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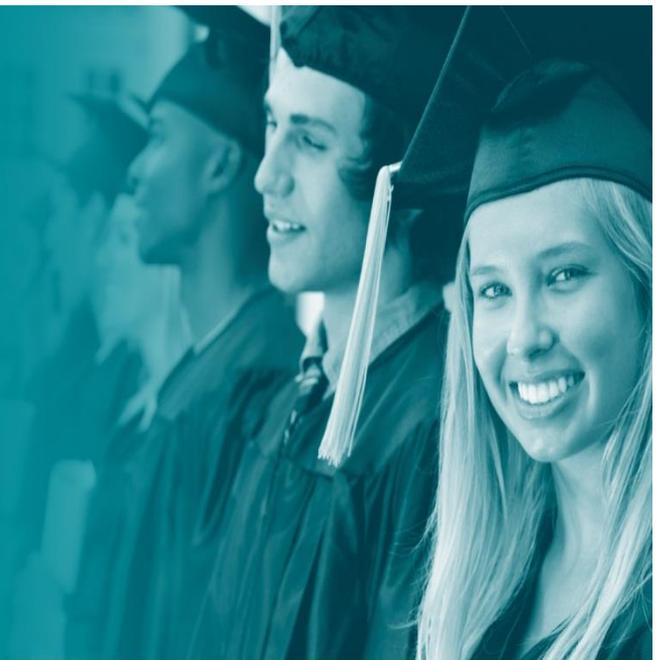
Outcomes-Based Funding: Current Status, Promising Practices and Emerging Trends

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Introduction

Probing the question of the effectiveness and applicability of outcomes-based funding policy for higher education in Ontario requires an approach that (1) reviews current research and policy literatures on this topic and (2) differentiates and contextualizes the knowledge available. In order to evaluate successful and unsuccessful policy features and institutional practices, it is important to take stock of current policies across varied provincial, state, regional and national contexts, as well as over time. The topic of outcomes-based funding has received considerable and continuing attention in the research and policy literatures, and syntheses of these are currently available (e.g., Dougherty & Reddy, 2011, 2013; Fröhlich, Schmidt & Rosa, 2010; National Conference of State Legislatures, 2013). However, a comprehensive policy-relevant perspective can only be a product of extended study that considers policy contexts internationally and provides an actionable, differentiated view on the research and policy in this area. This study will examine policy and research literature to address the following research questions:

1. What provinces, states and countries are funding their public postsecondary systems on the basis of outcomes, and what proportion of funding is devoted to these funding mechanisms?
2. Have outcomes-based funding policies in place within jurisdictions changed over time and, if so, how?
3. How has the implementation of performance-based funding affected the performance of higher education institutions?
4. What successful practices can be identified based on others' experiences?
5. What unsuccessful practices can be identified based on others' experiences?
6. What are the overall trends in outcomes-based funding in other jurisdictions?

Outcomes-based funding, or performance-based funding¹, is broadly defined as the linking of state funding for postsecondary and tertiary institutions to institutional performance based on identified outcomes. The history of higher education outcomes-based funding in the United States is marked by two iterations of funding models. The first iteration, implemented as early as 1979 in Tennessee, predominantly took the form of additional funding beyond regular appropriations to institutions, tying this funding to student outcomes such as graduation rates rather than to enrollment numbers exclusively. As part of a broader push for institutional accountability and efficiency modeled on market-based theories of financial incentives, this idea took hold in more U.S. states in the 1990s. This round of experimentation in performance-based funding was criticized for policies that focused too simplistically on inappropriate measures or that included levels of state higher education appropriations insufficient to induce institutions to change (Ardis, 2013; Dougherty et al., 2012; Lederman, 2008). Consequently, perhaps, some states instituted performance-based funding policies for short periods of time only, returning to enrollment-based funding when external economic conditions improved or when the performance funding interventions seemed to produce little effect.

The second iteration of performance-based funding, sometimes called "Performance Funding 2.0," has developed over the last several years and is characterized by a more integrated approach under which regular appropriations are based on formulas that link funding to student outcomes and that often include

¹ Taking the lead from scholars and researchers writing on the topic in the last 10 years in particular, we use the terms 'performance-based funding' and 'outcomes-based funding' more or less interchangeably throughout this report.

changes in institutional practice among the outcomes. The approach has gained momentum in the US particularly in the wake of the recent economic recession (Dougherty & Reddy, 2013; McKeown-Moak, 2013). While McKeown-Moak (2013) points to a number of reasons for this development related to the economic downturn, accounts of this shift often suggest a broader timeline. Some commonly cited examples of Performance Funding 2.0 were introduced well before the onset of the crisis, and many examples cited by Dougherty and Reddy (2013) were implemented after the recession's "technical" end.

The most prevalent theory of action implicit in performance-based funding policy discussions, as noted by Dougherty and colleagues (Dougherty & Natow, 2010; Dougherty & Reddy, 2011, 2013), posits that outcomes-based funding models incentivize institutions to change their behavior in ways that will result in higher student achievement. This logic model devotes more explanation to the steps leading from funding to institutional practice (immediate impacts) but has less to say about how the institutional changes lead to improved student outcomes (intermediate and ultimate impacts). In this way, critics note, the model sidesteps the inherent complexity of the institutional task of improving student outcomes. This key shortcoming lies in an area in which research can contribute to understanding. New research efforts have the potential to illuminate how and in what forms outcomes-based funding can make a difference in achieving policy goals for access and success. Clearly, however, more studies with rigorous multivariate analysis of student outcomes are needed in states with longer-standing Performance Funding 2.0 policies in place (e.g., Indiana, Pennsylvania, Tennessee) (Dougherty & Reddy, 2013).

Although performance-based funding has been at the center of steady research activity in recent years (Dougherty et al., 2012; Dougherty & Reddy, 2011, 2013; Enders et al., 2013; Frøhlich, 2011; Frøhlich et al., 2010; Hicks, 2012; Hummel, 2012; Jenkins & Shulock, 2013; McKeown-Moak, 2013; Miao, 2012; Quintero, 2012; Rabovsky, 2012; Sanford & Hunter, 2011), the focus in these studies is still mainly on early performance-based funding models and on a single state, region or type of institution. Furthermore, few studies employ the kind of multivariate analysis needed to support even provisional conclusions about the effects of policy, controlling for other relevant factors. Finally, as Dougherty and Reddy (2013) point out, most qualitative research on this topic places too much emphasis on the perceptions of stakeholders without sufficient analysis or triangulation. The historical context and limitations aside, collectively, recent studies have found that performance funding has an effect on institutions' behavior. However, they have shown little direct association between performance-based funding and improved student outcomes.

To shed light on the central questions guiding this project, it is important to put emerging models for public funding of higher education institutions into perspective and to explore new possibilities for supporting student access and success. Starting from the assumption that funding formulas may play a role in facilitating and shaping institutional improvement, our team set out to gather information from postsecondary systems that have previously implemented outcomes-based funding models as a way of encouraging institutional efficiency, research and teaching productivity, and improved student outcomes. Examining the specifics of selected jurisdictions across multiple national contexts will help build an understanding of the potential effectiveness and applicability of outcomes-based funding systems in varying contexts.

Outcomes-based funding has been at the center of an increasing number of research studies in recent years; nevertheless, the empirical literature on these questions remains relatively small, producing few results on the effects of outcomes-based funding models on targeted student and institutional outcomes. Moreover, as noted above, many studies to date have limitations – for example, a focus on a single institution or type of institution, or incomplete analysis of qualitative data – detracting from their usefulness in answering the questions at the center of this review. Only a very few studies use multivariate analytical techniques to help control for alternative explanations for shifts in student outcomes. Finally, most of the studies focus on early iterations of performance-based funding systems and therefore cannot shed light on new approaches emerging through Performance Funding 2.0.

Given these limitations, we are cautious in drawing conclusions from the literature and exercise care to distinguish the findings of studies that provide more reliable and relevant guidance from other findings. Our approach to meeting the goals of this project entailed a qualitative study in which we reviewed insights from the current research and policy literatures, differentiating and contextualizing the knowledge available. Considering the differences in policy contexts across jurisdictions allowed us to conduct a more comprehensive analysis of how performance-based funding systems have been designed, implemented and evaluated for effectiveness. In this way, we hope to glean the best and clearest guidance available from the research. This report from our study provides a review of the policy and research literatures focused on performance-based funding systems to address the research questions identified at the outset of the report.

In the following section, we share the conceptual and guiding frameworks of our study and identify the methods employed to complete this study. Next, we summarize our review of policies in various jurisdictions. Following the policy discussion, we present a targeted review of recent empirical literature, guided by four theories of action that underpin performance-based funding policies. The report will conclude with promising and unpromising practices identified via the literature and across varied contexts.

Conceptual Frameworks and Methods

Our research approach entailed a systematic review and analysis of relevant policy features incorporated into outcomes-based funding models in the US, Canada, Australia and selected countries in Europe – jurisdictions chosen based on activity in outcomes-based funding and relevance to Canadian higher education policy contexts (see Appendix A for full details on our methods in this study). Building on the work of Dougherty and Reddy (2013), we organized the review of policies and research around three types of outcomes:

- **Immediate impacts:** Institutional leaders' awareness of policies, goals, and their institution's performance on relevant measures; institutional leaders' perceptions of policies; incorporation of the outcomes-based funding incentives and requirements into financial decisions and other aspects of institutional practice.
- **Intermediate outcomes:** Student outcomes reflecting progress toward improved completion rates at intermediate time points in students' pathways through college (e.g., student retention, transfer, credit completion thresholds, successful completion of remediation).
- **Ultimate outcomes:** Student outcomes such as completion of degree or certificate, as well as workforce outcomes.²

This review not only considers the impacts of policies on student outcomes (intermediate and ultimate, outlined above) but also examines the immediate impacts of policy such as shifts in institutional practices. We developed an inventory to capture relevant policy features, including indicators of the quality of implementation, the depth of financial supports and the student outcomes associated with the policy. Analysis of this inventory enabled us to present a broad yet contextualized description of performance-based funding

² Dougherty and Reddy's (2013) analysis centered on a typology of outcomes, including *immediate impacts* and *intermediate and ultimate outcomes*. We adopt this typology as a useful framework for understanding the variation in policy goals, as well as for describing the existing research on outcomes-based funding. Nevertheless, we acknowledge that this terminology is not used widely in policy research, in which focusing on processes, outputs, and outcomes, is more common.

policies across jurisdictions. In turn, this analysis and description of policies provided important background for our discussion, in the second part of this report, of the research on the effects of outcomes-based funding.

After establishing the context with the review of outcomes-based funding policies in selected jurisdictions, the report shares insights gained from our thorough review of the research literature published since 2003. As indicated previously, to date research has produced little evidence that outcomes-based funding is associated with desired institutional and student outcomes. However, both Dougherty and Reddy (2013) and Tandberg, Hillman and Barakat (2013) suggest that more newly established performance budgeting systems, along with longer time frames for studies of the effectiveness of performance-based funding, may demonstrate the efficacy of outcomes-based funding in the future. With these caveats, a detailed literature review of the research on these questions provides information on the observed and potential effects of these policies and can help address the research questions of this project.

The reviews of policy information from past and current performance-based funding systems and of recent research on this topic have also allowed us to identify promising practices and insights about emerging trends in outcomes-based funding. After a discussion of the findings on the effects of outcomes-based funding on student outcomes, we highlight key themes in the research suggesting policy features that may be most promising or unpromising. This includes information about design, implementation and effectiveness, although most of the promising practices identified in the literature are linked to immediate impacts (e.g., shifts in institutions' perceptions and practices) rather than to student outcomes. The report concludes with a discussion connecting research findings with insights on current and emerging issues forwarded by three expert consultants interviewed for this project.

Review of Policies in Selected Jurisdictions

Outcomes-based funding plays an important role in higher education public policy across international contexts. Outcomes-based funding policy is longstanding and widely incorporated in the United States, with 22 or more states having adopted this type of policy in some form as of 2013. Policies are also in place in some European countries and in Australia, although arguably with differing emphases and goals. In Canada as well, policy discussions and some experimentation with outcomes-based funding have become an important and emerging thread. Studies conducted by the Organisation for Economic Co-operation and Development (OECD), the World Bank, and others have documented and contributed to discussions on outcomes-based funding of higher education in Asian and African countries as well (Ahmad, Farley, & Naidoo, 2012; Butler, 2010; Essack, Farley, & Naidoo, 2010; World Bank 2010), although these contexts are outside the scope of this review. Depending on the definition of outcomes-based funding applied and on the stage of implementation, the reported numbers of outcomes-based funding systems currently in place varies across reports of policy research. However, for the purposes of this study, we have identified policies in 30 jurisdictions to review according to the rationale discussed in the following paragraph.

Recent publications on performance-based funding in the US have yielded some conflicting information on whether or not a policy was in place in 2013 (Friedel, Thornton, D'Amico & Katsinas, 2013; Hillman, Kelchen & Goldrick-Rab, 2013; NSLC, 2014). For this reason, we used a triangulation of sources to identify the states where performance-based funding is currently used. These three sources were two reports – *Performance-Based Funding: The National Landscape* (Friedel, Thornton, D'Amico & Katsinas, 2013), *Recommendations for the Effective and Equitable Implementation of Performance-Based Funding for Wisconsin Higher Education* (Hillman, Kelchen & Goldrick-Rab, 2013) – and the National Conference of State Legislatures

website.³ Any state that was reported as currently using performance-based funding by at least two of these three sources was included in the study, resulting in the inclusion of 17 U.S. states. Nine countries from Europe were also included, along with Australia and three Canadian provinces. The European countries were selected with consideration given to region, population size, economic condition and recent reforms in the higher education sector. Appendix A, Table 4 provides the list of jurisdictions included in the study. Appendix B summarizes data on the percentage of higher education allocations linked to outcomes.

The following section of the report focuses on the policy review questions posed in the introduction (questions 1 and 2 as outlined on p. 3, above) . A general picture of performance-based funding in the US, Europe, Canada and Australia, as well as specific information on the use of performance-based funding in selected jurisdictions, will be the highlights of this section.

United States

According to Friedel, Thornton, D'Amico and Katsinas (2013), 22 states are now using some form of performance-based funding. While seven states are in transition to establishing performance-based funding systems, 10 more states are formally discussing the use of performance-based funding in higher education. A research report sponsored by the Ontario Confederation of University Faculty Associations (OCUFA, 2006) relates that, as of 2000, 37 of the 48 U.S. states had used performance indicators in some way. Using performance measures, however, does not necessarily mean that performance-based funding is in place. Dougherty and Reddy (2013) identified 27 states that used performance-based funding at some time. Of these, two-thirds (18) had abandoned the system at some time, either temporarily or permanently. Subsequently, 10 of the 18 reinstated outcomes-based funding models, while eight never used performance-based funding models again after their initial implementation and discontinuation. Table 1 lists the states and their experiences with performance-based funding.

Table 1: States that have had Performance Funding Programs at some point

State	Performance Funding Years in Operation	PF 2.0
Arkansas	1995–1997, 1999–2001, 2007–present	Approved 2011; funding to begin FY 2013
Colorado	1994–1996, 1999–2004, 2011–present	Funding to begin 2016
Florida	1994–2008 (funding ended); involved two different programs	
Georgia	2006–2008	
Idaho	2000–2005 (however, there is still some question about whether Idaho has indeed had performance funding)	
Illinois	1998–2002 (funding ended), 2011–present (funding planned to start in FY2013)	
Indiana	2007–present	2009–present
Kansas	1999–present; involved two different programs	

³ See <http://www.ncsl.org/issues-research/educ/performance-funding.aspx>

State	Performance Funding Years in Operation	PF 2.0
Kentucky	1994–1998, 2008–present	
Louisiana	2008–present (program adopted in 2001 was not funded)	2010–present
Michigan	2011–present	
Minnesota	1994–1998	
Missouri	1993–2002, 2013–present (funding expected to begin FY2014)	
New Jersey	1999–2003	
New Mexico	2003–present	2012–present
New York	1998–2007 (SUNY), 2000–present (CUNY)	
North Carolina	1999–2008 (funding ended)	
Ohio	1995–2008, 2009–present	2009–present
Oklahoma	1997–2000, 2001–present	
Oregon	1999–2000, 2007–present	
Pennsylvania	2000–present	2002–present
South Carolina	1996–2002 (funding ended)	1996–2002
South Dakota	1997–2002, 2004–present	
Tennessee	1979–present	2010–present
Texas	1999–2003, 2007–present; new system will be proposed in 2013	
Virginia	2005–present	
Washington	1997–1999, 2007–present	

Source: Dougherty and Reddy (2013, pp. 20-21).

While the adoption of outcomes-based funding models in various forms dates back to Tennessee in 1979, the last several years have seen increased activity and new approaches in this area. New policies with more integration of outcomes-based funding into larger proportions of state allocations to institutions and employing more sophisticated performance measures have become more prevalent in this new wave of activity, often referred to as “Performance Funding 2.0” (Dougherty & Reddy, 2013).

As of fall 2013, seven states had Performance Funding-2.0-type funding models in place: Pennsylvania (2002), Indiana (2009), Ohio (2009), Louisiana (2010), Tennessee (2010), New Mexico (2012) and Arkansas (2013). In addition, the state of Colorado will begin disbursing funds in 2016 using a new performance funding model. These models incorporate performance-based funding as a part of the regular state funding formula rather than adding it as a bonus to regular appropriations. Even though these new funding mechanisms incorporate student outcomes measures, such as degree and course completion or job placement (the latter mostly for community colleges), they generally include enrollment as the largest single formula driver (Dougherty & Reddy, 2013).

In addition, as of 2013, nine more states had performance-based funding models in place that were not specifically of the Performance Funding 2.0 variety. Illinois, Michigan and Washington, for example, tied

funding to performance at a rate of 1%, 3% and 3.5 million USD, respectively (National Conference of State Legislatures, 2014). In Illinois, where only 1% of state funds were tied to performance, indicators such as degree completion and amount spent per awarded degree were used to score institutions. Additionally, Illinois schools received bonuses for enrollments of low-income and minority students, and also for producing degree completions in science, technology, engineering and math (STEM) fields. During the first year, Illinois institutions did not experience significant losses or gains in funding, simply due to the small percentage of performance-based funding. In Michigan, the higher education budget was passed with a 3% increase (equivalent to \$36.2 million) in funding over the last year for public universities. The new funding will be tied to performance measures including graduation rates; number of degrees awarded in STEM and other critical fields; and research and development expenditures. The Michigan formula also includes an incentive for universities that do not increase tuition by more than 4%. To be eligible for the funding, universities must participate in the state's student transfer network, have reverse transfer agreements in place with at least three community colleges, and accept dual enrollment credits (NCSL, 2014).

Tennessee and Pennsylvania provide particularly useful examples to discuss in more detail. Tennessee has the most experience with performance-based funding, and its most recent policy revision incorporates this funding at the highest rate in the nation, with performance measures playing a role in 100% of the funding for Tennessee's higher education institutions. Pennsylvania is an important example because the state's program affects only four-year public institutions. Both Tennessee and Pennsylvania also revised their funding schemes from existing 1.0 models, rather than initiating a new policy on the Performance Funding-2.0 model, as Indiana did in 2009.

Tennessee is the first state that established outcomes-based funding in higher education, in 1979, and although the system has changed many times over the years, it has been continuously in place in some form since its initial adoption. The state's new Performance Funding-2.0 policy was established in 2010 under the Complete College Tennessee Act. The new act completely converted the previously enrollment-driven formula to a predominantly outcomes-based formula, with funding starting in the 2011–2012 academic year. It will take three years for the program to take full effect in Tennessee. This gradual implementation was incorporated as a safety net, so as to avoid overly drastic or sudden changes for institutions (Dougherty & Reddy, 2013). Metrics for adult learners (over age 25) and low-income students are weighted more heavily, with additional weights applied to each outcome depending on the priority and institutional mission. Points are awarded based on outcomes metrics, which are then multiplied by the Southern Regional Education Board (SREB) average salary to monetize the formula. Fixed costs and the Quality Assurance program funds (accreditation, student satisfaction and licensure exam pass rate) are added on (NCSL, 2014).

Funding for universities in Tennessee's new 2.0 program is based on the following indicators: students' accumulation of 24, 48 and 72 credit hours; bachelor's, master's, doctoral and law degrees granted; research/grant funding; transfers out with 12 hours; degrees granted per 100 full-time equivalent; and the six-year graduation rate. Community college metrics include students accumulating 12, 24 and 36 credit hours; dual-enrolled students; associate's degrees granted; graduates placed in jobs; remedial and development success; transfers out with 12 credit hours; workforce training (contact hours); and awards granted per 100 full-time equivalents (Dougherty & Reddy, 2013; NCSL, 2014). The policy includes further differentiation within sectors as well, in terms of the weighting and choice of measures. In this case, each institution has some choice about which measures are most important to its mission, and the measures designated as more important are weighted more heavily in the formula.

Pennsylvania, the second U.S. state with a significant history of performance-based funding, initially started its program in 2002 and revised it in 2010. The state's new performance-based program applies only to public four-year colleges and each university is measured on ten indicators. Five of these indicators are applied to all institutions and five are selected by individual institutions. The common performance indicators include

access (closing the access gap and faculty diversity); student success (degrees conferred and closing the achievement gap); and stewardship (securing private funding). Of the five institutional selections, one of the indicators must be in the stewardship category while the rest can be developed by the institutions with the approval of the state's chancellor of higher education. Because at least half of the indicators (more, depending on institutions' selections) are input-based, the policy is in some ways hard to identify as modeled on outcomes-based funding (Dougherty & Reddy, 2013).

Selected European Contexts

Higher education funding has shifted in recent years toward performance-based funding in the European context as well. Jongbloed (2010) identified the degree of performance-based orientation in funding mechanisms as high in 18 European countries (Austria, Belgium [Flanders], Denmark, Estonia, Finland, France, Germany, Greece, Iceland, Italy, Netherlands, Norway, Poland, Romania, Slovakia, Slovenia, Spain, Sweden and the UK), compared to only five in 1995 (Denmark, Netherlands, Poland, Sweden and the UK) (Jongbloed, 2010, p. 21). Although no country in Europe employs a 100% performance-based funding model like the one currently emerging in Tennessee, there are nevertheless several programs worth noting for this review.

The outcomes-based funding models in European countries generally emphasize research activity more than comparable policies in U.S. jurisdictions do (Benneworth et al., 2011; Jongbloed, 2010). In the UK, for example, higher education institutions (HEIs) are funded based on a combination of enrollment and results of regular research assessment exercises (RAE). The RAE measure was implemented as a quality assurance mechanism, not as part of an incentive budgeting system; however, we include it here because the financial support tied to the program functions in practice as an incentive. In addition, the UK employs centralized evaluation of institutional performance focused on multiple indicators including access, completion rates, student learning outcomes, graduate workforce outcomes and research productivity (Jongbloed, 2010; OCUFA, 2006). While the emphasis of these policies may resemble performance reporting at one level, the resemblance extends mainly to the use of student outcomes in reporting. Importantly, however, HEIs in the UK are required to report to the Higher Education Funding Council for England (HEFCE) on these measures. Furthermore, the allocation of funding based in part on the evaluation of research output squarely ties funding to performance.

Similarly, the current Italian system, while historically centered on enrollments, now incorporates funding based on research output as well. Sweden and Norway likewise both employ a mixture of inputs and outcomes in their funding of HEIs, but consider student outcomes (including graduation and credit completion in Norway, and credit completion in Sweden) in addition to research productivity measures. A funding model based on both enrollments and graduation is in place in the Czech Republic, and the Netherlands and Denmark allocate substantial proportions of funding to graduation and student learning outcomes (in Denmark, the number of students who pass exams).

Canada

Discussions of outcomes-based funding have occurred in multiple Canadian provinces, but activity has been greatest in Alberta and Ontario, with discussions dating back to the 1990s (Alexander, 2000; Barnetson & Cutright, 2000). The Ontario Confederation of University Faculty Associations (OCUFA) reported that, in 2005, all provinces except Nova Scotia, Manitoba and Newfoundland had some performance reporting, performance budgeting or performance-based funding in place (OCUFA, 2006).

In the mid-1990s, Ontario began requiring universities and colleges to report on three and five Key

Performance Indicators (KPIs), respectively. Universities were to report data on graduation rates, student loan default rates and postgraduate employment rates. Colleges would report graduation rates and rates of postgraduate employment, as well as three additional indicators: graduate, student and employer satisfaction rates (Lang, forthcoming; OCUFA, 2006). In 2000, the province instituted a policy whereby some funding was contingent on institutions meeting identified benchmarks. The performance-based envelope for Ontario institutions constitutes approximately 2% of provincial operating grants to universities and colleges. Debate on the development of appropriate performance indicators, outcomes-based funding allocation mechanisms and envelope funding in general have persisted through the last decade (HEQCO, 2013; Kirby, 2007; Lang, 2005, forthcoming; OCUFA, 2006; Snowdon, 2005; Snowdon, Kaye, Moran, & O'Heron, 2009).

Alberta's history of linking funding to various performance indicators also dates back to the mid-1990s. The province's performance envelope, a funding source developed along with several other funding pools to assist postsecondary institutions financially, was specifically designed to incentivize performance and productivity and was split between research and student learning outcomes. Several performance indicators were established to correspond with additional operating grants for successful progress and completion of predetermined indicators. The outcomes identified in the program as learning indicators included employment rate, student satisfaction with overall quality, and administrative expenditures (for example, as a percentage of total expenditures). Research indicators included items related to awards per faculty member, the number of citations generated per research publication and the amount of industry-sponsored research. Roughly 2% of operating grants were tied to performance and indicators were focused on outcomes rather than inputs. Currently, with the release of Alberta's 2013 budget, it appears that all performance envelopes created to assist institutions in the province are suspended for at least the next three years, a continuation of a previous suspension.

Australia

The higher education system in Australia has undergone many changes in recent years. A major reform introduced in 2003, *Backing Australia's Future*, proposed providing additional funding for HEIs over four years beginning in 2004. At the end of the four years, the Bradley Commission evaluated how Australia's higher education sector was organized and financed to position itself and the country internationally. In 2009, in response to the commission's review, the federal government announced a comprehensive ten-year reform package for the nation's higher education sector, *Transforming Australia's Higher Education System* (Benneworth, de Boer, Cremonini, et al., 2011, p. 25), which included performance-based funding.

The government undertook extensive consultations to develop the new performance-based funding system in order to gather feedback and encourage support for the new policy from within the higher education sector. This involved establishing an indicator development group comprised of experts from the higher education sector in 2009. The group assisted in the development of a draft indicator framework, outlined in the discussion paper *An Indicator Framework for Higher Education Performance Funding*, which was released for consultation in December 2009. The draft framework contained 12 indicators within four categories of performance:

1. Student participation and inclusion (number of undergraduate students; low SES participation; other underrepresented group participation);
2. Student experience (first-year undergraduate retention; first-year and undergraduate student satisfaction);
3. Student attainment (progress and retention rates of all undergraduate students, low-SES students, and

students from an underrepresented group); and

4. Quality of learning outcomes (teaching qualifications; learning outcomes; employment) (Benneworth, 2011, p. 32).

In the context of broader discussions of tying public funding of higher education to institutional performance measures, the Australian government recently released the report *Towards a Performance Measurement Framework for Equity in Higher Education*, which described four phases in a student's college education: (1) pre-entry (aspirations and applications); (2) offers, acceptance and enrollment; (3) experience during university attendance; and (4) postgraduate outcomes. The framework proposed performance indicators in three tiers:

- Tier 1: **Educational attainment and outcomes** for students in the higher education sector, including measures of domestic undergraduate enrollments and completions as well as postgraduation outcomes (23 indicators);
- Tier 2: Measures of **the precursors of higher education attainment**, such as school performance and aspirations (9 indicators); and
- Tier 3: **Efforts and strategies of the university and government sectors** to improve equity outcomes such as outreach strategies, financial support and support strategies during university (29 indicators) (Australian Institute of Health and Welfare, 2014).

Emerging Trends

As indicated previously, literature on the most recent iteration of outcomes-based funding in the US, Performance Funding 2.0, remains relatively small. With these newer policies, more emphasis is placed on intermediate outcomes such as credit completion and retention than on ultimate outcomes such as graduation rates and job placement. Intermediate outcomes are increasingly apparent in new iterations of performance-based funding in Ohio, Tennessee and Washington, for example (Dougherty & Reddy, 2013). The Student Achievement Initiative in Washington focuses on student gains in basic skills and credit completion. Institutional stakeholders viewed the initiative's emphasis on these intermediate outcomes as reflecting support for students from varied backgrounds, as well as respect for institutional differences statewide (Jenkins & Shulock, 2013).

Performance Funding 2.0 is also characterized by an increase in the percentage of state funding that is outcomes-based (Dougherty & Reddy, 2013). Formula funding in the state of Ohio provides an example of this shift. Ohio's newest formula, implemented in the 2012–2013 academic year, accounts for 20% of the overall funding, an increase from 15% in the previous year. In addition to an increased share of the overall funding, incentives were based initially on intermediate incomes, most notably course completion, with degree completion added to the formula in subsequent years.

Tennessee, the state with the longest history of performance-based funding, made significant changes to its funding formulas in 2010, a shift that also exemplified the 2.0 iteration of outcomes-based funding. Under its recent policy, for example, Tennessee's key performance indicators include intermediate outcomes such as course completion and persistence, in addition to degree completion, and the state has also tied a greater share of its appropriations for higher education institutions to these indicators (Dougherty & Reddy, 2013).

Reviewing performance-based or outcomes-based funding policies across jurisdictions in the United States, Europe, Australia and Canada is a major component of better understanding the design and implementation of these systems. In order to contextualize these policies further, however, it is necessary to review empirical studies related to the design, implementation and effects of performance-based funding models. In the following section, we will highlight literature that focuses on the effects of performance or outcomes-based funding on identified outcomes. It is important to note that, while the *Review of Policies* section above looked specifically at each selected jurisdiction, the *Review of Research* which follows examines the research literature focused on the relationship between performance-based funding and institutional and student outcomes. The research record on this specific question centers disproportionately on U.S. contexts. Consequently, the discussion in this second half of the report focuses on studies examining these relationships, instead of discussing all of the jurisdictions discussed in the *Review of Policies* section.

Review of Research: The Effects of Outcomes-Based Funding on Performance Indicators

Theories of Action

Dougherty and Reddy (2013) outline four theories of action that underpin performance-based funding policies. The first and most prominent reflects a resource-dependency perspective wherein public funding is manipulated to simulate market profit incentives (i.e., in a system without actual market profits) that, according to the theory, motivate institutions to improve performance (Birnbaum, 1983). The second theory of action described supposes that policies persuade institutions to agree with public policy makers on the importance of improved student outcomes. It follows then, in the theory, that these institutions change their behaviors to improve student outcomes. The authors align this approach with what others have called “coercive isomorphism” (DiMaggio & Powell, 1983). The third theory of action involves raising institutions’ awareness of their performance, leading naturally to comparisons across institutions that stimulate institutions’ pride and status-striving and that motivate changes in institutional behaviors – resulting, theoretically, in improved outcomes. The fourth theory of action, although not yet a part of outcomes-based funding policy discussions in the US, nonetheless potentially describes an underlying mechanism for change. This fourth logic model entails providing institutions with resources to support greater capacity on key performance indicators and improved practice as learning organizations.

Resonating with Dougherty and Reddy’s (2013) first theory of action (resource-dependency perspective), Rabovsky (2012) comments that current performance-funding policies in the US are largely based on the premise that university administrators do not currently place enough emphasis on student outcomes because they have few incentives to do so. However, Rabovsky’s analyses of the Integrated Postsecondary Education Data System (IPEDS) data on public institutions in seventeen U.S. states suggest that the institutions included in the study already had meaningful financial incentives for improving performance (i.e., without performance-based funding) and that performance-based funding policies did little to make these incentives more powerful than they already were.

Furthermore, critics have noted that public funding of higher education comprises a system in which government funding acts as the solitary jurisdictional “buyer” for many providers of postsecondary education (i.e., a monopsony) and that this dynamic is unlikely to support competition or result in increased efficiency (Lang, personal communication, 2014). However, this perspective may not fully capture the complexity of the issue. In many jurisdictions in the United States, for example, revenue accrued from student tuition exceeds funding that public institutions receive from the state, complicating the “solitary-buyer” argument. Moreover, this observation supports many of the studies that have found that performance-based funding has little or no

impact on institutions. If institutions receive more funds from student tuition than from public funding, this may be at least one of the reasons that tertiary educational institutions are not responsive to funding incentives from many jurisdictions. These critiques raise the possibility that the hopes pinned on the features of Performance Funding 2.0 – the allocation of greater proportions of funding according to outcomes – may not be justified. It follows from this point that, in an asymmetrical system such as this, institutions' performance is unlikely to be incentivized regardless of the proportion of public funding allocated via performance-based funding.

Researchers have framed the interpretation of study results and implications alike in terms of these underlying theories of action. Understanding the multiple logic models informing these policies helps us to highlight and compare key findings across the literature. In the discussion below, we use these theories of action to organize and identify patterns in the research literature on outcomes-based funding and to raise questions about how the policies may or may not align practically with explicit and implied goals.

Research on Effects of Outcomes-Based Funding on Targeted Outcomes

Overview

A review of the research literature on outcomes-based funding reveals not only the types of policies in place, but also which kinds of policy or program features are incorporated, and the extent to which these policies have been shown to be successful. In addition, although limitations of the research make a full view of the policy effects impractical for now, it is possible to draw some insights on which policy features have been associated with particularly positive or negative results. As indicated in our methods section, we reviewed literature published after 2003 in an effort to zero in on research on current models of outcomes-based funding. Recent literature notably emphasizes policy development and implementation over examination of effects on targeted outcomes (Dougherty & Natow, 2010; Dougherty et al., 2012; Fryar, 2011; Jenkins & Shulock, 2013; Miao, 2012; Prince et al., 2010; Sharma, 2004; Watt et al., 2004). This implementation-centered research focuses not only on how specific systems were planned, including which stakeholders were involved prior to and after policy implementation, but also on how termination of some outcomes-based funding models was potentially hastened by certain design and implementation elements (e.g., instability in funding proportions, lack of collaboration) (Dougherty, Natow & Vega, 2012), a topic of further discussion in the *Immediate Impacts* section.

Immediate Impacts

Some studies focus on stakeholders' perceptions of outcomes-based funding models (e.g., college faculty, staff members) (Dougherty et al., 2012; Frølich et al., 2010; Jenkins & Shulock, 2013). Within these examples, surveys and interviews of stakeholders included questions on policy planning and design, implementation and perceptions of the effects of the policy, including perceptions of the measurements used.

Dougherty, Natow and Vega (2012) found the demise of Washington's (1997-1999) performance-based funding policy in 1999 to be connected to failures to involve relevant stakeholders in the design of performance funding incentives. In particular, perceptions voiced by study participants suggested that opposition from higher education institutions toward funding formulas, dissonance between performance indicators and diverse institutional goals, and duplication of previously established state mandates may each have played a role in the policy's termination. Although the authors identified a significant decrease in state revenue as the largest factor in the dissolution of Missouri's performance funding system in the early 2000s, stakeholder interviews also indicated a lack of support from higher education institutions for the program, including views that the policy intruded upon institutional autonomy.

Conversely, some implementation literature highlights successes. Jenkins and Shulock's (2013) evaluative study of the Student Achievement Initiative (SAI) in Washington shares lessons learned from the development and implementation of Washington's later, 2.0-type performance-funding policy, adopted in 2007. Following collection and analysis of interview data, Jenkins and Shulock concluded that college leaders generally supported the metrics built into the SAI. However, these stakeholders also perceived a lack of transparency within the complex model, inhibiting their ability to see why an institution's performance as measured in the model had improved, creating difficulty in identifying new ways to improve. Furthermore, they reported that some college leaders felt that too much funding tied to student outcomes could potentially be destabilizing for institutions. On the whole, their study results suggest that the inclusion of varied stakeholders, open communication and regular evaluation were instrumental to the program's successful implementation. Dougherty (2012) acknowledges concerns related to the state of Washington as well and cites participating institutional leaders' perception that the performance funding system was not responsive to diverse institutional missions.

In another example, Frølich, Schmidt and Rosa (2010) explored funding models in Denmark, Norway and Portugal through surveys of university faculty and stakeholders. Across these three systems, there was a focus on increasing enrollment, graduation rates and generating more credits. Additionally, in 2005 and 2006, these countries aimed to increase efficiency, effectiveness, quality and transparency while also enhancing a focus on student needs. While there were differences in the funding systems across these three countries, perceptions of stakeholders in each country identified negative and unintended consequences of the outcomes-based funding systems. These consequences related to the potential elimination of courses considered expensive or "unpopular," the time devoted to teaching or research as a result of how these activities are or are not incentivized, and the lack of appropriate performance indicators. Although each of the systems allocated monies to teaching and research, opinions among the three faculties differed on how teaching and research should be combined. In Norway, separation between the two was the overall goal; in Denmark, a separation had already been in place; Portugal, in contrast, sought to retain an integration of funding for teaching and research. These distinct positions across the three contexts had implications for how the respective funding models were seen to affect institutional and faculty autonomy. Furthermore, given the increased competition to secure external research funding, respondents in all three countries reported concern about the marginalization of research fields less capable of attracting international attention for publication. Although these countries have varied goals in regard to outcomes-based incentives, there is no research record as yet to show that these systems are actually furthering these goals.

Intermediate outcomes

As the iterations of performance-based funding have progressed, the policies appear to be less focused on ultimate outcomes, such as graduation and job placement, and more focused on intermediate achievement indicators. Dougherty and Reddy (2013) note that these indicators include "retention, developmental education completion, reaching certain credit thresholds, and transfer," outcomes that have become increasingly prevalent with Performance Funding 2.0 policies (p. 6). Washington state's use of intermediate outcomes as measures of performance have been considered particularly innovative and influential on Performance Funding 2.0 and will be discussed in detail in the following section (Dougherty & Reddy, 2013).

The Student Achievement Initiative in Washington includes intermediate outcomes among its key indicators (Jenkins & Shulock, 2013). Among these measures are student gains in basic math and writing skills, for example, as well as earning 15 and 30 college-quarter credits and completion of courses necessary for a technical or academic associate degree. In this system, incentivizing intermediate outcomes along student pathways to completion has been met with support from stakeholders for several reasons. One such reason

is that rewarding a diverse range of achievements has allowed for the achievements of students from disadvantaged backgrounds to be valued more equitably, considering that degree completion is more likely for students from more privileged backgrounds. Additionally, stakeholders participating in the study viewed policies that were more supportive of students from less privileged backgrounds as supportive of community colleges as well. These findings highlight the relevance of intermediate outcomes as useful measures across diverse institutional types. Nevertheless, as was the case with immediate impacts, research to date does not show statistically significant results demonstrating that performance-based funding exerts a direct effect on student retention or other intermediate student outcomes. It is possible, however, as Tandberg, Hillman & Barakat (2013) have suggested, that future studies looking at longer time frames may discover that performance-based funding is associated with desired effects.

Ultimate outcomes

In their insightful synthesis of key studies in the research literature, Dougherty and Reddy (2013) found evidence that institutions' awareness of their own performance and of state goals for higher education was higher in states with performance-based funding. They also found evidence that these policies affected institutions' financial decisions. They found no evidence, however, that outcomes-based funding policies affected institutions' capacity as learning organizations and, furthermore, little to no evidence that outcomes-based funding was associated with improved student outcomes in U.S. contexts. Through our review, we also found that research to date has revealed little evidence of outcomes-based funding showing significant effects on student outcomes.

One important study of Tennessee's performance-based funding model employed sophisticated multivariate analyses to examine the effects of an increase in the funds allocated through performance funding in 2005 (Sanford & Hunter, 2011). The authors used spline linear mixed models to compare mean retention and graduation rates before and after the policy change. Results of this analysis confirmed previous hypotheses that the performance funding model overall provided institutions with financial incentives to improve student outcomes. Nevertheless, the state's attempt to further incentivize improvement in institutional outcomes by doubling the money tied to the retention and graduation rate measures in 2005 was not shown to be associated with a change in institutions' retention rates.

Similar to the study by Sanford and Hunter, additional studies have revealed mixed results, including some indication of positive effects on student outcomes controlling for all else (e.g., Hillman, Tandberg & Gross, 2012). The preponderance of studies employing rigorous analytical methods, however, show no statistically significant relationships between performance funding policy adoption and student outcomes (e.g., Fryar, 2011; Shin, 2010; Shin & Milton, 2004; Tandberg, Hillman & Barakat, 2013).

Moreover, Jenkins and Shulock (2013) found evidence of dissonance between Washington's Student Achievement Initiative performance measures and their targeted student outcomes. Analyses showed, for example, that even in cases in which points awarded to colleges under the rating system increased, overall student progression did not increase – a finding that calls into question the validity and implementation of the performance measures themselves.

In a two-stage regression analysis based on IPEDS, Rabovsky (2012) found that the interaction terms with performance funding for graduation rates, retention and degrees awarded were either not significant or significant and negative. Contrary to the underlying logic supporting outcomes-based funding, these results suggest that U.S. states with performance funding in place showed a weaker link between student outcomes and institutional funding than did the states without performance funding.

Overall, the research record has provided little empirical evidence of the effects of performance funding policies on postsecondary student outcomes. Nevertheless, a few recent studies revealing new information about the success of outcomes-based funding are worth discussing in detail. Two studies using a differences-in-differences design methodology examine these effects at two-year and four-year institutions in the US from 1990–2010 (Hillman, Tandberg & Gross, 2013; Tandberg, Hillman & Barakat, 2013). The studies were designed to measure whether graduation rates improved after the implementation of performance funding in Pennsylvania. The analyses showed no significant difference in degree-completion trends before and after the implementation of performance funding in states with outcomes-based funding in place compared with states without outcomes-based funding (Hillman et al., 2013). Specifically, controlling for education finances, sociodemographics and state fixed-effects, the adoption of performance-based funding showed no significant impact on degree-completion trends at four-year institutions (Tandberg et al., 2013). A parallel study of two-year institutions similarly found that the adoption of performance funding had no significant effect on degree-completion trends in the two-year sector (Hillman et al., 2013). It is important to note, however, that among all the models analyzed in the two studies, one duration model included in the four-year study showed the number of years performance-based funding had been in place to be a significant factor, especially in the seventh, eighth and eleventh years (Tandberg et al., 2013). This finding suggests a modest positive effect after the seventh year of performance-based funding on completion outcomes in Pennsylvania.

These studies included recent Performance Funding 2.0 policies in their analyses and examined policy design and collaboration among stakeholders as well as student outcomes. In the case of Pennsylvania, for example, Hillman et al. (2013) suggested that poor program design, institutional mistrust of mechanisms to monitor performance, and improper alignment between theory and the purpose of the overall program may have contributed to the program's showing as nonsignificant in the differences in differences analysis. Furthermore, the authors assert that while Pennsylvania colleges and universities were making efforts to meet the objectives of the policy, it is likely that a lack of institutional capacity may have contributed to the failure of the policy to increase degree productivity (Hillman et al., 2013). An inherent assumption of performance funding programs is that institutions can improve completion rates. However, many institutions lack resources such as financial aid, necessary data infrastructure, and staffing, funding and expertise for student support services, for example. These institutions may therefore not have had the capacity to extend, monitor and improve programs and services in order to meet the desired outcomes of the performance funding program (Hillman et al., 2013).

Tandberg, Hillman and Bakarat (2013) put forward similar arguments about the relevance of institutional capacity for community colleges in particular. Findings showed that degree completion at two-year institutions in 19 states implementing performance funding between 1990–2001 remained stable on the whole (Tandberg et al., 2013). Four of the 19 states (Minnesota, Missouri, New Jersey and Washington) experienced small but statistically significant increases, suggesting that the outcomes-based funding policies may have affected completion rates in these states. The authors noted further that six states (Colorado, Idaho, New Mexico, South Carolina, Texas and Virginia) showed a negative association between the implementation of performance-based funding and associate's degree completions, and that still more states showed no significant effect. The study concluded that, even considering the positive results in a few states, the analyses provided no strong evidence that performance-based funding policies had increased community college degree completion overall. Both Tandberg et al. (2013) and Hillman et al. (2013) agreed that institutional capacity to respond to the policy is likely central and hypothesized further that multiple missions within individual community colleges and across the public two-year sector may complicate institutions' ability to succeed under outcomes-based funding policies.

Limited empirical base

It is important to note that the bulk of research in this area is focused on outcomes-based funding models that are best characterized as “Performance Funding 1.0” policy examples. These funding models exemplify “1.0” type policies in that they tied only “bonus” funding to student outcomes and used naïvely defined performance indicators not suited to capturing the range of institutional performance. Consequently, the current research is not comprehensive enough to evaluate wholly the effects on ultimate outcomes. Additional research is needed in order to adequately answer questions related to the efficacy of performance-based funding initiatives.

Continuing research in this area should focus on Performance Funding 2.0 models, should encompass multiple institutions and institution types and, furthermore, should employ multivariate analysis, quasi-experimental method or counterfactual method to control for alternative explanations for changes in student outcomes.

Promising and Unpromising Practices

Several studies address the success or failure of performance funding models in varied jurisdictions, offering lessons to postsecondary education systems planning to implement outcomes-based funding (Callaway, 2012; Cavanaugh & Garland, 2012; Dougherty & Natow, 2010; Dougherty, Natow, Hare, Jones & Vega, 2011; Dougherty, Natow & Vega, 2012; Dougherty & Reddy, 2011; McKeown-Moak, 2013; Miao, 2012; Sanford & Hunter, 2011; Schenker-Wicki, 2006; Shin, 2010; Shin & Milton, 2004). In the following section, we identify promising and unpromising components of these programs, including information related to the percentage of funding allocated within a policy, the length of time the policies are in place, the appropriateness of performance indicators associated with the policy and the broader policy context within the jurisdiction. Additionally, we briefly highlight how evaluation and collaboration as components of policy design and implementation are considered in regard to best practices.

Percentage of government funding allocated via outcomes-based models

Several studies have examined the percentage of funding allocated to outcomes-based models and the trends these allocations show over the years a policy is in place (Dougherty & Natow, 2010; Dougherty, Natow & Vega, 2012; Miao, 2012; Pakravan, 2006; Shin, 2010). Findings suggest that positive outcomes may be associated with higher percentages of allocations in an outcomes-based model and that if the allocation of funding tied to student outcomes is too small, the policy’s potential impact on institutional improvement may be hindered (Shin, 2010). Pakravan (2006) found that performance-based funding in Canada has mainly consisted of less than 5% of total funding and suggested that this small proportion applies too little force to encourage institutional improvement. Dougherty and Natow (2010) concluded, furthermore, that the stability in the percentage of incentivized funding has proven helpful for performance funding in Tennessee and, in contrast, that the more erratic year-to-year funding allocated through Florida’s performance-funding model was a contributing factor to the instability of that program. Research examining the proportion of funding tied to outcomes therefore suggests that the larger the proportion, the more likely the incentive will impact performance (Miao, 2012; Shin, 2010; Pakravan, 2006) and that stability in this proportion over time may increase the program’s longevity (Dougherty et al., 2012; Dougherty & Natow, 2010).

It is difficult to draw firm conclusions about this point as a promising practice. On the one hand, researchers and experts point to the percentage allocated via performance-based funding as a key policy feature to watch. Highlighting this is consistent with Dougherty and Reddy’s “first” theory of action underlying U.S. performance-based funding (resource-dependency). Given this theory of action, tying higher proportions of

funding to outcomes should only incentivize institutions further to improve practice. Considering an uneven empirical record, however, and given the questions critics have raised regarding whether the theory of action actually applies, it is difficult to say whether this dynamic plays out in practice.

Performance measures

Researchers see the issue of defining appropriate measures (or indicators of performance) as a key component and potentially imperative to the success or failure of an outcomes-based funding model (Dougherty & Natow, 2010; Pakravan, 2006; Zarkesh & Beas, 2004). Dougherty and Natow (2010) highlight the success of the state of Tennessee with regard to the design and implementation of performance indicators in its long history of performance funding and contrast this with the less stable system in Florida. Tennessee, often seen as having the most stable and successful program in the US (Sanford & Hunter, 2011), has introduced new performance indicators systematically, following planned program reviews every five years (Dougherty & Natow, 2010). These gradual shifts have occurred in accordance with the overall design of the performance funding system and are done in consultation with many invested stakeholders, perhaps increasing buy-in across involved constituents. Making changes to performance measures in a reactionary or irregular way – as seen in the Florida case, for example – seemed to contribute to program instability.

In addition to ensuring that metrics are reviewed systematically before adding or removing performance indicators, programs that concentrate on meaningful measurements that account for institutional diversity in a given jurisdiction have proven to be more successful (in terms of longevity and, to some degree, in terms of impact on student outcomes), as in the case of the Student Achievement Initiative in Washington (Jenkins & Shulock, 2013; Miao, 2012). Miao (2012) also argues that using metrics that measure student progress *and* completion, or intermediate and ultimate outcomes as defined by Dougherty and Reddy (2013), has become recognized in the policy literature as a “best practice” within this field. Lastly, authors’ suggestions regarding promising practices have also included an emphasis on establishing a collaborative process to define performance measures (Dougherty & Natow, 2009; Jenkins & Shulock, 2013; McKeown-Moak, 2013; Miao, 2012). This kind of process entails a commitment to designing metrics that account for (1) complex student pathways, (2) the conditions under which institutions operate (e.g., stretched resources, multiple institutional missions, economic context, selectivity and enrollment changes), and (3) the varied perspectives of institutional and governmental stakeholders.

Policy context

The context in which an outcomes-based funding policy exists has been an important consideration in studies. As indicated previously, the involvement of various stakeholder groups was noted as key to program longevity. Dougherty, Natow and Vega’s (2012) study of factors that contributed to policy termination concluded that states experiencing budget cuts were more likely to decrease funding to higher education institutions if performance-based funding systems were in place. This was reflected in the example of Missouri, which abandoned its outcomes-based funding program in 2002 following a 6% decrease in the state’s general revenue between 2000 and 2002. In addition to budget fluctuations and stakeholder involvement, the authors noted that social support from outside businesses, government agencies and key legislators can also positively or negatively impact the stability of a program. In the case of Tennessee, a program that has endured for over 30 years, these political relationships have been fostered collaboratively and have aided in the endurance of the system. In addition, Tennessee has not experienced the same budget pressures present in states such as Florida and Missouri, another factor that, in turn, may have created a more stable context conducive to the policy’s sustainability. Ironically, perhaps, budget cuts were cited as one factor prompting the creation of performance-based funding programs and in these studies were found to be

associated with termination of programs as well.

Studies have shown, therefore, that the design and implementation of performance measures can affect the longevity of a policy and that the quality of collaboration within the overall process of design and implementation also matters (Dougherty & Natow, 2009; Jenkins & Shulock, 2013; McKeown-Moak, 2013; Miao, 2012). A collaborative process can support the longevity and responsiveness of a policy, and supporting a collaborative approach is relevant throughout all stages of the process: design, implementation and evaluation (Dougherty & Natow, 2009; Jenkins & Shulock, 2013; McKeown-Moak, 2013; Miao, 2012). Collaboration can positively impact how policies are developed and maintained, as exemplified in the state of Tennessee. Dougherty and Natow (2012) suggest, furthermore, that absence of collaboration between higher education institutions, political actors and social communities, as seen in the case of Missouri, can contribute to the demise of a performance funding system.

A policy's longevity is itself an important factor, since sufficient time in place is necessary to establish whether a policy is achieving its aims (Hillman, Tandberg & Gross, 2013; McKeown-Moak, 2013; Shin & Milton, 2004; Tandberg, Hillman & Barakat, 2013). Tandberg, Hillman and Barakat (2013) found, for example, that in the relatively few cases in which effects of performance-based funding policies in U.S. states on student outcomes were apparent – either positive or negative – those effects were seen only several years after the policy's introduction (Hillman, Tandberg & Gross, 2013; Tandberg, Hillman & Barakat, 2013). Furthermore, policies designed with evaluation in mind have proven to be more sustainable, as is the case in Tennessee (Dougherty & Natow, 2012).

Analyzing the big picture: Key conclusions from research and experts' perspectives

As shown in the preceding discussion, research on outcomes-based funding of higher education has shown little evidence that these policies are associated with improved student outcomes. Nevertheless, studies have noted that this may not yet be the final word on the question (Dougherty & Reddy, 2013; Jenkins & Shulock, 2013; Shin, 2010). One reason for this is that much of the research on this topic focuses on early versions of outcomes-based funding policies, which differ from current iterations. Recent performance funding models in the US not only emphasize intermediate outcomes over ultimate outcomes, but the most recent variations are also characterized by increased collaboration and intentional design. A few recent studies examining Performance Funding 2.0 policies attend to various aspects of policy design, including the involvement of various stakeholders in planning and implementation (Dougherty & Natow, 2010; Dougherty, Natow, & Vega, 2012; Jenkins & Shulock, 2013; Miao, 2012; Prince et al., 2010; Watt, Lancaster, Gilbert & Higerd, 2004). Jenkins and Shulock (2013) discuss the integral role of policy design and implementation in the sustainability and effectiveness of performance funding models and point to the importance of ongoing assessment as well. Establishing a participatory process with institutions allows for deeper understanding of how outcomes-based funding policies may impact institutions with varied missions (Miao, 2012) and could lead to improved buy-in from invested stakeholders (Dougherty, 2012). Dougherty (2012) attributes Tennessee's successful implementation of performance funding in part to the state's relatively limited budget constraints and also points to institutional involvement in the design and implementation process. Jenkins and Shulock (2013) also found that an inclusive process was central to developing buy-in from institutional and external stakeholders, ultimately increasing the overall policy's chance for success.

Lastly, recent research on whether outcomes-based funding is effective in a given state suggests that in order for evaluation and research results to be meaningful, researchers must allow sufficient time for implementation and evaluation (Jenkins & Shulock, 2013; Shin, 2010). Furthermore, in some specific cases, a lack of empirical evidence linking policies to improved student outcomes is not seen as sufficient grounds for discontinuing (Jenkins & Shulock, 2013; Shin, 2010). In their study of Washington state's SAI, for example,

Jenkins and Shulock (2013) note:

State leaders should not be deterred from considering the benefits of performance funding by the paucity of direct evidence of its effectiveness or by the opposition of some stakeholders, as performance funding has not yet been given a fair chance because we are still learning how to do it better. (p. 18)

Similarly, although Shin (2010) found no evidence that performance-based funding adoption affected graduation rates in participating states, his conclusions cite the need for more time for reflection and evaluation, and assert that abandoning programs is not necessarily the answer.

Nevertheless, as discussed above, recent studies conclude that aspects of policy design, such as a collaborative process and responsiveness to the variations in institutional missions and the conditions under which institutions operate, have important consequences for the potential effectiveness of emerging policy models. Moreover, these key studies conclude that institutional capacity is a central concern.

Even though they work in three different countries and make observations about distinct approaches to outcomes-based funding in higher education, the three scholars who consulted with us on this project arrived at similar conclusions to those outlined above. In identifying themes across our discussions with these expert consultants, we found that they similarly emphasized the importance of policies attending to the differentiated missions of institutions affected by policies and to the different conditions under which they operate. Policies will naturally affect open-admissions institutions or institutions with fewer resources differently than institutions that are wealthier and more selective. Likewise, institutions will be more or less constrained in their ability to respond to outcomes-based funding according to the specific level of autonomy they have within the broader system. If outcomes-based funding policies fail to account for differences across the institutions affected, jurisdictions may be more susceptible to unintended consequences, such as increasing retention and graduation rates simply by making admissions criteria more selective. In a similar vein, some institutions might be forced to bear an unfair and punitive burden, whereby resources are progressively more constrained through the outcomes-based funding, creating a downward spiral.

Throughout this report, we have noted observations from the review of policies, the research literature and our conversations with expert consultants, all centering on the importance of outcomes-based funding policies incorporating responsiveness to the differing missions and situations of different types of institutions. In the case of the U.S. examples in particular, it seems fair to conclude: If an outcomes-based funding formula does not take into account the differentiated missions and conditions under which institutions operate, a de facto result may be that the scrutiny is more focused on community colleges. Moreover, as emerging trends in performance-based funding in the US place more emphasis on intermediate student outcomes (such as credit thresholds, completion of developmental education), it is important to note that outcomes of this type are particularly relevant to community colleges and less selective, or less well-resourced four-year institutions as well. Even more to the point, it stands to reason that the fewer research dollars an institution brings in, and – in the US – the less able to attract out-of-state students an institution is, the more the outcomes-based funding will matter to the institution. Universities with the greatest institutional wealth, high levels of external funding for research and other diverse resources, on the other hand, are less likely to feel the consequences of receiving or losing public funding tied to outcomes. We raise this point to highlight the ways policies that appear neutral in applying measures across institutions actually place a far greater burden on institutions that have the least resources and that serve the broadest population of students.

Also in line with the research conclusions summarized throughout this report, our expert consultants stressed the importance of collaborative implementation processes and the centrality of institutional capacity. One expert noted, in fact, that the logic of incentives necessarily fails if the policy incentivizes outcomes that

institutions do not know how to achieve. This last point related further to additional issues raised in our discussions with consultants, bearing on what Dougherty and Reddy (2013) referred to as the issue of “learning organizations” in their “fourth” potential theory of action underlying performance funding in the US. This issue raises the question of whether the incentives built into policies bear any relationship to the cost of making the specific changes needed to achieve the targeted goals. Analyses from the literature and our expert interviews alike converged on the conclusion that this relationship is not actually built into policies. Rather, in practice, policies incorporate incentive funding at a level sufficient to attract attention within institutions, but not sufficient to funding the actual changes needed.

One additional theme, the question of “pooling” or aggregation, also figured prominently in our consultants' comments. This issue raises questions regarding whether the theory of action underlying a given policy takes into account the multiple levels and actors within institutions. First, the question arises about whether all possible actors who would need to work to raise targeted outcomes are equally invested, aware and rewarded to make concerted efforts toward this goal. Second, it is important to consider whether outcomes-based funding of institutions can effectively incentivize change for individuals within the organization if the reward is only calculated based on aggregate results for the whole institution. Finally, future research should question and evaluate further whether the rewards built into the outcomes-based funding policies actually reach affected individual actors within the institutions. For example, do we (or can we) expect that an outcomes-based funding policy will specifically move individual faculty members to change their practices? Will changes in incentive funding at the institutional level lead to systemic improvements in individuals' priorities and behaviors throughout the institution?

Telling similarities have emerged from the insights assembled through this project, pointing to the need for caution in drawing conclusions about the effectiveness of outcome-based funding. Evidence from studies across jurisdictions suggests, furthermore, that several factors, including (1) institutional differentiation, (2) appropriate performance measures, (3) collaborative processes, and (4) institutional capacity to improve targeted outcomes, figure importantly in the successful design and implementation of outcomes-based funding. The collected findings also suggest that many jurisdictions implementing performance-based funding have tied relatively low levels of funding to performance, pointing us toward the possibility that these amounts may not be sufficient to incentivize the institutional changes required to raise student outcomes. To establish this relationship as a certainty, however, requires further research.

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