplification' of the evaluation and funding system, the 'Research Excellence Framework', has been proposed by the government and will replace the RAE in 2013. This will be a metrics-based evaluation scheme including measures on research income, citations, *etc* (Fazackerley, 2006).

Other European Countries' Experiences

The "Super Campus" programme was launched by the French government in 2008. This programme

¹⁴ The four funding councils are Higher Education Funding Council for England (HEFCE), Scotland Higher Education Funding Council (SHEFC), Higher Education Funding Council for Wales (HEFCW) and the Department of Higher and Further Education, Training and Employment in Northern Ireland (DHFETE).

¹⁵ Established in 1994, the Russell Group, an association of 20 major research-intensive universities in UK, purports to provide leadership and strategic direction for these 20 universities. It aims "to ensure that policy development in a wide range of issues relating to higher education is underpinned by a robust evidence base and a commitment to civic responsibility, improving life chances, raising aspirations and contributing to economic prosperity and innovation" (Russell Group, 2006).

has identified ten regional centres of excellence in higher education and research. Overall, the ten campuses regroup 38 universities and research organizations. It is a €5 billion national initiative, implemented by President Nicolas Sarkozy (Marshall, 2008; Salmi, 2009). The President also claims that the French government is endeavouring to build two universities within the world's top 20 and ten universities among top 100 by the year of 2012.

The Russian Education Ministry proposed the "Federal Universities" programme. This programme will establish a network of new, high-status federal institutions under the Ministry. Selected universities will be offered targeted resources to build special research institutes and to develop wider lifelong vocational learning (Holdsworth, 2008). By doing so, the government intends to improve Russian universities' positions in the international league tables. This programme is still under consideration by the Education Ministry, although two pilot universities were established in 2007.

In addition, the European Commission (EC) has launched its "Framework Programme 7" (FP7) to build 'centres of excellence' in EU countries, inspired by some US universities' experiences. Within these centres, research and technological development will be expected to be performed at a very high, often world-class level. The programme aims at creating centres that will contain and attract excellent researchers and developers, and that will earn a reputation as significant resources for the progress of science and technology and the spread of innovation (EC, 2008). The overall budget for FP7 is €50.5 billion, which covers 7 years from 2007 to 2013. Along with FP7, the 'Erasmus Mundus II programme' is due to start in 2009. With a budget of €950 million, the programme aims to promote the EU as a centre of excellence and seeks to attract the best-qualified students and academics internationally (EC, 2007).

Comparing the National Initiatives

After reviewing the initiatives on building world-class universities and research centres across some Asian and European countries, in this section the national policies are compared in each of the following areas: the funding context, duration, aims, approach, financial support and selection process.

The Funding Context

The different national experiences reviewed above show that world-class universities, now frequently characterized as the leading research universities, have been playing a critical role for countries to compete in the global knowledge-based economy. There is increasing recognition also of the strategic importance of such universities in a nation's innovation system. These universities perform international-standard education and research in a wide range of disciplines, and make great efforts to serve national needs and provide an international public good (Liu, 2009). The national initiatives

are proposed in such a context. State governments, in both developed and developing countries, attempt to develop policies and provide solid financial support to reform higher education systems, raise their quality and eventually create a number of world-class universities and centres of research excellence, ultimately enhancing the higher education competitiveness of their nations in the global market (Song, *et al.*, 2007; Deem, *et al.*, 2008; Salmi, 2009).

The Duration

It is commonplace to discover that the duration of the national initiatives reviewed in the previous section is relatively long. For example, the duration of China's "985 Programme" is three years for Phase I and four years for Phase II, with a two-year transition period; the durations of COE21 and Global COE, in Japan and that of the "Excellence Initiative" in Germany are five years; and the duration is seven years for Korea's BK21 programme. These relatively long durations can ensure continuity and improve the effectiveness of policy implementation (Gornitzka, 2005). These initiatives are all proposed, agreed and legislated by governmental officials and organizations. The legislation processes turn these education initiatives into regulations and laws, which strengthen the authoritative and compulsory nature of the policies (Yang, *et al.*, 2007).

Approaches

Different countries, in accordance with their respective socio-economic conditions and cultures, design their paths and implement their national initiatives differently. China's "985 Programme" takes a two-step strategy to develop research universities: two universities are intended to become world-class universities first, with a few other elite universities achieving a world standard. Japan's COE and WPI programmes and UK's RAE funding system take research subjects as units with a mechanism based on peer-review panels, to improve higher education quality through developing individual disciplines. Germany's experience focuses clearly on developing graduate schools, clusters of excellence, and elite institutions. The Singaporean government is reforming its higher education system by introducing foreign institutions and providing foreign-led or foreign-linked educational services. In addition, several East Asian countries have engaged in wholesale restructuring of their higher education systems and engaged in a series of internal benchmarking exercises in search for world-class positioning (Deem, *et al.*, 2008). As Jamil Salmi (2009) points out, different approaches to building world-class universities are not mutually incompatible and countries may pursue different approaches or combine them in response to their conditions and demands.

Financial Support: Concentration of Research Funding

In terms of the quantity of financial investment, all national governments pursuing these policies have provided substantial financial support and resources. True, research universities are capable of generating significant research income by a variety of means, but there is no substitute for consistent and abundant government and public support to sustain their development (Salmi, 2009).

Another feature is the concentration of research funding into a limited number of selected institutions. This strategy is adopted as a means to ensure world-class status for the few (Deem, *et al.*, 2008). As Liu (2009) and Salmi (2009) both state, adopting the goal of building world-class universities does not imply that all universities or departments in a given country can be or should aspire to be of international standing. A more attainable and appropriate approach would be, for countries, in establishing policies, to take into account a range of factors including the demand for a world-class university in the region or country and its economic rationale and affordability. However, there is also a potential fear for or criticism from academics that such concentration of research funding could lead to a zero-sum game (Deem, *et al.*, 2008), where the better universities gain at the expense of the poorer universities' reduced funding.

Selection and Evaluation Processes

Comparing the selection processes in the countries mentioned above, different selection and evaluation processes have been adopted by different countries, or even different selection approaches at different times in the same countries. Governments play a major role in China's "985 Programme"; groups of academic experts are involved in the evaluation process; in both Japan's COE programme and the RAE in UK; and opinions from both governments and academic experts are taken into consideration in Korea's BK21 and Germany's "Excellence Initiative" programme. However, a common feature of all of them is a selection process with clear criteria and transparent procedures. An effective selection process can inspire competition among universities (Song, *et al.*, 2007). To some extent, selection and evaluation processes can also reflect the policy environment and public support, which are critical factors for building world-class universities (Salmi, 2009).

Conclusions and Implications

The purpose of building universities with international stature is "not simply for improving the quality of learning and research in higher education but also, more importantly, for developing the capacity to compete in the global tertiary education marketplace through the acquisition, adaptation, and creation of advanced knowledge" (Salmi, 2009, p.3). However, it is an immensely expensive exercise to build such universities; and not every nation needs them, at least not while more fundamental higher

education needs are not met. Similarly, not every university or department in a given country needs to be world-class (Liu, 2009). In other words, as national contexts vary widely, attention needs to be drawn to the observation that each country must choose a strategy that can bring its strengths and resources into play, rather than engage in “a globalized policy copying” (Deem, *et al.*, 2008).

This paper has reviewed and compared different national initiatives implemented in some Asian and European countries in attempting to create world-class universities in a knowledge-based economy. In spite of the different approaches adopted, these special initiatives have had strong influences on developing higher education systems and world-class universities in these nations. Under these initiatives, clear and sensible aims are proposed; adequate funding has been provided; and essential government and policy support assured, in order to reform the higher education systems. In conclusion, attainable national initiatives can develop an integrated system of teaching, research and technology-oriented institutions, to support and enhance the development of a few centres of excellence with value-added fields and chosen areas of comparative advantages that can eventually evolve into world-class institutions and play a critical role in building national competitiveness in the global knowledge economy.

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Public Expenditure on Higher Education in Japan

Fumihiro Maruyama*

Abstract: The amount of public funding for higher education has been expected to increase in most developed and some developing countries owing to the increase in the higher education population and the need to improve the quality of higher education. However, during periods in which there is widespread financial difficulty, sustaining the level of public funding for higher education is a particular problem. Consequently, higher education institutions worldwide are currently struggling with less public funding to achieve their goals and their teaching and research mission; and governments have a need to review and reform their *modus operandi* in order to allocate funds more efficiently and effectively to the institutions. This paper examines current issues in public funding for higher education in Japan. First, the present situation of public expenditure in Japan is reviewed using longitudinal data and through international comparison. Second, the five types of public funding available to higher education in Japan are summarized. The paper concludes with a discussion of the current situation regarding funding allocation for higher education institutions.

Keywords: public funding, expenditure on higher education, operational grant, subsidies for private universities, research grant, capital funds, student aid

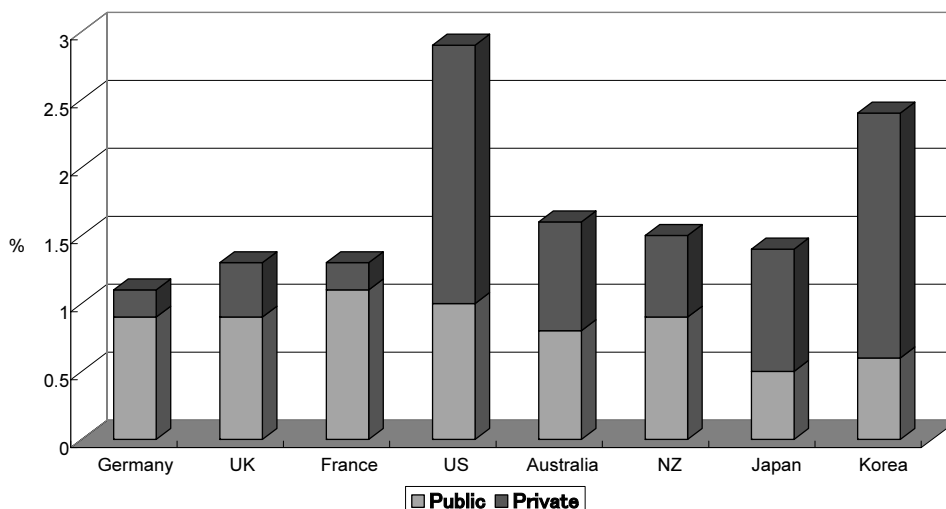
1. The Extent of Public Expenditure on Higher Education

In Japan, more than 50% of 18-year olds advance from high school to college or university and more than 75% of those youngsters attend some type of higher education institution. In the 86 national universities, 89 other public universities and 580 four-year private universities, 2.8 million students are enrolled. These figures are proportionately similar to the higher education populations of other developed nations, and the total expenditure on higher education, as a proportion of GDP, is 1.4%, which is about the average for OECD countries (Figure 1). However, public expenditure on higher education, relative to GDP, is only 0.5%, which is the lowest among OECD countries (OECD, 2008). It is private expenditure that pushes total expenditure on higher education in Japan up to the OECD average. This distribution of higher educational expenditure is quite different from that of other

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countries, especially those in Europe where most of the cost of higher education has traditionally been taken from the public purse. The proportion of total expenditure in the cases of the UK, France and Germany, relative to GDP, is almost the same as that of Japan, but public expenditure in these countries is about twice that of Japan (UK 0.9%, France 1.1%, Germany 0.9%).

Figure 1. Investment in Higher Education as a Percentage of GDP 2005



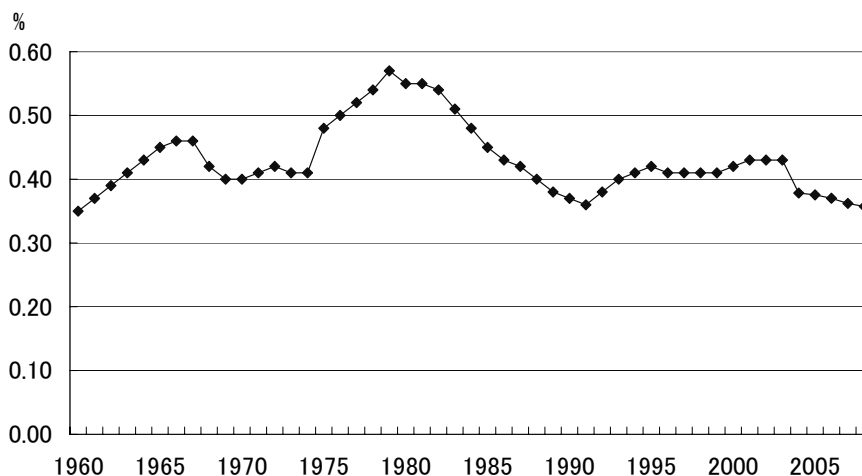
Although public expenditure is the lowest among the OECD countries, annual expenditure *per* student is essentially above average (OECD, 2008). The annual cost of higher education per student in Japan is US\$12,326, which is almost the same as in the UK (\$13,506), Germany (\$12,446) and France (\$10,995)¹. Likewise, the cumulative expenditure *per* student over the average duration of higher education is basically the same among the four countries. In Japan, students average stay in college is 4.07 years, requiring an average expenditure of \$50,167, compared to \$66,758 in Germany (average duration 5.36 years), \$58,654 in the UK (4.34 years) and \$44,202 in France (4.02 years). Thus, compared to these countries, with a similar level of total expenditure on higher education *per* student, students in Japan are uniquely supported by private contributions to higher education spending rather than public ones.

Figure 2 shows the longitudinal change in public expenditure on higher education as a proportion of GDP since 1960. Public spending has been recorded at lower than 40% on three occasions: in the early 60s, early 90s, and at present. After a rather stagnant early 70s, it reached a peak — at over 57% — in 1979 before returning to under 40% in the early 90s and remaining stable thereafter. The lack of growth in government revenue due to the economic slump experienced since the early 90s and the shift in government's priorities toward social securities such as medical care and pensions might be serving to constrain public expenditure on higher education at the present level. This is in contrast to

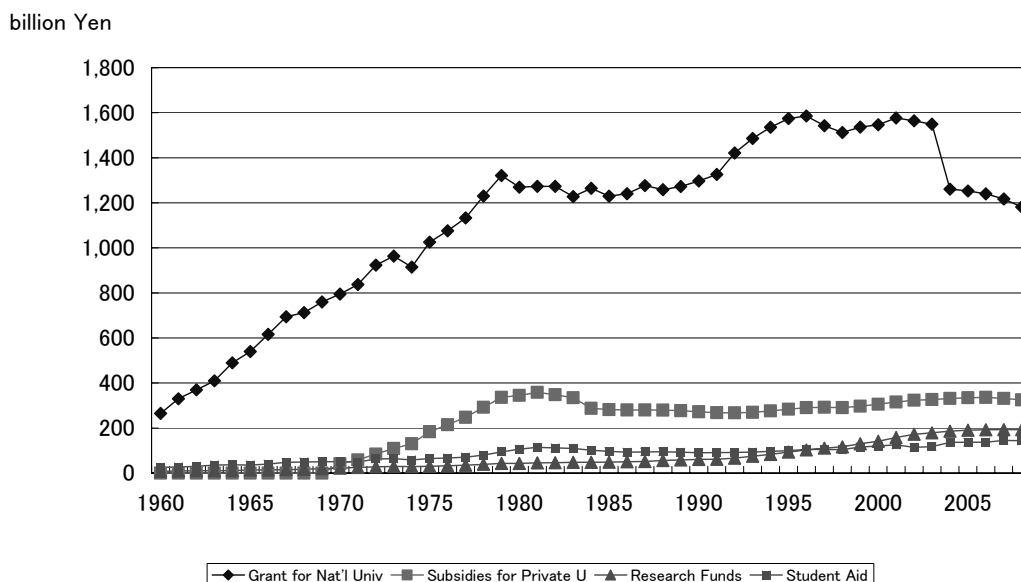
¹ National costs are expressed in equivalent US dollars by using PPP

the increase in public expenditure on social security as a proportion of GDP, which has risen from 17% in 1995 to 27% in 2009.

Figure 2. Public Support as a Percentage of GDP



Government expenditure on higher education in Japan falls into five categories: (1) the operational grant to national universities, which is directly granted to institutions by the Ministry of Education, Culture, Sports, and Technology (hereafter MEXT); (2) a subsidy for capital investment in the national universities which is provided by both MEXT and the Center for National University Finance and Management (CNUFM), a semi-governmental organization; (3) research funds provided through the Japan Society for the Promotion of Science (JSPS; this is also an independent administrative corporation) and MEXT; (4) the “Subsidies for Current Expenses for Private Universities” which are allocated by an intermediate body, the Promotion and Mutual Aid Corporation for Private Schools in Japan; and (5) student aid provided by the Japan Student Service Organization, which is also an independent administrative institution. Figure 3 shows the longitudinal trends in these expenditures since 1960 except for the subsidy for capital investment in the national universities. As can be seen, the operational grant to national universities accounts for the largest part of public spending, constituting more than 60% of the total expenditure. While this proportion increased in the 1960s and 70s, when higher education as a whole was continuously expanding, it has not grown further except in the late 90s and early 2000s. The second largest part of public spending is the subsidy to private universities, which also grew rapidly in the late 70s but has been stable since the 1980s. Over this 50-year period, the number of private universities has grown, as have the number of students they accept. As a result, public support *per* student at private institutions has decreased even though total public spending to private universities has been stable. Both research funds and student aid have shown a steady increase over the 50-year period.

Figure 3. Public Expenditure on Higher Education: (2008 prices)

2. Operational Grant to National Universities

The largest part of public expenditure to higher education is the operational grant to national universities, which includes personnel costs and facilities maintenance. It accounted for \$12.3 billion and comprised around 56% of total revenue of the 86 national universities in 2005. This operational grant can be categorized as a “formula-based” budget allocation since it is allocated to institutions according to the government’s calculation which includes objective indicators such as number of students, number of faculty members and square meters of campus (for details of the calculation, see Mizuta, 2008).

The operational grant, as a method of allocating funds to the national universities was introduced in 2004 as part of the reform of national universities known as “corporatization”. Prior to the system reform, the national universities were one of the government’s agencies and their regulations and other legal constraints were often used to prevent the universities from behaving autonomously. Upon corporatization, each national university was given independent corporate status, empowering it to act more autonomously and seek to manage its operations more efficiently and with an aim to reform by invigorating research and teaching.

Since this reform, which instilled the concept of a contract between the government and each university, the Minister of Education mandates and prescribes the different ‘mid-term’ targets initially proposed by individual institutions across the country, and all are required to report and make public their strategic plans and targets. A mid-term extends over six years. The first mid-term began in

2004 and will end in 2009; the second mid-term will then begin in 2010. The most controversial issue for the national universities is the reflection of institutional performance for the first mid-term in the grant allocation for the subsequent mid-term. In other words, a certain amount of block grant for the second term will be determined on the basis of the evaluation of the results of the university's performance in the first term in the areas of teaching, research and management. The National University Corporation Evaluation Committee, whose members are mainly academics, is currently engaged in the evaluation. Thus, from the start of the second term, the formula-based block grant also has the nature of performance-based funding.

Since corporatization in 2004, the national universities have been able to keep revenue from tuition charges for their own use; formerly, the tuition paid by students and other miscellaneous revenue collected by the university went directly to the government's Special Account for National Schools. Under the new system, the national universities are also allowed to accrue a surplus and carry balances over into subsequent years. Each of the 86 national universities can now determine its internal allocation of the operating grant allocated by MEXT. This has now, therefore, become a discretionary fund for each individual institution, whereas before corporatization it was a line-itemized budgetary allocation in which money was earmarked, and all of which was to be spent within the current fiscal year.

The new provisions appear to be positively evaluated by campus leaders. CNUFM conducted a survey by questionnaire to university presidents and administrators in 2009. The results suggest that the presidents of the national universities tend to find that the discretion over expenditure of block grant funding influences positively the efficiency of university management, teaching and research activities, and provision of university social services. The finance officers (vice-presidents finance) also tend to prefer the block grant system owing to the discretionary freedom permitted and the ability to carry over surpluses into following years, which helps them use their budgets more efficiently and effectively (CNUFM, 2009).

Although the universities indicated their preference for the discretionary grants under the new system, central government has been decreasing the size of the total grant by 1% annually since 2004 due to the financial difficulties it faces: its government bond liabilities exceed 170% of GDP, the highest among developed countries. Moreover, the Ministry of Finance, which has cut budgets in every sector and naturally desires budgets to be used efficiently and effectively, prefers competitive and project-based funding to the block grant system such as that made to the national universities and which is allocated annually based on formula calculations requiring no application, submission or request. The relevant committees, of both the Ministry of Finance and central government, tend to favor competitive and project-based funds, which for the national universities would be considered to be stimulators of teaching and research activities.

3. Research Funds

In most national universities, faculty members are provided with research funds from the operational grant by internal allocation through the university's administration. Around 16% of the operational grant is reported to be spent on research funding, excluding the personnel costs of faculty members and researchers. In addition to this source, faculty members can apply for and secure research funds from several other sources. The largest amount of research funding is available from the "Grant-in-Aid for Scientific Research Programs", which has a 90-year history. MEXT and JSPS provide these grants-in-aid, which cover a wide range of researches, from studies in the humanities by a single researcher, through to small research studies that will be completed within one year, to large-scale studies in the natural or medical sciences conducted by international research teams and which often continue for a number of years and require huge amounts of funding. Not only national university faculty members but also researchers in private universities, non-profit organizations, public institutions and even researchers in private industry can apply for these grants-in-aid. The success rate for receiving research funding is not high, currently at less than one in five of all applications made. The applications are screened and selected through peer-review. However, as a consequence, more than 80% of the grants are awarded to faculty members and researchers in the national universities, which are focused more than other institutions on the natural sciences, engineering and health sciences and are research oriented.

As Figure 3 shows, the total amount available for these grants-in-aid has substantially increased over the last decade², from \$1.4 billion in 2000 to \$1.9 billion in 2008. The total amount of research funds available, including monies from other competitive project-based funds, exceeded \$3.5 billion in 2006. As remarked earlier, the proportion of these funds to the basic operational grants to both public and private institutions from public funds has grown, from 14% in 2001 to 27% in 2007. Given the fact that the operational grant is decreasing while the grants-in-aid are increasing, some university leaders are strongly encouraging their faculty members to seek grants-in-aid and sometimes provide awards to the recipients of grants by offering additional research funds from the university's discretionary funds. University administration also benefits from the grant-in-aid awards since 30% of the grant is automatically attached as indirect overhead costs: in 2007, 612 universities earned \$250 million as indirect costs allocated to the grant-in-aid program.

The governments of European countries implement policies to enhance the international competitiveness of universities (Amaral, 2009) or to strengthen economies through university research. In the UK, following the RAE, research funds are concentrated into a small number of universities; in Germany, the government program, "Excellence Initiative", established up to ten selected universities as competitive research and training institutions. Japan's MEXT has also provided similar

² For comparative convenience, figures are given in equivalent US dollars, by using an exchange rate of ¥100 to \$1, a rough average exchange rate in recent years.

project-based funds for both research and teaching activities. The Centers of Excellence program (COE program), which has been implemented since 2002, provides research funds to reward and foster world-class research universities in Japan. In 2005, 273 research bases at 91 universities were supported by this program. The program fund has been increasing year by year and amounted to \$615 million in 2007. The outcome of research funded by the COE program is subject to third party evaluation and its results are disclosed. The fund may be partially curtailed or even nullified in the subsequent research term if its results are deemed unsatisfactory. In the area of teaching, MEXT started several Good Practice programs (GP programs) to improve teaching practice in universities in 2003.

4. Capital Funds for National Institutions

During the expansion era of the 1960s and 70s, new campuses were opened and new campus buildings and other facilities were constructed across the country. Almost 40 years later, many of these buildings and facilities have become decrepit and obsolete, and require replacement or renovation. Both public and private universities are now facing the problem of how to secure capital funds for such work. This can be viewed as a legacy cost of the rapid economic growth and the same is true in regard to infrastructure, highways, bridges, large comprehensive hospitals, the high-speed train system and public housing facilities in metropolitan areas.

Private universities receive public subsidies to fund their capital development, although the amount is quite small relative to the subsidies received for current expenditure. They manage to build new campus buildings and renovate others through use of savings, loans and donations. Private universities mainly concentrate their activities on teaching in the humanities and social sciences rather than in the natural sciences, engineering and health sciences, on undergraduate rather than graduate education, and on teaching rather than research, and thus need less capital funds for large-scale and high-cost facilities and equipment than the national universities. In addition, most private universities have reserve funds for the depreciation of their own buildings and other facilities. Specifically for campus renovation, private institutions can make use of low interest loans from the Promotion and Mutual Aid Corporation for Private Schools of Japan, a semi-governmental agency, as well as loans from commercial banks.

The depreciation of national university facilities is recognized and registered in the financial statement of each university. However, none of the universities hold back funds for facility development or replacement as it is still considered to be the government's responsibility even though the universities have acquired autonomous and independent corporate status (Shibata, 2008). The sources of capital expenditure for the national universities are mainly Capital Development Funds from MEXT and loans from CNUFM. Capital Development Funds are financed from national construction bonds, which are issued in a somewhat irregular manner every year. The CNUFM

provides a loan program for constructing university hospitals through use of the government's Fiscal Investment and Loan Program.

Based on the national universities' budget request applications, MEXT determines the priorities for allocation of the Capital Development Funds in consultation with a third party. In 2008, only 12% percent of the total requests for funding of construction and renovation projects — amounting to \$400 million — were selected to receive funding for refurbishment and new facility construction. This is around one quarter of the total value of the annual depreciation of all facilities owned by the national universities (Shibata, 2008). As the universities are not sure whether their applications will be accepted and fully funded, their strategic plans are sometimes delayed or unachievable.

While the national universities can forecast the approximate amount of operational grant to be received and take this into consideration when developing their goals and plans, it is more difficult for them to predict the amount of capital funds that can be acquired because the extent of these funds is uncertain. This dual funding system causes problems for national university management. National universities must make their mid-term goals and plans for teaching and research, but if rebuilding or renovation work is a necessary condition to their achievement, they may fall short of their objectives unless the university is fully funded by the Capital Development Funds. Alternatively, the national universities may be compelled to provide ambiguous statements of the goals and plans that need financial backing. This need for obfuscation is one of the short-comings of the present funding system for national universities.

5. Public Subsidies for Private Universities

Before the 1970s, private universities received no government subsidies, and their main sources of revenue — a situation that persists, even to the present day — are the tuition and other fees received from students. In the 1960s and early 70s, private universities increased their revenue by raising tuition fees on an annual basis and accepting more students than their registered capacity permitted by the Ministry of Education. However, student unrest, which was spreading across the country at that time, prevented the private universities from raising tuition fees as student political groups were typically opposed to the “tuition hike”. Many private institutions were, however, struggling with financial deficits caused by soaring personnel costs and large debts incurred from rapid and huge capital expenditures. Private universities also faced a problem of the quality of teaching resulting from their enrollment of a greater number of students, which reduced the standard teacher-student ratio below the level prescribed by the Ministry of Education. Based on the argument that private higher education contributes to the public good, private universities, often through the associations of private universities, asked for public institutional aid from the government in order to mitigate their financial difficulties and to stem the student movement opposed to increased educational fees.

In 1975, in the face of such requests from the private university associations and considering the

issues of tuition fees, financial struggles and teaching quality, central government decided to subsidize private universities for the first time in Japan's history of higher education. The legislation, "Promotion and Subsidization for Private Schools" (The Private School Promotion and Assistance Law), stipulated that the government could subsidize up to 50% of the current expenditure of private universities through the Promotion and Mutual Aid Corporation, a *quasi*-public body. However, the level of subsidy has never reached 50%: in the peak year of 1980 subsidies reached 30% of current expenditure. At present, private universities receive subsidies of about 12% of expenditure, a figure which has not changed much in the last decade.

Public subsidies for private universities are supposed to have three purposes: to improve the quality of education in private institutions; to reduce the household burden in relation to higher education costs; and to improve the financial management of private universities. There is consensus on the first two but not on the last, which remains controversial. Moreover, some argue that public support for private institutions violates Article 89 of the Constitution of Japan which prohibits public spending on religious, charitable and educational organizations not under public control. Following policy implementation, subsidies for private universities have been shown to have improved educational conditions — the student-teacher ratio gradually decreased from 31.5 : 1 in 1975 to 24.6 : 1 in 1985 — and financial management of the institutions — staff salaries have been improved. Nevertheless, despite private universities receiving public subsidies from the government, tuition fees have never been cut.

There are several possible explanations for the increase in tuition charges that occurred at private institutions, which will be discussed below in more detail. However, briefly, the Accounting Standard for School Juridical Persons Japan (the Accounting Standard for Private Schools) might be one such cause. The special Accounting Standard for Private Schools was introduced in 1971 on the initiative of the Ministry of Education and has been adopted only for private institutions. This accounting standard, while unique, remains controversial. It is designed to improve the financial independence of private institutions, which consistently experience financial difficulties. In the accounting standard, the concept of transfer to the Basic Fund, which functions to augment the endowment, is somewhat peculiar and rarely seen in other accounting systems. There are four types of Basic Fund: fixed assets for academic activities already purchased; fund reserves for future acquisition of fixed assets for education facilities; fund reserves for scholarships and research; and preserved assets for operational costs (one twelfth of annual current expenditure) in certain periods of time.

The accounting system encourages taking funds to reserves that are expected to contribute to the financial strength of the private universities so that they can continue to provide higher educational opportunities to the population at large. Private institutions can transfer a portion of revenue to the Basic Fund before finalizing the balance annually. The amount transferred is completely at the discretion of the institution. In 1980, the ratio of transfer from revenue to the Basic Fund rose to a

staggering 25%, but recently it has decreased to less than 15% (Morozumi, 2005). After this transfer to the Basic Fund, institutions can finalize their annual balance and indicate whether they are in the black or the red at the end of the fiscal year (Institutions can have no net surplus because total income is computed after deducting the transfer from the total revenue). When revenue exceeds costs, private universities initially make a transfer to the Basic Fund so that they can finalize their balance while reserving profits in the Basic Fund. Accordingly, the net surplus or deficits in the statements of income and expenditure of private institutions should be interpreted with caution. The accounting system allows this manipulation of the accounts to help institutions show appropriate reasons for raising tuition fees and suppressing wage increases, thereby enabling the private universities to insist that they are not in a satisfactory financial situation even if, in reality, they are. Private universities are classed as non-profit organizations but reserve their 'profits' in the Basic Fund.

Although the teaching and research performance of private universities are never evaluated, they are financially audited and the financial statements are submitted to MEXT. If the financial conditions are judged not to be viable, their subsidies will cease or be reduced.

The population of 18-year olds has declined by 40% over the past decade or so, from more than 2 million in 1992 to 1.2 million in 2009. Private universities, which cannot successfully attract a sufficient number of students, are facing financial difficulties. This has placed MEXT in a difficult position in regard to implementing private higher education policy. Should subsidies not be given to institutions with fewer students than their capacity, when they are clearly not properly fulfilling their social function by failing to meet current student needs? Or should subsidies be offered to financially weak institutions with fewer students in order that they can continue to provide higher education opportunities? As it stands now, the Mutual Aid Corporation does not offer subsidies when the number of enrollments is less than 50% of the designated student capacity, and it provides a special subsidy program to revitalize financially weak private universities with lower enrollments.

6. Student Aid

Until the mid 1970s, tuition fees for the national universities were kept low, at \$120 a year, in order to attract academically outstanding students who were expected to become future national and local leaders in various fields. This policy contributed, therefore, to the provision of higher education opportunities for bright students from less affluent families. However, this social contribution was constrained by the national universities recruiting only a limited number of such students. It has instead been the private universities that have mainly provided higher education opportunities to students from various family backgrounds, through use of the grant-type scholarship program of a non-profit foundation, although the numbers have been quite small. Thus, there is a structural contradiction in that private universities charging higher tuition fees have been functioning to provide higher education opportunities for the masses, while a smaller number of students learn at the less

expensive national universities. In this contradictory situation, reducing the difference in tuition fees between national and private institutions (estimated to be a ratio of 1 : 6 in the 1960s) has been a political issue for a long time.

To close this gap between the two sectors, the first policy the Ministry of Education adopted in 1975 was the provision of institutional aid to private universities instead of individual aid through scholarships. This policy did not work well however, partly because the private universities chose to spend the subsidy on improving teaching quality rather than lowering tuition fees, and partly because the amount of subsidy was too small to yield a significant decrease in the tuition fees. This meant that the tuition gap continued to exist.

From the late 1970s, the policy of low tuition fees for national universities changed to one of a more equal charge between the national and private universities, and the government adopted a policy of raising tuition fees for the national universities. Tuition has risen substantially from \$360 in 1975 to over \$5,000 in 2008. The difference in the ratio of tuition fees between the national and private universities has improved from 1 : 5 in 1975 to 1 : 1.6 in 2008. Although the gap has clearly been reduced, the increase in national university tuition fees has been criticized because it impinges on the opportunities for higher education and, more importantly, it has affected the tuition of private universities which determine their tuition fees by taking into account the tuition fees of national universities.

At the same time, the government started a student aid program in order to compensate for the burden of higher education costs on households. Thus, the previous policy of “lower tuition and little student aid” has changed to one of “higher tuition and greater student aid”. Student aid is made available mainly by the student loan program provided by Japan Student Services Organization (JASSO). There has been strong criticism of JASSO’s policy of expanding the student loan program while abolishing the previously existing grant scholarship program which is considered to have more robustly promoted college education for students from less affluent families. In 2008, approximately 1.2 million students — or 40% of all students — were using the program; the loans overall amount to a total of ¥982 billion or \$9.8 billion. There are two types of loans available under this program: one is an interest-free loan and the other is a loan with interest, the rate being dependent on market conditions but with a ceiling of 3%. Students who wish to obtain an interest-free loan must achieve a certain GPA standard at high school and there is an income contingency for both programs. The student loan program is sourced from Governmental General Account expenses, credited repayments from student borrowers, Fiscal Loan Funds and Fiscal Investment and Loan Program Agency Bonds.

7. Intended and Unintended Consequences of the Shift in Funding Allocation

Public expenditure on higher education cannot be expected to increase easily due to the nation’s protracted economic slump and the shift toward an aging society. Moreover, higher education is no

longer a political priority ahead of economic recovery, unemployment, medical and nursing care and pension plans. Therefore, securing the level of funding as well as devising new methods of allocation of public funds for higher education remains an important and critical policy issue to pursue.

The recent trend in public funding can be described as “from institutional to individual aid” and “from basic grants to competitive and project-based grants”. The government seems now to be shifting the methods of public funding toward individual aid by providing funding directly to researchers, research teams and students and away from institutional aid such as operational grants for national universities and subsidies for private universities. The basic funds that institutions are automatically given have been decreasing and institutions now have to make clear compensatory efforts by acquiring other external funds, most of which are acquired competitively. The government also emphasizes “selection and concentration” in its allocation of funds, selecting and concentrating on specific institutions, research teams, researchers and study fields.

This shift in funding allocation is intended to create winners. Those who benefit most are the research-oriented universities which have a long tradition and reputation in outstanding research and study fields and which can attract bright young scholars and catch the attention of both industry and central and local governments. Following the shift in the method of allocation, it is such institutions and study fields that are receiving more funds. Perhaps unintentionally however, this shift in funding also differentiates the losers from the winners. Local universities — both national and private — which tend to lack sufficient human as well as physical capital — suffer most and are more likely to lose basic funds for teaching and research. Some study fields such as philosophy, history, archaeology and other humanities suffer from an inability to attract research funds, and non-money-making study fields experience difficulties obtaining administrative and other support.

These changes in the funding system also create winners and losers on the campus itself. Professors in revenue-earning study fields are winners and earn more research money also from campus funds. But, at the same time, they incur costs: they lose more research time than before because they need to spend more time preparing applications for research funds, being involved in the peer-review process of judging research applications and spend energy on preparing reports on research evaluation not only for academic but also for administrative purposes. In the ‘good old days’, when professors were automatically provided with sufficient basic funds, such activities were much less onerous.

Another shift in public funding is “from low tuition and few scholarships” to “higher tuition and more scholarships”. The heavy household burden with respect to the costs of higher education has been a critical issue over the long term, especially for families with students enrolled at private universities. This shift will serve to impinge still further on equal educational opportunities for higher education in the future. Opportunities for higher education have historically extended to students from both richer families and poorer families. Now, more than 50% of youngsters attend

colleges and universities, which means that higher education institutions should be accepting more and more students from less affluent backgrounds. It is doubtful, therefore, that the present policy of “higher tuition and more loan-type scholarships” will be effective for promoting equal opportunities for higher education. Indeed, one study suggests that as lower income families are more likely to avoid future debt, the availability of loan-type scholarships will not improve the possibilities for students from such families to attend college or complete their college education.

Finally, it should be pointed out that the amount of, and methods for, allocating the capital budget for national universities are hot political issues. Although the national universities have been given autonomous status, they cannot develop their own campus planning as far as building construction is concerned. National universities by themselves cannot reserve capital investment sources which are totally under the control of MEXT. Even if MEXT were to undertake campus planning for all of the national universities, the amount of capital funds available would hardly be enough to renovate or create campus facilities with advanced earthquake-proof construction.

Glossary

Accounting Standard for School Juridical Persons Japan (the Accounting Standard for Private Schools) was stipulated by the Ministry of Education in 1971. The School Juridical Person who receives Subsidies for Current Expenses for Private Universities must prepare a statement of income and expenditure, a cash flow statement, and the balance sheet according to the Accounting Standard for School Juridical Person.

Capacity of student number or **capacity of enrollment** in both national and private institutions is stipulated by MEXT. The operational grant to a national university is calculated on the basis of the capacity number; thus, accepting students over capacity has no benefit as far as the grant is concerned. Acceptance over capacity at private institutions is subject to a curtailment in subsidy for the purpose of inducing better teaching quality.

Center for National University Finance and Management (CNUFM) is an independent administrative institution which provides loans to national universities to support them in the construction of university hospitals. The Fiscal Loan Fund is the source from which the CNUFM draws the loans.

Centers of Excellence Program (the 21st Century COE Program) started in 2002 as part of the reform of university education. The goal of the program is the establishment of world-class research and education bases in the national, public and private universities. The program assists research groups by subsidizing the expenses for developing centers of academic and scientific excellence. The budget was \$380 million in 2008.

Fiscal Investment and Loan Program is one of the major services provided by the Ministry of

Finance and can be seen as “secondary governmental budgeting”. The Program raises funds by issuing government bonds and through their use provides loans to local governments and independent administrative institutions for the support and financing of public projects.

Fiscal Investment and Loan Program Agency Bonds are issued by local government and independent administrative institutions which are funded by the Ministry of Finance’s Fiscal Investment and Loan Program and are used to develop projects and services which are less likely to be advanced by private enterprises.

Fiscal Loan Funds are raised by the issuing of governmental bonds through the financial market. Fiscal Loans, one of the sources of funding provided by the Fiscal Investment and Loan Program, are available with long-term, fixed, low interest rates since the Fiscal Loan Fund is guaranteed by the Government.

Japan Student Services Organization (JASSO) is a semi-governmental institution which was established in 2004 as a Ministry of Education initiative for merging five previously existing organizations. It is engaged in operating student loan programs and providing various supports to overseas and Japanese students.

The Legislation, “Promotion and Subsidization for Private Schools” (The Private Schools Promotion and Assistance Law) was established in 1975 at the strong request of private colleges and universities. The legislation stipulates that the State may subsidize the school juridical person (the founding body of a private university) up to 50% of current expenditure including personnel and teaching and research costs.

Promotion and Mutual Aid Corporation for Private Schools of Japan was originally established in 1970 and assumed the role of a third party organization for allocation of government subsidies to private institutions. It also provides a loan program for campus development, a training program for administrative staff, management consultation for private schools, and a mutual aid program for employees of private schools, among other services.

School Juridical Person is one of the school founding bodies other than the state, local government, and recently admitted for-profit corporations. It must have its own endowment and operating funds for purchasing land, teaching facilities, and equipment in order to establish and operate a school(s). The School Juridical Person can establish one or all of an elementary school, junior high school, senior high school, college and university. It is exempted from property tax, corporation tax, and other taxes due to its nature of providing public benefit.

Special Account for National Schools was one of the government’s accounts that existed until 2004 when the reform of national universities was completed. A Special Account could be established and separated from the General Account if there were special revenue sources. In the case of national schools, revenue such as tuition fees from students and hospital income went directly into the Special Account. The total budget for the national universities was provided from the reserves of the Special Account, and deficits of the Special Account were compensated

by a transfer from the General Account.

Subsidies for Current Expenses for Private Universities consist of ordinary subsidies and special subsidies. The former is a formula-based grant basically related to staff and student numbers and the latter is allocated based on the university's performance in teaching and research. As the formula includes various coefficients such as an inducement for better quality of teaching, the more students the institution has over the designated capacity, the fewer subsidies would be granted.

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Increase in PhD Production and Reform of Doctoral Education Worldwide

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Abstract: Theories of the ‘knowledge economy’ view knowledge, and particularly new knowledge, as a critical resource to enhance a nation’s economic growth. Governments around the world have invested in expansion of doctoral education. Reforms in doctoral education are being shaped by the changing needs of society, of research modes, and of changed labor markets for PhD holders. The reform elements strive for excellence, expansion, quality assurance, accountability, and international and inter-sector network building. The expansion in doctoral studies has gone hand in hand with an increased flow of international doctoral students, the wish of universities to become world-class, and the adoption of more standardized structures and practices for doctoral education. This paper ends with a number of promising reform strategies that may be useful for countries with emerging doctoral systems, such as the introduction of North American-type graduate schools that help to implement and initiate innovations in doctoral education on a campus.

Keywords: Doctoral education worldwide, reform, increase in production, promising practices

Introduction: the Knowledge Economy and Doctoral Education¹

Since the 1990s, nations around the world have been increasing doctoral degree production and introducing initiatives to reform their masters’ and doctoral programs. This trend is apparent in nations as small as Iceland and as large as China, and with those having long traditions of doctoral education, such as Germany, or shorter traditions, such as Australia, Brazil and Malaysia. Why are such initiatives occurring at the same time around the world? Why are both resource-rich countries, with highly developed higher education systems, and countries with emerging economies and newer advanced higher education systems all reforming postgraduate education?

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¹ An earlier version of the international context of doctoral education worldwide has been presented at a symposium in South Africa on October 5, 2009.

Economic theories of the ‘knowledge economy’ are embraced by governments worldwide. These theories argue that knowledge is crucial to national economic growth and increased prosperity. Theories of the ‘knowledge economy’ locate the causes of economic growth in novel ideas leading to scientific, technical, organizational, environmental or health innovations (Powell & Snellman, 2004; Slaughter & Rhoades, 2004). Natural resources are no longer the key factors in economic growth. Rather innovations and technical changes are seen as the principal means of economic growth and sustaining international competitiveness. As the knowledge economy theory has spread around the world, national governments in many places have turned to masters’ programs and doctoral education as a way of educating scientific and technical innovators. Postgraduate education and academic research are now global endeavors and it is not only nations, but also supranational organizations (OECD, EU, UNESCO, World Bank) that are developing policies to enhance the contribution of doctoral education to national and regional economic growth.

Within the context of hope for economic growth, national capacity building, and international cooperation and competition, governments are allocating substantial funds to increase the research and development capacities of their countries. Postgraduate education is included in these funding allocations. The education of high quality scholars and professionals who are able to bring innovative changes to their workplaces, be these in business, government, academe or non-profit sectors, is increasingly considered part of research and development activities and included in national innovation policies. It is believed, and empirical evidence now suggests, that not only the supply of highly skilled people, but also how widely academic knowledge is disseminated has an influence on the economic and social development of a nation (Dill & v.Vught, 2010). Or, put differently, new knowledge must be effectively disseminated and absorbed if innovations and economic growth are to proceed from it. In addition, in order to attract investment and create new jobs and markets, governments want their countries to be known for having world-class research capacities.

In accord with such a concept, the number of masters’ and doctoral students has to increase and the type of education they receive has to be rethought. Education and research training has to be organized in a problem-solving approach, with multi-disciplinary teams, and inclusion of participants from various sectors of society. This brings into doctoral education the form of knowledge production that has become known as Mode 2 in contrast to Mode 1, the traditional way of learning from one master scholar within one discipline (Gibbons *et al.*, 1994). Development of transferable professional skills — such as knowing how to present and teach complex knowledge to diverse audiences, to write for multiple audiences, to manage time, people, projects, and budgets, and to deal with ethical questions in one’s research and field — has become an accepted and sought after component of doctoral education. Career planning and development have been introduced into doctoral education as graduates are needed and hired in many employment sectors. Career planning and development have also been introduced as a means of attracting people to postgraduate studies. Today’s students need to learn how to look for jobs inside and outside academia. Academic and non-

academic employment today includes interactions with, trips to, and periods of living in other countries and cultures. Postgraduate education increasingly includes preparation to be able to function in international settings.

Expansion of doctoral education

During the last fifteen years PhD production has increased worldwide. Between 1991 and 2004, China had an 817% rate of increase in PhD production, increasing the number of PhDs granted from 2,556 to 23,446 (Chinese Statistical Yearbook 1992, 2005, NSF 2008, appendix table 2-43). In the same period, the number of PhDs awarded in Taiwan climbed from 410 to 1,964 for a 379% increase (this and the following country statistics were retrieved from NSF 2008). South Korea's rate of PhD production increased 166% from 2,984 PhDs in 1991 to 7,946 in 2004. Japan had a 57% increase from 10,758 PhDs to 16,909. Individual European countries with mature and relatively large doctoral education systems also showed an increase in their PhD production, although proportionately smaller. Germany had a 3% rate of increase between 1991 and 2004; awarding 22,462 doctoral degrees in 1991, and 23,138 doctoral degrees in 2004. In these 13 years, the UK had an 82% increase from 8,390 to 15,260. The US experienced a 12% increase from 37,530 to 42,117. Australia, within a shorter period, between 1998 and 2004 increased its PhD production by 46% from 3,271 to 4,763 (OECD, n.d.).²

Attracting International Doctoral Students

In countries with low birthrates or small populations and a need to attract highly skilled workers through the back door of education, expanding doctoral education requires national efforts to attract a greater proportion of international students. The UK, Japan, and also Germany have launched massive recruitment efforts, particularly for their science, engineering, mathematics, and agricultural doctoral programs. In the UK an international student market analysis agency assesses foreign countries for their potential as sources of students that can be recruited to UK universities. Private firms advertise and recruit overseas for UK universities. Japan has an initiative to attract more international students to their universities called "100,000 students from overseas" (Yamamoto, 2008). Universities in Australia and New Zealand and, more recently in Canada, are recruiting heavily from overseas, most notably from Asian or Caribbean countries (Pearson, 1999; Evans, 2000). Even the

² The numbers for the annual PhD production provided by the US NSF Science and Engineering (S&E) Indicators 2008 and numbers provided by OECD statistics show various discrepancies. The largest discrepancies are in the numbers provided for US doctorates. While the US NSF S&E statistics provide numbers for PhDs in all fields, not just in science and engineering fields, these statistics do not include medical and law doctoral degrees (MDs and JDs) as they are considered professional degrees and not research degrees. Most European countries include these degrees.

United States, a country that had attracted the largest number of international doctoral students without explicit recruitment, in 2005 began participating in an international recruitment fair in China (Washington University, St. Louis organized this initiative). The Malaysian government's goal is to become a higher education hub for the Asia Pacific region. The initiatives to attract international postgraduate students are often linked to immigration policies.

It is difficult to provide robust comparative numbers of the flow of international doctoral students as countries have different systems of allowing international students to become residents. Data on the magnitude of this flow are available both as enrolments or as degrees awarded. Between 1998 and 2004 the rate of international student enrolment in Australia increased by 70% from 3,774 to 6,439 and in Canada by 55% from 4,791 to 7,422. For countries where we know the proportion of doctoral degrees awarded to international students between 2003 and 2005, we see marked increases. In Germany, for example, the proportion of international students among all doctorates awarded increased from 10% to 16% (3,556 international doctoral recipients) (NSF 2006 and 2008, appendix table 2-49). In the United Kingdom during the same 3 year period, of all the PhDs awarded the proportion awarded to international students increased from 39% to 42% (6,650 international doctoral recipients) while in the US the proportion increased from 30% to 33% for a total of 14,424 doctorates awarded (NSF 2006 and 2008).

A clear picture emerges of global trends in doctoral education. In the last decade PhD production increased, especially in Asian countries. The more modest increase in PhD production in European countries is largely driven by an increase in international students. Specifically in English speaking nations and in countries where doctoral education is offered in English (as in many European countries), the numbers of international doctoral students has increased substantially.

Within rising doctoral enrolment, women's participation and the proportion of doctoral students who are older increased in many countries. More 30-year olds or beyond begin their doctoral study after a period of employment. This is coupled with a growth in part-time PhD students. The proliferation of professional doctorates, such as in nursing, physical therapy or audiology is also notable.

Reform Efforts

Accompanying increases in the production of doctoral degrees, reform efforts are underway in many countries to improve the quality and efficiency of doctoral education. Individual country initiatives show common elements of striving for excellence, expansion, quality assurance and accountability, and international and inter-sector network building.

New Models of Knowledge Production: Linking University with Industry

Australia, Brazil, Ireland, Germany, Japan, and the US are aiming to:

- link the university more closely with industry,
- introduce interdisciplinarity and problem-solving into doctoral programs,
- equip their graduates for participation in international networks, and
- assure doctoral programs are completed in a timely manner.

By creating programs that link universities closer to industry and the public sector, it is hoped that doctoral graduates learn to transfer knowledge acquired during their studies to places that immediately use and apply this knowledge. This is part of the trend towards Mode 2 knowledge production, where teams of researchers from different settings and different disciplines work together on problems and products (Nerad & Trzyna, 2008; Gibbons *et al.*, 1994). The links between government, industry, and university in this new mode of knowledge production are often referred to as a ‘triple-helix’ (Etzkowitz & Leydesdorff, 2000; Harmon, 2008).

The Australian Cooperative Research Centers (CRC), conceived by the Australian government in 1990, are examples of these links and new modes of knowledge production. The goal of the CRC is to produce “end-user driven” or “employment-ready” graduates (Harmon, 2004, 2008; Manathunga *et al.*, 2009) not only for industry but also the public sector. These centers emphasize collaborative, multi-disciplinary and commercially-oriented research.

In 1990 Germany introduced structured, interdisciplinary doctoral programs, the “Graduiertenkollegs”. They are theme-oriented, involving professors from several universities, and often have an international orientation (Nerad, 1994; Kehm, 2008). In 1997 the United States introduced similar programs that aim to train doctoral students by working within multi-disciplinary teams on topic-driven research in addition to acquiring traditional disciplinary research training (Nerad, 2008, 2009). In 2005 the United States introduced an international research and training program, the “Partnership in International Research and Education” (PIRE). PIRE programs focus on providing strong international research experiences for U.S. students and postdoctoral workers (NSF, 2009)

Universities Aim to Become World-Class Universities

In order to indicate preparedness for innovations in the employment sectors and new markets, governments strive for world-class research preparation and research production. This can be seen in statements from various nations expressing the intention to become world centers of excellence and move into the top 100 world-class universities’ league: Ireland, Japan, Germany, Malaysia, and recently Canada have, or are talking about creating, world-class universities.

In 2002 Japan began funding centers of excellence under the 21st Century Center of Excellence (COE) Program to strengthen and enhance the education and research functions of graduate schools in order to perform at a level of global excellence and elevate the international competitiveness of the Japanese universities (<http://www.jsps.go.jp/english/e-globalcoe/index.htm>).

In 2005 Germany created an “Excellence Initiative,” that aims to make Germany a more attractive research location and make it more internationally competitive. Between 2006 and 2011 the German government will provide €1.9 billion in additional funding to create more graduate schools to promote young scientists, and to develop institutional strategies for and implement clusters of excellence to promote top-level research (Deutsche Forschungsgemeinschaft, 2009)

Similarly in 2007 Malaysia adopted an ‘Excellence Initiative’ the APEX university, to create excellent, world-class universities. China has similar initiatives (Yamamoto, 2008; Hayhoe & Pan, 2005).

Examples of Changes in Postgraduate Education Worldwide

In the following section examples are provided of how postgraduate education has become part of national innovation policies and the specific tactics are shown that have been employed to increase and change postgraduate education in individual countries.

Europe

In the Bologna Declaration, Europe proclaimed its goal to become the leading knowledge-based economy in the world by 2010. European Union leaders vowed to allocate 3% of the GNP in their countries by 2010 to research and development (Nerad & Trzyna, 2008). In the process towards implementing this goal, doctoral education was included and the necessity of an increase in the number of doctoral candidates was spelled out. During her 2007 presidency of the European Union, German Chancellor Angela Merkel made science and research one of the highest priorities. While the introduction of a uniform degree system and the allocation of 3% of GNP to research and development (R&D) in each of the member countries has not been reached, increases in PhD production and changes in doctoral education can be witnessed in many of the European Union member countries.

Ireland

Ireland, a member of the European Union and a relatively poor country until recently, in 2005 developed a comprehensive plan to become a leading knowledge economy by 2013. The

government's strategy for science, technology and innovation included a tripling of R&D investment in the higher education and business sector. The country's strategy is five-fold:

1. Building a world-class research system by increasing the numbers of researchers trained in Ireland and by attracting highly skilled, research-active individuals to Ireland. This is coupled with a change in doctoral education to structured programs.
2. Capturing, protecting and commercializing ideas and know-how.
3. Driving growth through research and innovation by taking the outputs of research with commercial potentials and bringing them to a point where they can be transferred to industry.
4. Providing a solid foundation in primary and secondary education through improved teachers' education, creating professional development and networks for teachers and emphasizing methods of science teaching.
5. Ensuring that all parts of the research and education system work well together.

(<http://www.entemp.ie/publications/science/2008/firstreportonSSTI.pdf>)

By focusing on growth in research capacity and by increasing the reputation of its universities, coupled with an enhanced research and development tax credit arrangement, Ireland set up significant industrial and academic research collaborations. In the expansion of advanced degrees, Ireland has focused on areas in health, agriculture, marine, energy and environment sectors.

Iceland

Iceland, a very small country where traditionally the annual home grown number of PhDs was 10, within a period of 13 years and with the support of governmental grants, fellowships, or special loans, increased its PhD enrolment to 335 (Gudmundson, 2008). Icelandic scholars who studied elsewhere were persuaded to return to Iceland and became a small respected research community capturing the entrepreneurial development that focused on Iceland's natural resources: geophysics and geothermal energy forces, fishing and fish-processing technology. This research capacity and the newly developed industrial research environments in these fields produced a research-learning context that allowed for expansion of PhD production. In addition Iceland's universities set up co-operative agreements with universities around the world for student research exchanges and joint programs and degrees.

Brazil

The National Plan for Postgraduate studies 2005-2010 is part of the Brazilian government's plan for self-sufficiency in the principal sectors of society. It calls for creating high quality professionals for

the productive sector in order to increase the competitiveness of Brazilian companies in the global marketplace (Ribeiro, 2008). The specific strategies of the postgraduate studies plan are to:

1. increase the production of advanced degrees, masters' and doctoral degrees, double the number of faculty with doctoral degrees within a 10 year period, and increase doctorates awarded in areas relevant to economic development;
2. change the national fellowship system, align doctoral education with the national goals of self-sufficiency in principal sectors of the economy;
3. create links between the academic world and the world of production;
4. invest in research and development in the academic sector as well as in industry and business with an investment of \$660 million for these goals;
5. implement a clear, transparent national quality evaluation system coordinated by a Council for the Improvement of Higher Education Personnel and the National Research Council; and
6. enlist active participation of the academic community in these changes.

Areas of increase in professional masters' degrees and research degrees are: engineering, public and non-governmental administration, health education, culture and sports.

India

In 2005 the Indian National Knowledge Commission, an advisory body to India's Prime Minister, stated that India needed a knowledge-oriented paradigm of development to give the country a competitive advantage in all fields of knowledge (Jayarama *et al.*, in press). In 2007, the Department of Science and Technology, among others, allocated funding to increase PhDs in nano-science. India's expansion of doctoral production is not only a response to intra-national needs, but also a response to the establishment of research and development centers by multinational-national companies and emerging collaborations between these R&D centers, Indian universities and research institutes and Indian companies (Jayaram *et al.*, in press). These developments are concentrated in the areas of biotechnology, computer software development, and nanotechnology.

Malaysia

Malaysia is positioning itself as a higher education hub in the Asian Pacific region. It has been recognized that the cost of education in countries such as the UK, the U.S., and Australia has increased and that, because of Malaysia's geographic location and religious diversity, it is in a good position to welcome international students. Its 2007 National Higher Education Strategic Plan focuses on:

1. increasing the proportion of academic staff who hold doctoral degrees from 30% to 75%;

2. implementing quality assurance indicators that include the quality of academic staff, the quality of the infrastructure, and the quality of the learning and teaching content.
3. establishing centers of excellence at a small number of universities through competitive applications to become an APEX university. To become an APEX university, a university has to demonstrate a willingness to look for innovative ideas, a preparedness for change, and a readiness to implement the changes with a detailed plan.

In its expansion of postgraduate education, Malaysia's APEX university, USM Penang, is focusing on research that seeks poverty reduction, providing wide access to health care, education and food for all, and spreading environmental awareness (Institute of Postgraduate Studies, 2009; Sirat, 2009; Malaysia Ministry of Higher Education, 2007)

Converging Practices in Doctoral Education Systems

In spite of the differences in doctoral education systems and innovation practices, a canvassing of university statements of countries in the East and the West of the world found three common features pertaining to a research doctorate: (a) a research doctorate should contribute to knowledge through original research; (b) doctoral graduates are expected to have a substantial knowledge in their area of study; (c) increasing agreement that doctoral education should include development of transferable professional competencies that constitute an integral part of becoming a researcher in one's field.

Beyond this common understanding of what a doctoral degree entails, the following practices — I call them converging practices — have emerged around the world.³

- Students are prepared for a variety of careers, not just for becoming a professor but also for doing research and teaching in industry, business, government and non-profit enterprises. Graduates with doctorates are increasingly seen in non-academic careers.
- More and more countries allow access to doctoral programs after a bachelor's degree as opposed to only after first earning a masters' degree.
- The admission procedure to doctoral study has become a defined, formalized process that is competitive.
- In order to attract the best, students are now offered several years of funding. In some countries funding comes directly from the government. In other countries, such as the US, students are funded indirectly by the government through research grants, or by the states through teaching assistantships. Students increasingly are offered a three- to four-year funding package.

³ An earlier version of the converging practices was presented in the keynote presentation at the annual meeting of the Canadian Higher Education Association in June 2008.

- Students have more than one supervisor or advisor. A dissertation committee, a panel of several people, guides the doctoral students throughout the dissertation process.
- Where not already existing, graduate schools or research schools as they are called in Europe, are being established that develop overall guidelines for the doctoral education process. These graduate schools and departments are developing codes of practice for supervision by faculty members. They increasingly offer training for supervisors and develop evaluation surveys to assess what students think about the program and the faculty's advising. Departments and graduate schools offer incentives for good mentoring through special awards.
- Countries that traditionally have not had examinations during doctoral study are introducing oral examinations.
- Training in professional skills is offered through the graduate school or research school. This training focuses on: conducting ethical research, working effectively in teams, knowing how to teach, how to publish, how to present, how to communicate complex information, how to write group applications for grants, and how to manage time and projects.
- Universities make efforts to provide international experiences for their postgraduate students.
- In many countries English has become the language of doctoral education.
- Increasingly students, specifically in the sciences and economics, have the possibility of choosing between a traditional dissertation or a compilation of several peer reviewed articles based on their research. Universities are starting to adopt policies that recognize such articles and also thesis chapters with multiple authors.
- National funding agencies and universities are creating templates for the review of doctoral programs that synthesize international standards on PhD programs. They are reaching out to international review teams for program review.
- Funding and regulatory agencies are asking doctoral programs to undertake formative and summative evaluations for ongoing program improvements.

Conclusion: Promising Strategies of Doctoral Education Reforms Based on International Experiences

As knowledge and particularly new knowledge is viewed as a critical resource to enhance a nation's economic growth, governments around the world have invested in initiatives to increase the production of PhDs and have introduced new models of knowledge production. The expansion in doctoral studies went hand in hand with an increased flow of international doctoral students as nations try to attract the best minds from around the world. The wish to become a world-class university, a goal that is heavily supported by many governments, resulted, among other outcomes, in adopting similar practices in the structure and forms of doctoral education. We can speak of converging practices in a global system of doctoral education. In the light of these developments in doctoral

education around the world, it is possible to discern a number of “promising reform practices”.⁴ These practices have resulted to a considerable degree in the planned intended outcomes and thus may be useful for countries with emerging doctoral systems.

1. When doctoral education is aligned with national goals and included in a country’s spending on research and development, then the likelihood of sufficient resources provided by governments is high.
2. When the increase in postgraduate education addresses multiple needs, the initiatives are likely to be successful. For example: Ireland and Brazil developed a 10-year plan of doubling the number of academic staff in all fields who hold doctoral degrees. The EU, Malaysia, Brazil and Ireland targeted a proportion of the increase on fields that impact on economic growth. These countries further created a few novel doctoral programs that are unique. Specifically, Brazil created more professional masters’ programs and planned for a regionally balanced increase.
3. ‘Brain-drain’ was experienced by many resource-poor nations or countries with few world-class universities. When countries are turning past losses of excellent minds (‘brains’) into a positive situation and bring back to their universities expatriates who have become outstanding researchers, doctoral education and research experience a boost from the ‘brain circulation’. South Korea, Australia, Ireland, Germany, China, and now India have all set up systems to bring back to their universities (permanently or for a few years at a time) eminent scholars in areas of national and institutional needs. They have embraced the concept of ‘brain circulation’. These countries allocate a considerable amount of funding to make such a move attractive. In Germany the Alexander von Humboldt distinguished professorship provides further funds to support employment of a spouse in cases where scholars are partnered with another professional. “Dual-career couple” hiring policies have contributed to significant increases in attracting outstanding scholars. In countries with such initiatives, the returning scholars are well paid, have excellent working conditions, state of the art laboratory equipment, and an exciting mission to conduct high quality research and train graduate students in the process. In order to make this possible, several universities, research centers, and departments work together and potentially collaborate with industry.
4. When reforms in doctoral education are paired with a differentiated higher education system, centers of excellence are more easily created. For example, the California Master Plan for Higher Education differentiates by functions and degrees among its three types of higher education institutions (research universities, masters’ granting institutions, and community colleges) and has a strong system of articulation between the different institutions. Further, not all research universities need to offer all possible doctoral degrees. Increasingly the US

⁴ I call them promising and not best practices as only a longer time span will show lasting results, and one practice may be the best at one place, but not at another

creates specialized centers for excellence particularly clustered around acknowledged expertise of a university or a collaboration of several universities. Centers of excellence in global health, astrophysics, the environment, and the study of poverty are examples. When research specializations within a university and between universities are combined to form a sufficient critical mass, then quantity and quality of PhD production is more feasible.

5. When governments create national prestigious fellowships for their best students, which include provision for a maximum two years of study at a foreign university, they assure education with the international exposure necessary for a global employment market. Brazil, China, Thailand, and Denmark all have successful programs to support students to go abroad. These fellowship holders, funded by their home governments, are welcomed by the host universities as no extra expenses are incurred; indeed the classrooms and research groups hosting funded students are simply enriched by the brightest minds from many nations.
6. The dissemination of the latest knowledge and the placement of PhD graduates are more readily accomplished when concerted and coordinated efforts are made to bring together representatives of universities, research councils, governments, non-profit enterprises, and industry in on-going Round Table meetings that include career planning and career mentoring for current doctoral students with alumni in a variety of careers. Australia, Ireland, and the U.S. are good examples for such Round Table activities.
7. When universities which increased doctoral production introduced a single graduate school to control, design, and assure quality and quantity of masters' and doctoral programs the expansion was more readily accomplished. Recent implementation of various forms of the graduate school in Europe finds the American model of a single graduate school superior to several decentralized research schools (Dill & v. Vught, 2010). Characteristic of a North American graduate school are its close links to the research agenda of the university and a graduate dean who belongs to the inner circle of a university's governance. This model of a graduate school provides both an administrative as well as an academic unit. It is the executive policy body of an academic senate committee that assures the quality of masters' and doctoral education across the entire university. It is an administrative unit for all matters of postgraduate and postdoctoral affairs. As such, it oversees the basic requirements of admissions and degrees. It is also a service unit for postgraduate programs and postgraduate students. In this function, it provides additional professional skills-training that helps doctoral students be successful in a variety of employment settings. It is an institutional research unit for postgraduate matters, collecting and analyzing data on postgraduate education at its university. Institutional research serves as a base for policy setting. Finally, the graduate school can be an initiator and catalyst for innovation in postgraduate and post-doctoral matters.

In sum, the worldwide expansion in doctoral education is motivated in part by the policy goal of increasing the number of scientific and technical innovators. Reforms in doctoral education are being shaped by the changing needs of society, modes of research, and labor markets for PhD graduates. There is a general trend towards promoting excellence and educating postgraduate students for a variety of career paths. These efforts go hand in hand with organizational innovations within universities, including the introduction of North American-type graduate schools to help implement and initiate innovations in doctoral education.

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The Graduate Foundations of Research in Brazil

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Abstract. This paper presents some of the most relevant institutional traits of Brazilian graduate education, explores some facets of its history and examines the link between graduate education and the research enterprise in the Brazilian experience. For the last of these, it uses data produced by a survey on the Brazilian academic profession from 2007, which formed part of the international project the “Changing Academic Profession” (CAP project). The paper shows that contrary to international experience, in the Brazilian case, graduate education and not research came first. One of the factors explaining the success of Brazilian higher education in building a strong research profile is hidden in its success in building a strong tier of graduate education. Our analysis shows how graduate education in Brazil emerged in the 1970s as a by-product of the consensus built between political leaders, policy makers and the domestic leaders in the sciences around a project that puts science as a core policy for promoting the country’s economic development and independence. As this project grew, it created the necessary conditions for research to become institutionalized inside the small number of Brazilian universities that had succeeded in developing a robust tier of graduate education.

Keywords: Brazil, higher education, graduate education, graduate education evaluation, research organization, research community

Introduction

In 1993 Burton Clark published a major work analyzing the connections between research organization and graduate studies, especially the doctorate, in mature systems of higher education. In this work, Clark argues that it is this connection that makes the difference between this higher level of education, and the other kinds of training offered by all higher education systems around the world. As posed by Clark,

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Any country can have advanced higher education that has little or no relation to research activity and training Conversely, countries can have much research activity and even research training accomplished away from locales of advanced education. What we explore are conditions of the third possibility, the unity option, in which research and training are carried out in academic locales as an intrinsic part of graduate or advanced education Research, teaching and advanced study are thereby so closely interrelated that one informs the others (Clark, 1993, p. xx)

In this article we argue that the Brazilian experience exemplifies another side of this connection. One where it is the process of building the institutional conditions for a strong graduate tier that creates a protected space inside which research could be institutionalized and become a routine task for the academics, one that happens all year long, to be performed with as much assiduity as the teaching responsibilities¹.

To be sure, this process has had strong impacts on the final design of the research system in Brazil, some positive, and others, negative. In presenting some of the most relevant institutional traits of Brazilian graduate education, this paper seeks to explore some facets of its history and examine the link between graduate education and the research enterprise in the Brazilian experience. For the last part, we will use the data produced by a survey on the Brazilian academic profession from 2007, as part of the international project the “Changing Academic Profession” (CAP project).

Brazilian graduate education: an updated picture

While higher education in Brazil is plagued by many known problems, graduate education is a token of national pride recognized as such by the entire Brazilian society. The figures are impressive: in 2008, more than 88,000 students were enrolled in masters’ programs and a further 53,000 were enrolled in doctoral programs. In the same year, more than 33,000 masters and almost 11,000 doctors graduated in Brazil. These figures make Brazilian graduate education one of the most impressive within the emerging countries. However, Brazilian graduate education does not impress only by its size. Differing from what happens at the undergraduate level, Brazilian graduate education is impressive also for its quality. Since the mid-1970s the Fundação Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (CAPES), the Ministry of Education’s agency in charge of graduate education, implemented a sophisticated evaluation process, based on peer-review,

¹ Brazilian higher education is organized according to the European model, according to which students enter the universities to obtain a professional degree, and eventually continue to postgraduate education at the masters’ or doctoral levels. So, there is no undergraduate education as such. However, to follow the usual Anglo-Saxon terminology, we use the expression “undergraduate” to refer to the first tier of professional education, and “graduate” to refer to the second and third tiers of masters’ and doctoral education.

that successfully connects performance with support, creating a virtuous circle that reinforces the best programs, while imposing a threshold for performance that limits growth without quality.

A brief history²

The beginning of graduate studies in Brazil can be traced to early experiences with the old chair system adopted by the first Brazilian University of Law in 1931. This was the period when the first Brazilian universities were created³ and when Brazil attracted a group of foreign scholars, escaping from the European turmoil of the 1930s. These academics brought to Brazil the European tradition of graduate certification. At its core was the tutorial relationship between the full professor and a few assistants who were supposed to assist the professor in his duties in teaching and research. Training was mostly informal and centered on the student's academic duties and his or her dissertation. The authority of the professor was almost absolute in assigning the assistant's academic workload, in determining the dissertation's content and methodology and in establishing the acceptable quality standards.

Until the 1950s, only a handful of academics obtained advanced degrees in Brazil, mostly at the Universities of São Paulo and Rio de Janeiro. At that time, graduate education had small impact on Brazilian higher education as a whole. One may even say that it was a small 'foreign' enterprise, tolerated by the academic authorities, but not deemed necessary. In a few institutions, graduate activities were a path (among others) for entry to an academic career. Outside the academy, a master's or doctoral degree had no relevance at all.

The first steps for recognition and regulation of graduate education in Brazil were taken in 1965. The main features were sketched by the Graduate Education Act 977, enacted by the Federal Council of Education (known in Brazil as *Parecer Sucupira*)⁴. This Act introduced a two-level structure for graduate studies, where students were supposed to successfully conclude a master's program prior to being accepted in a doctoral program. This is still the accepted format for graduate education in Brazil today.

The regulation of graduate education points to the Government's awareness of its potentialities as a domestic alternative to qualify academics for the growing federal network of universities. In 1968,

² This part of the paper is based on Balbachevsky (2004).

³ The first higher education institution founded in Brazil was the Imperial School of Law founded in 1808, when the Portuguese Royal Family fled to Brazil, escaping from Napoleon. From this beginning until the 1930s, the only institutional model for higher education known in Brazil was the non-university institution composed by single professional schools and providing training and certification for prestigious professions. These professional schools also adopted the chair model.

⁴ In Brazil, the Federal Education Council (called today the National Education Council) is a semi-autonomous collective body formed by education stakeholder representatives nominated by the Brazilian government, to regulate and establish education policies at all levels. The written opinions of its members, once approved at the Council's plenary session, become part of the country's education legislation.

the government also enacted a bill to reorganize the Brazilian universities after the U.S. model. This reform eliminated the old chair system, introduced the department model, inaugurated full-time contracts for faculty and replaced the traditional sequential course system by a credit system.

After the 1968 reform, graduate studies grew in the most prestigious universities and in some non-university research institutes, very often as semi-autonomous programs. In the new format, the tutorship was preserved but relations between the candidate and the tutor were now to be supervised by the graduate program's board. To successfully conclude their graduate studies, candidates were expected to accrue credits by attending specialized courses and culminated in a public defense of a thesis before a board of examiners — three in the case of a master's degree and five for a doctorate.

A decisive push for the growth of graduate education in Brazil emerged when these programs came to be defined as a privileged focus for policies supporting science and technology (Schwartzman, 1991) in the early 1970s. At that time Brazil was under an authoritarian regime with an important nationalistic orientation. In the 1950s, the Brazilian government had created a few research institutions, such as the National Research Council, the Brazilian Institute for Physics Research and the National Commission for Nuclear Energy, in the hope of participating in the post-war promised benefits from advanced technologies, particularly in the area of nuclear energy. In the late 1960s, for the first time, there was an attempt to link science and technology with higher education, as part of a broader project for economic development. This initiative can be best understood if one takes into account the consensus then built between influential scientists (some of them with well-known leftist orientations) and the nationalist sector in the Brazilian army, both supporting the idea of building an important sector of science and technology as an instrument for the country's economic development.

From the point of view of this scientific elite, the assumption was that, with adequate economic incentives, private investors would change their attitude from technology consumers to technology developers. This transformation would allow the country to break away from technological dependency, then diagnosed as one of the most important sources of economic underdevelopment. From the military's perspective, this objective was important also as a means to ensure access to sensitive technology in strategic fields such as nuclear energy, electronics and space research. Both stakeholders also converged on the best institutional model for achieving these goals: investments should be concentrated in a few large strategic projects from which scientific and technological competence were supposed to 'trickle down' into the economy and society. Graduate education was supposed to supply the sophisticated human capital deemed necessary for implementing these projects. Accordingly, the Brazilian government also launched an important program of scholarships for masters' and doctorate students abroad.

To achieve these objectives, the main Brazilian investment bank — the government-owned Banco Nacional de Desenvolvimento Econômico (BNDES) — established a program to support technological development in 1964. With the success of the fund, a new specialized agency, the Financiadora de Estudos e Projetos (FINEP), was created to be in charge of a new National Fund for

the development of science and technology, entitled to a permanent item of the Federal Budget. In 1975 the old and small Conselho Nacional de Pesquisa (National Research Council) was reformed into a larger Conselho Nacional de Desenvolvimento Científico e tecnológico (National Council for Scientific and Technological Development: CNPq), placed under control of the Ministry of Planning, then an important and strategic arm of the Brazilian government.

The 1970s were years of economic expansion, in which the Brazilian economy grew at annual rates of 7% to 10%. These new agencies had funds to spend, and a flexible and modern bureaucracy. Their first attempts were directed towards stimulating private and public firms to invest in technological development. Few of these initiatives succeeded, due the firms' lack of interest in investing in such risky enterprises, being placed, as they were, in the highly protected environment created by import substitution policies. Then, the agencies turned their attention towards the most prestigious universities, where some scientific tradition already existed. The strategy was to search for talented people in the academic institutions and provide them with direct support in research infrastructure and staff, as well as support for graduate education in the country and abroad, often by-passing university procedures and bureaucratic controls,

Thanks to these policies, a new generation of Brazilian researchers was created, many of them having graduated abroad, mostly in the United States. These young researchers came back to Brazil with a well defined picture of what should constitute a graduate program in an international perspective and how research was to be connected with graduate training. They were an important instrument for the dynamism one could find in these programs even in the earlier stages.

With such support, graduate education in Brazil grew at a great pace. In 1965, when the first rules and regulations for graduate education were established, the National Education Council accredited 38 graduate programs: 27 as masters' and 11 as doctoral degrees. Ten years later, in 1975, there were already 429 masters' programs, and 149 doctoral programs. These figures have grown continuously since then. In 2008, there were in Brazil 2,314 accredited masters' and 1,320 doctoral courses.

While FINEP and CNPq favored hard science and engineering, the Ministry of Education tended to support a broader range of fields, being focused, as it were, on faculty qualification. Since most of the undergraduate courses were in the soft fields, the Ministry's policy tended to favor graduate programs in these areas. In the end, with the overlap of policies of these two stakeholders, graduate education in Brazil became fairly well distributed among the major academic fields, as one can see in Table 1.

Table 1. Brazil: Master's and Doctoral programs enrolments, 2007

	Masters of Science	Doctoral programs
Agrarian Sciences & Forestry	8.7%	10.8%
Biological Sciences	6.5%	11.1%
Health Sciences	12.9%	15.1%
Mathematics, Physics	9.0%	11.6%
Humanities	18.3%	18.3%
Applied Social Science	14.9%	8.0%
Engineering	15.6%	14.0%
Fine Arts	7.4%	6.8%
Multidisciplinary	6.7%	4.3%
TOTAL (100%)	(78,771)	(47,200)

Source: Brazil's Ministry of Education, CAPES.

The quest for quality and evaluation

The 1965 Graduate Education Act conferred on the Ministry of Education's Conselho Federal de Educação (Federal Education Council) the responsibility for the programs' accreditation and evaluation. However, its earlier attempts to fulfill this role failed, for the lack of appropriate mechanisms and procedures. Lacking general standards, the S&T agencies had few clues in choosing to support or dismiss proposals from research-groups and postgraduate programs. CNPq had had some experience in peer-review procedures for individual projects, but not for programs as a whole. For the research groups, to attain high quality standards was crucial: it meant independence from the agencies' internal struggles and was perceived as an alternative for preserving the prestige associated with postgraduate education.

A solution to this impasse was reached when CAPES — then a Ministry of Education's agency in charge of providing scholarships for faculty and graduate students — organized the first general evaluation of graduate programs in 1976. The initiative was supposed to serve as guideline for allocating scholarships to students (Castro & Soares, 1986). Instead of making individual grants, CAPES decided to assess each graduate program as a whole, in terms of its academic output — mainly publications, number of degrees granted — and provide block grants to graduate programs according to their achievements. The assessment was done by peer-review teams, selected by CAPES according to nominations coming from the scientific associations, which were established to assess all graduate programs in their respective fields.

Eventually, as the CAPES evaluation became a routine procedure performed periodically and widely publicized, it was accepted by most stakeholders as a quality reference for postgraduate programs. In this way, the CAPES evaluation was converted in a strong policy instrument, successfully connecting performance with reward. The better the program evaluation, the greater its chances for accrued support as expressed in students' scholarships, research infrastructure and funds.

In spite of its positive aspects, the CAPES evaluation had some problems that became more and more apparent as time went by. The small size of the Brazilian scientific community and the visibility of the peer-committees work created unavoidable parochial pressures. One consequence was grade inflation. (Castro & Soares, 1986; CAPES, 1998) In 1996, four in every five programs were placed in the two highest ranks, A or B. It meant that CAPES evaluations were losing the ability for a discriminatory role.

Reacting to this situation, the CAPES authorities established in 1998 a new model for program evaluation. This new model preserves the authority of the peer-committees, but adopts more formal rules for evaluation. It reinforces the adoption of international standards for all fields of knowledge; imposes a set of parameters for faculty evaluation, stressing their academic background and research performance as measured by their publishing patterns; extends the periodicity of evaluation from two to three years; adopts a more comprehensive procedure, evaluating masters' and doctoral programs together, instead of evaluating each program *per se*; and adopts a seven point scale (instead of five), where the ranks of 6 and 7 are available only to programs offering doctoral degrees that could be assessed as good or excellent by international standards, and established that 3 was the lowest acceptable rank for a postgraduate program to be successfully accredited.

The 1998 evaluation round proceeded under these new rules. The results were satisfactory from the agency's point of view: by using the new criteria, only 30% of programs were ranked in the three highest positions (CAPES, 1999); ten years later, only 17.8% of the doctoral programs were still ranked in the two highest positions.

The place of graduate studies in the Brazilian higher education

Since the implementation of the 1968 reform, Brazilian higher education has been under strong pressure to diversify. By the late 1970s, its profile already showed the traits of a highly diverse and sharply stratified system: a public, tuition-free network of universities at the top and a large group of low quality, tuition-paying, small private non-university institutions at the bottom. In Brazil, the difference between university and non-university institutions is not related to the degrees they grant, but to the autonomy they enjoy. Formally, the legal value of a professional degree is the same regardless of the nature of the institution. But universities are free to decide how many students they can admit, while non-university institutions depend on the federal government for authorization. In principle, university status should be granted by the National Council of Education to institutions that provide graduate education in different subjects and have a significant number of full-time, highly qualified faculty. In practice, most public universities were created by law, and their university status cannot be revoked. On the other hand, most private institutions start as non-universities, but seek university status in order to increase their autonomy.

Among the public universities, a marked distinction should be made between the few that had succeeded in establishing a strong graduate level program, which we propose to call public research universities; and other public institutions (most of them also universities), which are mostly oriented toward undergraduate level and which we shall call regional universities.

The huge private sector, that provides about 75% of the country's undergraduate enrollments, has also experienced a sharp stratification, with the growth of a small segment of prestigious, elite private institutions, while the immense majority is still confined to a kind of "commodity-like" market of mass-undergraduate education. While any university is legally allowed to offer graduate education, the restrictions imposed by the CAPES evaluation have succeeded in limiting the growth of such programs in the private sector. In fact, 82% of the graduate students, and almost 90% of the doctoral students, are in public universities. In the private sector, there are graduate programs in a few Catholic universities and in other prestigious private institutions, particularly in the areas of social sciences and business.

The Brazilian masters' programs were not organized, as in the U.S., as market-oriented, professional degrees, but as mini-doctoral, academic programs for institutions that could not meet the requirements to provide full doctoral degrees. The 1997 Education Act (*Lei de Diretrizes e Bases da Educação*) required that higher education institutions should provide some kind of graduate education to obtain university status, and in many public institutions a graduate degree became a requisite for academic advancement. To fulfill this requirement, private institutions aspiring to university status created masters' programs that tend to be small, chronically undernourished and with few connections with the institution's real life. They are not supposed to grow and to occupy a place of their own inside the institution. They exist only for the sake of the indicators they produce. The 2007 national survey of the Brazilian academic profession, conducted under the guidelines of the CAP international project shows how the institutional environment affects academics' experience with graduate education.

As one can see in Table 2, teaching at the doctoral level is a common experience only for academics who are employed at the National public research institutes and at the public research universities. For academics from the other public universities and the elite private institutions, teaching only at the undergraduate level is the most frequent experience. Even so, in both kinds of institutions one can find a significant number of academics who are engaged in graduate education, some with the experience of teaching at the doctoral level, and others in masters' programs. At the private mass-oriented institutions, 93% of all academics teach only at the undergraduate level⁵.

⁵ Many institutions in the mass-private sector also are very active in continuing education. Thus, many academics from this sector also have experience of teaching in programs of professional specialization and other kinds of continuing education.

Table 2. Brazilian academics: highest teaching responsibility by institutional context

Academics' highest teaching responsibility	Type of institution					Total
	Public research institutes	Public research universities	Public regional universities	Private elite institutions	Private mass institutions	
Doctoral programs	69.2%	43.5%	16.2%	19.5%	1.9%	17.3%
Masters' Programs	15.4%	10.4%	21.3%	16.5%	5.1%	11.9%
Undergraduate programs	15.4%	46.1%	62.5%	64.0%	92.9%	70.8%
Total (100%)	39	193	277	164	468	1,141

Source: FAPESP/CAP project, Brazil 2007

Teaching and advising in graduate programs: the academic profile

The processes described above have made graduate education in Brazil highly selective and demanding for academics. The 2007 national survey on Brazilian academics, as part of the international CAP project presents some relevant indicators in this dimension. Although this survey did not ask if the academic advises doctoral dissertations or masters' theses, by selecting those that gave a positive answer when asked if they teach classes for masters' and/or doctoral programs a broad identification of the academics that have connections with graduate education can be made. In order to be allowed to advise on graduate work, an academic must be accepted by the graduate school or the collegiate department. In this process, the first step is being allowed to teach a graduate program. The second step is to be recognized as an advisor at the master's level, which usually comes after one or two terms of teaching in graduate programs. Authorization for advising doctoral theses — when the program is allowed to confer doctoral degrees — comes after the first advised master's thesis is successfully approved. Thus, identifying academics who teach at the graduate level is a good proxy for identifying academics who also provide advice on masters' theses and/or doctoral dissertations. Table 3 shows that teaching at graduate level, and, especially, teaching in doctoral programs requires that an academic holds a PhD degree.

Teaching at graduate level also requires a strong commitment to research. By following the international literature, academics can be regarded as experienced researchers if they are able to disseminate the research findings to a wider audience, which, for many, means to publish these findings (Fulton & Trow, 1975). In the Brazilian context, fully fledged researchers are also expected to have the skills and experience needed to raise external support for their research activities. It is not usual for public institutions in Brazil to set aside institutional resources to support research. In the private sector, even when institutions earmark small amounts of funds to support academics' research, access to these resources is not regulated by academic norms. They usually stay under the

discretionary control of the institution's authorities. Therefore, one can assume that, in the Brazilian context, being able to command external funds means also that academics' research agendas have been evaluated by their peers.

Table 3. Proportion of academics holding a doctoral degree by their highest teaching responsibility

Type of institution	Highest teaching level		
	Doctoral programs	Masters' programs	Undergraduate programs
Public research institutes	100.0%	100.0%	66.7%
Public research universities	100.0%	100.0%	85.4%
Public regional universities	93.3%	98.3%	46.2%
Private elite institutions	96.9%	92.6%	60.0%
Private Mass institutions	66.7%	87.5%	26.0%

Source: FAPESP/CAP project, Brazil 2007

Table 4, ranks the degree of commitment to research among Brazilian academics. The scale runs from a fully professionalized researcher (one who performs research, publishes and is able to secure external support) through to one with a non-active role. In between these extremes, there can be identified those that do research and publish but cannot secure external support and those that perform research without achieving any publication of or support for the work.

Table 4. Brazilian academic's research profile and teaching responsibilities

Research Profile	Highest teaching level			Total
	Doctoral programs	Masters' Programs	Undergraduate programs	
Fully-fledged researcher	64.0%	41.2%	12.4%	24,7%
Doing research and publishing without external support	28.4%	46.3%	37.3%	36,8%
Doing research without publishing and external support	3.0%	8.1%	16.0%	12,8%
Inactive as researcher	4.6%	4.4%	34.4%	25,7%
Total (100%)	197	136	808	1,141

Source: FAPESP/CAP project, Brazil 2007

As one can see in this table, there is a strong association between having the profile of a fully-fledged researcher and teaching in doctoral and masters' programs. On the other hand, the second group, of those that publish but have no success in securing external funds, has a weak (but significant) association with teaching at masters' level. In the final two groups the commitment to research reaches the lower level: academics who either do not do research at all, or, if they do, have not published in the last three years prior to the interview nor have had access to external funds to support their research. These profiles are strongly associated with teaching only at the undergraduate level and are almost absent among academics teaching at the graduate level.

Furthermore, as shown in Table 5, experienced researchers, with active international connections usually have teaching responsibilities in doctoral programs, while those confined to domestic networks are associated with teaching at masters' level. Researchers with only parochial (institutional) networks and those who develop research only in isolation are associated with the undergraduate level.

Table 5. Research network and teaching responsibilities

Research network	Highest teaching level			Total
	Doctoral programs	Masters' Programs	Undergraduate programs	
Researcher with international connections	56.5%	31.0%	16.0%	27,3%
Researcher with domestic connections	26.1%	44.4%	34.3%	34,0%
Researcher with institutional connections	11.4%	19.0%	27.2%	22,4%
Isolated researcher	6.0%	5.6%	22.5%	16,3%
Total	184	126	519	829

Source: FAPESP/CAP project, Brazil 2007

The higher commitment to research found among the academics working in graduate education has predictable effects on their productivity, as estimated by the number of works published in the last three years⁶. Table 6, compares the productivity of academics with different teaching profiles in the last three years.

Table 6 shows significant differences in the level of productivity associated with different levels of teaching responsibilities. In fact, while academics teaching in doctoral programs have 20 weighted publications in the last three-years, this number falls to 14 among academics teaching in masters' programs and to only 7 among academics with responsibilities only at the undergraduate

⁶ In order to overcome the problems associated with the differences in the lengths of work that are required to publish a book when compared with publishing a paper, the information presented by the academics regarding their scholarly contributions was weighted. The number of books reported by the academic was weighted 4, the number of books edited was weighted 2, and both added to the number of papers published in scholarly journals or presented at scholarly conferences.

level. What is more important, the analysis of variance (ANOVA) shows that teaching at different levels explains almost 14% of all variance in productivity.

Academics who work in graduate education, and especially those in doctoral programs, are not only more productive. The CAP study also found that their publishing activity is done in a richer context, counting on the help of peer-revision and collaboration of colleagues from abroad and domestically.

Table 6. Differences in productivity, as measured by the number of works published in the last three years

Summary (means and standard deviation)

Highest teaching level	Mean	N	Std. Deviation
Doctoral programs	20.0863	197	17.01793
Masters' programs	14.7500	136	14.05057
Undergraduate programs	7.1052	808	11.40197
Total	10.2577	1,141	13.83278

ANOVA Table

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups (Combined)	29805.154	2	14902.577	90.051	.000
Within Groups	188329.091	1,138	165.491		
Total	218134.245	1,140			

Measures of Association

	Eta	Eta Squared
Production_Total Highest teaching level	.370	.137

Source: FAPESP/CAP project, Brazil 2007

In fact, as can be seen in Table 7, 74% of the academics with responsibilities in doctoral programs have their publications subject to peer-review. Among them, 33.1% published in co-authorship with foreign colleagues and another 31.5% published with colleagues in Brazil. In the second group, 59.9% of the academics with teaching responsibilities at masters' level have work published with peer-review. Among them, only 11.5% published in co-authorship with foreign colleagues but 36.1% published in collaboration with colleagues in Brazil. Finally, academics with teaching responsibilities confined to undergraduate level tend to show a more impoverished profile of

publications: when they have works published (because 25.4% of them have had no work published at all), they usually publish alone and without peer-review.

By way of conclusion, one can say that in Brazil, graduate education, and more specifically, the doctoral programs are, in fact, places where research found all the requisites to be institutionalized inside Brazilian higher education. The micro-environment of these programs is such that it successfully concentrates academics with dynamic profiles as researchers, with intense activity in international networking and publishing, creating an energetic and demanding environment for its students.

Table 7. Patterns of publishing and teaching responsibilities

Patterns of publishing	Highest teaching level			Total
	Doctoral programs	Masters' Programs	Undergraduate programs	
production with peer-review, local and foreign co-author	33.1%	11.5%	5.2%	12.3%
production with peer review and local coauthor	31.5%	36.1%	20.2%	25.0%
production with peer-review, no co-author	9.4%	12.3%	7.2%	8.4%
production with local co-author, no peer-review	17.1%	19.7%	22.3%	20.8%
production without peer-review and co-author	4.4%	11.5%	19.8%	15.1%
no publications	4.4%	9.0%	25.4%	18.3%
Total	181	122	516	819

Source: FAPESP/CAP project, Brazil 2007

The graduate foundations of research in Brazil

This article started with a quotation from Burton Clark where he describes one of the most striking features of modern higher education, that is, the coupling of research with teaching. In his analysis, Clark (1993) states that this nexus is especially strong inside the higher levels of learning, that is, in graduate education. However, in his formulation, research and knowledge creation are deemed a necessary condition for a vigorous system of higher learning to be built. The title of this article inverts the terms of his proposition. We argue that in the Brazilian experience, graduate education and not research comes first. One of the factors explaining the success of Brazilian higher education in building a strong research profile is hidden in its success in building a strong tier of graduate education. Our analysis shows how graduate education in Brazil emerged in the 1970s as a by-product of the consensus built between political leaders, policy makers and the domestic leaders in scientific disciplines around a project that puts science as a core policy for promoting the country's economic development and independence. And as it grew, it created the necessary conditions for

research to become institutionalized inside the small number of Brazilian universities that had succeeded in developing a robust tier of graduate education.

Pivotal to this process was the institutionalization of the procedures for program evaluation. As was said in the first part of this article, the strong legitimacy of these procedures rested in the work done by the committees of peers that CAPES was able to mobilize for these evaluations.

The work of these committees had a major impact on the institutionalization of academic research in Brazil. In each recognized field, they became a major forum for establishing quality standards for research, for legitimizing subjects of study, theories and methodologies, and for evaluating international links and publishing patterns (Coutinho, 1996). Thus, one can see the work of these evaluation committees as one of the most effective instruments for expediting the institutionalization of all fields of knowledge and in building the foundations of the Brazilian scientific community (Schwartzman, 1991).

While the first committees were chosen by an *ad-hoc* procedure among the most influential scientific leaders in Brazil, as the CAPES evaluation became institutionalized, the composition of these committees became more stable, but at the same time the nomination process was converted into an arena where different research traditions and groups struggled to be represented. This process presents few difficulties in areas where scientific consensus is broad and the research agenda is more or less consensual. But in fields where these characteristics are not present, this struggle is fierce and the committees' decisions had major impacts over the different research traditions. As quality tends to be defined in terms of what is done by the most powerful groups inside each field, the whole process is by its nature very conservative, and creates artificial obstacles for the growth of new research areas, especially when they are born in-between the rigid boundaries CAPES evaluation defines for different fields. Thus, it is not surprising that 54% of all graduate programs formally classified as "multidisciplinary" are ranked at the lowest position of the CAPES evaluation scale.

In fact, multi- and trans-disciplinary research areas are particularly affected by the compositional effects created by the peculiar relations between graduate education and research in Brazil. CAPES evaluation is simply unable to deal with the peculiarities presented by research groups (and graduate programs) working with a more trans-disciplinary orientation. Many of them are forced to fit into one or other area committee, where they are seen as a kind of "ugly duckling", to whom no metric of beauty or excellence can be properly applied. Others also are condemned to the limbo represented by the "multidisciplinary" committee, where evaluation is forced to emulate the norms adopted for the more disciplinary oriented committees. Finally, others are simply dismissed.

One of the most relevant features of the 1998 reform of CAPES evaluation was the adoption of a number of indicators that should be used by the committees when evaluating a program. This procedure was very effective in counteracting the parochial pressures to which all the committees were exposed. Nevertheless, the new instrument reinforced the role played by the CAPES bureaucracy. Because of the peculiar centrality that graduate programs even now play in the process of

institutionalization of science in Brazil, this change in the balance of power in favor of the bureaucracy introduced further constraints over the processes supporting diversification in science.

The strong ties that connect all the building blocks of graduate education in Brazil also restrict the autonomous growth and diversification of the masters' programs. In most countries masters' programs have tended to disengage themselves from the trajectory pursued by doctoral programs. In doing so, these programs have established their own identity and relevance as they become places for advanced training for an increasingly demanding labor market. In Brazil masters' programs are still conceived mainly as a kind of 'mini-doctorate', an intermediate stage mandatory for anyone who wants to attend a doctoral program. This situation prolongs unnecessarily the time needed for training the new generation of researchers. CAPES officials estimate that in order to conclude a masters' degree, a student would spend 34 months, on average (almost 3 years). To achieve a doctoral degree, it takes an additional 53 months (four and half years). It also freezes the masters' programs in an adjunct role, inhibiting growth and diversification, and hindering the potentialities this kind of study has for upgrading the competences of society as whole⁷.

Conclusion

In the 1970s, Brazil started a significant effort to build science, technology and graduate education as part of a broader project of modernization and economic growth. However, while the links between research and development remained limited at best, graduate education grew as part of an expanding higher education system, establishing the conditions but also the limits for academic research to develop. The analysis shows how effective has been the evaluation process in preserving the special features of this structure inside Brazilian higher education. Even so, the article also points out some of the more relevant constraints and challenges for this overall successful policy. One of the unintended consequences of this emphasis on the assessment of the academic quality of the graduate programs is that it penalizes both applied and interdisciplinary work, which is essential for university research to transcend their institutional boundaries and link more strongly with society (Schwartzman, 2008). We may be reaching a turning point when the hindrances created by academic over-regulation surpass its benefits. How the Brazilian science community, the policy makers and society as a whole are going to deal with these new challenges is, at present, an open question.

⁷ In 1997 CAPES also recognized a new kind of masters' degree called the "professional master program". Nevertheless, this initiative was never fully accepted by the evaluation committees nor by the public universities. As a result, 10 years after proposing the new alternative format for a masters' program, there are only 662 programs of this kind, attended by only 7,000 students.

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Access & Quality Dilemma in Education: implication for Namibia's Vision 2030

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Abstract. The 1990 World Declaration on Education for All identified quality as imperative for achieving equity in education. This point has strongly been emphasised by UNESCO (1991, p.3), where it is expounded that “Education has a vital role to play in helping human beings to improve their relationships with their environment and contribute to the ultimate sustainability of the planet.” In this context quality education rests on four pillars: learning to know, learning to do, learning to be and learning to live together. In 1993 Namibia adopted an “Education for All” policy based on *access*, *equity*, *quality* and *democratic* goals. However, its implementation has meant that the country can boast of having exceeded a 90% enrolment rate at primary school level, at the expense of the quality goal. This discourse takes a critical look at the *access* and *quality* dilemma in education and how these can impact on Namibia's Vision 2030.

Keywords: access and quality dilemma, educational reform, equity, democracy, policy

Introduction

What education and for whom?

Education is meaningful only in as far as it helps the individual and the many individuals that constitute a society, to see beyond the framework of their limitations, and penetrate into the unlimited world of discovery — towards the constant creation of the new and the necessary capability to change our environment — the world. That is why education is such an indisputable necessity, to mankind as a whole. (Amukugo, 1995)

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This means in short, that education does not only help in opening one's mind and widening one's scope, it also provides human beings with the capacity to act upon their environment rather than being conditioned by it.

It is against this backdrop that we can talk about "quality education" and the contribution it can make towards achieving socio-economic development, provided, as Henry A. Giroux (1985) argues, the forms of knowledge transmitted through education are such that it provides opportunities for self- and social- empowerment in society at large. Education should, among other goals, empower those who go through it to "partake in political and economic life of their community, struggle against poverty or oppression and most importantly benefit from the joys and rewards of human existence...". (Devidal, 2004)

Thus, as Freire (1974) holds, educational development should not only be limited to purely economic objectives or structural reforms, but ought to include the formation of "critical attitudes". Such an education should:

... Enable men to discuss courageously the problems of their context; it would warn men of the dangers of the time and offer them the confidence and the strength to confront those dangers instead of surrounding their sense of self through submission to the decision of others... . By predisposing men to re-evaluate constantly, to analyze 'findings' to adopt scientific methods and processes, and to perceive themselves in dialectical relationship with their social reality, that education could help men to assume an increasingly critical attitude toward the world and so to transform it. (Freire, 1974, pp.33-34)

This critical approach to education not only places educational content and method at the centre of educational provision; it also defines more clearly the concept of "educational quality". It does this by marking distinctly the place and role of education for both the individual and society.

The Jomtien World Conference on Education for All (UNESCO, 1991) went even further in explaining the linkage between education, economic and social development.

Education must help to build up the self-confidence to succeed in life and strike out on one's own. There need to be 'job creators' coming out of school rather than 'job seekers'. The implications of this situation for education are manifold. There can be no sustained economic and social development without an active population capable of playing its full role in such development. This demands adequate preparation through education and training. (UNESCO, 1991, p.45)

While agreeing that education contributes to bringing about socio-economic development, it is important to ask at the same time about what development and for whose benefit. An answer to this question rests in understanding the type of society within which education functions. This is because

changes within the educational sector result from changes in society's economic, political and social relationships.

Any critical appraisal of the policy on education therefore, presupposes an understanding of the linkage between educational practice and political and socio-economic development. Namibia is a class-based society with a mixed economic system. But as Herman *et al.* (1982) observed, a mixed economy does not necessarily help to bring about any major shift of power between capital and labour. Within the Namibian context, for example, the capitalist class owns most of the productive facilities and resources while the manual and intellectual workers own their labour, with self-employed business people in between and peasants struggling to make ends meet. The Presidential Commission on Education and Training revealed that "Namibia has greater disparities in wealth than any other country in the world ...". The children of prosperous families attend schools which are equivalent to schools in the capital cities of the most advanced countries; while the children of poor peasants attend schools which are totally inadequate for their needs (Government of the Republic of Namibia, 1999, p.11). This clarification may help to explain the ever widening gap between the rich and the poor within our society; the reason why 50% of our people live below the poverty line; and the contextual circumstances under which the educational goals of *access*, *equity* and *quality* have been implemented.

Access, equity and quality in education

There has been a global consensus on the meaning of education *access* with many international instruments focusing on the quantitative aspects of education policy (UNESCO, 2005). However, the issues of equity and quality in education seem not to have attracted the same universal agreement. On the contrary, varying viewpoints have emerged with regard to the meaning of each of the two concepts.

The concept of *equity* is closely linked to the aspect of 'fair play' in educational provision. But, what is meant by fair play depends largely on differing ideological positions. Liberal democrats may argue from the point of view of "equality of opportunity", a view that sees the individual's "efforts, ability and free choice" (Outhwaite, 2006, p.204), as being crucial to achieving equity, without taking into account problems arising from existing socio-economic barriers, for example. Structural functionalists, by viewing the role of education as being that of legitimizing and reproducing social inequalities (Robinson, 1981, pp.27-28), may suggest that education cannot compensate for the inequalities in society as a whole; and that significant improvements in education can only be achieved if they are accompanied by wider social changes. Critical theorists, whilst recognizing the immense challenges humanity faces in achieving social equity (Freire, 2004), would define the concept in terms of who benefits more from education as a social institution. From that premise, they would focus their attention on the root causes of inequalities and propose relevant action for bringing about change. This paper falls within the latter category.

Neither has there been common agreement on what *quality* in education entails. As it is observed in the 2005 EFA Global Monitoring Report:

Although there is no single definition of quality, two principles characterize most attempts to define the objectives of education. The first which identifies learners cognitive development ... The second emphasizes the role of education in promoting commonly shared values along with creative and emotional development. (UNESCO, 2005, p.19)

The above observations can generally be placed under two major psychological theories of learning that have over the years provided theoretical frameworks within which types of education systems in general and educational content in particular have been developed. First, is the cognitive development learning theory spearheaded by Piaget. Its main postulates are that children develop according to stages¹. Teaching and learning activities should hence be adapted to fit into those stages, because once a child misses out during one stage it becomes difficult for that child to pick up lost knowledge at another stage. Environmental differences will have no influence on the order of stages. This view has been criticised by, amongst others, Vygotsky, a social psychologist, who points out that “Piaget has already been criticized ... for his failure to take into account the importance of the social situation and milieu.” (Vygotsky, 1962, p.23) Vygotsky’s position reflects a general perspective held by proponents of the social theory of learning who argue that individual changes are the result of person-environment interaction.

Quality in education then can be understood in terms of an educational content and practice that encourages critical examination of power relations within society, and which provides useful tools for people to change their environment.

Notwithstanding the above, there seem to be some generally accepted criteria, on the basis of which quality in a particular education system can be determined. These include but are not limited to:

- the level of public spending on education,
- the quality of the teaching profession,
- achievement of measurable learning outcomes (literacy, numeracy and basic life skills),
- teacher/pupil ratio,
- the survival rate at Basic Education level (grades 1-12), and
- the extent to which an environment conducive to learning exists (availability of study materials, equipment and physical facilities).

It is important to note from the outset that these criteria cannot be looked at in isolation. They

¹ Learning-Theories.com. Stage Theory of Cognitive Development (Piaget). Retrieved on 11/05/2009, from: <http://www.learning-theories.com/piagets/stage-theory-of-cognitive-development.html>

need to be interpreted within a particular socio-economic context.

Access, equity and quality in the Namibian context

The goals of *access*, *equity*, and *quality* in education can be placed within the context of the global concept of “Education for All” (EFA), whose origin can be traced back to the United Nations Universal Declaration of Human Rights (1948); and the Jomtien World Conference on Education (1990).

Article 26 of the Universal Declaration of Human Rights states that

Everyone has the right to education. Education shall be free, at least in the elementary and fundamental stages. Elementary education shall be compulsory. Technical education and professional education shall be made generally available. (UNESCO, 1991)

This international commitment was reconfirmed by the World Conference on EFA, which took place at Jomtien (1990) and declared amongst others that

We, the participants in the World Conference on Education for All, reaffirm the right of all people to education ... together we call on governments, concerned organizations and individuals to join in this urgent undertaking. (UNESCO, 1991, p.95)

Independent Namibia, being a participant to the Jomtien conference, developed a concept of EFA that meets the Namibian socio-economic conditions, and which is based on the goals of *access*, *equity*, *quality* and *democracy*.

Influenced by this global concern, and the need to come to terms with past imbalances within the educational system, the right of all citizens to education became part of independent Namibia's constitution. Hence Article 20 of Namibia's Constitution states

All persons shall have the right to education. Primary education shall be compulsory and the state shall provide reasonable facilities to render effective this right for every resident within Namibia, by establishing and maintaining state schools at which primary education will be provided free of charge. Children shall not be allowed to leave school until they have completed their primary education or have attained the age of sixteen. (Government of the Republic of Namibia, 1990)

The policy of ‘Education for All’ was therefore partially meant to meet the constitutional requirements to provide free and compulsory schooling for children between the ages of six- to sixteen-years. In concrete terms, government set out, first and foremost, to establish a unified educational system by merging eleven ethnic/racial administration authorities into one single Ministry

of Education and Culture. Three years after independence, the government published a major policy document, "Towards Education for All" (Ministry of Education and Culture, 1993), which set the framework for achieving "Education for All" by the year 2000. This policy is basically based on four major goals: access, equity, quality and democracy (*ibid.*, pp.32-42).

In terms of *access*, the government pledged to commit itself to providing universal basic education, and to ensure that the majority of Namibians would have acquired basic primary education (grades 1-7) by the year 2000. Adult and non-formal educational programmes would be developed to cater for the learning needs of the adult population. Equipment would be provided to enhance teachers' levels of preparation; a more equitable allocation of resources would be provided; and the educational output would be kept under constant review to ensure equal opportunities for all learners.

In relation to *quality*, it was envisaged that quality in education would be achieved through providing good schools, ensuring that teachers are sufficiently prepared for their tasks, and moving from examination-centred education to developing skilled learners as well as by developing integrated curricula.

The goal of *democracy* would be achieved by developing democratic education. Learners are to study how democratic societies operate and what the obligations and rights of citizens are. Moreover, broad participation in decision-making about education would be facilitated by government. Teaching itself will become democratic by moving from a teacher-centred teaching and learning concept to a student-centred one.

What do we mean by educational quality in the Namibian context?

Level of public spending on education

Namibia's public expenditure on education increased from 20% of the total annual Government expenditure in 1990/91, to 23% in 2002/3 (IPPR, 2002, p.4). In fact, Namibia spends proportionately more on education than any other country in sub-Saharan Africa. However, Namibia spent 83% of its annual Basic Education budget on salaries and administration, leaving only 17% for actual educational activities (Amukugo, 2003, p.203).

This state of affairs, suggests that the achievements so far cannot be commensurate with the resources and time committed to basic education. The need for value for money is at the core of the definition of quality in education. Meeting the needs of society goes a long way to meeting customer requirements and hence quality. There are too many gaps in the current model for it to be both sustainable and meet the requirements of the contractual obligations to the needs of society.

The quality of the teaching profession and achievement of learning outcomes

A recent UNICEF (2004, p.8) study, while praising Namibia for having achieved gender parity in education, concluded that “the quality of Namibian education [Basic Education] remains low”. The report also arrived at the conclusion that “two-thirds of Namibia’s grade 6 learners cannot read with any level of competency”; and that by grade 10 national examination results are constantly disappointing, with over half having failed in 2001.

Furthermore, the 2004/2005 World Bank Evaluation Report (World Bank, 2005) of the education provision in Namibia suggests that formal education provision over the last 14 or 15 years has been ineffective. It further asserts (*ibid.*) that general education in particular is ineffective, mainly because of inadequacies in a range of education quality enhancing inputs. Due to lack of access to early childhood development (ECD), and to pre-primary education programmes, 80% of children enter the first grade of primary education without the required level of learning readiness

Invariably, these children are exposed to ineffective teaching (*ibid.*). To compound this scenario further, the report states that, 60% of primary school teachers, and 30% of secondary school teachers are unqualified. Among the qualified, a large proportion lacks essential competencies such as mastery of their teaching subjects, good English proficiency, reading skills, elicitation skills, curriculum interpretation, and setting tests for students (*ibid.*). These weaknesses limit the teachers’ effectiveness in implementing the official curriculum. As a result the poor quality of education contributes to low internal efficiency; as is manifest in high student repetition and dropout rates.

A question can be asked as to why all this is so. According to UNESCO (2005) quality in education is best measured by the following proxy indicators: the number of learners *per* teacher, teacher training, public expenditures, educational achievement and the survival rate to Grade 5. In the Namibian context, other factors such as lack of physical facilities, shortage of books and equipment, also contribute to poor quality in education.

However, with this state of affairs there is need for an intervention to improve the quality or effectiveness of general education in Namibia. Good quality general education (grade 1 to 12) builds the foundation skills required for the effectiveness of higher levels of the education and training system, and for effective functioning in a knowledge based-economy (UNESCO, 2005). It seems therefore, that Namibia has no choice but to do a lot more in addressing these problems, which will have severe financial implications for the nation.

Level of teacher/learner ratio, survival rate and the creation of an environment conducive to learning

Our observations regarding regional inequalities tally with the findings of the Presidential Commission (1991) on Education, Culture and Training that

... very many children are getting an education which is greatly inferior to that enjoyed by town dwellers and which does not give every Namibian child an equal opportunity of achieving the best of which he or she is capable. It is clear that the root cause of this deprivation is the unequal distribution of the educational resources ... (Government of the Republic of Namibia, 1999, p.98)

The logical implication of these weaknesses is the fact that primary education lacks the capacity to feed secondary schools with competent learners, in addition to depriving these learners of life-long learning skills. This pattern eventually impacts on the intakes to higher education who inevitably will be inadequately prepared and who, when they complete their studies, may be unable to cope with the pressures of leadership, which would lead to dire consequences for the future of Namibia.

The government introduced a new Junior Secondary Curriculum as early as 1991, a year after independence. The new curriculum was meant amongst other things to create a common core learning experience for all Namibian youth, and to introduce English as a common medium of instruction.

Three years later, in 1994 the government took a political decision to abolish the Cape Education Department Matriculation Examination. A new Senior Secondary curriculum that leads to the International General Certificate of Secondary Education (IGCSE), which is equivalent to an O-level, was introduced in its place. Selected secondary schools were permitted to introduce the Higher International General Certificate of Secondary Education (HIGCSE), which is equivalent to an A-level certificate.

But, as Amukugo (2003) observed, the IGCSE examination results have remained more or less unchanged for the period between 1999-2002: only 19% obtained a C grade, and 86% of our youth leave secondary school with a mere G grade in a significant number of subjects. As few as 6% of these students qualify for admission to the University of Namibia and the Polytechnic of Namibia. Over and above this, only 12.8% obtained grade 1, which is the highest grade on the HIGCSE scale. On occasions, over 80% of the HIGCSE students have obtained no more than a grade 4, which is the lowest on the scale (Amukugo, 2003, p.203).

The high failure rates at Grades 10 and 12 respectively, which has characterised the period from the 1990's to 2003 and beyond, are symptomatic of the process of transformation where political decisions may be prompted by the prevailing circumstances — in the case of Namibia the inadequate education system that was inherited from the South African Colonial education system (Likando, Katzao & Ijambo, 2006) - without seriously considering the educational implications. It is clear that these changes were introduced in haste without first preparing teachers for the new tasks. In addition, learners have been subjected to the *automatic promotion policy*, in accordance with which they are transferred to the next Grade even if they have not mastered the core content. These factors, concomitant with Namibia's socio-economic reality, have contributed greatly to the high failure rate at

secondary school level, while turning our youth into candidates for the streets where their chances of finding employment are very slim.

It is hence crucial that an alternative policy for secondary education must place emphasis on issues of fairness in terms of resources distribution, educational quality, and the relevance of curricular content. All in all, education should not only be “available” and “accessible”, but should also be “acceptable ...” (Devidal, 2004)

Implication for Namibia’s Vision 2030

Namibia’s policy framework for long term national development (Vision 2030) is committed to the principle of sustainable development, as advocated by the United Nations Agenda 21 Principles (Government of the Republic of Namibia, 2004). It is imperative to note that among other factors the driving force in achieving Vision 2030, is education, science and technology (*ibid.*, 2004).

Although Namibia’s Vision 2030 is considered an ambitious dream for the country, there is a firm commitment by government to “... improve the quality of life of the people of Namibia to the level of their counterparts in the developed world by 2030” (*ibid.*, 2004, p.90). This is evident through its ‘sub-vision’ on education that aims at establishing in Namibia an affordable and pragmatic education capable of producing a balanced supply of human resources to respond to the demands of the labour market (*ibid.*). The provision of quality education is a precondition for the realisation of this sub-vision. Quality education is a tool that makes the realisation of political, civil, economic, cultural and social rights possible (Devidal, 2004). Therefore, the provision of quality education is an imperative for the realisation of Vision 2030.

Although Vision 2030 stipulates clearly the objectives and the timeframe within which they have to be achieved, a word of caution is necessary. Namibia is known as a country good at putting policies in place but falling short in implementation. However, Vision 2030 might be an exception in this regard. After having experienced such challenges in the past, the country needs to have credible policy implementation strategies to ensure constant follow-up, evaluation and, if necessary, revision of objectives to make sure that they are still realistic, viable and implementable.

Put differently, ‘implementers’ are key elements in the realisation of the set objectives. For example, teachers are crucial agents in the realisation of the sub-vision on education. If their conditions of service are compromised, with poor facilities and infrastructure then it is a futile exercise to dream of Namibia being at par with the developed world by 2030. As the Education and Training Sector Improvement Programme (ETSIP) aims to enhance the education sector’s contribution to the attainment of strategic national development goals, and to facilitate the transition to a knowledge-based economy, as required by Vision 2030 and the Third National Development Plan (NDP III), our argument is that the country needs to invest more in education to improve the learning and teaching conditions, and to provide appropriate training to its educators (Government of the Republic of

Namibia, 2007).

Conclusion

There is an urgent need to review the senior secondary education paradigms and results, in order to ascertain their relevance to the Namibian context. This review must help in resuscitating our social contract by including members of the civil society. The education system of the future should also seek to allow for *multiple exit and entry points* that will facilitate continuous and life-long learning at secondary education level. Each exit point should have a corresponding list of competencies that will be seen to add value to both an individual and society.

The establishment of the Education and Training Sector Improvement Programme (ETSIP) aimed at enhancing the education sector's contribution to the attainment of strategic national development goals, and to facilitate the transition to a knowledge-based economy was a crucial initiative from government. Given the fact that ETSIP targets all areas of education, including early childhood, general education, tertiary education, vocational education and adult and lifelong learning, in the process of reform, the context has been set. Although they are challenges in terms of funding ETSIP, which seems to be an ambitious programme, its objectives are key to the achievement of quality education necessary for the country's transition to a knowledge-based society.

It is worth noting therefore, that the successful implementation of ETSIP might support a viable education policy that provides an adequate framework within which to assess and act upon possible contradictions between the political will and educational outcomes. Its curriculum content should reflect the aspirations of the people, and meet the needs of both the individual and the changing society. This is imperative in ensuring that there is a "Peoples Contract" with their leadership, a commitment to building a society that is just and fair for all Namibians.

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The American Economic Recovery and Reinvestment Act of 2009: impact on state higher education policy

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Abstract. The economic collapse of 2008-2009 led President Barack Obama to propose and the Congress to pass the American Recovery and Reinvestment Act of 2009 (ARRA). This legislation offered the potential for a one-time massive infusion of federal funding into the higher education systems and institutions in the United States. Three of the best known higher education policy groups in the United States, the Delta Project on Postsecondary Education Costs, Productivity, and Accountability (DPPECPA); the National Center for Public Policy and Higher Education (NCPPE); and the National Center for Higher Education Management Systems (NCHEMS), in February, 2009 issued a joint policy advisory to assist state fiscal policymakers and higher education leaders in setting spending priorities for the higher education funds provided by the legislation. This paper reports the results of a fifty-state survey of State Higher Education Executive Officers (SHEEOs) aimed at determining whether the joint policy advisory influenced state fiscal policymakers' decision making and the impact to date of the legislation on higher education policy.

Keywords: American Recovery and Reinvestment Act of 2009, *post-secondary* education, spending priorities for the American Recovery and Reinvestment Act of 2009, State Higher Education Executive Officers

I. Introduction

The last year of George W. Bush's administration, 2008, and the first year of Barack Obama's administration, 2009, witnessed the most severe economic collapse in the United States since the Great Depression of the 1930s. What began as a slump in the real estate market brought on by abuses within the subprime mortgage industry turned into the Wall Street crisis with the very real potential for collapse of the banking, securities, and insurance industries, bankruptcy of the automobile industry, and, some argued, sending the entire economy into a deep recession. Economists and historians will

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debate the root causes for years to come, and politicians will engage in all-too-familiar scapegoating regarding whether Republican or Democrat policies were responsible. While there will be differing interpretations of what led to the collapse, there was at the time widespread agreement that worsening economic conditions necessitated a heretofore unseen response by the federal government. On that fact most Americans and their elected leaders in Washington agreed.

During the waning months of his administration, President Bush initiated a response by the federal government that involved economic and spending policies that were, to say the least, not business as usual for a Republican administration. While some members of Congress, particularly Republicans in the House of Representatives, resisted President Bush's call for prompt action, the Congress ultimately consented to proposals by his administration for what came to be known as the TARP, Troubled Asset Relief Program, to empower the federal government to purchase from institutions assets and equity designed to strengthen the financial sector of the economy. The TARP was passed as the Emergency Economic Stabilization Act of 2008; it authorized the federal government, through a new Office of Financial Stability within the United States Department of Treasury, to purchase or insure up to \$700 billion of "troubled assets." The Bush administration worked to the very last day of his term of office implementing and refining the details of the TARP, and members of the Bush administration worked closely with the new President-Elect's Transition Team to ensure that the federal government's initiatives to deal with the economic crisis continued unabated.

After the Bush administration left office, and even prior to its departure, there was strong criticism of the manner in which the first phase of the TARP was implemented: claims that monies were not being well accounted for and that the administration had done too much to assist wealthy financial institutions and too little to assist ordinary citizens who were losing their homes through mortgage foreclosures. There was also much controversy over salary bonuses given to executives of some of the financial institutions that were beneficiaries of the TARP. Be that as it may, the Bush administration must be given credit for aggressively pursuing policies designed to deal with the financial crisis and stabilize the economy. And while President-Elect Obama largely refrained from criticizing President Bush during the transition period, it became clear after his election that, by the time he took the oath of office on January 20, 2009, he would be prepared to go far beyond what the Bush administration had done in enhancing the federal government's efforts to bring about a much needed economic recovery. With charisma reminiscent of John F. Kennedy and an optimistic leadership style approaching that of Franklin D. Roosevelt, Barack Obama entered the White House with an omnibus economic recovery package that would become the American Recovery and Reinvestment Act of 2009 (ARRA). Included among its many provisions were a significant number that would offer the potential for a much-needed infusion of federal funds into the nation's elementary, secondary, and *post*-secondary education systems.

In an attempt to assist state policymakers, the Delta Project on Postsecondary Education Costs

(DPPECPA), the National Center for Public Policy and Higher Education (NCPHE), and the National Center for Higher Education Management Systems (NCHEMS) in February, 2009, in the same month in which President Obama signed the legislation into law, issued a joint policy advisory, Postsecondary Education Spending Priorities for the American Recovery and Reinvestment Act of 2009, suggesting that state policymakers should not “spend ARRA resources to base budget gaps” but rather “for making maximum use of this opportunity to protect access and success in higher education, and to better position institutions for the future” (DPPECPA, NCPHE & NCHEMS, 2009, p.1).

The purpose of this paper is to examine the impact of the ARRA on state higher education policy in the United States and to determine to what extent the joint policy advisory issued by DPPECPA, NCPHE, and NCHEMS has influenced the decision-making of state fiscal policymakers. After describing the higher education provisions of the ARRA and discussing the recommendations of the joint policy statement, the paper will present the results of a fifty-state survey which queried State Higher Education Executive Officers (SHEEOs) about ARRA spending decisions and the influence of the joint policy statement in their respective states. The concluding section of the paper will offer analysis of the impact of the ARRA on state higher education policy to date.

II. The American Recovery and Reinvestment Act of 2009

The ARRA, Public Law 111-5, is a comprehensive economic stimulus package designed to alleviate the economic collapse of 2008-2009. It is based mainly on proposals made by President Obama, but it also reflects major modifications in his proposals that were required to obtain sufficient support for its passage. For example, Senate Republicans insisted upon nearly \$150 billion of changes to the House version of the bill, which had more closely reflected the proposal made by the President. The final Conference Report which President Obama signed into law on February 17, 2009 is nominally worth \$789 billion of which \$507 billion is in spending programs and \$282 billion in tax relief. The law cannot be said to have been a bipartisan effort; it reflects the political makeup of the Congress, with the Democrats controlling both the House of Representatives and the Senate. The House vote was 246-183. All 246 yeas were Democrats, and no Republicans in the House voted for the bill. In the Senate the vote was 60-38, with only three Republicans voting for it. All Democrat members in the Senate voted in the affirmative.¹ The legislation in effect reflects a Democrat controlled Congress working hand-in-glove with a Democrat administration. It also reflects the diminished position of the Republican Party in the Congress after the November, 2008 elections.

The stated purposes of the law are:

- (1) to preserve and create jobs and promote economic recovery,
- (2) to assist those most impacted by the recession,

¹ See Final Vote Results for Roll Call 70, <http://clerk.house.gov>, and Roll Call 59 Vote Results, <http://senate.gov>

- (3) to provide investments needed to increase economic efficiency by spurring technological advances in science and health,
- (4) to invest in transportation, environmental protection, and other infrastructure that will provide long-term economic benefits, and
- (5) to stabilize state and local government budgets, in order to minimize and avoid reductions in essential services and local tax increases.

These purposes of the law are to be achieved by relief programs for both individuals (\$237 billion) and corporations(\$51 billion), by spending programs in the areas of healthcare (\$147.7 billion); education (\$90.9 billion), by aid to low income workers, the unemployed, and retirees (\$82.5 billion), by infrastructure investment to include roads, bridges, railways, sewers, other transportation, government facilities and vehicle fleets (\$80.9 billion), and by investment in energy (\$61.3 billion), housing (\$12.7 billion), scientific research (\$8.9 billion), and various other areas (\$18.1 billion).²

While there was widespread agreement among the American people and their elected officials that the federal government had to act to counter the negative impacts of the economic collapse of 2008-2009, opinions are mixed on the question of whether the ARRA is the answer to the problem. Just as debate in the Congress has been heated, so too has been debate among economists and the public, and especially among conservative Republicans. Many noted economists support the notion of a large economic stimulus to counter the downturn but some of these do not believe the legislation, as passed, is the answer. There are those who, simply stated, believe that the legislation is absolutely the wrong thing for the federal government to have done, in essence arguing that massive government spending on the scale called for in the legislation will be limited in its positive impacts on the economy and will magnify the national debt. Supporters of the legislation point to needed improvements that will be wrought by the spending programs for infrastructure, transportation, research, and education.

While opinions on the legislation vary among economists and the general public, the higher education community, like most government entities whose mission is the provision of services, is optimistic about the legislation's potential for preventing the loss of vital government services and for making needed future improvements. The legislation offers tremendous potential for higher education systems and institutions. State policymakers and higher education leaders are fortunate that the legislation did not direct how the funds available to states for higher education are to be spent. It provides state fiscal policymakers much discretion in this regard. Given the latitude provided to state fiscal policymakers in regard to higher education funds provided by the legislation, some of the United States' most respected higher education policy analysts perceived President Obama's signing the legislation into law as a real opportunity to preserve "historic commitments to affordability and

² For details of the legislation and to monitor the spending of funding it provides for various programs, see <http://recovery.gov>

access” now threatened by adverse economic conditions and as a potential funding source for “investment in instructional improvements needed to meet future needs for educational attainment.” (DPPECPA, NCPPE & NCHEMS, 2009, p.1).

III. Joint Policy Advisory on the American Recovery and Reinvestment Act of 2009

In response to passage of this legislation, DPPECPA, NCPPE, and NCHEMS in February, 2009 issued their joint policy statement Postsecondary Education Spending Priorities for the American Recovery and Reinvestment Act of 2009. Collectively and individually, these three policy groups have a record of credibility and success in advising state policymakers on strategic issues in higher education. Of the three, NCHEMS has the longest history; for more than thirty years. NCHEMS's mission has been “to improve strategic decision-making in higher education for states and institutions in the United States and abroad.” It does so by

. . . bridging the gap between research and practice by placing the latest concepts and tools in the hands of higher education policymakers and administrators. Since its founding, NCHEMS has received widespread acclaim for developing practical responses to the strategic issues facing leaders of higher education institutions and agencies. . . NCHEMS develops information and policy tools targeted at policymakers and institutional leaders that can help them set strategic directions and evaluate their effectiveness. . . A particular hallmark of what [NCHEMS does] is identifying and analyzing data drawn from multiple sources to help solve specific policy and strategic problems.³

The NCPPE is the second most senior of the three policy groups, having been founded in 1998. Its purpose “As an independent, nonprofit, nonpartisan organization” that “is not affiliated with any institution of higher education, with any political party, or with any government agency” is to

promote public policies that enhance Americans' opportunities to pursue and achieve high-quality education and training beyond high school. [It] prepares action-oriented analysis of pressing policy issues facing the states and the nation regarding opportunity and achievement in higher education. . . The National Center communicates performance results and key findings to the public, to civic, business and higher education leaders, and to state and federal leaders who are poised to improve higher education policy.⁴

The NCPPE is best known for developing and publishing biennially “Measuring Up: The National Report Card on Higher Education”. The report card grades the fifty state systems of higher education in the United States on five criteria: preparation for college/university; participation rates in

³ See <http://www.nchems.org/>

⁴ See <http://highereducation.org/>

higher education; affordability of a college/university education; benefits a state derives from an educated population; and the actual learning that takes place within a state's colleges and universities.

The Delta Project as the DPPECPA is commonly known has as its mission "to help improve college affordability by controlling costs and improving productivity." It is

. . . focused on the spending part of the college cost problem — how spending relates to access and success, and ways that costs can be controlled without compromising quality. [DPPECPA believes this] requires a change in traditional approaches to higher education finance — from a focus on inputs (enrollments) and efficiency measures (funding *per* student) — to an integrated view of productivity, and how funds are used to ensure access, equity, and successful learning results.⁵

Jointly these three groups through their policy advisory Postsecondary Education Spending Priorities for the American Recovery and Reinvestment Act of 2009 made seven recommendations to guide state fiscal policymakers' decision making with reference to higher education funds available in their states.

- (1) Promote investment, not maintenance.
- (2) Consider strategic re-allocation.
- (3) Condition funds on accountability for meeting priorities.
- (4) Use ARRA funding as a bridge to a long-range fiscal plan.
- (5) Avoid creating unsustainable funding dependencies.
- (6) Use funds to improve educational quality and productivity enhancements.
- (7) Create investment pools for longer-term reforms (DPPECPA, NCPHE & NCHEMS, 2009, pp.1-4).

In making these recommendations, the three policy groups, recommend to state fiscal policymakers that they view President Obama's stimulus package as a one-time opportunity to invest in the future. They call on policymakers to view the funding to be made available to higher education as a long-term opportunity to bring about needed change to enable the nations' colleges and universities to meet the educational challenges of the twenty-first century rather than view the legislation as a short-term solution to budget shortfalls caused by the economic crisis. Funding decisions should not focus upon maintaining the *status quo*, the preservation of outdated programs. Rather funding decisions should focus upon initiatives that are in line with current and planned future state priorities. Further, they argue against across-the-board allocations to all colleges and universities, allocating equitable shares to all. Rather, state fiscal policymakers should target those institutions for funding, be they public or private, for-profit or not-for-profit, that offer the greatest

⁵ See <http://deltacostproject.org/>

potential for improving the quality of undergraduate education and for enhancing opportunities for access to higher education.

Higher education funding available under the ARRA should be allocated in a manner that advances state higher education policy priorities. Receipt of such funds by colleges and universities should be conditional upon support of state-set priorities, not necessarily institution-set ones. Funding should be targeted on those institutions that buy into such state priorities as ensuring affordability and access for all students, particularly those most at risk of not being served by the current system. Sustainable fiscal viability, the joint policy advisory argues, should be a high priority for state higher education policymakers. Consequently, an institution should be required, as a condition of receiving funds under the legislation, to develop a fiscal plan that “emphasizes increasing access, closing achievement gaps, and increasing attainment of certificates and degrees” (DPPECA, NCPPE & NCHEMS, p.3). Such plans should emphasize limiting tuition increases, providing increased need-based financial aid, and pursuing increased state funding for growth while recognizing the real potential for limited revenue growth.

One-time funding under the ARRA should not be used by either state policymakers or institutional administrators to create funding dependencies that cannot be sustained. Institutions should not, in other words, create expectations among stakeholders that federal funding available under the legislation will be picked up by the state when the federal funding expires. Perhaps most importantly, state fiscal policymakers should use available funding to promote workforce development through job creation and improved educational quality and productivity enhancements. Such initiatives include improving physical plant efficiency, curricular redesign to increase cost-effectiveness of educational delivery, and creating opportunities for unemployed students to work and study simultaneously. Finally, given that recovery from the economic collapse of 2008-2009 will not occur quickly, DPPECA, NCPPE, and NCHEMS argue in their joint policy advisory that fiscal policymakers should, if possible, create small “investment pools” to fund reforms that will be needed after 2009.

IV. Survey of State Higher Education Executive Officers (SHEEOs)

Survey Design

In making their recommendations for higher education priorities under the ARRA, the three policy groups sought to provide a funding template for state fiscal policymakers and higher education leaders. Have they been successful? The three policy groups have credibility with state policymakers and with higher education leaders, but have their recommendations had an impact on decision making at the state level regarding the expenditure of funds made available for higher education? In an attempt to answer this question, a survey instrument was developed reflecting the seven major

recommendations of the joint policy advisory, including the substantive detail of each recommendation. The survey instrument was then sent to the SHEEO in each of the fifty states in the United States. Part I of the survey sought to obtain the observations of SHEEOs regarding the response of fiscal policymakers in their states to the recommendations by DPPECPA, NCPPE, and NCHEMS. Part II of the survey solicited information on the actual expenditure of ARRA higher education funds by category at the state level. The SHEEOs are well positioned to know what the response has been in their states. They play a crucial role in the policy decisions made at the state level affecting the expenditure of ARRA higher education funds. They are, in fact, usually the most knowledgeable persons about overall higher education funding in their states by the very nature of their work. The focus of individual presidents and chancellors is the institution; the focus of the SHEEO is the entire state higher education budget.

Survey Results

The data collected from Part I of the fifty-state survey are reported in Tables 1-7, with each table reflecting the SHEEOs' response to the individual recommendations of the three policy groups. Of the fifty SHEEOs, eighteen responded to the survey, a return rate of 36%.

**Table 1. State Response to Policy Recommendation I
Investment, not maintenance**

Policymaker Focus	Yes (%)	No (%)
Have focused on future	5 (28%)	13 (72%)
<i>Type of future investment:</i>		
Economic Development	2 (11%)	
Workforce Development	1 (5%)	
Other	15 (84%)	
Total = 18		
Non-responses = 32		

**Table 2. State Response to Policy Recommendation II
Consider Strategic Re-allocation**

Policymaker Focus	Yes (%)	No (%)
Have allocated ARRA equitably	12 (87%)	6 (13%)
Have focused ARRA on increasing undergraduate education	2 (11%)	16 (89%)
Have focused ARRA funding on two-year and four-year institutions that make undergraduate education their priority	4 (22%)	14 (78%)
Have focused ARRA funding on private not-for-profit or non-profit institutions	0 (0%)	18 (100%)
Total = 18		
Non-responses = 32		

**Table 3. State Response to Policy Recommendation III
Condition Funds on Accountability for Meeting Priorities**

Policymaker Focus	Yes (%)	No (%)
Have required institutions to meet state priorities to receive to receive ARRA funds	4 (22%)	14 (78%)
Have made receipt of ARRA funds conditional upon protecting affordability for all students	4 (22%)	14 (78%)
Have increased need-based financial aid to offset tuition increases	5 (28%)	13 (72%)
Have made receipt of ARRA funding conditional upon ensuring quality entry-level students are accommodated	1 (5%)	17 (95%)
Total = 18		
Non-responses = 32		

**Table 4. State Response to Policy Recommendation IV
Use funding as a bridge to a long-term fiscal plan**

Policymaker Focus	Yes (%)	No (%)
Have made receipt of ARRA funding conditional upon development of financial plan		
<i>Have required long-term plan to include:</i>		
Increasing access	0 (0%)	18 (100%)
Closing achievement gaps	0 (0%)	18 (100%)
Increasing attainment of certificates and degrees	0 (0%)	18 (100%)
Indexing tuition to increases in per capita income	0 (0%)	18 (100%)
Providing need-based financial aid	1 (5%)	17 (95%)
Increasing state appropriations to fund enrolment growth	2 (11%)	16 (89%)
Total = 18		
Non-responses = 32		

**Table 5. State Response to Policy Recommendation V
Avoid creating unsustainable funding dependencies**

Policymaker Focus	Yes (%)	No (%)
Have required institutions to avoid one-time spending that creates unsustainable, dependencies	6 (33%)	12 (67%)
Have required institutions to develop revenue plans to fund post-ARRA	3 (16%)	15 (84%)
Total = 18		
Non-responses = 32		

Table 6. State Response to Policy Recommendation VI
Use funds to improve educational quality and productivity enhancements

Policymaker Focus	Yes (%)	No (%)
Have required/encouraged use of ARRA funds to increase physical plant efficiency	9 (50%)	9 (50%)
Retrofit buildings for energy efficiency	9 (50%)	9 (50%)
Reduce backlog of deferred maintenance	6 (33%)	12 (67%)
Make replacement of dated, less functional space a priority for new construction	2 (11%)	16 (89%)
Have required/encouraged investments in course design and curricula changes that will result in a more cost-effective curriculum	1 (5%)	17 (95%)
Redesign large undergraduate courses	1 (5%)	17 (95%)
Create cost-effective developmental models for statewide delivery	1 (5%)	17 (95%)
Redesign general education curriculum to enhance community college transfer	1 (5%)	17 (95%)
Have required/encouraged use of ARRA funds to improve graduate education	0 (0%)	18 (100%)
Reduce attrition rates in doctoral programs	0 (0%)	18 (100%)
Discontinue raiding undergraduate programs to subsidize marginal-quality graduate programs	0 (0%)	18 (100%)
Have required/encouraged use of ARRA funds to create work opportunities for unemployed students to earn and learn	1 (5%)	17 (95%)
Create paid internships	1 (5%)	17 (95%)
Expand work-study	1 (5%)	17 (95%)
Expand undergraduate research assistantships	0 (0%)	18 (100%)
Invest economic development funds in community services that involve students	0 (0%)	18 (100%)
Total = 18		
Non-responses = 32		

Table 7. State Response to Policy Recommendation VII
Create investment pools for longer-term reforms

Policymaker Focus	Yes (%)	No (%)
Prepared for long-term reforms required to recover from current economic crisis	7 (38%)	11 (62%)
Have created an investment pool with ARRA funds for reforms beyond 2009	0 (0%)	18 (100%)
Total = 18		
Non-responses = 32		

State Policymakers' Response to Policy Advisory Recommendations

Of the SHEEO respondents, 28% indicated that fiscal policy makers in their states heeded the policy advisory's recommendation to focus ARRA funding on future investments in higher education rather than upon maintenance; however, nearly three fourths, seventy-two percent, did not. Of those who did focus upon future investments, economic development and workforce development were indicated as priorities in 16% of the states that did focus upon future developments. An overwhelming majority of the respondents, 87%, indicated that policymakers did not follow the recommendation to consider strategic reallocation in their funding decisions, instead they were distributing ARRA funds equitably among the higher education institutions within their states. Likewise overwhelming majorities of the respondents indicated that state policymakers did not, as recommended in the policy advisory, emphasize increasing undergraduate education and funding for two- and four-year institutions that make undergraduate education their priority. Approximately one fourth of the respondents, 22%, 22%, and 28% respectively, indicated that their state policymakers did focus upon institutional accountability for meeting state priorities in their funding decision-making regarding the expenditure of ARRA funds, upon protecting affordability for all students, and upon increasing need-based financial aid to offset tuition increases. Conversely 78%, 78%, and 72% of the responding SHEEOs said that decision-makers in their states did not focus upon these priority areas.

Concerning the policy advisory's fourth major recommendation that state policymakers use ARRA funding as a bridge to long-term state fiscal plans, the respondents indicated almost unanimously that this recommendation was completely ignored. The specific details of this recommendation, increasing access, closing achievement gaps, increasing attainment of certificates and degrees, indexing tuition to increases in *per capita* income, providing increased need-based financial aid, and increasing state appropriations to fund enrolment growth, were ignored in 95% and 89% of the responding states

One third, 33%, of the respondents indicated that their state policymakers required higher education institutions to avoid one-time expenditures that create unsustainable dependencies, but only 16% of the respondents indicated that development of post-ARRA revenue plans were required in their states. Viewed differently, 67% of the responding states did not require higher education institutions to avoid creating unsustainable funding dependencies and 84% did not require post-ARRA revenue plans of their higher education systems. Of the responding SHEEOs, 50% said their states required or encouraged higher institutions to use ARRA funds to increase physical plant efficiency, including retrofitting buildings for energy efficiency (50%); reducing the backlog of deferred maintenance (33%); and making replacement of dated, less functional space a priority for new construction (11%).

Recommended investments in course design and changes resulting in more cost-effective curriculum were ignored by state fiscal policy-makers in 95%-100% of the cases. Likewise

recommendations to use ARRA funds to improve graduate education and to create work opportunities for unemployed students to earn and learn were ignored by 95%-100% of state policy-makers. Only 5% of respondents indicated that fiscal policy-makers in their states required or encouraged higher education officials to create paid internships or to expand work-study opportunities for unemployed students. The final recommendation of the policy advisory to create investment pools for longer-term reforms required to recover from the current economic crisis was heeded in only one third of the responding eighteen states, and the recommendation to create investment pools for reforms beyond 2009 was completely ignored by the responding states.

Expenditure of ARRA Funds by Category at the State Level

Part II of the survey asked responding SHEEOs to identify the “categories of expenditure of the higher education ARRA funds available” in their states. Responses to this part of the survey indicate that such funds have been used to fund the following types of activities in the eighteen states which responded to the survey: budget reductions; enrolment growth; fire safety improvements; deferred maintenance; protecting affordability; and to prevent tuition increases. The respondents were also asked which category of expenditures they identified received the highest priority in their states. The SHEEOs overwhelmingly identified restoration of budget cuts as the highest priority.

Conclusion: Impact of the American Recovery and Investment Act of 2009 on American higher education to date

The stated purpose of this paper at the outset was to “examine the impact of the ARRA on state higher education policy in the United States and to determine to what extent the joint policy advisory issued by DPPECPA, NCPPE, and NCHEMS has influenced the decisions of state fiscal policymakers.” This goal was achieved by administering a survey questionnaire reflecting the recommendations of the joint policy advisory to the State Higher Education Officers in the fifty states of the United States. Eighteen, or 36%, of those higher education officials responded to the survey. Their responses indicate that the joint policy advisory did impact on the decisions of state fiscal policymakers regarding the expenditure of ARRA funds made available to their states. The categories of expenditures outlined in the foregoing section of this paper indicate the types of activities that have been funded in the responding states. There were some major recommendations of the joint policy advisory that were entirely disregarded by state fiscal policymakers, for example using ARRA funds as a bridge to long-term fiscal plans; investing in course design and curricula changes resulting in a more cost-effective curriculum; improving graduate education; creating work opportunities for unemployed students to earn and learn; and creating investment pools with ARRA funds for reforms beyond 2009. In contrast, the state fiscal policymakers did respond in varying degrees to the

recommendations of the joint policy advisory to focus on investment rather than maintenance; to consider strategic reallocation; to make ARRA funds conditional upon accountability for achieving state results; and to avoid creating unsustainable funding dependencies. In sum, while none of the respondents to the survey stated directly that state fiscal policymakers in their state followed the recommendations of the joint policy advisory, their decision-making decisions do reflect many of the same priorities reflected in the thinking of the policy analysts at DPPECPA, NCPPHE, and NCHEMS. Like other state public services that have benefited from federal funding provided through the American Recovery and Reinvestment Act of 2009, so too have higher education systems and institutions throughout the United States.

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