The Potential Economic and Fiscal Cost to Missouri and Kansas of Proposed Policies Limiting the Role of Diversity, Equity, and Inclusion

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THE PERRYMAN GROUP

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Executive Summary

- Irrespective of their stated purpose or actual intent, policies perceived to be discriminatory can lead to economic harms. This pattern of awareness and potential consequences is increasing as such actions receive greater attention. For example, controversial laws can both reduce travel and tourism and diminish the potential for economic development.

- There are currently several proposed bills and other measures in Missouri and Kansas with diversity, equity and inclusion (DEI) components. If passed, such anti-DEI legislation could be viewed as discriminatory and could negatively affect the economy through two primary channels: reduced tourism and a diminished potential for economic development.

- The Perryman Group estimates that bills and initiatives currently under consideration in **Missouri** which could be seen as discriminatory have the potential to lead to losses including nearly **$2.6 billion** in annual gross product and **23,842** jobs as of 2030 (including multiplier effects). These declines represent more than 0.6% of total output (gross product) and approximate 0.8% of current employment.

- The Perryman Group estimates that the total potential economic cost of policies under consideration in **Kansas** which could be viewed as discriminatory includes **$898.4 million** in lost annual gross product and **8,462** lost jobs as of 2030 (including multiplier effects). These adverse consequences represent more than 0.4% of gross state product and almost 0.6% of total employment.

- Business activity generates tax revenue, and the economic losses associated with the proposed policies would lead to decreases in tax receipts to the States and local government entities. The Perryman Group estimates that, once the policies are implemented and related effects are realized, the potential annual decrease in tax receipts would be significant.
    - **Missouri: $487.0 million** to the federal government, **$226.7 million** to the State of Missouri, and almost **$129.0 million** to local government entities across the state.
    - **Kansas: $170.9 million** to the federal government, **$83.2 million** to the State of Kansas, and **$46.1 million** to local government entities across the state.

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- The US economy is facing major challenges and uncertainty due to numerous factors including fiscal policy concerns, ongoing inflation, and geopolitical tensions around the globe. In such an environment, competition for quality corporate locations and expansions as well as highly skilled workers is particularly intense. The potential negative effects of policies which could be viewed as discriminatory can be a major detriment to economic competitiveness.

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Introduction

Irrespective of their stated purpose or actual intent, policies perceived to be discriminatory can lead to economic harms. This pattern of awareness and potential consequences is increasing as such actions receive greater attention. For example, controversial laws can both reduce travel and tourism and diminish the potential for economic development.

Scheduling an event in a location with policies that are considered to be non-inclusive or discriminatory is often interpreted as supporting these initiatives; thus, some organizations and sponsors choose to avoid areas with controversial laws in order to remove the appearance of approval. In addition, some potential visitors will choose to go elsewhere rather than support places which are less open to diversity, equity, and inclusion. The resulting reductions in travel and tourism can involve significant economic costs.

> Regardless of their stated purpose, policies perceived to be discriminatory can lead to economic harms.

Empirical studies also indicate that controversial public policy of this nature can discourage the location of knowledge workers and young workers in an area, thus reducing the capacity for attracting and retaining high-growth industries conducive to long-term economic development.

Several bills and other measures which could be viewed as discriminatory and/or anti-DEI are presently under consideration by the Missouri and Kansas legislatures; these potential measures are briefly described in the following section. The Perryman Group engaged in an extensive research and modeling effort to estimate the magnitude of potential economic losses in Missouri and Kansas which could reasonably be expected with the passage of these proposed laws. This report presents the results of this assessment.

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Legislation Under Consideration

There are currently several proposed bills in Missouri and Kansas with diversity, equity and inclusion (DEI) limitation components. If passed, such legislation and other measures could be viewed as discriminatory.

One proposed bill in Missouri is SB 1314 (substantially similar to HB 2365) which prohibits funds from being expended by any state department for interdepartmental programs, staffing, or other initiatives associated with "diversity, equity, and inclusion" or "diversity, inclusion, and belonging," with certain exceptions.[1]

> There are currently several proposed bills in the Missouri and Kansas legislatures with diversity, equity and inclusion (DEI) components which, if passed, could be viewed as discriminatory.

Another bill (Missouri SB 980) creates new provisions related to business practices of entities doing business in the state. One provision is that public entities are prohibited from entering into certain contracts with companies which will not certify that they are not engaged in any kind of economic boycott and agree not to engage in such a boycott for the duration of the contract.[2]

The other major element of the bill concerns DEI, defining DEI classifications as race, ethnicity, nationality, socioeconomic status, sex, sexual orientation, gender, or gender identity. The act makes it unlawful for any "private business, in entering into, maintaining, or seeking to establish contractual relations with any other private business to:

- Fail or refuse to enter into a contract, maintain a contract, or entertain bids or offers to contract, based, in whole or in part, on the fact that the other private business: (a) does not provide information or data, or does not provide sufficient information or data, about the extent to which its workforce or ownership exhibit particular DEI classifications; or (b) fails to satisfy any

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[1] https://senate.mo.gov/24info/BTS_Web/Bill.aspx?SessionType=R&BillID=906047.
[2] https://senate.mo.gov/24info/BTS_Web/Bill.aspx?SessionType=R&BillID=1573.

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rule, standard, policy, goal, aspiration, or preference, whether express or implied, regarding the extent to which its workforce, managers, executives, or ownership exhibit or claim to exhibit particular DEI classifications.

- Consider, including as one criterion among many other criteria, whether or not it is treated as a dispositive criterion in making a decision, and whether or not it is part of an express or implied scoring or grading system: (a) Whether the owners, controllers, officers, or employees of another private business exhibit or claim to exhibit particular DEI classifications; or (b) Whether another private business has adopted or endorsed any particular policy or practice that promotes the hiring and promotion of employees based on the fact that those employees or prospective employees exhibit or claim to exhibit particular DEI classifications;

- Require or suggest that individuals exhibiting particular DEI classifications, because of their DEI classifications, work on the contract or have particular roles in performing the contract, or to require or suggest that a particular quota or percentage of individuals working on the performance of a contract exhibit one or more particular DEI classifications; and

- Require or suggest that any other contracting party provide data regarding the extent to which its workforce, managers, executives, or ownership exhibit or claim to exhibit particular DEI classifications." [3]

The practical outcome from such anti-DEI legislation and related initiatives appears to be the elimination of many aspects of programs aimed at increasing opportunities for historically underutilized businesses such as those owned by women or minorities, among other groups.

In Kansas, HB 2460 would prohibit postsecondary educational institutions from conditioning admission or educational aid to applicants, or employment decisions for faculty, upon their support of, or opposition to, statements regarding diversity, equity, inclusion, patriotism, or related topics. It would also require each institution to make publicly available on their website all training for students,

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[3] https://senate.mo.gov/24info/BTS_Web/Bill.aspx?SessionType=R&BillID=1573.

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faculty, and staff on all matters of nondiscrimination, diversity, equity, inclusion, race, ethnicity, sex, or bias.[4]

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[4] https://kslegislature.org/li/b2023_24/measures/hb2460/.

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Economic Costs

Any economic stimulus leads to dynamic responses across the economy. The Perryman Group has developed complex and comprehensive models over the past four decades to measure these dynamic responses.

> Any economic stimulus leads to dynamic responses across the economy.

In this instance, proposed anti-DEI legislation (if passed) and other measures the states may undertake have the potential to negatively affect the economy through two primary channels: reduced tourism and a diminished potential for economic development.

As noted, both business and leisure travelers may be affected by public policy they view as discriminatory, and surveys of travelers and convention professionals have indicated that the absence of the perception of discrimination is increasingly necessary for an active tourism market.

Controversial laws can reduce numbers of attendees, for instance, which can cause professionals who organize conferences and events to avoid such locations. In addition, scheduling an event in a location with laws that are considered to be harmful by some groups can be interpreted as support for the policy, and some organizations will choose to avoid such locations due to the possibility of perceptions that they support (or at least do not actively discourage) these policies.

The trajectory of economic development can also be decreased. This decline stems from the difficulty in attracting knowledge workers and, thus, emerging industries.

Methods used in this analysis are summarized on the following page, with substantial additional detail in Appendix A. Results by industry are presented in Appendix B.

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Measuring Economic and Fiscal Benefits

Any economic stimulus, whether positive or negative, generates multiplier effects throughout the economy. In this instance, proposed bills which may be viewed as discriminatory have the potential to decrease tourism and economic development. Reducing economic activity would, in turn, have a negative effect on tax receipts to the federal, State, and local governments.

The Perryman Group's dynamic input-output assessment system (the US Multi-Regional Impact Assessment System, which is described in further detail in the Appendices to this report) was developed by the firm about 40 years ago and has been consistently maintained and updated since that time. The model has been used in hundreds of analyses for clients ranging from major corporations to government agencies and has been peer reviewed on multiple occasions. The impact system uses a variety of data (from surveys, industry information, and other sources) to describe the various goods and services (known as resources or inputs) required to produce another good/service. This process allows for estimation of the total economic impact (including multiplier effects) of the proposed anti-DEI policies. The models used in the current analysis reflect the specific industrial composition and characteristics of Missouri and Kansas.

Total economic effects are quantified for the key measures of business activity described below (further explained in Appendix A). Note that these are different ways of looking at the same economic effects; they are not additive.

- **Total expenditures** (or total spending) measure the dollars changing hands as a result of the economic stimulus.
- **Gross product** (or output) is production of goods and services that will come about in the area as a result of the activity. This measure is parallel to the gross domestic product numbers commonly reported by various media outlets and is a subset of total expenditures.
- **Personal income** is dollars that end up in the hands of people in the area; the vast majority of this aggregate derives from the earnings of employees, but payments such as interest and rents are also included.
- **Job gains** are expressed on a full-time-equivalent basis.

Monetary values were quantified on a constant (2023) basis to eliminate the effects of inflation. See Appendix A for additional information regarding the methods and assumptions used in this analysis.

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Missouri

According to the Missouri Division of Tourism, there were about 40.1 million visitors to the state in fiscal year 2022, and over 281,000 residents are employed in tourism-related industries.[5] Clearly, tourism and travel are important to the state economy. More than two years were required for employment in the state to return to pre-pandemic levels, and the Missouri economy has recently experienced uneven performance. In such an environment, it is particularly important to avoid legislation that could present additional strains on growth.

The Perryman Group estimates that anti-DEI bills currently under consideration in Missouri or other measures which could be seen as discriminatory have the potential to lead to losses including nearly **$2.6 billion** in annual gross product and **23,842** jobs as of 2030 (including multiplier effects). These declines represent more than 0.6% of total output (gross product) and approximate 0.8% of current employment.

	Total Expenditures (Billions of 2023 Dollars)	Gross Product (Billions of 2023 Dollars)	Personal Income (Billions of 2023 Dollars)	Employment
Potential Economic Costs as of 2030 of Anti-DEI Policy Perceived to be Discriminatory: Missouri				
Tourism	-$2.106	-$1.094	-$0.677	-9,631
Economic Development	-$3.042	-$1.467	-$0.909	-14,210
TOTAL	**-$5.148**	**-$2.561**	**-$1.585**	**-23,842**

Note: Based on current proposals and The Perryman Group's estimates of potential implications for tourism and economic development as well as related multiplier effects. Projected as of 2030. Components may not sum to totals due to independent rounding. Additional definitions of terms and explanation of methods and assumptions may be found elsewhere in this report and in Appendix A. Results by industry are included in Appendix B.
Source: US Multi-Regional Impact Assessment System, The Perryman Group

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[5] "FY22 Report for the Missouri Division of Tourism," https://industry.visitmo.com/research/reports-studies/.

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Kansas

An estimated 36.4 million people visited Kansas and spent $7.7 billion in 2022 according to data maintained by Kansas Tourism, and travel and tourism industries support tens of thousands of jobs. Employment in Kansas reached pre-pandemic (February 2020) levels by the end of 2021, but like many parts of the country has seen sluggish performance since the summer of 2023. Bills presently under consideration are less likely to draw the degree of controversy as those in Missouri, but nonetheless lead to potential economic costs. Available evidence indicates that the perception associated with policies is generally more significant than the details of specific provisions.

The Perryman Group estimates that the total potential economic cost of anti-DEI policy under consideration in Kansas or other measures which could be viewed as discriminatory includes **$898.4 million** in lost annual gross product and **8,462** lost jobs as of 2030 (including multiplier effects). These adverse consequences represent more than 0.4% of gross state product and almost 0.6% of total employment.

	Total Expenditures (Millions of 2023 Dollars)	Gross Product (Millions of 2023 Dollars)	Personal Income (Millions of 2023 Dollars)	Employment
Potential Economic Costs as of 2030 of Anti-DEI Policy Perceived to be Discriminatory: Kansas				
Tourism	-$538.986	-$283.542	-$175.483	-2,499
Economic Development	-$1,255.986	-$614.819	-$381.160	-5,962
TOTAL	**-$1,794.972**	**-$898.361**	**-$556.643**	**-8,462**

Note: Based on current proposals and The Perryman Group's estimates of potential effects on tourism and economic development as well as related multiplier effects. Projected as of 2030. Components may not sum to totals due to independent rounding. Additional definitions of terms and explanation of methods and assumptions may be found elsewhere in this report and in Appendix A. Results by industry are included in Appendix B. Source: US Multi-Regional Impact Assessment System, The Perryman Group

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Fiscal Costs

Business activity generates tax revenue. The economic losses associated with the proposed policies and their effects on tourism and economic development would lead to decreases in tax receipts to the States and local government entities including counties, cities, and schools. Federal tax revenues would also decrease. Tax effects were estimated based on the loss of economic activity quantified by The Perryman Group and described in the preceding sections.

For example, retail sales would decrease if proposed policies were implemented, causing the economic losses measured in this study (results appear in Appendix B). A portion of these retail sales would be taxable, leading to decreased receipts to the State and local taxing entities. Hotel room nights lead to occupancy or guest taxes, and decreased tourism would also reduce collections.

> When the total potential negative economic effects of policies perceived as discriminatory are considered (such as those measured in this study), the losses in tax revenue are significant.

Economic activity also affects property tax values. Lower income associated with the economic harms would decrease housing demand, leading to lower taxable values as well as reduced need for houses. In addition, decreased retail sales and incomes negatively affect the need for commercial space such as restaurants, retail outlets, and personal service facilities. Lower property values decrease related taxes.

When the total economic effects are considered (such as those measured in this study), the losses in taxes from these sources are significant.

- The Perryman Group estimates that, once the policies are implemented and related effects are realized, the potential annual decrease in tax receipts for **Missouri** would include approximately **$487.0 million** to the federal government, **$226.7 million** to the State of Missouri, and almost **$129.0 million** to local government entities across the state.

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- For **Kansas**, the potential annual decrease in tax receipts would include approximately **$170.9 million** to the federal government, **$83.2 million** to the State of Kansas, and **$46.1 million** to local government entities across the state.

Projected Annual Tax Revenue Losses as of 2030 Associated with Anti-DEI Policy Perceived to be Discriminatory (in Millions)				
		Federal	State	Local
Missouri	Tourism	-$208.000	-$83.122	-$52.099
	Economic Development	-$279.027	-$143.606	-$76.863
	TOTAL	**-$487.027**	**-$226.728**	**-$128.963**
Kansas	Tourism	-$53.925	-$21.977	-$13.603
	Economic Development	-$116.929	-$61.271	-$32.461
	TOTAL	**-$170.854**	**-$83.248**	**-$46.065**

Note: Based on economic impacts measured in this study. Projected as of 2030.
Source: The Perryman Group

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Conclusion

As noted at the outset, controversial laws which are viewed as discriminatory can have substantial negative economic effects. Travel and tourism losses in Missouri and Kansas could total hundreds of millions per year, with an associated loss in revenue to the State and local governments. Companies may be less likely to expand or locate in these states, particularly in industries with a large number of knowledge workers (particularly desirable technology-intensive industries with high growth potential).

> The potential negative economic effects of policies which could be viewed as discriminatory can be a major detriment to economic competitiveness.

It should further be noted that, while tourism and development tend to be the major channels of impact, other costs can also occur. For example, policies that restrict the number and quality of bidders for governmental contracts may be expected to lead to reduced competition and higher costs to taxpayers.

The US economy is facing major challenges and uncertainty due to numerous factors including fiscal policy concerns, ongoing inflation, and geopolitical tensions around the globe. In such an environment, competition for quality corporate locations and expansions as well as highly skilled workers is particularly intense. The potential negative effects of anti-DEI policies or other measures which could be viewed as discriminatory can be a major detriment to economic competitiveness.

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Appendix A: Methods Used

US Multi-Regional Impact Assessment System

Overview

The US Multi-Regional Impact Assessment System (USMRIAS) measures multiplier effects of economic stimuli. The USMRIAS was developed and is maintained by The Perryman Group. This model has been used in hundreds of diverse applications across the country and has an excellent reputation for accuracy and credibility; it has also been peer reviewed on multiple occasions and has been a key factor in major national and international policy simulations.

The basic modeling technique is known as dynamic input-output analysis, which essentially uses extensive survey data, industry information, and a variety of corroborative source materials to create a matrix describing the various goods and services (known as resources or inputs) required to produce one unit (a dollar's worth) of output for a given sector. Once the base information is compiled, it can be mathematically simulated to generate evaluations of the magnitude of successive rounds of activity involved in the overall production process.

There are two essential steps in conducting an input-output analysis once the system is operational. The first major endeavor is to accurately define the levels of direct activity to be evaluated. In this instance, proposed legislation and other measures as of the time of the study were analyzed in light of empirical research and outcomes in other areas.

An analysis by Gao and Zhang quantified the net effects of non-discrimination acts on technology growth as measured by patents.[6] This analysis provides an extensive assessment based on the performance of states with and without non-discrimination laws. Similarly, patent growth has been linked to economic expansion based on a model developed by Josheski and Koteski.[7] These findings

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[6]Gao, Huasheng and Wei Zhang, "Employment Non-Discrimination Acts and Corporate Innovation*," Management Science, June 2016.
[7] Josheski, Dushko and Cane Koteski, "The causal relationship between patent growth and growth of GDP with quarterly data in the G7 countries: cointegration, ARDL and error correction models," MPRA (Munich Personal RePEc Archive), September 2011.

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are supported by substantial additional academic and policy research.[8] By integrating these concepts into a comprehensive modeling effort, controlling for other factors, and localizing all data to the relevant geographic areas, The Perryman Group estimated the potential negative effects of laws under consideration which would tend to have the opposite effects.

The next phase of the analysis was to estimate the nature of the reduction in output growth, as it would tend to be concentrated in technology-oriented sectors. Data from the US Patent and Trademark Office related to patents by industry was compiled and used to generate a projection of the composition of the growth that would be compromised by legislation perceived as discriminatory. The result of this process was an estimate of the direct portion of losses associated with knowledge workers.

With regard to the tourism impact, TPG made use of a national survey of thousands of leisure travelers as well as other standard travel and economic data. TPG estimated leisure travel implications by examining the net effects of those in the traveler's survey who would avoid states with discriminatory policies and the convention losses based on the net group of meeting planners who indicated they would not book meetings in these locales. Among other findings, this analysis permits estimates of the minimum impacts based on other states which have enacted varying types of laws perceived to be discriminatory. As an added measure of conservatism, however, TPG used the lower bound of the 95% confidence interval, thus creating a high probability that the effects are understated.

The estimated direct effects were then used in a simulation of the input-output system to measure total overall economic effects of the direct stimulus. The systems used reflect the unique industrial structure of the Missouri and Kansas economies.

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[8] See, for example, Hickin, Ruth, "Open, inclusive and diverse cities are better for business and economic growth," World Economic Forum, June 2018; Cunningham, George, "How anti-LGBT laws foster a culture of exclusion that harms states' economic prosperity," The Conversation, January 2017; Gates, Gary and Richard Florida, "Technology and Tolerance: The Importance of Diversity to High-Technology Growth," Brookings, June 2001; Atun, Rifat, Ian Harvey, and Joff Wild, "Innovation, Patents, and Economic Growth," International Journal of Innovation Management, June 2007; and Cainelli, Giulio, Rinaldo Evangelista, and Maria Sonova, "The Impact of Innovation on Economic Performance in Services," The Services Industry Journal, January 2004. Information regarding technology workers in Missouri and Kansas was obtained from "State of the Tech Workforce | Cyberstates 2023," produced by The Computing Technology Industry Association (CompTIA), 2023.

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Model Structure

The USMRIAS is somewhat similar in format to the Input-Output Model of the United States which is maintained by the US Department of Commerce. The model developed by TPG, however, incorporates several important enhancements and refinements. Specifically, the expanded system includes (1) comprehensive 500-sector coverage for any county, multi-county, or urban region; (2) calculation of both total expenditures and value-added by industry and region; (3) direct estimation of expenditures for multiple basic input choices (expenditures, output, income, or employment); (4) extensive parameter localization; (5) price adjustments for real and nominal assessments by sectors and areas; (6) comprehensive measurement of the induced impacts associated with payrolls and consumer spending; (7) embedded modules to estimate multi-sectoral direct spending effects; (8) estimation of retail spending activity by consumers; and (9) comprehensive linkage and integration capabilities with a wide variety of econometric, real estate, occupational, and fiscal impact models.

The impact assessment (input-output) process essentially estimates the amounts of all types of goods and services required to produce one unit (a dollar's worth) of a specific type of output. For purposes of illustrating the nature of the system, it is useful to think of inputs and outputs in dollar (rather than physical) terms. As an example, the construction of a new building will require specific dollar amounts of lumber, glass, concrete, hand tools, architectural services, interior design services, paint, plumbing, and numerous other elements. Each of these suppliers must, in turn, purchase additional dollar amounts of inputs. This process continues through multiple rounds of production, thus generating subsequent increments to business activity. The initial process of building the facility is known as the *direct effect*. The ensuing transactions in the output chain constitute the *indirect effect*.

Another pattern that arises in response to any direct economic activity comes from the payroll dollars received by employees at each stage of the production cycle. As workers are compensated, they use some of their income for taxes, savings, and purchases from external markets. A substantial portion, however, is spent locally on food, clothing, health care services, utilities, housing, recreation, and other items. Typical purchasing patterns in the relevant areas are obtained from the Center for Community and Economic Research *Cost of Living Index*, a privately compiled inter-regional measure which has been widely used for several decades, and the *Consumer Expenditure Survey* of the US Department of Labor. These initial outlays by area residents generate further secondary activity as local providers acquire inputs to meet this consumer demand. These consumer

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spending impacts are known as the *induced effect*. The USMRIAS is designed to provide realistic, yet conservative, estimates of these phenomena.

Sources for information used in this process include the Bureau of the Census, the Bureau of Labor Statistics, the Regional Economic Information System of the US Department of Commerce, and other public and private sources. The pricing data are compiled from the US Department of Labor and the US Department of Commerce. The verification and testing procedures make use of extensive public and private sources.

Impacts are typically measured in constant dollars to eliminate the effects of inflation.

The USMRIAS is also integrated with a comprehensive fiscal model, which links the tax payments by industry to the specific rates and structures associated with the relevant State and local governmental authorities.

Measures of Business Activity

The USMRIAS generates estimates of total economic effects on several measures of business activity. Note that these are different ways of measuring the same impacts; they are not additive.

The most comprehensive measure of economic activity is **Total Expenditures**. This measure incorporates every dollar that changes hands in any transaction. For example, suppose a farmer sells wheat to a miller for $0.50; the miller then sells flour to a baker for $0.75; the baker, in turn, sells bread to a customer for $1.25. The Total Expenditures recorded in this instance would be $2.50, that is, $0.50 + $0.75 + $1.25. This measure is quite broad but is useful in that (1) it reflects the overall interplay of all industries in the economy, and (2) some key fiscal variables such as sales taxes are linked to aggregate spending.

A second measure of business activity is **Gross Product**. This indicator represents the regional equivalent of Gross Domestic Product, the most commonly reported statistic regarding national economic performance. In other words, the Gross Product of Texas is the amount of US output that is produced in that state; it is defined as the value of all final goods produced in a given region for a specific period of time. Stated differently, it captures the amount of value-added (gross area product) over intermediate goods and services at each stage of the production process, that is, it eliminates the double counting in the Total Expenditures concept. Using the example above, the Gross Product is $1.25 (the value of the bread) rather than $2.50. Alternatively, it may be viewed as the sum of the value-added by the farmer, $0.50; the miller, $0.25 ($0.75 - $0.50); and the

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baker, $0.50 ($1.25 - $0.75). The total value-added is, therefore, $1.25, which is equivalent to the final value of the bread. In many industries, the primary component of value-added is the wage and salary payments to employees.

The third gauge of economic activity used in this evaluation is **Personal Income**. As the name implies, Personal Income is simply the income received by individuals, whether in the form of wages, salaries, interest, dividends, proprietors' profits, or other sources. It may thus be viewed as the segment of overall impacts which flows directly to the citizenry.

The final aggregates used are **Jobs and Job-Years,** which reflect the full-time equivalent jobs generated by an activity. For an economic stimulus expected to endure (such as the ongoing operations of a facility), the Jobs measure is used. It should be noted that, unlike the dollar values described above, Jobs is a "stock" rather than a "flow." In other words, if an area produces $1 million in output in 2022 and $1 million in 2023, it is appropriate to say that $2 million was achieved in the 2022-23 period. If the same area has 100 people working in 2022 and 100 in 2023, it only has 100 Jobs. When a flow of jobs is measured, such as in a construction project or a cumulative assessment over multiple years, it is appropriate to measure employment in Job-Years (a person working for a year, though it could be multiple individuals working for partial years). This concept is distinct from Jobs, which anticipates that the relevant positions will be maintained on a continuing basis.

US Multi-Regional Econometric Model

Overview

The US Multi-Regional Econometric Model was developed by Dr. M. Ray Perryman, President and CEO of The Perryman Group (TPG), about 40 years ago and has been consistently maintained, expanded, and updated since that time. It is formulated in an internally consistent manner and is designed to permit the integration of relevant global, national, state, and local factors into the projection process. It is the result of four decades of continuing research in econometrics, economic theory, statistical methods, and key policy issues and behavioral patterns, as well as intensive, ongoing study of all aspects of the global, US, state, and metropolitan area economies. It is extensively used by scores of federal and State governmental entities on an ongoing basis, as well as hundreds of major

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corporations. It can be integrated with The Perryman Group's other models and systems to provide dynamic projections.

This section describes the forecasting process in a comprehensive manner, focusing on both the modeling and the supplemental analysis. The overall methodology, while certainly not ensuring perfect foresight, permits an enormous body of relevant information to impact the economic outlook in a systematic manner.

Model Logic and Structure

The Model revolves around a core system which projects output (real and nominal), income (real and nominal), and employment by industry in a simultaneous manner. For the purposes of illustration, it is useful to initially consider the employment functions. Essentially, employment within the system is a derived demand relationship obtained from a neo-Classical production function. The expressions are augmented to include dynamic temporal adjustments to changes in relative factor input costs, output and (implicitly) productivity, and technological progress over time. Thus, the typical equation includes output, the relative real cost of labor and capital, dynamic lag structures, and a technological adjustment parameter. The functional form is logarithmic, thus preserving the theoretical consistency with the neo-Classical formulation.

The income segment of the model is divided into wage and non-wage components. The wage equations, like their employment counterparts, are individually estimated at the 3-digit North American Industry Classification System (NAICS) level of aggregation. Hence, income by place of work is measured for approximately 90 production categories. The wage equations measure real compensation, with the form of the variable structure differing between "basic" and "non-basic."

The basic industries, comprised primarily of the various components of Mining, Agriculture, and Manufacturing, are export-oriented, i.e., they bring external dollars into the area and form the core of the economy. The production of these sectors typically flows into national and international markets; hence, the labor markets are influenced by conditions in areas beyond the borders of the particular region. Thus, real (inflation-adjusted) wages in the basic industry are expressed as a function of the corresponding national rates, as well as measures of local labor market conditions (the reciprocal of the unemployment rate), dynamic adjustment parameters, and ongoing trends.

The "non-basic" sectors are somewhat different in nature, as the strength of their labor markets is linked to the health of the local export sectors. Consequently, wages in these industries are related to those in the basic segment of the economy. The relationship also includes the local labor market measures contained in the basic wage equations.

Note that compensation rates in the export or "basic" sectors provide a key element of the interaction of the regional economies with national and international market phenomena, while the "non-basic" or local industries are strongly impacted by area production levels. Given the wage and employment equations, multiplicative identities in each industry provide expressions for total compensation; these totals may then be aggregated to determine aggregate wage and salary income. Simple linkage equations are then estimated for the calculation of personal income by place of work.

The non-labor aspects of personal income are modeled at the regional level using straightforward empirical expressions relating to national performance, dynamic responses, and evolving temporal patterns. In some instances (such as dividends, rents, and others) national variables (for example, interest rates) directly enter the forecasting system. These factors have numerous other implicit linkages into the system resulting from their simultaneous interaction with other phenomena in national and international markets which are explicitly included in various expressions.

The output or gross area product expressions are also developed at the 3-digit NAICS level. Regional output for basic industries is linked to national performance in the relevant industries, local and national production in key related sectors, relative area and national labor costs in the industry, dynamic adjustment parameters, and ongoing changes in industrial interrelationships (driven by technological changes in production processes).

Output in the non-basic sectors is modeled as a function of basic production levels, output in related local support industries (if applicable), dynamic temporal adjustments, and ongoing patterns. The inter-industry linkages are obtained from the input-output (impact assessment) system which is part of the overall integrated modeling structure maintained by The Perryman Group. Note that the dominant component of the econometric system involves the simultaneous estimation and projection of output (real and nominal), income (real and nominal), and employment at a disaggregated industrial level. This process, of necessity, also produces projections of regional price deflators by industry. These values are affected by both national pricing patterns and local cost variations and permit

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changes in prices to impact other aspects of economic behavior. Income is converted from real to nominal terms using relevant Consumer Price Indices, which fluctuate in response to national pricing patterns and unique local phenomena.

Several other components of the model are critical to the forecasting process. The demographic module includes (1) a linkage equation between wage and salary (establishment) employment and household employment, (2) a labor force participation rate function, and (3) a complete population system with endogenous migration. Given household employment, labor force participation (which is a function of economic conditions and evolving patterns of worker preferences), and the working-age population, the unemployment rate and level become identities.

The population system uses Census information, fertility rates, and life tables to determine the "natural" changes in population by age group. Migration, the most difficult segment of population dynamics to track, is estimated in relation to relative regional and extra-regional economic conditions over time. Because evolving economic conditions determine migration in the system, population changes are allowed to interact simultaneously with overall economic conditions. Through this process, migration is treated as endogenous to the system, thus allowing population to vary in accordance with relative business performance (particularly employment).

Real retail sales is related to income, interest rates, dynamic adjustments, and patterns in consumer behavior on a store group basis. It is expressed on an inflation-adjusted basis. Inflation at the state level relates to national patterns, indicators of relative economic conditions, and ongoing trends. As noted earlier, prices are endogenous to the system.

A final significant segment of the forecasting system relates to real estate absorption and activity. The short-term demand for various types of property is determined by underlying economic and demographic factors, with short-term adjustments to reflect the current status of the pertinent building cycle. In some instances, this portion of the forecast requires integration with the US Multi-Regional Industry-Occupation System which is maintained by The Perryman Group. This system also allows any employment simulation or forecast from the econometric model to be translated into a highly detailed occupational profile.

The overall US Multi-Regional Econometric Model contains numerous additional specifications, and individual expressions are modified to reflect alternative lag

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structures, empirical properties of the estimates, simulation requirements, and similar phenomena. Moreover, it is updated on an ongoing basis as new data releases become available. Nonetheless, the above synopsis offers a basic understanding of the overall structure and underlying logic of the system.

Model Simulation and Multi-Regional Structure

The initial phase of the simulation process is the execution of a standard non-linear algorithm for the state system and that of each of the individual sub-areas. The external assumptions are derived from scenarios developed through national and international models and extensive analysis by The Perryman Group.

Once the initial simulations are completed, they are merged into a single system with additive constraints and interregional flows. Using information on minimum regional requirements, import needs, export potential, and locations, it becomes possible to balance the various forecasts into a mathematically consistent set of results. This process is, in effect, a disciplining exercise with regard to the individual regional (including metropolitan and rural) systems. By compelling equilibrium across all regions and sectors, the algorithm ensures that the patterns in state activity are reasonable in light of smaller area dynamics and, conversely, that the regional outlooks are within plausible performance levels for the state as a whole.

The iterative simulation process has the additional property of imposing a global convergence criterion across the entire multi-regional system, with balance being achieved simultaneously on both a sectoral and a geographic basis. This approach is particularly critical on non-linear dynamic systems, as independent simulations of individual systems often yield unstable, non-convergent outcomes.

It should be noted that the underlying data for the modeling and simulation process are frequently updated and revised by the various public and private entities compiling them. Whenever those modifications to the database occur, they bring corresponding changes to the structural parameter estimates of the various systems and the solutions to the simulation and forecasting system. The multi-regional version of the econometric model is re-estimated and simulated with each such data release, thus providing a constantly evolving and current assessment of state and local business activity.

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The Final Forecast

The process described above is followed to produce an initial set of projections. Through the comprehensive multi-regional modeling and simulation process, a systematic analysis is generated which accounts for both historical patterns in economic performance and inter-relationships and the best available information on the future course of pertinent external factors. While the best available techniques and data are employed in this effort, they are not capable of directly capturing "street sense," i.e., the contemporaneous and often non-quantifiable information that can materially affect economic outcomes. In order to provide a comprehensive approach to the prediction of business conditions, it is necessary to compile and assimilate extensive material regarding current events and other relevant factors.

This critical aspect of the forecasting methodology includes activities such as (1) daily review of hundreds of financial and business publications and electronic information sites; (2) review of major newspapers and online news sources in the state on a daily basis; (3) dozens of hours of direct telephone interviews with key business and political leaders in all parts of the state; (4) face-to-face discussions with representatives of major industry groups; and (5) frequent site visits to the various regions of the state. The insights arising from this "fact finding" are analyzed and evaluated for their effects on the likely course of the future activity.

Another vital information resource stems from the firm's ongoing interaction with key players in the international, domestic, and state economic scenes. Such activities include visiting with corporate groups on a regular basis and being regularly involved in the policy process at all levels. The firm is also an active participant in many major corporate relocations, economic development initiatives, and regulatory proceedings.

Once organized, this information is carefully assessed and, when appropriate, independently verified. The impact on specific communities and sectors that is distinct from what is captured by the econometric system is then factored into the forecast analysis. For example, the opening or closing of a major facility, particularly in a relatively small area, can cause a sudden change in business performance that will not be accounted for by either a modeling system based on historical relationships or expected (primarily national and international) factors.

The final step in the forecasting process is the integration of this material into the results in a logical and mathematically consistent manner. In some instances, this task is accomplished through "constant adjustment factors" which augment

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relevant equations. In other cases, anticipated changes in industrial structure or regulatory parameters are initially simulated within the context of the Multi-Regional Impact Assessment System to estimate their ultimate effects by sector. Those findings are then factored into the simulation as constant adjustments on a distributed temporal basis. Once this scenario is formulated, the extended system is again balanced across regions and sectors through an iterative simulation algorithm analogous to that described in the preceding section.

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Appendix B: Detailed Results

Missouri

The Potential Annual Economic Costs to Missouri of Tourism Effects of Policy Perceived to be Discriminatory as of 2030

Results by Industry

Industry	Total Expenditures	Gross Product	Personal Income	Jobs
Agriculture	-$47.5 m	-$12.7 m	-$8.4 m	-89
Mining	-$26.8 m	-$6.2 m	-$3.5 m	-14
Utilities	-$88.9 m	-$20.5 m	-$8.9 m	-26
Construction	-$37.9 m	-$20.2 m	-$16.7 m	-159
Manufacturing	-$330.8 m	-$92.4 m	-$50.8 m	-543
Wholesale Trade	-$69.6 m	-$47.1 m	-$27.2 m	-209
Retail Trade*	-$463.2 m	-$340.4 m	-$196.6 m	-4,217
Transportation & Warehousing	-$225.8 m	-$163.9 m	-$108.4 m	-1,001
Information	-$42.6 m	-$26.2 m	-$11.2 m	-68
Financial Activities*	-$244.3 m	-$66.8 m	-$26.6 m	-189
Business Services	-$71.0 m	-$44.4 m	-$36.2 m	-299
Health Services	-$57.5 m	-$40.2 m	-$34.0 m	-381
Other Services	-$399.8 m	-$212.6 m	-$148.0 m	-2,438
Total, All Industries	**-$2,105.7 m**	**-$1,093.7 m**	**-$676.5 m**	**-9,631**

Source: US Multi-Regional Impact Assessment System, The Perryman Group
Notes: Monetary values given in millions of 2023 US dollars per year. Components may not sum due to rounding. Retail Trade includes Restaurants, Financial Activities includes Real Estate.

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The Potential Annual Economic Costs to Missouri of Economic Development Effects of Policy Perceived to be Discriminatory as of 2030

Results by Industry

Industry	Total Expenditures	Gross Product	Personal Income	Jobs
Agriculture	-$62.0 m	-$17.7 m	-$11.7 m	-136
Mining	-$47.6 m	-$11.2 m	-$6.6 m	-29
Utilities	-$204.8 m	-$46.0 m	-$20.1 m	-64
Construction	-$74.4 m	-$38.1 m	-$31.4 m	-325
Manufacturing	-$423.9 m	-$121.8 m	-$67.4 m	-778
Wholesale Trade	-$91.4 m	-$61.9 m	-$35.7 m	-299
Retail Trade*	-$825.5 m	-$621.7 m	-$361.8 m	-8,127
Transportation & Warehousing	-$88.7 m	-$61.0 m	-$40.3 m	-405
Information	-$90.5 m	-$55.9 m	-$23.9 m	-158
Financial Activities*	-$563.8 m	-$97.4 m	-$37.6 m	-290
Business Services	-$119.8 m	-$70.5 m	-$57.5 m	-516
Health Services	-$158.1 m	-$112.1 m	-$94.8 m	-1,153
Other Services	-$291.9 m	-$151.9 m	-$120.0 m	-1,930
Total, All Industries	**-$3,042.4 m**	**-$1,467.1 m**	**-$908.8 m**	**-14,210**

Source: US Multi-Regional Impact Assessment System, The Perryman Group
Notes: Monetary values given in millions of 2023 US dollars per year. Components may not sum due to rounding. Retail Trade includes Restaurants, Financial Activities includes Real Estate.

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The Total Potential Annual Economic Costs to Missouri of Tourism and Economic Development Effects of Policy Perceived to be Discriminatory as of 2030

Results by Industry

Industry	Total Expenditures	Gross Product	Personal Income	Jobs
Agriculture	-$109.5 m	-$30.5 m	-$20.1 m	-226
Mining	-$74.4 m	-$17.4 m	-$10.1 m	-43
Utilities	-$293.7 m	-$66.5 m	-$29.0 m	-91
Construction	-$112.3 m	-$58.3 m	-$48.1 m	-484
Manufacturing	-$754.7 m	-$214.1 m	-$118.2 m	-1,321
Wholesale Trade	-$161.0 m	-$108.9 m	-$62.8 m	-508
Retail Trade*	-$1,288.7 m	-$962.0 m	-$558.5 m	-12,343
Transportation & Warehousing	-$314.5 m	-$224.9 m	-$148.8 m	-1,406
Information	-$133.1 m	-$82.1 m	-$35.1 m	-226
Financial Activities*	-$808.1 m	-$164.2 m	-$64.2 m	-478
Business Services	-$190.8 m	-$114.9 m	-$93.8 m	-814
Health Services	-$215.6 m	-$152.3 m	-$128.8 m	-1,534
Other Services	-$691.7 m	-$364.5 m	-$268.1 m	-4,368
Total, All Industries	**-$5,148.1 m**	**-$2,560.8 m**	**-$1,585.4 m**	**-23,842**

Source: US Multi-Regional Impact Assessment System, The Perryman Group
Notes: Monetary values given in millions of 2023 US dollars per year. Components may not sum due to rounding. Retail Trade includes Restaurants, Financial Activities includes Real Estate.

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Kansas

The Potential Annual Economic Costs to Kansas of Tourism Effects of Policy Perceived to be Discriminatory as of 2030

Results by Industry

Industry	Total Expenditures	Gross Product	Personal Income	Jobs
Agriculture	-$11.9 m	-$3.2 m	-$2.1 m	-22
Mining	-$7.1 m	-$1.7 m	-$0.9 m	-4
Utilities	-$24.7 m	-$5.7 m	-$2.5 m	-7
Construction	-$9.7 m	-$5.2 m	-$4.3 m	-41
Manufacturing	-$77.5 m	-$22.6 m	-$12.4 m	-136
Wholesale Trade	-$18.5 m	-$12.5 m	-$7.2 m	-55
Retail Trade*	-$121.5 m	-$89.6 m	-$51.8 m	-1,105
Transportation & Warehousing	-$57.8 m	-$42.0 m	-$27.8 m	-256
Information	-$10.9 m	-$6.7 m	-$2.9 m	-17
Financial Activities*	-$63.0 m	-$17.7 m	-$7.2 m	-52
Business Services	-$17.9 m	-$11.2 m	-$9.2 m	-75
Health Services	-$15.2 m	-$10.7 m	-$9.0 m	-101
Other Services	-$103.1 m	-$54.8 m	-$38.2 m	-627
Total, All Industries	**-$539.0 m**	**-$283.5 m**	**-$175.5 m**	**-2,499**

Source: US Multi-Regional Impact Assessment System, The Perryman Group
Notes: Monetary values given in millions of 2023 US dollars per year. Components may not sum due to rounding. Retail Trade includes Restaurants, Financial Activities includes Real Estate.

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The Potential Annual Economic Costs to Kansas of Economic Development Effects of Policy Perceived to be Discriminatory as of 2030

Results by Industry

Industry	Total Expenditures	Gross Product	Personal Income	Jobs
Agriculture	-$25.0 m	-$7.2 m	-$4.7 m	-55
Mining	-$20.2 m	-$4.7 m	-$2.8 m	-12
Utilities	-$91.4 m	-$20.5 m	-$9.0 m	-29
Construction	-$30.6 m	-$15.7 m	-$12.9 m	-134
Manufacturing	-$157.7 m	-$47.2 m	-$26.2 m	-310
Wholesale Trade	-$39.0 m	-$26.4 m	-$15.2 m	-128
Retail Trade*	-$349.4 m	-$264.0 m	-$153.8 m	-3,436
Transportation & Warehousing	-$36.5 m	-$25.1 m	-$16.6 m	-167
Information	-$37.1 m	-$22.9 m	-$9.8 m	-65
Financial Activities*	-$231.5 m	-$41.5 m	-$16.4 m	-128
Business Services	-$48.7 m	-$28.6 m	-$23.4 m	-210
Health Services	-$67.3 m	-$47.7 m	-$40.3 m	-491
Other Services	-$121.6 m	-$63.3 m	-$50.0 m	-799
Total, All Industries	**-$1,256.0 m**	**-$614.8 m**	**-$381.2 m**	**-5,962**

Source: US Multi-Regional Impact Assessment System, The Perryman Group
Notes: Monetary values given in millions of 2023 US dollars per year. Components may not sum due to rounding. Retail Trade includes Restaurants, Financial Activities includes Real Estate.

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The Total Potential Annual Economic Costs to Kansas of Tourism and Economic Development Effects of Policy Perceived to be Discriminatory as of 2030

Results by Industry

Industry	Total Expenditures	Gross Product	Personal Income	Jobs
Agriculture	-$37.0 m	-$10.3 m	-$6.8 m	-78
Mining	-$27.3 m	-$6.4 m	-$3.7 m	-16
Utilities	-$116.1 m	-$26.2 m	-$11.4 m	-36
Construction	-$40.3 m	-$20.8 m	-$17.2 m	-174
Manufacturing	-$235.3 m	-$69.8 m	-$38.7 m	-446
Wholesale Trade	-$57.5 m	-$38.9 m	-$22.4 m	-183
Retail Trade*	-$470.9 m	-$353.7 m	-$205.7 m	-4,542
Transportation & Warehousing	-$94.4 m	-$67.1 m	-$44.4 m	-423
Information	-$47.9 m	-$29.6 m	-$12.6 m	-82
Financial Activities*	-$294.5 m	-$59.2 m	-$23.7 m	-180
Business Services	-$66.6 m	-$39.9 m	-$32.5 m	-285
Health Services	-$82.5 m	-$58.3 m	-$49.3 m	-592
Other Services	-$224.7 m	-$118.1 m	-$88.2 m	-1,426
Total, All Industries	**-$1,795.0 m**	**-$898.4 m**	**-$556.6 m**	**-8,462**

Source: US Multi-Regional Impact Assessment System, The Perryman Group
Notes: Monetary values given in millions of 2023 US dollars per year. Components may not sum due to rounding. Retail Trade includes Restaurants, Financial Activities includes Real Estate.