The Economic Benefits to Missouri and Kansas of Immigration

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Executive Summary

- The foreign-born population is a crucial component of the US workforce. A
 significant portion of the workforces in Missouri and Kansas is comprised of
 foreign-born workers, and these employees support substantial business
 activity across the economy. At a time when labor shortages are an issue,
 these individuals are generating substantial economic benefits to the Missouri
 and Kansas economies.
- The Perryman Group estimated the direct benefits of the foreign-born workforce on the economies of Missouri and Kansas, as well as the total (not only direct, but also indirect and induced) economic benefits when multiplier effects are considered. Impacts on rural areas were also quantified.
- For Missouri, the economic benefits of the foreign-born are significant.
 - The Perryman Group estimates that the direct effect of Missouri's foreign-born workforce on business activity includes approximately \$19.0 billion in annual gross product and 160,000 jobs.
 - When multiplier effects are included to capture the downstream effects of these workers, the economic benefits rise to approximately \$55.2 billion in annual gross product and 495,200 jobs.
 - The Perryman Group estimates that for rural areas, the direct effect of Missouri's foreign-born workforce includes approximately \$2.0 billion in annual gross product and over 17,100 jobs.
 - When multiplier effects are included, economic benefits in rural areas rise to an estimated \$5.3 billion in gross product each year and more than 49,200 jobs of the statewide total effects.
- Foreign-born workers also support substantial business activity in Kansas.
 - The direct effect of the foreign-born workforce on business activity in Kansas is estimated to be approximately \$16.2 billion in annual gross product and 137,500 jobs.
 - Economic benefits rise to approximately \$46.4 billion in annual gross product and almost 419,500 jobs when multiplier effects are considered.
 - Looking at the economic benefits in rural areas, the direct effect of the foreign-born workforce includes approximately \$3.7 billion in annual gross product and almost 32,100 jobs in rural Kansas.



- o Including multiplier effects, the total economic benefits of the foreign-born workforce to rural Kansas was found to be almost \$9.9 billion in annual gross product and 92,100 jobs.
- Foreign-born workers are a key aspect of current economic vitality and future expansion. Sensible immigration policies which enable and encourage them to legally live and work in the United States, Missouri, and Kansas will enhance prosperity for all.



Introduction

The foreign-born population is a crucial component of the US workforce. With the retirement of the baby boom generation and lower fertility rates, many parts of the country are experiencing slowing

Without the foreign-born workforce, economic growth in Missouri and Kansas would be significantly constrained.

growth or even shrinkage in key working age ranges.

The most recent data from the US Bureau of Labor Statistics indicates that Missouri has about 173,000 job openings, but fewer than 102,000

unemployed persons. Some 43,000 people in Kansas are unemployed, but there are 86,000 job openings. In addition to these overall shortages, there are mismatches between skills and geographic locations and other challenges to finding needed workers. Without the foreign-born workforce, economic growth in these states would be significantly constrained.

Foreign-born workers are employed across the economy, and they support a substantial component of business activity in Missouri and Kansas. The Perryman Group recently estimated the direct economic effects of the foreign-born workforce, as well as total benefits (not only direct, but also multiplier effects across the economy). In addition, the importance of this component of the workforce to rural areas was measured. This report presents the results of this assessment.



The Foreign-Born Population

The US Census Bureau provides estimates of foreign-born individuals, which refers to anyone answering the census who was not a US citizen at birth. The estimates include naturalized US citizens, lawful permanent residents (immigrants), temporary migrants (such as foreign students), humanitarian migrants (such as refugees and asylees), and unauthorized migrants. Although the Census Bureau collects data from all foreign born who participate in its censuses and surveys irrespective of their legal status, it is likely that the estimates may tend to

A significant proportion of the Missouri and Kansas populations are foreign born.

undercount undocumented immigrants due to a potential reluctance to participate.

About 45.3 million foreignborn individuals resided in the United States as of 2022,

representing approximately 13.7% of the total population of 331.1 million persons.¹ Almost 23.7 million of these individuals were naturalized US citizens (52.3% of foreign born and 7.1% of the total US population), while 21.6 million were not US citizens (47.7% of foreign born and 6.5% of US population).

In Missouri, 4.2% (258,200) of the total population of nearly 6.2 million persons was foreign born. There were 131,790 naturalized US citizens among the foreign born, representing 51.0% of the foreign born and 2.14% of the state population. Another 126,410 were not US citizens (49.0% of foreign born and 2.05% of the total population).

Of the total Kansas population of more than 2.9 million persons, there were 207,290 foreign born individuals (about 7.1% of the total). The foreign-born population in Kansas included 88,295 naturalized US citizens (42.6% of the foreign born total and 3.0% of the state population), while 118,995 (57.4% of the foreign born and 4.1% of the state population) were not US citizens.

¹ All data in this section is from the US Census Bureau, American Community Survey 2022.



The foreign-born residents originated in numerous areas across the world, with Asia and Latin America representing the largest numbers. The following table presents additional details.

Total and Foreign-Born Population and Place of Birth				
	Kansas	Missouri		
Total Population	2,935,922	6,154,422		
Foreign Born	207,290	258,202		
Naturalized US Citizen	88,295	131,790		
Europe	9,352	31,254		
Asia	37,758	54,566		
Africa	6,594	13,279		
Oceania	387	1,060		
Latin America	32,948	29,276		
Northern America	1,255	2,355		
Not a US Citizen	118,995	126,412		
Europe	4,738	14,001		
Asia	27,964	46,250		
Africa	7,557	13,816		
Oceania	1,424	3,373		
Latin America	75,969	46,458		
Northern America	1,343	2,514		
Source: US Census Bureau				

While most of the population of Missouri and Kansas (including the foreign born) live in metropolitan areas, rural areas comprise a significant portion of residents. (Note that for purposes of this study, rural areas are defined to be counties which are not part of a Metropolitan Statistical Area (MSA)).

In Missouri, the rural population is 1.5 million, or 24.5% of the state total. Some 31,940 are foreign born (0.5% of the state total). In



Kansas, 890,915 (30.3%) of the state lives in rural counties, with 49,573 foreign born (1.7% of the total population).

Rural Population and Foreign Born						
	Missouri Kansas					
Total Population	6,154,422		6,154,422		2,93	35,922
		Percent of State Total		Percent of State Total		
Rural Population	1,509,800	24.5%	890,915	30.3%		
Rural Foreign Born	31,940	0.5%	49,573	1.7%		
Rural Naturalized US Citizen	14,220	0.2%	19,391	0.7%		
Rural Not a US Citizen	17,720	0.3%	30,182	1.0%		

Note: Rural is defined for purposes of this study as all counties not included in a metropolitan statistical area. Source: US Census Bureau



Economic Benefits

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

Any economic stimulus leads to dynamic responses across the economy.

dynamic responses. In this instance, a significant portion of the workforce is comprised of foreign-born workers, and these employees support notable business activity across

the economy. At a time when labor shortages are an issue, these individuals are generating substantial economic benefits to the Missouri and Kansas economies.

As an initial phase of this analysis, The Perryman Group estimated the direct effects of business activity supported by foreign-born workers. The Census Bureau dataset provides some indication of employment of such workers by industry in Missouri and Kansas, which The Perryman Group further refined and updated to 2023 based on educational attainment and other factors. The firm's US Multi-Regional Impact Assessment System was then utilized to estimate the level of direct activity supported by the foreign-born workforce as well as the total economic impacts (including not only direct, but also indirect and induced effects). Impacts on rural portions of the states were also estimated. The projections to 2023 were estimated using the US Multi-Regional Econometric Model.

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.



Measuring Economic Benefits

Any economic stimulus, whether positive or negative, generates multiplier effects throughout the economy. In this instance, foreign-born workers support a significant portion of the economy. The resulting increase in economic activity has a notable positive 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) and comprehensive forecasting system (the US Multi-Regional Econometric Model), which are described in further detail in the Appendices to this report, were developed by the firm about 40 years ago and have been consistently maintained and updated since that time. These models have 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 policies. The models used in the current analysis reflect the specific industrial composition and characteristics of Missouri and Kansas and the relevant rural areas.

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.

- <u>Total expenditures</u> (or total spending) measure the dollars changing hands as a result of the economic stimulus.
- <u>Gross product</u> (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.
- <u>Personal income</u> 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.



Missouri

The Perryman Group estimates that the direct effect of Missouri's foreign-born workforce on business activity includes approximately **\$19.0 billion** in annual gross product and **160,000** jobs. (Results by industry are included in Appendix B.)

Direct Annual Economic Benefits of the Foreign-Born Workforce: Missouri

	Total Expenditures (Billions of 2023 Dollars)	Gross Product (Billions of 2023 Dollars)	Personal Income (Billions of 2023 Dollars)	Employment
Citizens	\$23.524	\$10.571	\$6.541	83,036
Non-Citizens	\$20.446	\$8.426	\$5.585	76,955
TOTAL	\$43.970	\$18.997	\$12.125	159,992

Note: Based on US Census Bureau data regarding the foreign-born population and The Perryman Group's estimates of the level of business activity supported by these individuals. 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

When multiplier effects are included to capture the downstream effects of these workers, the economic benefits rise to approximately \$55.2 billion in annual gross product and 495,200 jobs.



Total Annual Economic Benefits (Direct, Indirect, and Induced) of the Foreign-Born Workforce: Missouri

	Total Expenditures (Billions of 2023 Dollars)	Gross Product (Billions of 2023 Dollars)	Personal Income (Billions of 2023 Dollars)	Employment
Citizens	\$62.275	\$29.166	\$17.941	256,066
Non-Citizens	\$58.957	\$25.988	\$16.355	239,133
TOTAL	\$121.232	\$55.154	\$34.296	495,199

Note: Based on US Census Bureau data regarding the foreign-born population and The Perryman Group's estimates of the level of business activity supported by these individuals as well as related multiplier effects. 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

As noted, effects on rural areas were also measured. (These benefits are a subset of statewide results.) The Perryman Group estimates that for rural areas, the direct effect of Missouri's foreign-born workers includes approximately \$2.0 billion in annual gross product and over 17,100 jobs.

Direct Annual Economic Benefits of the Foreign-Born Workforce: Rural Missouri

	Total Expenditures (Billions of 2023 Dollars)	Gross Product (Billions of 2023 Dollars)	Personal Income (Billions of 2023 Dollars)	Employment
Citizens	\$2.197	\$0.991	\$0.613	7,772
Non-Citizens	\$2.493	\$1.023	\$0.677	9,357
TOTAL	\$4.691	\$2.014	\$1.290	17,129

Note: Based on US Census Bureau data regarding the foreign-born population and The Perryman Group's estimates of the level of business activity supported by these individuals. Results were localized to rural areas using county-level data; rural is defined as counties not within metropolitan statistical areas. 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



When multiplier effects are included, economic benefits in rural areas rise to an estimated \$5.3 billion in gross product each year and more than 49,200 jobs of the statewide total effects.

Total Annual Economic Benefits (Direct, Indirect, and Induced) of the Foreign-Born Workforce: Rural Missouri

	Total Expenditures (Billions of 2023 Dollars)	Gross Product (Billions of 2023 Dollars)	Personal Income (Billions of 2023 Dollars)	Employment
Citizens	\$5.257	\$2.460	\$1.522	22,199
Non-Citizens	\$6.505	\$2.841	\$1.800	27,019
TOTAL	\$11.762	\$5.301	\$3.322	49,218

Note: Based on US Census Bureau data regarding the foreign-born population and The Perryman Group's estimates of the level of business activity supported by these individuals as well as related multiplier effects. Results were localized to rural areas using county-level data; rural is defined as counties not within metropolitan statistical areas. 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

Kansas

The direct effect of the foreign-born workforce on business activity in Kansas is estimated to be approximately **\$16.2 billion** in annual gross product and **137,500** jobs. (Results by industry are included in Appendix B.)



Direct Annual Economic Benefits of the Foreign-Born Workforce: Kansas

	Total Expenditures (Billions of 2023 Dollars)	Gross Product (Billions of 2023 Dollars)	Personal Income (Billions of 2023 Dollars)	Employment
Citizens	\$17.407	\$7.625	\$4.753	59,403
Non-Citizens	\$20.761	\$8.556	\$5.671	78,139
TOTAL	\$38.168	\$16.181	\$10.424	137,542

Note: Based on US Census Bureau data regarding the foreign-born population and The Perryman Group's estimates of the level of business activity supported by these individuals. 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

Economic benefits rise to approximately **\$46.4 billion** in annual gross product and almost **419,500** jobs when multiplier effects are considered.

Total Annual Economic Benefits (Direct, Indirect, and Induced) of the Foreign-Born Workforce: Kansas

	Total Expenditures (Billions of 2023 Dollars)	Gross Product (Billions of 2023 Dollars)	Personal Income (Billions of 2023 Dollars)	Employment
Citizens	\$43.319	\$20.469	\$12.615	180,301
Non-Citizens	\$58.111	\$25.890	\$16.323	239,150
TOTAL	\$101.431	\$46.359	\$28.938	419,451

Note: Based on US Census Bureau data regarding the foreign-born population and The Perryman Group's estimates of the level of business activity supported by these individuals as well as related multiplier effects. 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

Looking at the economic benefits in rural areas, the direct effect of the foreign-born workforce includes approximately \$3.7 billion in annual gross product and almost 32,100 jobs in rural Kansas.



Direct Annual Economic Benefits of the Foreign-Born Workforce: Rural Kansas

	Total Expenditures (Billions of 2023 Dollars)	Gross Product (Billions of 2023 Dollars)	Personal Income (Billions of 2023 Dollars)	Employment
Citizens	\$3.783	\$1.634	\$1.018	12,732
Non-Citizens	\$5.153	\$2.115	\$1.400	19,342
TOTAL	\$8.936	\$3.749	\$2.418	32,073

Note: Based on US Census Bureau data regarding the foreign-born population and The Perryman Group's estimates of the level of business activity supported by these individuals. Results were localized to rural areas using county-level data; rural is defined as counties not within metropolitan statistical areas. 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

Including multiplier effects, the total economic benefits of the foreign-born workforce to rural Kansas was found to be almost **\$9.9 billion** in annual gross product and **92,100** jobs.

Total Annual Economic Benefits (Direct, Indirect, and Induced) of the Foreign-Born Workforce: Rural Kansas

	Total Expenditures (Billions of 2023 Dollars)	Gross Product (Billions of 2023 Dollars)	Personal Income (Billions of 2023 Dollars)	Employment
Citizens	\$8.977	\$4.107	\$2.551	37,026
Non-Citizens	\$13.045	\$5.762	\$3.658	55,024
TOTAL	\$22.023	\$9.870	\$6.209	92,050

Note: Based on US Census Bureau data regarding the foreign-born population and The Perryman Group's estimates of the level of business activity supported by these individuals as well as related multiplier effects. Results were localized to rural areas using county-level data; rural is defined as counties not within metropolitan statistical areas. 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



Conclusion

Long-term US demographic trends are leading to smaller populations in key working age groups over time. For the nation and in many areas, including Missouri and Kansas, job openings exceed unemployed

Foreign-born workers are a key aspect of current economic vitality and future expansion.

persons by a substantial margin. Without the foreign-born population, worker shortages would be a major problem and economic growth would be constrained.

The Perryman Group estimates that when multiplier effects are considered, the annual economic impact of foreign-born workers on the Missouri economy includes \$55.2 billion in annual gross product 495,200 jobs, with an additional \$46.4 billion in gross product and 419,500 jobs in Kansas. A significant portion of these benefits occur within rural areas.

Foreign-born workers are a key aspect of current economic vitality and future expansion. Sensible immigration policies which enable and encourage them to legally live and work in the United States, Missouri, and Kansas will enhance prosperity for all.



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, US Census Bureau data regarding the foreign-born population was compiled. The Perryman Group first made use of a localized econometric model to update the 2022 estimates to 2023 in order to provide a more current measure of economic effects. Although the Census Bureau and the Bureau of Economic Analysis provide limited data related to employment by industry, TPG refined the estimates to determine employment by major industry group using available data regarding educational attainment and other measures. (These estimates reflect the "direct" economic benefits included in this report.)

The estimated direct effects were then used in a simulation of the input-output system to measure total overall economic effects (not only direct, but also indirect and induced). The systems used reflect the unique industrial structure of the Missouri and Kansas economies and the specific composition of activity in the relevant rural areas.



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



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



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



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



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



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.



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



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.



Appendix B: Detailed Results

Missouri

Direct Economic Effects of the Foreign-Born Workforce

The Annual Direct Economic Impact of Foreign-Born Workers on the Missouri Economy: Citizens

Results by Industry

	Total	Gross	Personal	
Industry	Expenditures	Product	Income	Jobs
Agriculture	+\$0.197 b	+\$0.054 b	+\$0.036 b	+454
Mining	+\$0.074 b	+\$0.029 b	+\$0.020 b	+140
Utilities	+\$1.153 b	+\$0.259 b	+\$0.113 b	+392
Construction	+\$1.036 b	+\$0.481 b	+\$0.396 b	+4,538
Manufacturing	+\$4.683 b	+\$1.503 b	+\$0.886 b	+9,409
Wholesale Trade	+\$1.137 b	+\$0.769 b	+\$0.444 b	+4,107
Retail Trade*	+\$1.583 b	+\$1.160 b	+\$0.670 b	+17,359
Transportation & Warehousing	+\$0.778 b	+\$0.533 b	+\$0.352 b	+3,915
Information	+\$0.617 b	+\$0.380 b	+\$0.162 b	+1,180
Financial Activities*	+\$6.830 b	+\$2.108 b	+\$0.751 b	+6,038
Business Services	+\$2.501 b	+\$1.587 b	+\$1.294 b	+12,838
Health Services	+\$1.376 b	+\$0.937 b	+\$0.792 b	+10,666
Other Services	+\$1.559 b	+\$0.770 b	+\$0.625 b	+12,001
Total, All Industries	+\$23.524 b	+\$10.571 b	+\$6.541 b	+83,036

Source: US Multi-Regional Impact Assessment System, The Perryman Group



The Annual Direct Economic Impact of Foreign-Born Workers on the Missouri Economy: Non-Citizens

Results by Industry

	Total	Gross	Personal	
Industry	Expenditures	Product	Income	Jobs
Agriculture	+\$1.337 b	+\$0.364 b	+\$0.240 b	+3,078
Mining	+\$1.217 b	+\$0.270 b	+\$0.126 b	+531
Utilities	+\$0.284 b	+\$0.064 b	+\$0.028 b	+97
Construction	+\$3.859 b	+\$1.794 b	+\$1.478 b	+16,930
Manufacturing	+\$5.908 b	+\$1.725 b	+\$0.987 b	+11,543
Wholesale Trade	+\$0.426 b	+\$0.289 b	+\$0.166 b	+1,539
Retail Trade*	+\$1.523 b	+\$1.050 b	+\$0.594 b	+16,930
Transportation & Warehousing	+\$0.563 b	+\$0.376 b	+\$0.248 b	+2,759
Information	+\$0.142 b	+\$0.088 b	+\$0.037 b	+271
Financial Activities*	+\$2.050 b	+\$0.530 b	+\$0.173 b	+1,353
Business Services	+\$1.721 b	+\$1.069 b	+\$0.872 b	+8,654
Health Services	+\$0.284 b	+\$0.197 b	+\$0.167 b	+2,248
Other Services	+\$1.133 b	+\$0.610 b	+\$0.466 b	+11,021
Total, All Industries	+\$20.446 b	+\$8.426 b	+\$5.585 b	+76,955

Source: US Multi-Regional Impact Assessment System, The Perryman Group



The Annual Direct Economic Impact of Foreign-Born Workers on the Missouri Economy: Total

Results by Industry

Industry	Total Expenditures	Gross Product	Personal Income	Jobs
Industry	•			_
Agriculture	+\$1.534 b	+\$0.418 b	+\$0.276 b	+3,533
Mining	+\$1.291 b	+\$0.299 b	+\$0.146 b	+671
Utilities	+\$1.437 b	+\$0.324 b	+\$0.141 b	+489
Construction	+\$4.895 b	+\$2.274 b	+\$1.874 b	+21,468
Manufacturing	+\$10.590 b	+\$3.228 b	+\$1.873 b	+20,953
Wholesale Trade	+\$1.564 b	+\$1.058 b	+\$0.610 b	+5,646
Retail Trade*	+\$3.106 b	+\$2.211 b	+\$1.264 b	+34,289
Transportation & Warehousing	+\$1.340 b	+\$0.908 b	+\$0.601 b	+6,674
Information	+\$0.759 b	+\$0.468 b	+\$0.200 b	+1,451
Financial Activities*	+\$8.879 b	+\$2.639 b	+\$0.924 b	+7,391
Business Services	+\$4.222 b	+\$2.656 b	+\$2.167 b	+21,492
Health Services	+\$1.660 b	+\$1.134 b	+\$0.959 b	+12,914
Other Services	+\$2.692 b	+\$1.380 b	+\$1.091 b	+23,021
Total, All Industries	+\$43.970 b	+\$18.997 b	+\$12.125 b	+159,992

Source: US Multi-Regional Impact Assessment System, The Perryman Group



Total Economic Effects of the Foreign-Born Workforce

The Annual Economic Impact of Foreign-Born Workers on the Missouri Economy: Citizens

Results by Industry

	Total	Gross	Personal	
Industry	Expenditures	Product	Income	Jobs
Agriculture	+\$1.574 b	+\$0.426 b	+\$0.284 b	+3,631
Mining	+\$0.983 b	+\$0.246 b	+\$0.143 b	+704
Utilities	+\$3.657 b	+\$0.823 b	+\$0.359 b	+1,242
Construction	+\$2.206 b	+\$1.104 b	+\$0.909 b	+10,416
Manufacturing	+\$13.770 b	+\$4.314 b	+\$2.450 b	+28,288
Wholesale Trade	+\$2.995 b	+\$2.027 b	+\$1.169 b	+10,818
Retail Trade*	+\$8.185 b	+\$6.075 b	+\$3.520 b	+89,485
Transportation & Warehousing	+\$2.496 b	+\$1.709 b	+\$1.130 b	+12,559
Information	+\$1.806 b	+\$1.113 b	+\$0.475 b	+3,452
Financial Activities*	+\$12.590 b	+\$4.059 b	+\$1.534 b	+12,666
Business Services	+\$4.698 b	+\$2.980 b	+\$2.431 b	+24,116
Health Services	+\$2.952 b	+\$2.009 b	+\$1.699 b	+22,878
Other Services	+\$4.362 b	+\$2.282 b	+\$1.837 b	+35,810
Total, All Industries	+\$62.275 b	+\$29.166 b	+\$17.941 b	+256,066

Source: US Multi-Regional Impact Assessment System, The Perryman Group



The Annual Economic Impact of Foreign-Born Workers on the Missouri Economy: Non-Citizens

Results by Industry

	Total	Gross	Personal	
Industry	Expenditures	Product	Income	Jobs
Agriculture	+\$3.415 b	+\$0.918 b	+\$0.612 b	+7,872
Mining	+\$2.193 b	+\$0.509 b	+\$0.257 b	+1,180
Utilities	+\$2.462 b	+\$0.556 b	+\$0.243 b	+842
Construction	+\$4.856 b	+\$2.327 b	+\$1.917 b	+21,962
Manufacturing	+\$16.110 b	+\$4.734 b	+\$2.668 b	+31,978
Wholesale Trade	+\$2.428 b	+\$1.643 b	+\$0.947 b	+8,763
Retail Trade*	+\$7.512 b	+\$5.524 b	+\$3.192 b	+82,318
Transportation & Warehousing	+\$2.241 b	+\$1.497 b	+\$0.990 b	+10,992
Information	+\$1.140 b	+\$0.703 b	+\$0.300 b	+2,176
Financial Activities*	+\$7.428 b	+\$2.151 b	+\$0.816 b	+6,765
Business Services	+\$3.679 b	+\$2.286 b	+\$1.864 b	+18,496
Health Services	+\$1.683 b	+\$1.169 b	+\$0.989 b	+13,313
Other Services	+\$3.809 b	+\$1.972 b	+\$1.560 b	+32,476
Total, All Industries	+\$58.957 b	+\$25.988 b	+\$16.355 b	+239,133

Source: US Multi-Regional Impact Assessment System, The Perryman Group



The Annual Economic Impact of Foreign-Born Workers on the Missouri Economy: Total

Results by Industry

	Total	Gross	Personal	
Industry	Expenditures	Product	Income	Jobs
Agriculture	+\$4.989 b	+\$1.344 b	+\$0.896 b	+11,503
Mining	+\$3.176 b	+\$0.754 b	+\$0.400 b	+1,883
Utilities	+\$6.119 b	+\$1.379 b	+\$0.602 b	+2,084
Construction	+\$7.063 b	+\$3.430 b	+\$2.827 b	+32,379
Manufacturing	+\$29.880 b	+\$9.048 b	+\$5.117 b	+60,266
Wholesale Trade	+\$5.423 b	+\$3.670 b	+\$2.116 b	+19,582
Retail Trade*	+\$15.697 b	+\$11.599 b	+\$6.712 b	+171,802
Transportation & Warehousing	+\$4.737 b	+\$3.206 b	+\$2.120 b	+23,551
Information	+\$2.946 b	+\$1.816 b	+\$0.775 b	+5,628
Financial Activities*	+\$20.018 b	+\$6.210 b	+\$2.350 b	+19,431
Business Services	+\$8.377 b	+\$5.266 b	+\$4.296 b	+42,612
Health Services	+\$4.635 b	+\$3.178 b	+\$2.687 b	+36,191
Other Services	+\$8.171 b	+\$4.254 b	+\$3.397 b	+68,286
Total, All Industries	+\$121.232 b	+\$55.154 b	+\$34.296 b	+495,199

Source: US Multi-Regional Impact Assessment System, The Perryman Group



Direct Economic Effects of the Foreign-Born Workforce on Rural Areas

The Annual Direct Economic Impact of Foreign-Born Workers in Rural Areas on the Rural Missouri Economy: Citizens

Results by Industry

	Total	Gross	Personal	
Industry	Expenditures	Product	Income	Jobs
Agriculture	+\$0.018 b	+\$0.005 b	+\$0.003 b	+43
Mining	+\$0.007 b	+\$0.003 b	+\$0.002 b	+13
Utilities	+\$0.108 b	+\$0.024 b	+\$0.011 b	+37
Construction	+\$0.097 b	+\$0.045 b	+\$0.037 b	+425
Manufacturing	+\$0.438 b	+\$0.141 b	+\$0.083 b	+881
Wholesale Trade	+\$0.106 b	+\$0.072 b	+\$0.042 b	+384
Retail Trade*	+\$0.148 b	+\$0.109 b	+\$0.063 b	+1,625
Transportation & Warehousing	+\$0.073 b	+\$0.050 b	+\$0.033 b	+366
Information	+\$0.058 b	+\$0.036 b	+\$0.015 b	+110
Financial Activities*	+\$0.635 b	+\$0.198 b	+\$0.071 b	+565
Business Services	+\$0.234 b	+\$0.149 b	+\$0.121 b	+1,202
Health Services	+\$0.129 b	+\$0.088 b	+\$0.074 b	+998
Other Services	+\$0.146 b	+\$0.072 b	+\$0.058 b	+1,123
Total, All Industries	+\$2.197 b	+\$0.991 b	+\$0.613 b	+7,772

Source: US Multi-Regional Impact Assessment System, The Perryman Group



The Annual Direct Economic Impact of Foreign-Born Workers in Rural Areas on the Rural Missouri Economy: Non-Citizens

Results by Industry

Industry	Total Expenditures	Gross Product	Personal Income	Jobs
•	•			
Agriculture	+\$0.163 b	+\$0.044 b	+\$0.029 b	+374
Mining	+\$0.148 b	+\$0.033 b	+\$0.015 b	+65
Utilities	+\$0.034 b	+\$0.008 b	+\$0.003 b	+12
Construction	+\$0.469 b	+\$0.218 b	+\$0.180 b	+2,059
Manufacturing	+\$0.718 b	+\$0.210 b	+\$0.120 b	+1,404
Wholesale Trade	+\$0.052 b	+\$0.035 b	+\$0.020 b	+187
Retail Trade*	+\$0.185 b	+\$0.128 b	+\$0.072 b	+2,059
Transportation & Warehousing	+\$0.068 b	+\$0.046 b	+\$0.030 b	+336
Information	+\$0.017 b	+\$0.011 b	+\$0.005 b	+33
Financial Activities*	+\$0.258 b	+\$0.065 b	+\$0.021 b	+165
Business Services	+\$0.210 b	+\$0.130 b	+\$0.106 b	+1,052
Health Services	+\$0.035 b	+\$0.024 b	+\$0.020 b	+273
Other Services	+\$0.136 b	+\$0.072 b	+\$0.055 b	+1,340
Total, All Industries	+\$2.493 b	+\$1.023 b	+\$0.677 b	+9,357

Source: US Multi-Regional Impact Assessment System, The Perryman Group



The Annual Direct Economic Impact of Foreign-Born Workers in Rural Areas on the Rural Missouri Economy: Total

Results by Industry

Industry	Total Expenditures	Gross Product	Personal Income	Jobs
Agriculture	+\$0.181 b	+\$0.049 b	+\$0.033 b	+417
Mining	+\$0.155 b	+\$0.036 b	+\$0.017 b	+78
Utilities	+\$0.143 b	+\$0.032 b	+\$0.014 b	+48
Construction	+\$0.566 b	+\$0.263 b	+\$0.217 b	+2,483
Manufacturing	+\$1.156 b	+\$0.351 b	+\$0.203 b	+2,284
Wholesale Trade	+\$0.158 b	+\$0.107 b	+\$0.062 b	+572
Retail Trade*	+\$0.333 b	+\$0.236 b	+\$0.135 b	+3,683
Transportation & Warehousing	+\$0.141 b	+\$0.096 b	+\$0.063 b	+702
Information	+\$0.075 b	+\$0.046 b	+\$0.020 b	+143
Financial Activities*	+\$0.893 b	+\$0.263 b	+\$0.092 b	+730
Business Services	+\$0.444 b	+\$0.279 b	+\$0.227 b	+2,254
Health Services	+\$0.164 b	+\$0.112 b	+\$0.094 b	+1,272
Other Services	+\$0.281 b	+\$0.144 b	+\$0.113 b	+2,463
Total, All Industries	+\$4.691 b	+\$2.014 b	+\$1.290 b	+17,129

Source: US Multi-Regional Impact Assessment System, The Perryman Group



Total Economic Effects of the Foreign-Born Workforce on Rural Areas

The Annual Economic Impact of Foreign-Born Workers in Rural Areas on the Rural Missouri Economy: Citizens

Results by Industry

Industry	Total	Gross Product	Personal Income	Jobs
Industry	Expenditures			
Agriculture	+\$0.145 b	+\$0.039 b	+\$0.026 b	+334
Mining	+\$0.090 b	+\$0.023 b	+\$0.013 b	+64
Utilities	+\$0.294 b	+\$0.066 b	+\$0.029 b	+100
Construction	+\$0.204 b	+\$0.102 b	+\$0.084 b	+962
Manufacturing	+\$1.229 b	+\$0.378 b	+\$0.213 b	+2,481
Wholesale Trade	+\$0.219 b	+\$0.149 b	+\$0.086 b	+793
Retail Trade*	+\$0.735 b	+\$0.545 b	+\$0.316 b	+8,038
Transportation & Warehousing	+\$0.226 b	+\$0.155 b	+\$0.103 b	+1,139
Information	+\$0.133 b	+\$0.082 b	+\$0.035 b	+253
Financial Activities*	+\$0.981 b	+\$0.317 b	+\$0.120 b	+980
Business Services	+\$0.343 b	+\$0.218 b	+\$0.178 b	+1,763
Health Services	+\$0.270 b	+\$0.184 b	+\$0.155 b	+2,093
Other Services	+\$0.387 b	+\$0.203 b	+\$0.164 b	+3,200
Total, All Industries	+\$5.257 b	+\$2.460 b	+\$1.522 b	+22,199

Source: US Multi-Regional Impact Assessment System, The Perryman Group



The Annual Economic Impact of Foreign-Born Workers in Rural Areas on the Rural Missouri Economy: Non-Citizens

Results by Industry

	Total	Gross	Personal	
Industry	Expenditures	Product	Income	Jobs
Agriculture	+\$0.413 b	+\$0.111 b	+\$0.074 b	+950
Mining	+\$0.265 b	+\$0.061 b	+\$0.031 b	+142
Utilities	+\$0.245 b	+\$0.055 b	+\$0.024 b	+84
Construction	+\$0.587 b	+\$0.281 b	+\$0.232 b	+2,655
Manufacturing	+\$1.888 b	+\$0.545 b	+\$0.305 b	+3,692
Wholesale Trade	+\$0.211 b	+\$0.143 b	+\$0.082 b	+760
Retail Trade*	+\$0.877 b	+\$0.645 b	+\$0.372 b	+9,617
Transportation & Warehousing	+\$0.264 b	+\$0.176 b	+\$0.116 b	+1,294
Information	+\$0.100 b	+\$0.062 b	+\$0.026 b	+190
Financial Activities*	+\$0.687 b	+\$0.194 b	+\$0.074 b	+606
Business Services	+\$0.337 b	+\$0.209 b	+\$0.170 b	+1,689
Health Services	+\$0.198 b	+\$0.137 b	+\$0.116 b	+1,562
Other Services	+\$0.435 b	+\$0.223 b	+\$0.177 b	+3,778
Total, All Industries	+\$6.505 b	+\$2.841 b	+\$1.800 b	+27,019

Source: US Multi-Regional Impact Assessment System, The Perryman Group



The Annual Economic Impact of Foreign-Born Workers in Rural Areas on the Rural Missouri Economy: Total

Results by Industry

In directors	Total	Gross	Personal	laha
Industry	Expenditures	Product	Income	Jobs
Agriculture	+\$0.557 b	+\$0.150 b	+\$0.100 b	+1,285
Mining	+\$0.355 b	+\$0.084 b	+\$0.044 b	+207
Utilities	+\$0.539 b	+\$0.122 b	+\$0.053 b	+184
Construction	+\$0.791 b	+\$0.383 b	+\$0.316 b	+3,616
Manufacturing	+\$3.117 b	+\$0.922 b	+\$0.518 b	+6,173
Wholesale Trade	+\$0.430 b	+\$0.291 b	+\$0.168 b	+1,553
Retail Trade*	+\$1.613 b	+\$1.190 b	+\$0.688 b	+17,655
Transportation & Warehousing	+\$0.490 b	+\$0.331 b	+\$0.219 b	+2,433
Information	+\$0.233 b	+\$0.144 b	+\$0.061 b	+443
Financial Activities*	+\$1.668 b	+\$0.511 b	+\$0.195 b	+1,586
Business Services	+\$0.680 b	+\$0.427 b	+\$0.348 b	+3,452
Health Services	+\$0.468 b	+\$0.321 b	+\$0.271 b	+3,655
Other Services	+\$0.822 b	+\$0.426 b	+\$0.340 b	+6,978
Total, All Industries	+\$11.762 b	+\$5.301 b	+\$3.322 b	+49,218

Source: US Multi-Regional Impact Assessment System, The Perryman Group



Kansas

Direct Economic Effects of the Foreign-Born Workforce

The Annual Direct Economic Impact of Foreign-Born Workers on the Kansas Economy: Citizens

Results by Industry

	Total	Gross	Personal	
Industry	Expenditures	Product	Income	Jobs
Agriculture	+\$0.432 b	+\$0.114 b	+\$0.077 b	+996
Mining	+\$0.485 b	+\$0.119 b	+\$0.061 b	+298
Utilities	+\$0.908 b	+\$0.204 b	+\$0.089 b	+308
Construction	+\$0.756 b	+\$0.351 b	+\$0.289 b	+3,311
Manufacturing	+\$4.122 b	+\$1.306 b	+\$0.771 b	+8,264
Wholesale Trade	+\$0.788 b	+\$0.533 b	+\$0.307 b	+2,845
Retail Trade*	+\$1.099 b	+\$0.806 b	+\$0.465 b	+12,043
Transportation & Warehousing	+\$0.675 b	+\$0.462 b	+\$0.306 b	+3,395
Information	+\$0.313 b	+\$0.193 b	+\$0.082 b	+598
Financial Activities*	+\$4.240 b	+\$1.338 b	+\$0.493 b	+4,017
Business Services	+\$1.729 b	+\$1.097 b	+\$0.895 b	+8,878
Health Services	+\$0.958 b	+\$0.652 b	+\$0.551 b	+7,426
Other Services	+\$0.904 b	+\$0.449 b	+\$0.365 b	+7,023
Total, All Industries	+\$17.407 b	+\$7.625 b	+\$4.753 b	+59,403

Source: US Multi-Regional Impact Assessment System, The Perryman Group



The Annual Direct Economic Impact of Foreign-Born Workers on the Kansas Economy: Non-Citizens

Results by Industry

la desatas	Total	Gross	Personal	l.h.
Industry	Expenditures	Product	Income	Jobs
Agriculture	+\$1.358 b	+\$0.370 b	+\$0.244 b	+3,126
Mining	+\$1.235 b	+\$0.274 b	+\$0.128 b	+539
Utilities	+\$0.289 b	+\$0.065 b	+\$0.028 b	+99
Construction	+\$3.918 b	+\$1.821 b	+\$1.501 b	+17,191
Manufacturing	+\$5.999 b	+\$1.752 b	+\$1.003 b	+11,721
Wholesale Trade	+\$0.433 b	+\$0.293 b	+\$0.169 b	+1,563
Retail Trade*	+\$1.546 b	+\$1.066 b	+\$0.603 b	+17,191
Transportation & Warehousing	+\$0.571 b	+\$0.381 b	+\$0.252 b	+2,802
Information	+\$0.144 b	+\$0.089 b	+\$0.038 b	+275
Financial Activities*	+\$2.081 b	+\$0.538 b	+\$0.175 b	+1,374
Business Services	+\$1.748 b	+\$1.086 b	+\$0.886 b	+8,787
Health Services	+\$0.289 b	+\$0.200 b	+\$0.170 b	+2,283
Other Services	+\$1.150 b	+\$0.620 b	+\$0.474 b	+11,190
Total, All Industries	+\$20.761 b	+\$8.556 b	+\$5.671 b	+78,139

Source: US Multi-Regional Impact Assessment System, The Perryman Group



The Annual Direct Economic Impact of Foreign-Born Workers on the Kansas Economy: Total

Results by Industry

	Total	Gross	Personal	
Industry	Expenditures	Product	Income	Jobs
Agriculture	+\$1.789 b	+\$0.483 b	+\$0.321 b	+4,122
Mining	+\$1.720 b	+\$0.393 b	+\$0.189 b	+837
Utilities	+\$1.197 b	+\$0.270 b	+\$0.118 b	+407
Construction	+\$4.674 b	+\$2.172 b	+\$1.790 b	+20,502
Manufacturing	+\$10.121 b	+\$3.058 b	+\$1.774 b	+19,985
Wholesale Trade	+\$1.221 b	+\$0.826 b	+\$0.476 b	+4,407
Retail Trade*	+\$2.645 b	+\$1.872 b	+\$1.069 b	+29,234
Transportation & Warehousing	+\$1.246 b	+\$0.844 b	+\$0.558 b	+6,197
Information	+\$0.457 b	+\$0.282 b	+\$0.120 b	+873
Financial Activities*	+\$6.321 b	+\$1.877 b	+\$0.669 b	+5,391
Business Services	+\$3.477 b	+\$2.183 b	+\$1.781 b	+17,665
Health Services	+\$1.247 b	+\$0.853 b	+\$0.721 b	+9,709
Other Services	+\$2.054 b	+\$1.069 b	+\$0.838 b	+18,213
Total, All Industries	+\$38.168 b	+\$16.181 b	+\$10.424 b	+137,542

Source: US Multi-Regional Impact Assessment System, The Perryman Group



Total Economic Effects of the Foreign-Born Workforce

The Annual Economic Impact of Foreign-Born Workers on the Kansas Economy: Citizens

Results by Industry

	Total	Gross	Personal	
Industry	Expenditures	Product	Income	Jobs
Agriculture	+\$1.078 b	+\$0.291 b	+\$0.194 b	+2,487
Mining	+\$0.724 b	+\$0.180 b	+\$0.104 b	+511
Utilities	+\$2.705 b	+\$0.609 b	+\$0.266 b	+919
Construction	+\$1.549 b	+\$0.774 b	+\$0.638 b	+7,302
Manufacturing	+\$9.004 b	+\$2.861 b	+\$1.634 b	+19,168
Wholesale Trade	+\$2.143 b	+\$1.450 b	+\$0.836 b	+7,740
Retail Trade*	+\$5.817 b	+\$4.330 b	+\$2.512 b	+63,549
Transportation & Warehousing	+\$1.748 b	+\$1.197 b	+\$0.792 b	+8,794
Information	+\$1.252 b	+\$0.772 b	+\$0.329 b	+2,393
Financial Activities*	+\$8.842 b	+\$2.884 b	+\$1.107 b	+9,197
Business Services	+\$3.284 b	+\$2.083 b	+\$1.700 b	+16,859
Health Services	+\$2.109 b	+\$1.435 b	+\$1.214 b	+16,346
Other Services	+\$3.066 b	+\$1.603 b	+\$1.290 b	+25,036
Total, All Industries	+\$43.319 b	+\$20.469 b	+\$12.615 b	+180,301

Source: US Multi-Regional Impact Assessment System, The Perryman Group



The Annual Economic Impact of Foreign-Born Workers on the Kansas Economy: Non-Citizens

Results by Industry

	Total	Gross	Personal	
Industry	Expenditures	Product	Income	Jobs
Agriculture	+\$3.362 b	+\$0.904 b	+\$0.603 b	+7,748
Mining	+\$2.230 b	+\$0.518 b	+\$0.261 b	+1,204
Utilities	+\$2.610 b	+\$0.589 b	+\$0.257 b	+892
Construction	+\$4.897 b	+\$2.344 b	+\$1.932 b	+22,128
Manufacturing	+\$15.034 b	+\$4.482 b	+\$2.537 b	+30,900
Wholesale Trade	+\$2.473 b	+\$1.673 b	+\$0.965 b	+8,926
Retail Trade*	+\$7.591 b	+\$5.598 b	+\$3.238 b	+83,123
Transportation & Warehousing	+\$2.221 b	+\$1.483 b	+\$0.981 b	+10,896
Information	+\$1.120 b	+\$0.691 b	+\$0.295 b	+2,138
Financial Activities*	+\$7.410 b	+\$2.183 b	+\$0.844 b	+7,059
Business Services	+\$3.647 b	+\$2.266 b	+\$1.848 b	+18,335
Health Services	+\$1.710 b	+\$1.188 b	+\$1.004 b	+13,525
Other Services	+\$3.807 b	+\$1.970 b	+\$1.558 b	+32,277
Total, All Industries	+\$58.111 b	+\$25.890 b	+\$16.323 b	+239,150

Source: US Multi-Regional Impact Assessment System, The Perryman Group



The Annual Economic Impact of Foreign-Born Workers on the Kansas Economy: Total

Results by Industry

	Total	Gross	Personal	
Industry	Expenditures	Product	Income	Jobs
Agriculture	+\$4.439 b	+\$1.194 b	+\$0.797 b	+10,235
Mining	+\$2.953 b	+\$0.698 b	+\$0.366 b	+1,715
Utilities	+\$5.315 b	+\$1.198 b	+\$0.523 b	+1,811
Construction	+\$6.446 b	+\$3.118 b	+\$2.570 b	+29,430
Manufacturing	+\$24.038 b	+\$7.343 b	+\$4.171 b	+50,068
Wholesale Trade	+\$4.616 b	+\$3.124 b	+\$1.801 b	+16,667
Retail Trade*	+\$13.408 b	+\$9.928 b	+\$5.749 b	+146,671
Transportation & Warehousing	+\$3.969 b	+\$2.680 b	+\$1.773 b	+19,690
Information	+\$2.372 b	+\$1.462 b	+\$0.624 b	+4,531
Financial Activities*	+\$16.252 b	+\$5.068 b	+\$1.951 b	+16,256
Business Services	+\$6.931 b	+\$4.349 b	+\$3.548 b	+35,194
Health Services	+\$3.819 b	+\$2.623 b	+\$2.218 b	+29,871
Other Services	+\$6.872 b	+\$3.573 b	+\$2.848 b	+57,313
Total, All Industries	+\$101.431 b	+\$46.359 b	+\$28.938 b	+419,451

Source: US Multi-Regional Impact Assessment System, The Perryman Group



Direct Economic Effects of the Foreign-Born Workforce on Rural Areas

The Annual Direct Economic Impact of Foreign-Born Workers in Rural Areas on the Rural Kansas Economy: Citizens

Results by Industry

	Total	Gross	Personal	
Industry	Expenditures	Product	Income	Jobs
Agriculture	+\$0.094 b	+\$0.024 b	+\$0.016 b	+214
Mining	+\$0.099 b	+\$0.024 b	+\$0.013 b	+64
Utilities	+\$0.194 b	+\$0.044 b	+\$0.019 b	+66
Construction	+\$0.162 b	+\$0.075 b	+\$0.062 b	+710
Manufacturing	+\$0.910 b	+\$0.280 b	+\$0.165 b	+1,771
Wholesale Trade	+\$0.169 b	+\$0.114 b	+\$0.066 b	+610
Retail Trade*	+\$0.235 b	+\$0.173 b	+\$0.100 b	+2,581
Transportation & Warehousing	+\$0.146 b	+\$0.099 b	+\$0.065 b	+728
Information	+\$0.067 b	+\$0.041 b	+\$0.018 b	+128
Financial Activities*	+\$0.934 b	+\$0.288 b	+\$0.106 b	+861
Business Services	+\$0.372 b	+\$0.235 b	+\$0.192 b	+1,903
Health Services	+\$0.205 b	+\$0.140 b	+\$0.118 b	+1,592
Other Services	+\$0.197 b	+\$0.096 b	+\$0.078 b	+1,505
Total, All Industries	+\$3.783 b	+\$1.634 b	+\$1.018 b	+12,732

Source: US Multi-Regional Impact Assessment System, The Perryman Group



The Annual Direct Economic Impact of Foreign-Born Workers in Rural Areas on the Rural Kansas Economy: Non-Citizens

Results by Industry

Industry	Total Expenditures	Gross Product	Personal Income	Jobs
Agriculture	+\$0.336 b	+\$0.092 b	+\$0.060 b	+774
Mining	+\$0.306 b	+\$0.068 b	+\$0.032 b	+134
Utilities	+\$0.071 b	+\$0.016 b	+\$0.007 b	+24
Construction	+\$0.970 b	+\$0.451 b	+\$0.371 b	+4,255
Manufacturing	+\$1.484 b	+\$0.434 b	+\$0.249 b	+2,901
Wholesale Trade	+\$0.107 b	+\$0.072 b	+\$0.042 b	+387
Retail Trade*	+\$0.383 b	+\$0.264 b	+\$0.149 b	+4,255
Transportation & Warehousing	+\$0.141 b	+\$0.094 b	+\$0.062 b	+693
Information	+\$0.036 b	+\$0.022 b	+\$0.009 b	+68
Financial Activities*	+\$0.534 b	+\$0.134 b	+\$0.044 b	+340
Business Services	+\$0.434 b	+\$0.269 b	+\$0.219 b	+2,175
Health Services	+\$0.071 b	+\$0.050 b	+\$0.042 b	+565
Other Services	+\$0.280 b	+\$0.149 b	+\$0.113 b	+2,770
Total, All Industries	+\$5.153 b	+\$2.115 b	+\$1.400 b	+19,342

Source: US Multi-Regional Impact Assessment System, The Perryman Group



The Annual Direct Economic Impact of Foreign-Born Workers in Rural Areas on the Rural Kansas Economy: Total

Results by Industry

	Total	Gross	Personal	
Industry	Expenditures	Product	Income	Jobs
Agriculture	+\$0.430 b	+\$0.116 b	+\$0.077 b	+987
Mining	+\$0.405 b	+\$0.092 b	+\$0.044 b	+197
Utilities	+\$0.265 b	+\$0.060 b	+\$0.026 b	+91
Construction	+\$1.132 b	+\$0.526 b	+\$0.433 b	+4,965
Manufacturing	+\$2.394 b	+\$0.714 b	+\$0.414 b	+4,672
Wholesale Trade	+\$0.276 b	+\$0.187 b	+\$0.108 b	+996
Retail Trade*	+\$0.618 b	+\$0.437 b	+\$0.249 b	+6,836
Transportation & Warehousing	+\$0.287 b	+\$0.193 b	+\$0.128 b	+1,421
Information	+\$0.103 b	+\$0.064 b	+\$0.027 b	+196
Financial Activities*	+\$1.468 b	+\$0.422 b	+\$0.150 b	+1,201
Business Services	+\$0.806 b	+\$0.504 b	+\$0.411 b	+4,078
Health Services	+\$0.276 b	+\$0.189 b	+\$0.160 b	+2,157
Other Services	+\$0.477 b	+\$0.245 b	+\$0.191 b	+4,275
Total, All Industries	+\$8.936 b	+\$3.749 b	+\$2.418 b	+32,073

Source: US Multi-Regional Impact Assessment System, The Perryman Group



Total Economic Effects of the Foreign-Born Workforce on Rural Areas

The Annual Economic Impact of Foreign-Born Workers in Rural Areas on the Rural Kansas Economy: Citizens

Results by Industry

	Total	Gross	Personal	
Industry	Expenditures	Product	Income	Jobs
Agriculture	+\$0.354 b	+\$0.093 b	+\$0.063 b	+806
Mining	+\$0.263 b	+\$0.063 b	+\$0.034 b	+164
Utilities	+\$0.531 b	+\$0.119 b	+\$0.052 b	+181
Construction	+\$0.340 b	+\$0.170 b	+\$0.140 b	+1,603
Manufacturing	+\$2.172 b	+\$0.651 b	+\$0.370 b	+4,361
Wholesale Trade	+\$0.371 b	+\$0.251 b	+\$0.145 b	+1,341
Retail Trade*	+\$1.227 b	+\$0.914 b	+\$0.530 b	+13,411
Transportation & Warehousing	+\$0.406 b	+\$0.276 b	+\$0.183 b	+2,031
Information	+\$0.189 b	+\$0.116 b	+\$0.050 b	+360
Financial Activities*	+\$1.530 b	+\$0.491 b	+\$0.192 b	+1,589
Business Services	+\$0.548 b	+\$0.346 b	+\$0.282 b	+2,799
Health Services	+\$0.445 b	+\$0.304 b	+\$0.257 b	+3,460
Other Services	+\$0.602 b	+\$0.313 b	+\$0.253 b	+4,920
Total, All Industries	+\$8.977 b	+\$4.107 b	+\$2.551 b	+37,026

Source: US Multi-Regional Impact Assessment System, The Perryman Group



The Annual Economic Impact of Foreign-Born Workers in Rural Areas on the Rural Kansas Economy: Non-Citizens

Results by Industry

In directors	Total	Gross	Personal	laha
Industry	Expenditures	Product	Income	Jobs
Agriculture	+\$0.827 b	+\$0.222 b	+\$0.148 b	+1,905
Mining	+\$0.548 b	+\$0.127 b	+\$0.064 b	+295
Utilities	+\$0.529 b	+\$0.119 b	+\$0.052 b	+181
Construction	+\$1.206 b	+\$0.577 b	+\$0.475 b	+5,446
Manufacturing	+\$3.588 b	+\$1.051 b	+\$0.591 b	+7,273
Wholesale Trade	+\$0.437 b	+\$0.295 b	+\$0.170 b	+1,577
Retail Trade*	+\$1.805 b	+\$1.330 b	+\$0.769 b	+19,769
Transportation & Warehousing	+\$0.532 b	+\$0.355 b	+\$0.235 b	+2,612
Information	+\$0.200 b	+\$0.124 b	+\$0.053 b	+380
Financial Activities*	+\$1.398 b	+\$0.400 b	+\$0.156 b	+1,277
Business Services	+\$0.684 b	+\$0.424 b	+\$0.346 b	+3,432
Health Services	+\$0.409 b	+\$0.284 b	+\$0.240 b	+3,231
Other Services	+\$0.884 b	+\$0.453 b	+\$0.358 b	+7,645
Total, All Industries	+\$13.045 b	+\$5.762 b	+\$3.658 b	+55,024

Source: US Multi-Regional Impact Assessment System, The Perryman Group



The Annual Economic Impact of Foreign-Born Workers in Rural Areas on the Rural Kansas Economy: Total

Results by Industry

	Total	Gross	Personal	
Industry	Expenditures	Product	Income	Jobs
Agriculture	+\$1.181 b	+\$0.315 b	+\$0.211 b	+2,711
Mining	+\$0.810 b	+\$0.190 b	+\$0.098 b	+459
Utilities	+\$1.060 b	+\$0.239 b	+\$0.104 b	+362
Construction	+\$1.545 b	+\$0.747 b	+\$0.615 b	+7,049
Manufacturing	+\$5.760 b	+\$1.701 b	+\$0.961 b	+11,635
Wholesale Trade	+\$0.808 b	+\$0.547 b	+\$0.315 b	+2,917
Retail Trade*	+\$3.032 b	+\$2.244 b	+\$1.299 b	+33,179
Transportation & Warehousing	+\$0.938 b	+\$0.632 b	+\$0.418 b	+4,643
Information	+\$0.389 b	+\$0.240 b	+\$0.102 b	+740
Financial Activities*	+\$2.927 b	+\$0.891 b	+\$0.348 b	+2,866
Business Services	+\$1.232 b	+\$0.770 b	+\$0.628 b	+6,232
Health Services	+\$0.854 b	+\$0.588 b	+\$0.497 b	+6,691
Other Services	+\$1.486 b	+\$0.766 b	+\$0.611 b	+12,566
Total, All Industries	+\$22.023 b	+\$9.870 b	+\$6.209 b	+92,050

Source: US Multi-Regional Impact Assessment System, The Perryman Group

