Leading in a Changing Fiscal Environment for Missouri Higher Education

“Higher education is not at the zenith of its popularity, and changes in political leadership are reshaping priorities, with fewer legislators focused on higher ed. Historically, our nation believed that having an educated citizenry was imperative for a healthy democracy, and so higher education was supported at very high levels. Over time, however, it has come to be seen as a benefit to the individual more so than a public good—particularly in an era of limited resources and competing priorities.” – Matthew Lambert, Author of *Privatization and the Public Good: Public Universities in the Balance*

The challenges faced by the University of Missouri are similar to challenges faced by other public universities across the nation. However, the Missouri story does have some nuance, with the University of Missouri facing some challenges before many peers. This positions the University of Missouri uniquely to become a leader of necessary change in public higher education. These materials and subsequent board discussion will explore the relationship between *trends in state budgetary policy, demographics and enrollments, potential options for dealing with future resource constraints, key pillars of a long-range financial plan,* and *envisioning a new future for the University of Missouri.*
Historic trends and state budgetary policy, demographics, and enrollment

The following analysis will explore the last four decades of state appropriations policy, enrollment trends, and their impact on the University’s operating budget.

Figure 1: 40 years of Appropriation History: Peak to Valley

Figure 1 depicts the University’s state appropriations received mapped with recessions as identified by the National Bureau of Economic Research. The recessions included in the four decades are:

- July 1981 – November 1982
- July 1990 – March 1991
- March 2001 – November 2001
- December 2007 – June 2009

As demonstrated in the chart, the University’s appropriations generally followed the economic cycle, with a cut in appropriations immediately following a recession. This generally makes sense, as state tax revenues generally correlate with the economic cycle, forcing the state to decrease expenses on higher education to maintain a balanced budget. **Over the forty years studied, the 2017 withhold represents the first funding decrease not tied to the overall economic cycle.**
Figure 2: State appropriations to inflation over 40 years

Figure 2 represents the actual state appropriations received compared to the inflation adjusted beginning appropriations for the decade using the Consumer Price Index – Urban as the indexing value. It is important to understand the purchasing power impact of the University’s appropriations over time, as inflation generally erodes the purchasing power of dollars over time. The above chart demonstrates how the University’s appropriations generally track with inflation, especially through the 1980’s and 1990’s where appropriations spent time both below and above inflationary levels, with eventual full recoveries to any recessions. This trend changed in the 2000’s and 2010’s, where the University’s appropriations grew after recessions, but not enough to recover purchasing power lost during recessions.
In addition to purchasing power considerations, which represent national data across all industries, it is also important to consider the trends within the specific industry. Figure 3 depicts the gap between the University of Missouri’s appropriations versus the average growth of state appropriations of all public higher education over the same timeframe, without consideration of relative starting or ending values. This chart represents University of Missouri’s change in appropriations to the industry change in appropriations. Note that through the 1980’s and 1990’s the University’s growth in appropriations generally tracked with the national average, save the loss in 1982 appropriations. The big gap for the University of Missouri emerged after the appropriations cuts in 2002, which were more severe than the US Average. Additionally, the growth rate for the University of Missouri was slower than the US Average from 2005 to 2008, allowing the gap to widen further. Since the “Great Recession” of 2007 to 2009, the University’s appropriations have trended with the national averages, but not recovered any ground since the early 2000’s. Nationally, public institutions began to feel the cost pressure of inflation outpacing appropriations in the 2010’s; the University of Missouri has been feeling this pressure since the 2000’s.
To deal with inflationary pressures and keep pace with other higher education institutions, the University of Missouri had to find a way to grow revenues to keep pace and stay competitive. To make up for flat growth in state appropriations, the University undertook a strategy to grow enrollment.

**Figure 4:** Appropriations growth compared to full time equivalent enrollment

Figure 4 demonstrates the University’s strategy of growing student enrollment (measured in full-time equivalents) to make up for slower growth in state appropriations. By doing this, the University of Missouri was able to maintain revenue growth by increasing the total tuition dollars collected as the University educated more students. The University of Missouri was able to increase student enrollments as high school graduates in Missouri and the Midwest, areas traditionally served by the University of Missouri, experienced significant growth. However, it is important to note incremental tuition dollars come with the incremental cost of educating an additional student. This growth resulted in the University focusing more on the teaching mission, as there were more students to educate.
Demographic trends largely supported the University’s ability to grow, as demonstrated in the following charts with underlying data provided by the Western Interstate Commission for Higher Education’s Knocking on the College Door report.

**Figure 5:** University of Missouri resident undergraduate growth to Missouri high school graduate increases

Figure 5 demonstrates the University of Missouri captured the majority of incremental high school graduates from 2001-2017. From 2012 on, the University enrolled more high school graduates than the growth in graduates, taking market share from other institutions. The University of Missouri was able to grow resident enrollments by capturing the majority of the incremental of high school graduates in the state of Missouri.
In addition to gains in Missouri, the University of Missouri was able to grow the number of non-resident enrollees significantly, especially from 2008 through 2015. In 2001, the University of Missouri enrolled 5,315 non-resident students. By 2016, that number had swelled to 12,665. This intentional targeting of non-resident enrollments came at a time where high school graduates in the Midwest were growing, allowing the University to benefit from adding additional students.
Figure 7: Forward trends in projected high school graduates

Going forward, the positive demographic trends in the Midwest experienced during the 2010’s will erode during the 2020’s. On a positive note, Missouri is expected to grow slightly then flatten as other states in the Midwest experience significant declines in high school graduates over the next fifteen years. Given the state budget environment and future demographics trends, the same strategies the University used to grow revenues over the past four decades will be challenged into the future decade.
The chart above demonstrates the relationship between tuition and state appropriations per student (operating fund revenues) and total research expenditures in five-year increments back to 1975. The total dollars have all been indexed to 2015 values using the Consumer Price Index – Urban. Note the stability of the 1970’s and 1980’s was followed by growth in resources per student in the late 1980’s through 2000. During the period of growth in resources per student, the University grew total research expenditures. Since 2000, resources per student have begun a downward trend, with state support per student dropping at a faster rate than tuition growth. As the resources per student fell, research expenditures began to follow. There is a relationship between tuition and state support per student and a research institution’s ability to generate research expenditures. If the University is unable to maintain tuition and state support per student, research competitiveness in terms of total research spending will likely continue to erode.
Options for dealing with future resource constraints

When considering options for dealing with future funding constraints as related to the future of the University, it is important to remember how the University’s business model and related funding works. As a public governmental entity, the University has less flexibility than a private business in how it spends funding. Many of the funds that come to the University come with strings attached. The following diagram, known as the “Colors of Money” represents the University’s funding model:

The chart shows gifts and grants in red because there is very little flexibility in how the University can spend the funds. Grants and contracts are primarily for specific research, although some grants and contracts fund public service and instructional activities. Donors restrict the majority of the University’s gifts for a specific purpose, giving the University little flexibility on how the University uses the funds. This is in contrast to many private institutions who maintain large endowments of unrestricted gifts.

In times of financial hardship, it can be tempting to grow gifts to try to fill shortfalls in tuition and state support, however, this strategy must be focused to achieve success. Historically, public institutions do not receive unrestricted gifts like many large private institutions, meaning many new gifts generally come with new spending. This does not create the resources necessary to fill gaps in tuition and state support.

Another area explored by universities in the face of mounting challenges with state support and tuition involves growing research funding to offset tuition and state support shortfalls. In the short run, this strategy can work to the extent that cost from the operating fund can
be shifted onto the restricted fund. For example, if the University is able to shift faculty workload and related funding to research from teaching, this strategy can be effective because it cuts cost on the operating fund. In practice, this strategy is challenging to implement as cycle times for winning research awards are very long, especially compared to the current fluid state of state support and tuition in the industry. Additionally, there are dangerous long-term effects of this strategy on the institution’s finances. While research grants do allow for indirect cost reimbursement in addition to direct cost reimbursement, the indirect cost reimbursement is insufficient to cover total fixed costs of research because of federal regulations. Research requires institutional support and if tuition and state support decline over the longer term, increases in research only continue to strain the pressure on the operating fund to continue investing in the infrastructure necessary to support research.

Other unrestricted funds are illustrated in yellow on the chart. The primary source of funding for this group is fees for services provided. These operations are treated as separate “business type” enterprises and are expected to set fees for services to cover current operating costs plus depreciation, which is set aside for future capital and equipment replacement. Included in this category are student auxiliaries (housing, dining, bookstores, and recreation centers), intercollegiate athletics, student unions, MU Health Care, the MURR research reactor, service operations (energy management, facilities design and construction, telecommunications, etc.), continuing education and self-insurance funds. These activities comprise half of the University’s funding.

With self-funded operations, there is the temptation to shift operating cost onto the self-funded activities. The University attempts to cover overhead support of these operations with chargebacks to the self-funded operations. It also reasonable for the University to expect the self-funded operations to support the mission at a maximum value, but the University has to be careful not to overcharge the operation to the point where it prevents the reinvestment necessary to ensure the sustainability of the operation.

The operations fund, shown in green, is where the bulk of the University’s teaching, research, and supporting service activities occur. Its primary funding sources are tuition, fees, and state appropriations, although it does receive some support from unrestricted auxiliary and other enterprise “like” operations in the form of overhead payments for services provided by the operations fund (such as accounting, procurement, legal, grant management, facilities, etc.). In addition, the operations fund receives facilities and administrative cost recovery funding from grants and contracts to offset some of the costs of providing space and support services (overhead), as previously discussed. Operations fund revenues are the least constrained by third parties and hence the most valuable. Any significant change in state appropriations and tuition disproportionately influence the operating fund and over the longer term can impact the other funding sources, as the operating fund represents the core of the University’s academic enterprise.
Because of the relationships described above, the University also uses the “Funding Tree” diagram to show the relationship between the types of funding demonstrated above:

Any long-term financial strategy must focus on the roots and trunk of the tree for the University to be sustainable in the long-run. The options for dealing with tuition and state support research constraints must be focused on the operating fund, meaning the solutions should be grounded in unrestricted, non-auxiliary revenues and administrative and core academic program expenditures. Over the longer term, the University can explore revenue streams outside of tuition and state support, however, the new revenue streams need to be free of incremental expenditures to have the same value as state support. This type of focus will require the University to think more in terms of marginal cost in line with marginal revenue, which has historically been a challenge for public higher education.

Additionally, to generate additional revenue, the University will need to start thinking in terms of return on investment. When the state appropriates funds, the University does not have to spend money to get marginal revenue. To generate new streams of revenue, the University will likely have to invest (or spend) more to earn more revenue and grow. The focus needs to shift to investing in a sustainable way.
Key pillars of a long-range financial plan for the University of Missouri

The key pillars of any long-term plan must be grounded in the funding constraints discussed above. Therefore, the long-term plan should focus on the core operations of the University, which are funded within the operating fund. The key pillars should address growing operating fund revenues of tuition and state support and managing operating fund expenditures, over three quarters of which are people largely comprised of academics and administration. The key pillars should address:

- **Tuition Revenue**: tuition and fees for the University of Missouri have grown less than national averages over the past decade. The University should explore where tuition and fees are low relative to program value, while balancing the burden of additional tuition on students. With continued erosion of state support, variable pricing may be necessary to align program costs and benefits to students. In addition to pricing adjustments, the University should also explore strategies to grow enrollments in high demand programs and improve student throughput via additional summer programs and winter intercession programs. As workforce demands change, the University should explore additional certificate and professional programs that allow the State’s workforce to adapt in a changing economy.

- **State Support**: although state support has been flat to declining for the past decade and a half, the University still should seek to maximize every dollar of state support. This support helps keep the University’s education affordable and provides a significant return through teaching, outreach, research, and economic development for the citizens of Missouri.

- **Administrative Cost**: the University of Missouri spends significantly less than peer averages on administration. However, with current funding constraints, the University needs to continue to evaluate the efficiency and effectiveness of administrative functions and the value added to the overall mission, while mitigating appropriate risks.

- **Academic Mission**: The University needs to ensure that a sustainable economic model supports every piece of the academic mission. The academic missions have the ability to generate significant value for the State of Missouri and improve the well-being of all Missourians. The University should ensure it maximizes this value while living within financial resource constraints. To the extent resource constraints result in a value decrease to the State, the University needs to identify these constraints and the potential losses to the State.

- **Resource Allocation**: The University needs to ensure it allocates its limited resources to the most critical parts of the organization as defined by the academic mission. The university needs to align resource allocation models to support and deliver the future mission.
Envisioning the new future of the University of Missouri

The University of Missouri is part of a larger movement towards fundamental change in the public higher education business model. Public higher education needs to recognize the movement towards private good from public good without abandoning the public mission. In envisioning a new future, the University must implement a plan that addresses the following topics surrounding business models, developed by the Association of Governing Boards of Universities and Colleges (AGB):

- How does the University of Missouri fit into the competitive landscape for higher education?

- What are the macro trends that affect higher education in the State of Missouri? How does the University of Missouri fit within these trends?

- Where is there room to innovate and change the University’s enterprise?

- How does the University’s business model need to change for the future?
  - What are revenue growth opportunities?
  - What are realistic strategic plans and how do they link to revenue and financial plans?
  - How are academics prioritized within these models?

- How can the institution identify, report, monitor, and respond to key metrics that show progress towards plans?

- How do the changes respond to the expectations of a new generation of students?
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Economy and its impact University of Missouri funding
Higher Education in Missouri is Changing

- The 2017 state appropriation cuts are different than past cuts
- Previously favorable demographics in high school graduates are shifting flat to negative
- The view of public higher education is shifting from public good to private good
- The University of Missouri is well positioned to lead the changes necessary to reshape public higher education
Larger cuts now follow smaller growth, past cuts followed recessions.
Medicaid Continues to Grow

- In 2016, Medicaid consumed 37% of Missouri’s budget. On a percentage basis, only Ohio spent more on Medicaid. (Source National Association of State Business Officers)
Compared to the US Average Growth, UM’s Support is 30% less than US Average before current withholds

University of Missouri to US Average growth in State Support

$190 million gap (30% less)
Previous double digit cuts were balanced with enrollment growth.
Real revenues per student decline, putting pressure on research enterprise.
Board Discussion

• How does the University of Missouri fit into the competitive landscape of higher education?
• What are the macro trends affecting Missouri? How does the University of Missouri fit in these trends?
• Where is there room to innovate in the University’s enterprise?
• How does the University’s business model need to change for the future?
• How can the University identify, report, monitor, and respond to key metrics to show plan progress?
• How do the changes respond to the expectations of a new generation of students?