Performance-Based Funding
Council of Ontario Universities

December 2013

Council of Ontario Universities
Conseil des Universités de l’Ontario
Performance-Based Funding

Prepared December 2013 by:
Council of Ontario Universities
Conseil des universités de l’Ontario
180 Dundas Street West, Suite 1100
Toronto, Ontario M5G 1Z8
www.cou.on.ca

For more information contact:
Peter Gooch
Senior Director, Policy and Analysis
416-979-2165 ext. 209
pgooch@cou.on.ca

COU: 886
Executive Summary

This paper provides an overview of performance-based funding (PBF) including the types of PBF, its prevalence and history in the U.S. and Ontario and offers some preliminary observations on its impacts, positive attributes and challenges.

Knowledge about the effectiveness of PBF is limited and many new PBF policies have yet to produce meaningful data. While the prevalence of PBF is increasing in the U.S., it is important to note that this is by no means a panacea to reductions in government funding and issues of long-term sustainability. Nor is PBF a solution to improving student outcomes.

Advocates of PBF and education leaders have made a number of recommendations for governments interested in implementing PBF, which are included in Appendix B: Advice for Governments Interested in Implementing Performance-Based Funding from Commentators. Of paramount importance in implementing PBF successfully is early engagement and collaboration with stakeholders on the structure and metrics of PBF funding.

Performance-Based Funding

PBF in higher education is a funding system whereby a portion of a government’s higher education budget is allocated according to specific performance measures such as, course completion, retention, and degree completion instead of allocating funding solely on the basis of enrolment.

The system is predicated on goal setting (either by the government or at the institutional level), measurement of progress and indicators in various areas; and incentives, which can be either financial or regulatory.

Types of Performance-Based Funding

There are three basic types of PBF (as identified by Miao, 2012):

1) **Output/outcomes-based funding formulas (or payment for results):** this model links funding formulas to outputs such as increasing the number of students who attain credit and degree completion milestones. Formulas don’t necessarily set specific targets. This model is based on the assumption that providing financial incentive for institutions will generate positive outcomes.

   Institutions can boost their total funding by improving their results on various performance metrics. Output-based formulas can be structured to recognize differences in institutional mission and student population.

   **Example:** Tennessee, where performance metrics are incorporated into the state funding formula and institutions can weight metrics according to institutional missions through negotiations with the Tennessee Higher Education Commission (THEC).
Further, the state incorporates a 40 per cent premium on its funding formula for adults and students receiving Pell Grants\(^1\) (Miao, 2012).

2) **Performance set-asides**: this model allocates a percentage of higher education funding for PBF where funds may be drawn from either the base funding or from additional sources. Institutions compete for shares of the performance fund by producing results that meet or exceed certain targets.

   **Examples**: Ontario, where Key Performance Indicators (KPIs) tied to funding have been in place since 2000-2001, and are used as a basis for allocating less than two per cent of the operating funding available to colleges and universities.

   Pennsylvania, where institutions are evaluated on the basis of five common indicators and five additional indicators chosen by the institution. The Pennsylvania State System of Higher Education sets aside 8 per cent of funding, or about $36 million, to reward colleges and universities for meeting or exceeding certain targets (Miao, 2012).

3) **Performance contracts**: this model involves agreements between states and individual institutions in which a certain level of funding or a regulatory provision is guaranteed if the institution meets specific goals. This model is sometimes tied to performance budgeting.

   **Examples**: Louisiana’s Granting Resources and Autonomies for Diplomas (GRAD) Act, where performance contracts are established between the state and its public colleges. The GRAD Act allows institutions to increase their tuition by 10 per cent each year if they meet certain goals of performance (Miao, 2012).

   In Australia, each institution can select and declare its own performance indicators in periodic performance agreements with government (Lang, 2013).

**Competitive and non-competitive performance based funding**

PBF may be either competitive (zero-sum) or non-competitive (entitlement).

In competitive PBF, there may be a fund set aside with a fixed amount of funding. Institutions compete for this funding based on performance against a set of indicators. In competitive PBF, even if an institution improves on performance metrics, the institution may not receive increased funding. Even with performance improvements, an institution may maintain or lose its share of funding depending on its performance relative to its peers. Competitive PBF means that each institution is dependent on the actions and performance metrics achieved by other institutions, not just its own actions.

In non-competitive PBF funding is open-ended and institutions do not compete with each other for funds, but may be required to meet a certain benchmark or cutoff.

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\(^1\) The Federal Pell Grant Program provides need-based grants to low-income undergraduate and certain post baccalaureate students to promote access to postsecondary education. For more information on Pell Grants please see the U.S. Department of Education website: [http://www2.ed.gov/programs/fpg/index.html](http://www2.ed.gov/programs/fpg/index.html)
Prevalence of Performance-Based Funding in the United States

According to Friedel et al., (2013) at the Education Policy Centre at the University of Alabama, 22 states have a funding formula in place that provides some amount of funding based on performance indicators. For a complete list of these states, the amount of funding dedicated to PBF and the metrics used, see Appendix A: States with Performance-Based Funding and Metrics. Performance indicators often include:

- course completion or a achieving a certain threshold number of credit hours;
- successful transfers to other institutions;
- the number of degrees awarded;
- premiums for low-income students; and
- premiums for production of STEM degrees.

Seven states are in the process of transitioning to some type of performance funding, where the Legislature or governing board has approved a performance funding program and the details are currently being worked out. An additional 10 states have had formal discussions about performance funding, which means that there have been formal hearings held at the Legislature or meetings conducted by governing boards on the topic.

Figure 1: PBF State Activity Map (as of September 2013)

This figure is taken directly from Friedel et al., 2013: Performance-Based Funding: The National Landscape. Friedel et al., have updated – with permission – this map and an accompanying table from the National Conference of State Legislatures, which outlines the status, funding
amounts, metrics used for performance funding and to link to supporting documentation – this can be found in Appendix A.

**History of Performance-Based Funding**

**United States**

Between 1979 and 2009, 26 states experimented with incorporating PBF into their higher education funding models (Harnisch, 2011; Miao, 2012). Success has been mixed: 14 states discontinued their programs, and two states discontinued and then re-established PBF programs.

Tennessee was the first state to adopt PBF through a pilot program in 1974 that became official in 1979. In the 1990s, PBF was distributed largely through performance set-asides and took the form of bonuses or supplementary funds to colleges and universities (Harnisch, 2011). Many of these programs were eliminated in the 2000s when the economy contracted (Harnisch, 2011).

PBF has evolved significantly from its earlier models. Key changes in performance funding in the U.S. that have evolved over time are:

- Moving away from budgetary bonuses and integrating PBF into base funding.
- Weighting funds according to institutional missions and student populations, for example, institutions may receive a premium for low income students.
- Rewarding intermediate (progressive) as well as long-term successes, for example, course or year completion as well as degree completion (Hillman et al., 2013).
- Putting a higher proportion of funding at stake.
- Using counts rather than rates to measure performance.

Another important distinction has been the inclusion of stakeholders in the planning phases in order to align government goals with institutional missions (Friedel et al., 2013). A number of newer programs have also allowed for more gradual, or phased in implementation and/or stop-loss provisions (Miao, 2012).

The distinctions between older and newer performance funding models are sometimes referred to as Performance funding 1.0 and Performance funding 2.0 (Dougherty & Reddy, 2011).

**Key Elements of Performance Funding 1.0 and 2.0:**

<table>
<thead>
<tr>
<th>Performance Funding 1.0</th>
<th>Performance Funding 2.0</th>
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<tbody>
<tr>
<td>Provides bonuses for meeting or exceeding performance indicators.</td>
<td>Integrates performance funding into base funding.</td>
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### Performance Funding 1.0 vs. Performance Funding 2.0

<table>
<thead>
<tr>
<th>Performance Funding 1.0</th>
<th>Performance Funding 2.0</th>
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<tbody>
<tr>
<td>Emphasis is on ultimate/long-term indicators, but may also include intermediate indicators.</td>
<td>Emphasis is on intermediate/progressive indicators.</td>
</tr>
<tr>
<td>Common indicators are used for all institutions.</td>
<td>Funds are weighted, or selected, according to institutional mission and student population.</td>
</tr>
<tr>
<td>Commonly 1-2 per cent of funding at stake.</td>
<td>A higher proportion of funding is at stake (more than three per cent and up to 100 per cent).</td>
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<tr>
<td>Relied more on rates, rather than counts (for example, the percentage of a specific cohort that has graduated in a specific year).</td>
<td>Prefers counts, rather than rates (for example, the aggregate number of degrees awarded, regardless of the students’ start date).</td>
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New or additive funds may be easier for institutions to ignore, according to their own institutional missions and judgments. However, performance funding that is applied to existing public grants (base funding), may put pressure on institutions to comply, regardless of institutional mission (Lang, 2013).

### Ontario

In Ontario, KPIs were originally introduced by the Ontario Conservative government after its election in 1995, with the intention of providing more information to students and the public about the employment and earnings of undergraduate students. This is sometimes called “performance reporting,” since it was not tied to funding. It was expected that with more information on employment outcomes of graduates, students would be able to make more informed choices on university and college programs. Results were ranked in order and provided to the public for information, but there was no information as to what amounted to satisfactory or unsatisfactory performance (Lang, 2013).

Performance funding was first tied to the KPIs in 2000-2001 based on the indicators of graduate employment rate at six months, graduate employment rate at two years, and degree completion rate. These metrics have remained consistent over time. At the time, the intent of the Ontario government was to reward differences in performance; however, there was very little natural variation among institutions. Arbitrary break points were introduced as that tied the KPIs to funding allocations, which insured there were winners and losers (Lang, 2013).

KPIs are now used as a basis for allocating less than two per cent of the operating funding available to universities (Lang, 2013). In 2012-2013, this grant amounted to $23M (MTCU, 2012).
Impacts of Performance-Based Funding on University Performance

Knowledge about the effectiveness of PBF is limited. Historically, the amount of funding allocated based on performance has been too small to make much of an impact (a majority of states that have implemented PBF have allocated less than five per cent of allocations towards performance - although in some states this will be increasing in coming years due to phased-in implementation). Though many new PBF policies have yet to produce meaningful data, advocates of PBF, as well as education leaders, have made a number of recommendations for governments interested in implementing PBF. For a list of these recommendations, please see Appendix B.

Recently, states have begun allocating larger amounts towards PBF. Most notably, Tennessee is the first state that claims to base 100 per cent of higher education funding on course completion and other performance indicators. Their outcomes based formula had its first year of operation in 2011-2012.

Arkansas has just begun allocating five per cent of higher education funding based on performance in 2013-2014, but it is increasing in five per cent increments, until it is capped at 25 per cent in 2018-2019. The remaining 75 per cent of funding will be based on enrolment and institutional needs.

Kevin J. Dougherty, Associate Professor in the Departments of Education Policy and Social Analysis and Organizational Leadership at Columbia University, and Vikash Reddy have written a working paper for the Community College Research Centre, The Impacts of State Performance Systems on Higher Education Institutions: Reach Literature Review and Policy Recommendations. This paper examines findings from studies in a number of states that have introduced performance funding.

Their findings include the following:

Tying funding to outputs has immediate impacts on colleges in the form of changes in funding, greater awareness by institutions of state priorities and their own institutional performance, and increased status competition among institutions. Because of these immediate impacts, performance funding produces intermediate institutional changes in the form of greater use of data in institutional planning and policymaking and in changes in academic and student services policies and practices that promise to improve student outcomes. However, claims that performance funding does indeed increase ultimate outcomes – in the form of improved rates of retention, completion of developmental education and graduation – are not validated by solid data (Dougherty & Reddy, 2011, abstract).

Dougherty and Reddy identify a number of obstacles and unintended impacts that impede the effective functioning of performance funding. Their paper concludes with various policy recommendations for overcoming the many obstacles to the effective functioning of performance funding and addressing the unintended impacts they have identified. Many of these are discussed below in the section on below on Observations of Performance Funding.
Preliminary Observations of Performance-Based Funding

As knowledge about the effectiveness of PBF is limited and many new PBF policies have yet to produce meaningful data, this paper can only offer preliminary observations. These observations have been categorized under positive attributes, inherent challenges, implementation challenges, possible unintended impacts and possible misconceptions.

Positive Attributes

Governments’ goal of PBF is to shift the focus of universities to government priorities. This typically has involved moving away from funding enrolment to focus on funding persistence and completion metrics. PBF rewards universities who are successful in meeting performance targets, or in improving their performance metrics over time. Positive attributes claimed for this model include:

• PBF has the potential to increase universities’ awareness of performance on specific metrics, both individually and in relation to other universities. This can encourage internal discussions on resource allocation, mission and priorities that are informed by data.

• PBF can address a key criticism of enrolment-based funding models, which is that they provide a stronger incentive for enrolment growth than excellence or productivity.

• PBF may enhance transparency and accountability. Advocates of PBF are drawn to it in part because of its promise to provide greater performance accountability in times of fiscal restraint. Further, they argue it provides a more robust picture of how successful institutions have used their funding to support students in course and degree completion.

Inherent Challenges

• It is difficult to establish appropriate performance measures that are well-balanced and that do not result in the creation of perverse incentives (for example, weakening of admission standards, weakening of academic standards, and others discussed below).

• It is difficult to match performance funding with the cost of the performance being measured: performance funding is almost always linear, that is, each percentage point rise in a performance indicator generates the same funding. However, not all performance increases are equal in terms of costs. Depending on where an institution has started relative to a performance metric, it may be more or less costly to improve performance, which can lead to a problem where the marginal cost/marginal revenue may be different for institutions (Lang, 2013).

• PBF can create challenges for government where open-ended and non-competitive PBF creates entitlement funding – where the more successful an institution is in relation to its peers, the more funding it will receive, and the more it will cost.

• PBF can create challenges for institutions if PBF is zero-sum (competitive): if all institutions improve, universities may not experience financial rewards if government appropriations do not increase.
• PBF may create challenges in maintaining and rewarding diversity of university missions: PBF can undermine diversity in universities and other higher education institutions if there is not flexibility in the model. Some models have taken this into account, and have added consideration for unique missions into the formula. For example, the formula in Tennessee accounts for this challenge by allowing institutions to weight metrics through a negotiation process with the state. In Missouri, institutions choose their indicators from a menu of metrics, and in Pennsylvania institutions select a mix of standard and self-defined indicators (Miller, 2013).

• PBF may create challenges in maintaining and rewarding diversity within the student body. In a number of instances, PBF has accounted for this by allowing for a premium for serving specific populations (for example, low income students and/or adult students). However, if this funding is not an appropriate offset it may create additional perverse incentives that privilege certain groups over others.

• PBF can measure only what is measurable, but not necessarily what is important or of value to the institution.

• It is unclear if PBF improves long-term outcomes for students (Dougherty & Reddy, 2011).

Implementation Challenges

• It is difficult for governments to maintain stability in funding indicators and measures over time. Changes in the definition, calculation, or amount of funding attached to each indicator can cause instability.

• Structures of performance funding often fail to take into account the long production cycles of universities. It is a challenge to achieve results rapidly due to the length of time to degree completion, as well as the length of time required to make a change and assess its impact (Lang, 2013).

• The decentralization of universities can pose a challenge to the implementation of PBF depending on the current practices regarding budgeting. While PBF measures indicators at the institutional level, universities are decentralized in budgeting and planning. Deans and faculty members need to be engaged in the implementation of performance funding in order for it to achieve desired results and to mitigate unintended impacts (Lang, 2013).

• Finding the right level of aggregation is challenging. Indicator performance will likely vary by program more than by institution (Lang, 2013). The challenge of measuring performance at an institutional level is that it could undermine the diversity of programming at universities, where less successful programs are terminated and more successful programs favoured (this could limit student choice and diversity across the sector).

• Finding the right level of funding is challenging. PBF will not solve or address shortfalls in regular funding.

• Supporting institutions through the transition is critical. Different approaches have been taken to eased the transition to a PBF model. In some instances this has been done through gradual implementation, or with a phase-in of the amount of funding dedicated
to PBF. In other instances, there has been a learning year that allows institutions to model how their funding would be affected. Some states established financial protections that limit the variance in funding any one institution may experience. Having user-friendly modeling tools (for example, tools that allow institutions to input a variety of assumptions about the institution, other institutions and the system as a whole) can provide institutions with the ability to estimate, and plan for, changes in funding (Miller, 2013).

- The inequality of institutional capacity to measure, evaluate and change course in order to achieve results can pose a challenge to the implementation of PBF. Institutions that do not have this ability may incur additional costs associated with implementation.

- Institutional resistance to PBF may result in ‘gaming the system’. Institutions could take measures to secure high performance scores, without making improvements in performance. This could take the form of setting low goals and targets that can easily be achieved, or taking other actions to improve performance scores, without improving performance (Dougherty & Reddy, 2011).

**Possible Unintended Impacts/ Perverse Incentives:**

- There may be unanticipated compliance costs or transition costs associated with PBF: a major gap in the available research on PBF is the lack of studies on the costs to institutions of meeting demands for data; developing effective organizational learning capacity; mounting initiatives to improve performance; and evaluating the results of these initiatives (Dougherty & Reddy, 2011).

- PBF could result in grade inflation and weakening of academic standards: because PBF is often structured around financial rewards for course or degree completion, institutions may be incentivized to inflate grades, or reduce academic rigour in order to improve their performance related to those metrics.

- PBF could create restrictions of student admissions/disincentives to serve non-traditional students: the most straightforward and least costly way to improve rates of graduation is to raise the standard of admission, or employ a more selective admission process (not improvements to teaching, services, etc.). If performance metrics are constructed around financial rewards for course or degree completion, there may be an incentive to change admission practices. Certain PBF formulas have made provisions for mitigating this risk by providing a premium for certain populations such as low-income students, or adult students. However, it is unclear that this additional funding will offset the additional costs. Additionally, overfunding for certain groups could create another perverse incentive and disadvantage other groups who are not assigned premiums.

- PBF could result in a diminished faculty voice in university governance because of a lack of understanding, or information about performance funding.

- A possible unintended impact that could be a disadvantage for governments is the potential for PBF to expose inadequacies of funding for higher education. PBF could expose a lack of resources as a driver for poor performance.
Possible Misconceptions

In a letter to Executive Heads dated August 29, 2013, the Higher Education Quality Council of Ontario (HEQCO) outlined a number of possible advantages to PBF. Commentary on these attributes is offered below. HEQCO’s claims are set out in bold, and commentary follows:

- **More stability in and predictability of annual funding:** The argument that PBF is more stable than an enrolment-based formula is centered on the idea that PBF relies on a number of metrics rather than relying on a single metric (enrolment) for funding (this is often likened to a diversified portfolio).

  It is difficult to determine if this claim is accurate, as the history of PBF has been mixed, with a number of programs ending after only a couple of years.

  There are a number of states that have enacted performance funding, and then have changed the amount of funding devoted to performance funding, and/or the metrics by which the funding is awarded over time (Dougherty & Natow, 2009). This has contributed to instability of funding.

  Additionally, there are cases of institutions improving their performance, and not experiencing increases in funding. This is because of the finite ‘pot’ for which institutions are competing. If institutional performance is assessed relative to the performance of its peers, there are no guarantees that institutions will see increases, even with improved performance (Dougherty & Natow, 2009). This has also contributed to instability of funding.

- **Government funds more through general purpose grants, less through targeted funding:** Very few states rely on a PBF formula to allocate the majority of funds, and most states rely on PBF to allocate a portion of funds. Of the 22 states that have PBF in place, 14 have indicated that they have allocated “a small amount” or 5 per cent or less towards PBF – although some have indicated this amount will increase in future years (see Appendix A). While PBF may have the potential to reduce targeted funding, this is not the observed case in almost all jurisdictions.

- **Greater willingness of government to invest in higher education:** This argument is predicated on the idea that governments will be more likely to invest in higher education if universities are required to meet government needs and goals in order to receive funding. This claim is not substantiated by historical data.

  Further, the National Association of State Budget Officers in the U.S., a professional membership organization for state budget and finance officers, has indicated that stiff competition for state funds and the unlikelihood of additional state funds for higher education has encouraged governments to look for ways to promote efficiencies – hence PBF. From their perspective, PBF is a way to target investment for meeting state needs with regards to increased student retention and degree production. In an analysis of the political origins of state-level PBF for higher education in Florida, Illinois, Missouri, South Carolina, Tennessee and Washington, tightening state budgets is cited as a factor in the implementation of PBF (Dougherty et al., 2011).

  Lastly, opponents of PBF have argued that it provides an excuse for government to cut, or keep down, regular state appropriations (Dougherty et al., 2011).
• **Less tendency of government to manage or dictate the affairs of institutions:** Conclusive evidence demonstrating this has not been found. Opponents of PBF have argued that PBF provides an excuse for government to undercut the autonomy of institutions (Dougherty et al., 2011).

• **Greater institutional control over the future of the institution:** In some states (Florida, for example) there are reports of some colleges improving their performance, and not experiencing increases in funding – this is because of the finite ‘pot’ and institutions competing for funds and being assessed relative to the performance of other colleges (Dougherty & Natow, 2009).

  Opponents of PBF have argued that PBF gives governments the authority to undercut universities’ authority (Dougherty et al., 2011).

• **Works for government as well:** Government and policy makers have been some of the strongest advocates for PBF. In states where PBF has remained relatively stable, there are also champions within the higher education sector (Dougherty et al., 2011).

**Case Study - PSE Funding System in Tennessee**

In 1979 Tennessee first introduced PBF to higher education. While funding was distributed primarily as a function of enrolment, a funding envelope was introduced that was reserved for meeting certain state goals for higher education including higher graduation rates, job placement rates, student satisfaction and other variables.

In 2010, Tennessee passed the *Complete College Tennessee (CCT)* Act moving the state from an enrolment-based funding model to an outcomes-based funding model. The new system has two basic formulas, one for community colleges and one for four-year state colleges and universities.

The Tennessee Higher Education Commission (THEC) contemplated redesign of the higher education funding formula for several years prior to adopting new legislation. In 2009, a new incentive structure based on outcomes was proposed to (then) Governor Phil Bresden. Meetings were held monthly that included bi-partisan political leadership and education policymakers on education reform. Reforms proposed for the postsecondary sector were linked to changes in K-12 around making Tennessee more competitive in the federal Race to the Top competition. The higher education reforms were motivated by Tennessee’s comparatively low educational attainment rate and economic vitality, which trails both the national average and that of the Southern Regional Education Board (SREB) (THEC, 2012). Further, higher education institutions in Tennessee have had challenges in retaining minority students (THEC, 2012).

After the CCT Act was passed, a Formula Review Committee, which included representation from higher education (including select presidents, CFO's and provosts) and the state government, was established to discuss and debate the new formula design. The Committee met monthly and outside experts were consulted.

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2 Race to the Top, is a $4.35 billion United States Department of Education competitive grant program designed to encourage and reward States that are creating the conditions for education innovation and reform in K-12 education. It is funded by the American Recovery and Reinvestment Act of 2009 (ARRA). More information can be found at: [http://www2.ed.gov/programs/racetothetop/executive-summary.pdf](http://www2.ed.gov/programs/racetothetop/executive-summary.pdf).
In the year prior to implementation, the formula was “back tested” by THEC so that institutions could see what their allocations would have been for the three years prior.

Tennessee is presently the only state that claims to use a strictly outcomes-based model instead of an enrolment-based model. The stated goal of this outcomes-based model is to shift incentives from enrolment and growth towards excellence and productivity.

The model incorporates two key aspects: productivity metrics and recognition of institutional mission. Institutional mission is an explicit component of the outcomes-based formula in Tennessee. Outcomes can be weighted differently by each institution, in order to reflect and reinforce an institution’s particular mission.

During the first year of the new system’s operation in fiscal 2011-2012, funding for universities was based on the following indicators:

- Student accumulation of 24, 48 and 72 hours of credit;
- Research and service expenditures;
- Degrees awarded (bachelor’s and associate, master’s and education specialist, and doctoral and law degrees);
- Degrees per full-time equivalent (FTE) student;
- Transfers out with at least 12 credit hours; and
- Six-year graduation rate.

Community colleges are funded on slightly different criteria:

- Student accumulation of 12, 24 and 26 hours of credit;
- Workforce training;
- Dual enrolment students;
- Associate degrees and certificates granted;
- Awards per FTE enrolments;
- Job placements;
- Transfers out with 12 credit hours; and
- Remedial and developmental success.

Implementation of the Tennessee PBF System

In order to build understanding in the new model, and to allow for institutions to see the stability of the model, the formula was back tested by THEC by simulating the formula calculations for three years prior.

Once the model was finalized, THEC staff developed a projection tool to allow institutions to simulate the effect of future changes in productivity.

3 These hours correspond to completion of 1st year, completion of 2nd year and completion of 3rd year, respectively.
The steps involved in the funding model, as outlined by THEC are as follows:

1) Identify university outcomes. For example: Student Progression, 24 Credit Hours, 48 Credit Hours, and 72 Credit Hours, Bachelor’s Degrees, Master’s Degrees, Doctoral/ Law Degrees, Research/ Grant funding, etc.

2) Collect data from an entire academic year on the various outcomes4.

3) Award a premium for the production of certain outcomes by low-income or adult student (for both universities and colleges, adults over 25, and low-income students completing any of the metrics are more heavily weighted).

4) Re-scale the data, if necessary, so that it is somewhat comparable across variables. (One of the goals of scaling the data was to bring each institution as close as possible to their previous years’ allocation. This way, each institution would begin from a predictable starting point.)

5) Apply a weight to each outcome that reflects the priority outcome and the mission of the university.

6) Multiply and sum the scaled data times the weight to produce the weighted outcomes.

All steps are identical at each institution, but institutions negotiate the weights with THEC for each factor. This gives a unique weighted outcome for each institution.

After the weighted outcome is calculated, these values are multiplied by the Southern Regional Education Board’s (SREB) average faculty salary of similar Carnegie Classification institutions. This gives each institution an “Outcome Based Performance” value.

Fixed costs, including maintenance and operations, utilities, rent and equipment replacement are calculated separately. “Quality Assurance” scores are also added, these are intended to measure additional performance funding metrics (more details on both these elements are provided in the document Outcomes-Based Model Narrative).

The Tennessee model generally relies on counts rather than rates, which means that the model does not depend on an initial cohort.

The allocation model does not determine each institution’s funding in and of itself; instead the allocation model determines each institution’s share of funding that the government makes available. Each institution’s formula calculation is independent of other institutions, but the allocation of available funding is competitive. For example, if the state funds 50 per cent of the total dollar amount shown in the allocation modeling, each institution would receive 50 per cent of the allocation derived by the model.

Funding must be earned by institutions on an annual basis, and there is no minimal level that institutions are guaranteed based on prior-year funding.

The formula is not directive in terms of how the funds should be spent.

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4 For universities, all data except for Research and Service is pulled from THEC’s Student Information System – which was in place prior to the CCT Act. This data is reported to THEC by individual institutions.
Conclusion

Knowledge about the effectiveness of PBF is limited and many new PBF policies have yet to produce meaningful data. While the prevalence of PBF is increasing in the U.S., it is important to note that PBF is by no means a panacea to reductions in government funding and issues of long-term sustainability. Nor is PBF a solution to improving student outcomes.

Advocates of PBF and education leaders have made a number of recommendations for governments interested in implementing PBF, which are included in Appendix B. Of paramount importance in implementing PBF successfully is early engagement and collaboration with stakeholders on the structure and metrics of PBF funding.
### Appendix A: States with Performance-Based Funding and Metrics

(Table is reproduced from Friedel et al., at the Education Policy Centre at the University of Alabama: *Performance-Based Funding: The National Landscape*, September 2013)

<table>
<thead>
<tr>
<th>State</th>
<th>Status</th>
<th>Amount of PBF</th>
<th>Metrics</th>
</tr>
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<tbody>
<tr>
<td>Alabama</td>
<td>In transition (enacted through regulation, not statute, by the Alabama State Board of Education)</td>
<td>15 per cent in FY2014</td>
<td>With encouragement from legislative leaders and the governor, the Alabama Department of Postsecondary Education commissioned a study to propose a new funding formula to allocate state appropriations. This will be implemented in the 2014 Fiscal Year, which in Alabama starts on October 1, 2013</td>
</tr>
</tbody>
</table>
| Arizona        | In place 2012 SB 1530         | FY2013: $5 million of existing dollars expected to be reallocated by the Board of Regents based on performance metrics | Public universities:  
• Degree completion  
• Credit hour completion  
• Research and public service funding  
• STEM and other high-need fields are weighted |
| Arkansas       | In place 2011 Act 1203        | Begins with 5 per cent in 2013-2014 school year, and increases in 5 per cent increments until capped at 25 per cent during the 2018-2019 school year | Separate, yet similar formulas for community colleges and universities; 40 per cent of performance funding:  
• Total credentials awarded  
• Bachelor credentials awarded  
• STEM production  
• Student progression on 60 per cent of performance funding;  
• Optional measures selected by each institution |
| California     | Formal discussions 2013 SB 195 | N/A                    | Legislators are currently in discussion and have recommended a working group to design performance metrics to include:  
• Graduation rates  
• Transfer rates  
• Degree completion  
• Low-income degree completion  
• Developmental education  
• Retention rates  
• Course completions  
• Total funding per degree or |
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| Colorado   | In transition 2011 SB 52 | Begins no earlier than FY 2016-2017; 25 per cent of the General Fund appropriation that exceeds $650 million in total higher education operating appropriations; performance funding implemented only when total state higher education General Fund appropriations reach at least $706 million | The metrics are still under development with the following goals:  
• Increase attainment  
• Improve student success  
• Diversify enrollment and reduce attainment gaps  
• Restore balance in postsecondary revenues and maintain productivity |
| Florida    | In transition Chapter 2013-27 | N/A                                | The metrics are under development with the goals of increasing graduation and employment rates in targeted program areas, and increasing the number of industry certifications |
| Georgia    | Formal discussions       | N/A                                | N/A                                                                      |
| Idaho      | Formal discussions       | N/A                                | N/A                                                                      |
| Illinois   | In place 2011 HB 1503    | Less than 1 per cent in FY2013; may grow in future years | Public universities:  
• Degree completion  
• Amount of money spent on each degree  
• Bonuses for low-income and minority students, and for STEM degrees  
Community colleges also have a system, but theirs is based more on enrollment |
<p>| Indiana    | In place CHE Higher Ed Budget | 5 per cent in FY2011-FY2013; projected to be 6 | Institutions evaluated against the same benchmarks regardless of size or mission: |</p>
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<th>State</th>
<th>Status</th>
<th>Amount of PBF</th>
<th>Metrics</th>
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</table>
| Kentucky   | Formal discussions                          | N/A                                                                           | • Overall degree attainment  
• On-time degree attainment  
• Low-income degree attainment  
• Credit hour completion  
• Dual-credit completion  
• "Early college" credit hour completion  
• University research improvement |
| Louisiana  | In place 2010 GRAD Act                      | 15 per cent of total state budget allocation                                  | • Graduation rate and graduation productivity goals consistent with institutional peers  
• Program completion  
• Partnerships with high schools to prepare students for postsecondary education  
• Pass rates on licensure and certification exams and workforce foundational skills |
| Maine      | Formal discussions                          | N/A                                                                           | Currently developing recommendations on performance funding metrics and strategy                                                                                                                          |
| Maryland   | Formal discussions                          | N/A                                                                           | NCSL participated in discussions on performance funding with Maryland legislators and legislative staff in 2011 and 2012                                                                                     |
| Massachusetts | In place 2013 HB 3538                     | $7.5 million in FY2014 ($5 million for community colleges, $2.5 million for public universities) | Community colleges and public universities:  
• College participation  
• College completion  
• Student learning  
• Workforce alignment  
• Preparing citizens  
• Closing achievement gaps  
• Operational efficiency |
| Michigan   | In place 2012 HB 5372                       | 3 per cent under FY 2012-2013 enacted budget (8.5 million for community colleges) | Public universities:  
• Graduation rates  
• Number of degrees awarded in STEM and other critical area fields  
• Research and development |
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<th>State</th>
<th>Status</th>
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| Minnesota  | In place 2013 SF 1236       | 5 per cent of total appropriations | Community colleges and public universities:  
  • Graduation rate or degrees, diplomas & certificates conferred  
  • Persistence and completion rate  
  • Related employment rate  
  • Reduce student expenses through the use of Open Educational Resources (OER) tools and services  
  • Reallocation of funds from expense realignment  |
| Mississippi| In place 2013 SB 2851       | As of FY2014, 100 per cent of public university appropriations based on | Public universities:  
  • Retention rate  
  • Undergraduate graduation rate  
  • Diversity of faculty  
  • Research/public service  |
<table>
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<th>State</th>
<th>Status</th>
<th>Amount of PBF</th>
<th>Metrics</th>
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<tbody>
<tr>
<td>Missouri</td>
<td>In place CBHE 2012 Report</td>
<td>Approximately 2-3 per cent (to be in place by FY2014)</td>
<td>Metrics vary by institutional sector and focus on the following areas:</td>
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<tr>
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<td>• Student success/progress: (a) completion rates; (b) retention rates; (c) completion of developmental and first credit-bearing course; (d) credit accumulation</td>
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<td></td>
<td>• Degree attainment: (a) total degrees awarded; (b) graduation rates</td>
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<td></td>
<td>• Quality: (a) job placement; (b) licensure/ certification exam results and pass rates; (c) assessment results in major field, general education</td>
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<td></td>
<td>• Financial responsibility/efficiency: (a) share of E&amp;G spending on core mission; (b) revenue growth per FTE student; (c) completed credit hours per $100,000 of state appropriations or E&amp;G spending</td>
</tr>
<tr>
<td>Montana</td>
<td>In transition 2013 Sj 0013</td>
<td>An additional 5 per cent ($7.5 million) on top of the total general fund appropriation available in 2014-2015 academic year</td>
<td>Metrics for the initial pilot year will include:</td>
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<td>• Annual number of undergraduate degrees and certificates awarded</td>
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<td>• Percentage of first-time, full-time freshmen returning for a second year of enrollment</td>
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<td>Long-range plans for future potential allocations would include mission differentiation</td>
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<tr>
<td>Nevada</td>
<td>In place 2013 AB 507</td>
<td>5 per cent of base appropriations in</td>
<td>Community colleges and public universities:</td>
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<tr>
<td>State</td>
<td>Status</td>
<td>Amount of PBF</td>
<td>Metrics</td>
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| New Mexico     | In place LFC Hearing Brief | FY2015 (FY2013 performance); growing to 20 per cent by FY2018; $18,926,196 has been set aside for performance funding pool for FY2014-2015 | • Certificate and degree completion  
• Transfer  
• Increased success with underserved populations |
| New York       | Formal discussions | 5 per cent                                                                    | Public universities:  
• Number of certificates and degrees awarded  
• Number of certificates and degrees awarded in state workforce priority areas  
• Number of certificates and degrees earned by financially at-risk students |
| North Carolina | In transition SL 2012-142 Section 8.5 | Up to 2 per cent of previous year’s General Fund appropriations; additional funds as available for exceeding performance on all eight measures; measurement in FY2013 and funding in FY2014 | State Board of Community Colleges:  
• Basic Skills Student Progress  
• Developmental Student Success Rate in College-Level English Courses  
• First Year Progression  
• Licensure and Certification Passing Rate  
• GED Diploma Passing Rate  
• Developmental Student Success Rate in College-Level Math Courses  
• Curriculum Student Completion  
• College Transfer Performance |
| North Dakota   | In place 2013 SB 2200 | Moving from enrollment-based model; in FY2013, general fund appropriations will be based on credits completed; additional $5 million available | Community colleges and public universities:  
• Credit completion  
• Credits are weighted by level and in relation to state workforce needs |
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<th>State</th>
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<tr>
<td>Ohio</td>
<td>In place Section 371.20.80</td>
<td>Universities: all instructional funding on course completions instead of enrollments; degree completions being phased in (began in 2010)</td>
<td>At-risk students are more heavily weighted in formula, and there is a STEM course incentive. Public universities: • Course and degree completion Community colleges Progression from remedial to college level courses • Students earning 15 and 30 college level credits • Students earning an associate degree • Completion of 15 hours and transfers to four-year institutions</td>
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<tr>
<td>Oklahoma</td>
<td>In place Revised Funding Formula</td>
<td>Small percentage of the overall budget for higher education; in 2008, performance-based funding averaged $2.2 million a year; Board of Regents in April 2012 approved revised and expanded funding formula for new dollars or any funding the system receives beyond its current base</td>
<td>• Campus degree completion plan • Retention rates • Pell Grant retention rates • 24-credit-hour completion rate • Graduation rate • CCA degree target achievement • Number of certificates/degrees conferred • Program accreditation</td>
</tr>
<tr>
<td>Oregon</td>
<td>In transition HB 3120</td>
<td>N/A</td>
<td>Effective July 1, 2014, the community colleges will move under the governance of the Higher Education Coordinating Commission. A new outcomes-based formula is under development for all sectors of public higher education.</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>In place Allocation</td>
<td>2.4 per cent</td>
<td>Public universities:</td>
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<td>State</td>
<td>Status</td>
<td>Amount of PBF</td>
<td>Metrics</td>
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<tr>
<td>South</td>
<td>Formula</td>
<td></td>
<td>Mandatory • Student success: degrees conferred and closing achievement gap • Access: close access gap and faculty diversity • Stewardship: private support dollars raised</td>
</tr>
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</table>
| Carolina   |                                                                        |                    | Optional (choose any 5 metrics from the following categories) • Success: deep learning scale results, senior survey, student persistence, value added, and STEM degrees

| South     | Formal discussions S 0266 (2013-2014)                                | To begin FY2016, annual appropriations will be distributed through an accountability-based model. A five-year transition period will be incorporated. | Metrics for public universities are under development, to include: • Completion • Affordability and access • Educational quality • Economic development and institutional mission |
| Dakota    | In place Senate Bill 5                                                | $6 million         | Community and technical colleges are exempt.                                                                                                                                                    |

After a one-time performance funding pilot for public universities based on three years of degree production data, with more funding for producing graduates in high-priority fields, 2013 legislation provides the framework for performance.
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<th>State</th>
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| Tennessee | In place Complete College TN Act of 2010 | 100 per cent | Public universities:  
- Students accumulating: 24, 48, and 72 hours  
- Bachelor's, master's, doctoral, and law degrees  
- Research/grant funding  
- Transfers out with 12 hours  
- Degrees per 100 full-time equivalent (FTE)  
- Six-year graduation rate  
Community Colleges:  
- Student accumulating: 12, 24, and 36 hours  
- Dual enrolled students  
- Associate degrees, 1 year certificates, and less than 1 year certificates  
- Graduates placed in jobs  
- Remedial and development success  
- Transfers out with 12 credit hours  
- Workforce training (contact hours)  
- Award per 100 FTEs |
| Texas  | In place 2013 SB 1                           | 10 per cent   | Community/junior colleges:  
- Developmental education  
- Gateway courses  
- College credit hour attainment  
- Credentials awarded  
- Transfers to a four-year Institution |
<p>| Utah   | In place 2011 Senate Bill 97                | N/A           | Senate Bill 97 establishes &quot;mission based funding&quot; as a basis for higher education appropriations in Utah instead of funding institutions based solely on enrollment growth; mission-based funding will consider both enrollment growth and the strategic priorities for colleges and universities. As |</p>
<table>
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<th>State</th>
<th>Status</th>
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<tr>
<td>Virginia</td>
<td>In place Virginia Higher Education Opportunity Act of 2011</td>
<td>N/A</td>
<td>Public universities and community colleges:</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>• Increased enrollment</td>
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<td></td>
<td>• Increased degree completion</td>
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<td></td>
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<td></td>
<td>• Improved retention and graduation rates</td>
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<td>• Increased research output</td>
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<td></td>
<td>• Increased degree production in STEM fields</td>
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<td>• Increased efficiency gains through:</td>
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<td>• Year-round use of campus facilities</td>
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<td>• Online courses</td>
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<td>• Resource sharing</td>
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<td>• Better use of technology</td>
</tr>
<tr>
<td>Washington</td>
<td>In place Student Achievement Initiative</td>
<td>2013-2015: approved $10.5 million</td>
<td>Community and technical colleges:</td>
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<td></td>
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<td>• Building college level skills: adult literacy/English language proficiency test score gains, GED or H.S. diploma, and passing pre-college writing or math</td>
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<td></td>
<td>• First-year retention: earning 15 and 30 college level credits</td>
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<td></td>
<td>• Completing college level math: passing courses required for technical or academic associate degrees</td>
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<td></td>
<td></td>
<td></td>
<td>• Completions: certificates, associate degrees, and apprenticeship training</td>
</tr>
<tr>
<td>West Virginia</td>
<td>Formal discussions</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Wisconsin</td>
<td>Formal discussions</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Wyoming</td>
<td>In transition</td>
<td>2015-16:</td>
<td>Self-study has been completed;</td>
</tr>
<tr>
<td>State</td>
<td>Status</td>
<td>Amount of PBF</td>
<td>Metrics</td>
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|       | 2009 HB 114 | $14.3 million | performance metrics are now being established, likely to include:  
• Completion of diplomas and high-level certificates  
• Time to degree  
• Remedial education |

**Note:** The PBF State Activity Table is based on the February 2013 version developed by the National Conference of State Legislatures (NCSL) and has been modified and included with permission from NCSL: http://www.ncsl.org/issues-research/educ/ performance-funding.aspx. The current table includes updates by the authors from the state legislative websites, websites of state higher education agencies and governing boards, and community college state directors in attendance at the annual summer meeting of the National Council of State Directors of Community Colleges, July 28-31, 2013, Big Sky, MT.
Appendix B: Advice for Governments Interested in Implementing Performance-Based Funding from Commentators

Though many new PBF policies have yet to produce meaningful data, advocates of PBF, as well as education leaders have made the following recommendations for governments interested in implementing PBF. Unless otherwise indicated, these design tips are taken from the National Conference of State Legislatures:

- Engage all stakeholders—policymakers, higher education leaders, faculty members and business and industry representatives—in the design of the funding system.

- Put enough funding at stake to create an incentive for institutions to improve results, and decide whether the funding will come from new money or base funds. Most states are putting aside five per cent to 25 per cent of higher education dollars for performance funding.

- Allow postsecondary institutions with different missions to be measured by different standards. For example, research universities could be rewarded for research and development performance, while community colleges could be rewarded for workforce training results. Phase in the performance funding system to make the transition easier.

- Keep the funding formula simple, with unambiguous metrics, so expectations are clear to everyone.

- Maintain focus on the goal of improving college completion, while rewarding both progress and success. States can reward colleges not only for increased degree production, but also for retaining students year to year, and for helping students transfer between institutions.

- Include a measure to reward colleges that graduate low-income, minority and adult students to ensure that institutions keep serving these populations.

- Align the funding formula with state economic and workforce needs by providing performance funding to those colleges that are graduating students in high-priority fields.

- Preserve academic quality by incorporating student learning measurements into the performance funding system.

- Integrate all metrics and provisions into the state higher-education-funding formula, as this makes it more durable when states are faced with budget cuts (Miao, 2012).

- Incorporate stop-loss provisions that prevent institutions from losing more than a certain level of funding each year (Miao, 2012).

- Implement a year of learning during the first year that the policy is in effect, a period in which state spending does not change but colleges receive reports detailing how their funding would have been impacted under the new measures; and/or gradually phase in over a multiyear period the percentage of total funding allocated based on performance (Miao, 2012).

- Subject the system to frequent evaluation and make adjustments where needed (Miao, 2012).
References


