SEIGMA

SOCIAL AND ECONOMIC IMPACTS OF GAMBLING IN MASSACHUSETTS

UNIVERSITY OF MASSACHUSETTS SCHOOL OF PUBLIC HEALTH AND HEALTH SCIENCES

Sports Betting in Massachusetts:
2023 Economic Impacts Report

Prepared by the UMass Donahue Institute's
Economic & Public Policy Research Group

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Executive Summary

Through the establishment of the gambling industry in Massachusetts, lawmakers provided avenues for the creation of new jobs, revenue, and economic growth in the state. The Social and Economic Impacts of Gambling in Massachusetts (SEIGMA) project, of which the Economic and Public Policy Research (EPPR) unit at the University of Massachusetts Donahue Institute (UMDI) is a part, strives to understand the impact of the casinos on the people and economy of the Commonwealth.

The purpose of this report is to catalog as accurately as possible the ways in which the Massachusetts economy has been changed by the legalization of sports betting. Legalization introduced three retail sports betting operators, operating within the three existing casino locations, and nine mobile or online sports betting operators[1] into the Commonwealth's gambling industry. Understanding how the introduction of these operators affects the economy involves analyzing the impacts of multiple parts of these operations, namely, operating impacts such as employment and spending to other businesses, gross gaming revenues, and consumer spending patterns. Taken together, these measures of economic activity can be quantified and used as inputs to inform the SEIGMA team's REMI PI$^+$ economic model. The output from this model allows us to capture the "ripple effects" that are caused by these direct impacts and therefore make conclusions about the total impacts of these changes on the Massachusetts economy.

To estimate economic impacts, three key sources of data have been collected: casino and mobile sports betting operations (spending on vendors, employees and government entities), gross gaming revenues, and patron spending behavior. Given that this report is intended for the Massachusetts Gaming Commission and a broader audience of policymakers and stakeholders in Massachusetts, we have constrained our analysis to economic activity that a) occurs in the gambling space (casinos and sports betting) and b) would not have occurred in Massachusetts if the Commonwealth had not legalized gambling. For similar reasons, economic activity related to mobile sports betting is excluded from our analysis in cases where the SEIGMA team determined that activity to be a continuation of activity that pre-dated the legalization of mobile sports betting in Massachusetts, and that likely would have continued regardless of whether or not Massachusetts legalized sports betting. Though the economic impacts of the casino industry have been modeled thoroughly in the past, the sports betting industry, and mobile sports betting in particular, is quite different from the casino industry in almost every way, except that they both involve gambling. The economic activities these operators engage in, and the degree to which they engage in these activities in Massachusetts, differs from casino operators. As such, new methods were developed, and the data used to understand these impacts are different. The estimated impacts are highlighted below.

Direct Impacts

Employment

- As a technology-based activity, mobile sports betting does not require nearly the same levels of hiring to operate that the casinos required when they opened. It is also less important that those jobs be physically located in Massachusetts.
- In 2023, mobile sports betting operators employed an average of 10,265 employees across the U.S. industry in a quarter.

[1] At the time of writing, nine sports betting operators had been licensed by the MGC, although some ultimately withdrew from the state. Our analysis will cover the impact of the six that operated through 2023.

- Nearly twelve percent of those employees, an average of 1,185 in a quarter, were employed in Massachusetts. However, most of that employment either existed in Massachusetts prior to the legalization of sports betting or was remote work that was not necessarily tied to the expansion of gambling in Massachusetts.

Vendor Spending

- In terms of business-to-business spending, Category 3 operators made a total of $1.74 billion in payments to vendors across the state and nation in 2023.
- About four percent of those payments, $70.8 million, were made to Massachusetts firms.
- As a result of initiating operations in Massachusetts, sports betting operators reported spending needs in several key sectors. Major spending areas related to setting up and maintaining data centers in a new location, new spending on marketing, advertising, and promotions, and new spending on professional technical services related to legal and regulatory requirements.

Revenues

- The mobile sports betting industry grossed a total of $465.1 million in 2023. Of that total, individual operators earned between $4.6 million and $237.4 million.
- We estimate that 29 percent of spending on mobile sports betting, or just under $137 million, was recaptured from out-of-state or “gray market” betting.
- Taxes on gross gaming revenue in this sector generated a total of $90.8 million for the Commonwealth in 2023. When considered with casino gross gaming revenue taxes, sports betting taxes represented 22 percent of all non-lottery gaming tax revenue that year.
- Gross gaming revenue has increased 155 percent over the past decade while gaming tax revenues only increased 72 percent, due in part to the lower tax rates on each new form of gambling introduced.
- Casino revenue declined by 0.9 percent in FY2024, the first year on year decline since Plainridge Park Casino opened in 2015. It is possible that the declines between FY2023 and FY2024 were only minor fluctuations in what will prove to be relatively stable year-to-year revenue. However, the immediate leveling off of casino revenue once sports betting was introduced is striking.

Patrons: Consumer Spending

- In 2023, bettors placed $4.7 billion worth of online sports bets in Massachusetts and approximately $4.25 billion was paid out in prizes to gamblers.
- An estimated $136.9 million dollars or 29 percent of spending on mobile sports betting came from patrons who reported that they would have spent their money on some other type of sports betting if mobile sports betting had not been legalized in Massachusetts.
- An estimated $333.7 million dollars (71 percent of spending) were reallocated away from other types of economic activities and towards mobile sports betting. In other words, we estimate that these funds would have been spent elsewhere in the economy if not for legalized sports betting, a trend that we refer to as consumption reallocation.

Total Impacts

- All casino and sports betting impacts considered, the legalization of gambling in Massachusetts created and supported an estimated net of 15,459 jobs across the Commonwealth. Of these jobs, almost all of them are the result of the casino industry, and almost half are the result of Encore Boston Harbor alone.
- The mobile sports betting industry, taken as a whole, creates or supports approximately 118 jobs. This number represents the estimated number of jobs created through the operations of sports betting firms (722) and the number of jobs created through new state government spending of sports betting revenue (1,861) minus estimated jobs lost through consumption reallocation (2,465).
- Legalized gambling also supports almost $3.6 billion in Output (sales), with $2.5 billion of that being Value Added (gross state product). Only 2.0 percent of Output from legalized gambling is generated by mobile sports betting. Mobile sports betting's relatively small share is likely a result of its limited in-state vendor spending and limited direct employment.
- Sports betting's positive impact on the economy is largely due to the tax revenue it generates for the Commonwealth, and the subsequent expenditure of those funds.
- The results of our economic modeling exercise indicate that the net economic impact of sports betting is slightly positive, but it is important to note that these results do not account for social impacts that may have "downstream" economic impact, such as bankruptcies and should be viewed with some degree of caution.

Introduction

Overview

The goal of this report is to catalog as accurately as possible the ways in which the Massachusetts economy has been changed by the legalization of sports betting. Legalization introduced three retail sports betting operators, operating within the three existing casino locations, and nine mobile or online sports betting operators[2] into the commonwealth's gambling industry. Understanding how the introduction of these operators affects the economy involves analyzing the impacts of multiple parts of these operations. First, we measure operating impacts, which include employment and spending to other businesses, to understand the impacts of the jobs created, wages paid, and goods and services purchased by these operators. The gross gaming revenue (GGR) collected by the Commonwealth and spent as new state government spending is another important piece of the economic picture. Finally, changes in the spending patterns of sports betting patrons further influence the nature of the industry's impact on the economy. Taken together, these measures of economic activity can be quantified and used as inputs to inform the SEIGMA team's REMI PI^{+} economic model. The output from this model allows us to capture the "ripple effects" that are caused by these direct impacts and therefore make conclusions about the total impacts of these changes on the Massachusetts economy.[3]

Because this report is intended for the Massachusetts Gaming Commission and a broader audience of policymakers and stakeholders in Massachusetts, we have constrained our economic impact modeling exercise to economic activity that a) occurs in the gambling space (casinos and sports betting) and b) would not have occurred in Massachusetts if the Commonwealth had not legalized gambling. So, in the case of a business in Massachusetts that was supplying goods or services to an out-of-state casino, that would not be included in our analysis, and in fact we would not receive any data on that activity. For similar reasons, economic activity related to mobile sports betting is excluded from our analysis in cases where the SEIGMA team determined that activity to be a continuation of activity that pre-dated the legalization of mobile sports betting in Massachusetts, and that likely would have continued regardless of whether Massachusetts legalized sports betting.

As a part of the Massachusetts Gaming Commission's research agenda, the SEIGMA team produced an initial study on the Massachusetts sports betting industry, in which the team formed important assumptions regarding the ways in which the industry ought to be modeled. Though the economic impacts of the casino industry have been modeled thoroughly in the past, the sports betting industry, and mobile sports betting in particular, is quite different from the casino industry in almost every way, except that they both involve gambling. The economic activities these operators engage in, and the degree to which they engage in these activities in Massachusetts, differs from casino operators. As such, the methods and data used to understand these impacts are different, and in some cases not as robust as those used for studying casino impacts.

Early Impacts and Assumptions

As discussed in our previous report, *Early Economic Impacts of Sports Betting in the Commonwealth of Massachusetts*, an analysis of the available data allowed the research team to make early determinations regarding how best to model the economic impacts of sports betting. This section,

[2] At the time of writing, nine sports betting operators had been licensed by the MGC, although some ultimately withdrew from the state. Our analysis will cover the impact of the six that operated through 2023.

[3] For more information on methodology and the use of REMI model see Appendix 2: Methodology, located on page 30.

featured in the previous report, briefly describes our findings and recommendations for studying the industry going forward.

Retail Sports Betting

Early findings indicated that retail sports betting operations are a relatively small share of casino operations. While 3.3 percent of employees at Plainridge Park Casino work in the sports betting operation, sports betting employees represent an even smaller portion, less than one percent of employees, at the other two casinos. Likewise, sports betting constitutes less than three percent of vendor spending, and less than two percent of in-state vendor spending, at all three casinos.

While retail sports betting represents a small share of total casino employment and spending, its operations are heavily integrated into the broader operations of the casino. In the case of Encore Boston Harbor, casino employees split their time between sports betting and other operations. Even in casinos that have dedicated sports betting employees, there is reason to believe retail sports betting may have generated demand for labor or business-to-business spending which is impossible to capture accurately. For example, some share of a bartender or hotel worker's labor is in service of patrons who visited the casino to place sports bets, but the share is unknown. Similar problems present themselves with vendor spending. For example, casinos use the same vendors to order uniforms for sports betting employees that they do for other casino employees.

For these reasons, we determined that future economic impact studies will consider retail sports betting as a part of the casinos' broader operations. Findings from operator data and qualitative questionnaires suggest that the economic impact of retail sports betting is not large or distinct enough to warrant additional economic impact work beyond what the SEIGMA team already does to monitor the impact of the casinos. Moreover, while the exact nature of their arrangements vary across casinos, retail sports betting operations are integrated into the operations of the casinos to the point that it is impossible to accurately isolate the impacts of retail sports betting from those of the host casino. Therefore, the best way to capture on-site sports betting impacts is to treat it as another aspect of the casinos. The SEIGMA team did collect data on total casino operations as part of our ongoing data request program. For an analysis and summary of casino and retail sports betting impacts in 2023, see Appendix 1.

Mobile Sports Betting

While mobile sports betting operators are regulated by the MGC, they are authorized through a separate legislative act and subject to different restrictions and requirements than those set for casinos. One consequence is that the SEIGMA team has not been able to access the same level of data from mobile sports betting operators as it does from casino operators. Our work on the Early Economic Impacts of Sports Betting in the Commonwealth of Massachusetts study enabled us to form recommendations for modeling the economic impact of the mobile sports betting industry given these restrictions.

First, employment impacts from mobile sports betting tend to be small. Where sports betting employment was significant, the SEIGMA team determined that it was related to pre-existing operators in Massachusetts, rather than new employment following the expansion of sports betting in Massachusetts. Therefore, it would not be appropriate to attribute the employment of its existing in-state workers to the legalization of sports betting in Massachusetts.

Assumptions about the nature of the sports betting industry were also developed using a questionnaire that was distributed to mobile and retail operators in the summer of 2024. In this questionnaire, operators answered multiple choice and open response questions regarding operational structures and changes resulting from the expansion of sports betting into Massachusetts. Depending on the

respondent, questions focused on either the integration of retail sports books into casino locations for Category 1 operators or on the expansion of digital enterprises into a new state for Category 3 operators. The questions asked in the survey were related to employment and hiring, new spending in and outside of Massachusetts, and diversity policies and programs. These responses revealed that while there is some new hiring and spending `related to sports betting expansion, it is very limited.

While the primary economic impacts of the casinos have been operational impacts, the SEIGMA team believes that the most important economic impacts of mobile sports betting will be the impact of new state revenue and the impact of consumer reallocation towards sports betting and away from other goods and services. These impacts were measured for casino impact studies in the past, but they will take on greater significance in sports betting studies, given the lack of major operating impacts. Fortunately, there is data available to the SEIGMA team on these topics that can be used to inform economic impact models. The MGC collects rich data on operator gross gaming revenues. In lieu of on-site patron surveys that provided information on patron behavior in prior casino reports, two data sources are available to gain insight into consumer behavior: location data from AirSage, and survey data (for retail sports betting and ongoing casino work) from SEIGMA's 2024 Online Panel Survey (OPS24). Details on both data sources are available in the appendices to this report. AirSage data allows us to determine the point of origin (used as a proxy for home address) of individuals who visited the casinos but does not provide any further information beyond this. OPS24 offers a rich data set with an extensive range of questions, but only surveys Massachusetts residents. This does leave some gaps in knowledge about the behavior of out-of-state patrons. On the other hand, this approach allows us to collect a significantly larger database at a reduced cost.

In accordance with assumptions made about retail and online sports betting, the remainder of this report will focus solely on online sports betting.

Background to the Research Project

In November of 2011, Governor Deval Patrick signed the Expanded Gaming Act into law, an act tasked with establishing the grounds for gambling legalization in the Commonwealth. Through the expansion of the casino industry in Massachusetts, lawmakers provided avenues for the creation of new jobs, revenue, and economic growth in the state. To ensure these needs are met, the Massachusetts Gaming Commission (MGC)–established to oversee the implementation of the Expanded Gaming Act–organizes protective measures for communities threatened by potential social and economic impacts of gaming establishments. The UMass Donahue Institute (UMDI), as a part of the Social and Economic Impacts of Gambling in Massachusetts (SEIGMA) Research Team, is tasked with producing various analyses of economic and fiscal impacts in fulfillment of the MGC's research agenda and mandates.

The gaming legislation allows for the creation of up to three commercial resort-style casinos in the state and one slots parlor. To reduce internal competition among casinos, the Commonwealth was divided into three licensing regions, shown in Figure 1, with each region able to attract no more than one full resort-style casino license. Slots-parlor licenses are not geographically limited. To date, two full resort-style licenses and one slots-parlor license have been awarded. In Region A, Plainridge Park Casino–the state's singular slots-parlor–launched the casino industry with its opening in Plainville, Massachusetts in July of 2015. MGM Springfield located in Springfield, Massachusetts, started as the first resort-style casino in the state, having taken residence in Region B in August of 2018. Encore Boston Harbor opened in Everett, Massachusetts, in June of 2019, joining Plainridge Park Casino as the second casino in Region A and joining MGM Springfield as the second resort-style casino in the Commonwealth.

Figure 1: Massachusetts Gaming Commission Regions

Source: Massachusetts Gaming Commission

Building on the 2011 Massachusetts Expanded Gaming Act, G.L c.23K, the Commonwealth legalized sports wagering activities in 2022 through an Act to Regulate Sports Wagering (House Bill No. 5164). The MGC was tasked with overseeing the promulgation of the sports wagering industry in the state. The resulting law, Massachusetts General Laws c.23N, created license categories for three distinct types of sports wagering operators based on modes of play: in-person gambling at casinos; in-person wagering at establishments that either conduct live horse racing or simulcast wagering on horse or greyhound racing; and online or mobile wagering.

More than 30 companies seeking to be prospective operators submitted requested documents and other pertinent materials to the MGC during the application process. The three licensed casinos in Massachusetts, Encore Boston Harbor, MGM Springfield, and Plainridge Park Casino were granted Category 1 licenses to offer in-person sports wagering. Category 1 licenses became effective at the end of January 2023. Nine operators were granted Category 3 licenses to offer mobile or online sports wagering. With licenses that rolled out starting in March 2023, the list now includes the following digital operators:

- BetMGM
- Caesars Sportsbook
- Fanatics Betting & Gaming
- Penn Sports Interactive
- Bally Bet
- DraftKings
- FanDuel
- Betr
- WynnBet

Bally Bet was not included in the analysis for this study because the company opened its Massachusetts sportsbook on July 1, 2024, too late to provide a data set for 2023. Betr and WynnBet did not renew their licenses in 2024 and no longer operate mobile sports wagering platforms in Massachusetts. As of 2024, no Category 2 (in person simulcast betting on horse and greyhound racing) licenses have been awarded.

Direct Impacts

Direct impacts are the economic impacts that stem directly from the operation of a firm, in this case the casino or mobile sports betting company. These impacts include employment, compensation paid to employees, and business-to-business spending. Direct impacts do not include any shifts in government spending as a result of new revenues, nor do they include changes in consumer spending that might result from the legalization of gambling in Massachusetts. This section focuses on the direct impacts of mobile sports betting in Massachusetts. Given the quarterly nature of the data collected from sports betting operators, operating impacts in this section are reported as aggregate quarterly averages for employment.

Employment and Wages

In 2023, mobile sports betting operators employed an average of 10,265 employees across the industry in a quarter. Nearly twelve percent of those employees, an average of 1,185 in a quarter, were employed in Massachusetts. It should be noted that a substantial majority of sports betting employment in Massachusetts can be attributed to pre-existing sports betting jobs in Massachusetts, whether at a Massachusetts-based sports betting firm, or in a remote position with an out-of-state firm. In either case, we consider these jobs unrelated to the expansion of sports betting into Massachusetts.

In questionnaire responses, five out of the six operators indicated that they generally hire new employees when expanding to a new state, with four out of six explicitly responding that they had hired new staff because of Massachusetts opting to legalize sports betting. Responses indicate that these positions tend to be customer-facing, specifically customer support and VIP services for high value patrons. However, as a technology-based activity, mobile sports betting does not require nearly the same levels of hiring to operate that the casinos required when they opened. It is also less important that those jobs be physically located in Massachusetts.

Most respondents stated that they operate with a centralized model and do not have employees dedicated to a specific state, indicating that employees supporting operations in Massachusetts do not necessarily need to be located in Massachusetts. Some of these employees work at the main office of the operator, while others work remotely. Some respondents indicated that they do have employees dedicated to a state during the first year or two, before adding the state to an employee or department's broader portfolio once their services have been successfully launched. VIP/Key Account Managers are most likely to be hired to manage specific states, since they are expected to meet face to face with high value patrons. Based on the survey responses, we estimate that less than 100 new individuals were hired, especially because only one type of job (VIP Support/Key Account Manager) required employees to live in Massachusetts.

Vendor Spending

Mobile sports betting operators made a total of $1.74 billion in payments to vendors across the state and nation in 2023. About four percent of those payments, $70.8 million, were made to Massachusetts firms. It is important to note that these calculations include expenditure for DraftKings, an organization which existed in the Commonwealth prior to legalization. For the purposes of economic modeling, we only modeled DraftKings' advertising spending, working on the assumption that the remainder of their Massachusetts vendor spending is not related to the expansion of sports betting into Massachusetts

Table 1: Mobile Sports Betting Operating Impacts, 2023

Measure	All US	Massachusetts
Employment (Average Quarterly)	10,265	1,185
Vendor Spending (Total)	$1,741,096,649	$70,815,284

Source: Mobile sports betting operator data

The questionnaire sent to operators inquired about new business-to-business spending habits in addition to employment details. Upon initializing operations in a new state, mobile sports betting operators unanimously incur additional spending needs. Primarily, operators reported spending needs related to setting up and maintaining data centers in a new location, including hardware costs and tech labor costs. Five out of six operators also reported new spending on marketing, advertising, and promotions, while four out of six operators reported new spending related to legal and regulatory requirements. Other new spending needs such as retail staffing, customer service, and increased spending with existing vendors due to scaling were also reported.

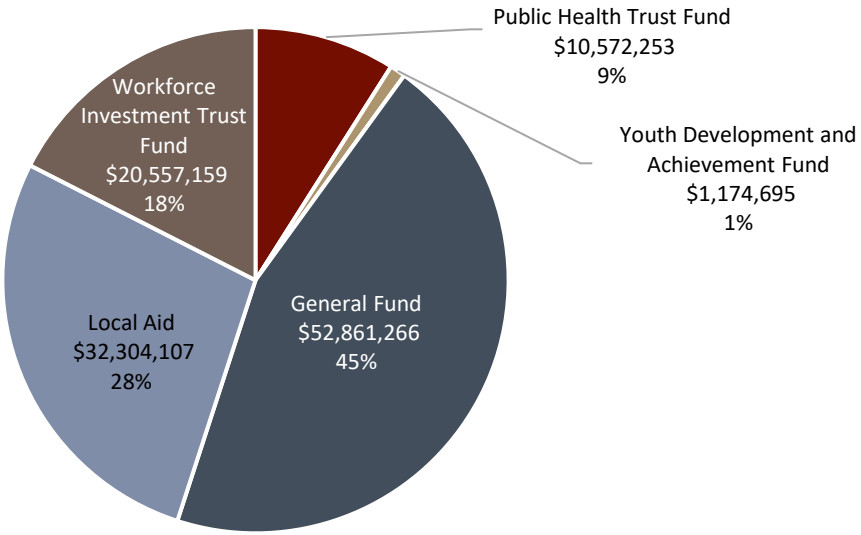
Looking more specifically at the legalization of sports betting in Massachusetts, mobile sports betting operators reported new spending on goods and services in the major categories discussed above as a result of expanding operators into the Commonwealth. Four out of six operators reported new spending on goods and services from in-state vendors, which typically consist of legal and lobbyist firms, data center and server hosting services, and local marketing and advertising vendors. Operators also reported contracting with in-state vendors related to operations staff, retail, and consulting needs. A subset of these services are provided by firms who perform work that requires them to be located in Massachusetts, such as data centers and servers, while operators reported preference for local legal consultants and advertisers in order to gain a local perspective.

Public Sector Impacts from Gross Gaming Revenue

One of the major motivations for legalizing sports betting is the large amount of new tax revenue that can be collected on sports bets. The revenue generated from taxes on gross gaming revenue (GGR), is an important piece of the economic picture that drives impacts on the public sector. While this section focuses on mobile sports betting, it is important to understand the impacts of the introduction of sports betting within the context of the existing trends of GGR generated by casinos and the lottery as well.

The funding generated by sports wagering revenue taxes already provides significant support to Massachusetts municipalities and organizations through dedicated allocations to five different state funds. In FY 2024 alone, $117.6 million was collected and distributed to these funds. The largest portion of sports wagering tax revenue is designated for the General Fund, to which 45 percent is allotted. The next biggest recipient is Local Aid to municipalities, into which 28 percent is allotted, then the Workforce Investment Trust Fund at 18 percent, an additional nine percent is allocated to the Public Health Trust Fund (PHTF), and one percent is allocated to the Youth Development and Achievement Fund, a financial assistance program that aims to support Massachusetts students in higher education at approved institutions. The Public Health Trust Fund was established to specifically allocate resources to research, prevention, intervention, treatment, and recovery support services in order to mitigate the harmful effects of problem gambling and related issues.

Figure 2: Sports Betting Tax Revenue, FY24



Source: Massachusetts Gaming Commission

Mobile sports betting revenue did not accrue evenly across operators. The mobile sports betting industry grossed a total of $465.1 million in Massachusetts in 2023. Of that total, individual operators earned between $4.6 million and $237.4 million. Draft Kings earned the highest gross revenue for the year ($237.4 million), followed by FanDuel ($149.9 million), and then BetMGM ($40.5 million). We estimate that 29 percent of spending on mobile sports betting, or just under $137 million, was recaptured from out-of-state or “gray market” betting. Taxes on gross gaming revenue in this sector are 20%, which generated a total of $90.8 million for the Commonwealth in 2023. When considered with casino gross gaming revenue taxes in 2023, sports betting taxes represented 22 percent of all gaming tax revenues that year.

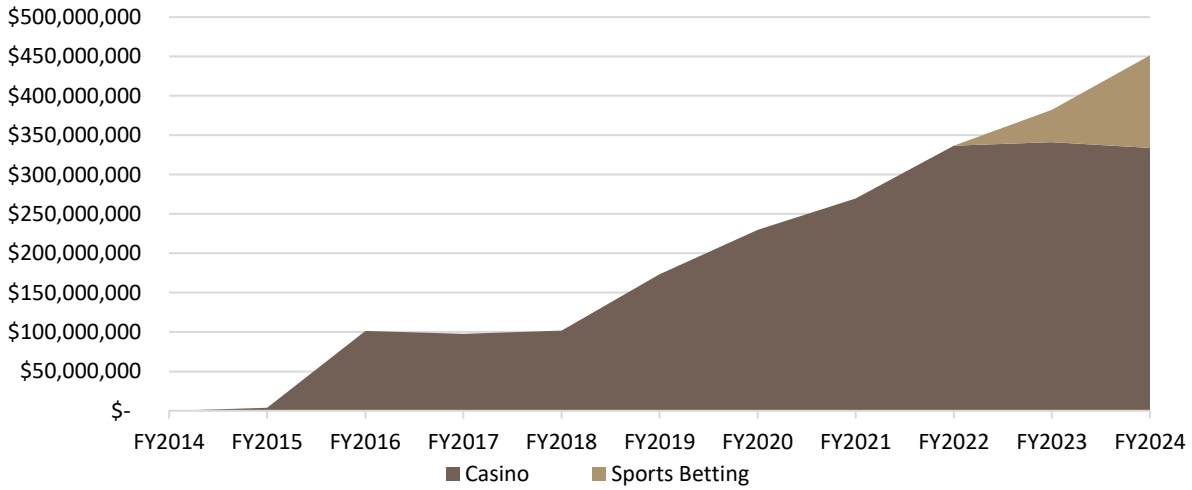
Table 2: Mobile Sports Betting Annual Win and State Revenue, 2023

Operator	Total Win/ Spending	State Revenue
BetMGM	$40,534,460	$7,937,639
Caesars	$11,436,040	$2,196,662
DraftKings	$237,448,574	$46,310,206
ESPN Bet	$21,207,616	$4,124,707
FanDuel	$149,894,115	$29,330,663
Fanatics	$4,591,169	$890,691
Total	**$465,111,974**	**$90,790,568**

Source: Massachusetts Gaming Commission
Note: Total Win/Spending represents monthly win prior to federal excise taxes. In other words, it is the net amount spent by gamblers in Massachusetts.

The introduction of sports betting has continued the general growth of overall gambling revenue in Massachusetts, although it appears to have somewhat eaten into casino revenue. Casino revenue declined by 0.9 percent in FY2024, the first year on year decline since Plainridge Park Casino opened in 2015. This decline may be unrelated to the introduction of sports betting, as FY2022 was the first full year of all three casinos operating with no pandemic-related restrictions, and there was only a small increase in revenue from FY2022 to FY2023, indicating that casinos may have reached their natural revenue peak even before sports betting was introduced. It is also possible that the declines between FY2023 and FY2024 were only minor fluctuations in what will prove to be relatively stable year-to-year revenue. However, the immediate leveling off of casino revenue once sports betting was introduced is striking.

Figure 3: Gaming Tax Revenue, FY2014 – FY2024 (2023 dollars)



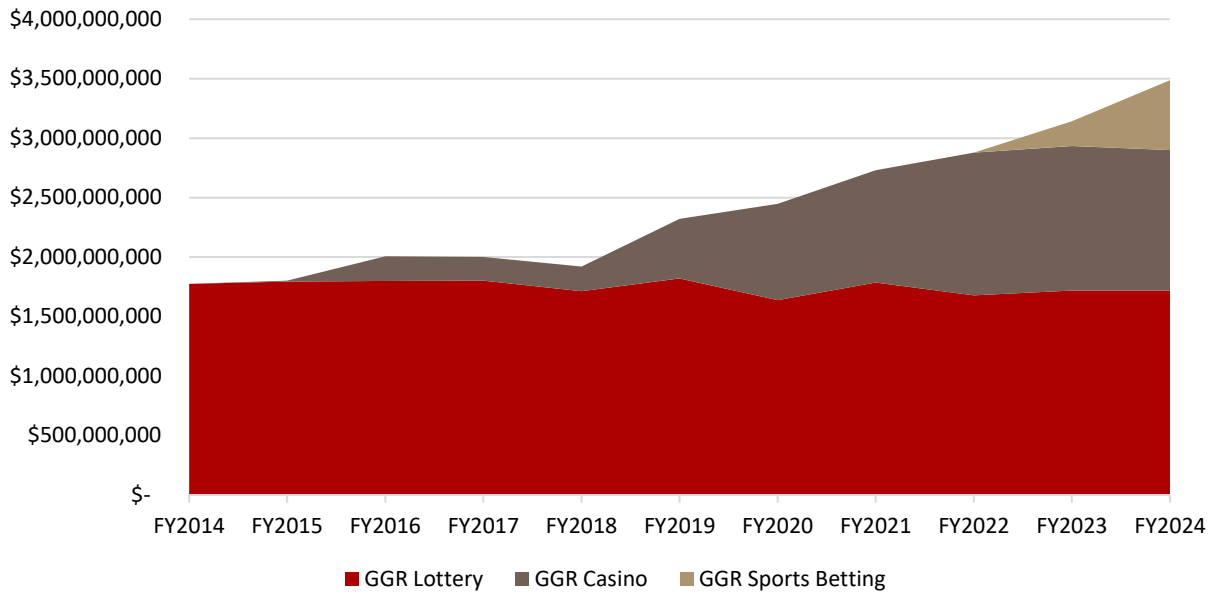
Source: Massachusetts Gaming Commission

Tax revenue related to the legalization of sports betting and casinos has not seen the rapid growth that overall gross gaming revenue has, due to the lower tax rate of casinos and sports betting compared to the nearly 75 percent effective "tax rate" of the lottery.[4] Because each new form of gambling introduced has had lower tax rates, gross gaming revenue has increased 155 percent over the past decade, compared to 72 percent for gaming tax revenue. Sports betting operators pay a lower proportion of

[4] While the lottery is not actually "taxed", on average 75% of gross lottery revenue after prizes are paid out goes to local aid.

gross gaming revenues than casino operators. Resort casino operators including EBH and MGM pay taxes on 25 percent of gross gaming revenues, and PPC, as a slots facility, pays a tax rate of 49 percent on gross gaming revenues. In contrast, in-person and mobile sports betting operators are taxed on 15 to 20 percent of gross sports wagering revenue respectively. If sports betting continues to eat into the market share of the lottery and casinos, this lower tax rate will reduce overall government revenue from gaming. Combined with the lower operating impacts of sports wagering versus casinos, this could also reduce the positive economic impact of expanded gambling in the state.

Figure 4: Gross Gaming Revenue in Massachusetts, FY 2014-2024 (2024 dollars)



Source: Massachusetts Gaming Commission

While the expenditure of taxes collected from sports betting will generally have a positive economic impact, it is important to note that some of the revenue raised from taxes on gambling revenue was earmarked to address negative impacts that the gambling industry might have in Massachusetts. For example, $12.9 million in taxes from casinos and $10.6 million in taxes from mobile sports betting were earmarked for Massachusetts' Public Health Trust Fund to support problem gambling research, prevention, treatment and recovery efforts. It could be argued that those funds are not a boon to the Commonwealth, as they are used to fund problems that the expansion of gambling in Massachusetts at least partially exacerbated. At the same time, the expenditure of these funds does have an economic impact, so for the purpose of this exercise, these funds are not treated any differently from other government expenditures.

Local Aid

While tax revenue from sports betting is collected by the state government, 28 percent of that revenue is earmarked for local aid. Local aid consists of state budget funds that flow to city and town budgets in Massachusetts to support essential services like schools, police, fire protection, parks, and public works. These funds are distributed to the Commonwealth's 351 municipalities based on population and community affluence, in order to reduce inequalities in public services that would arise if local budgets relied solely on property tax revenue.

In 2023, just under two-thirds of local aid revenue was distributed in the Metro Boston area, followed by similar amounts distributed to Southeast, Central, and Pioneer Valley regions. The Berkshires and the Cape and Islands receive the least amount.

Table 3: Distribution of Local Aid from Gross Gaming Revenue by REMI Region, 2023

Region	Local Aid
Berkshires	$2,970,479
Cape and Islands	$1,361,539
Central	$16,217,781
Metro Boston	$83,915,172
Pioneer Valley	$16,335,206
Southeast	$19,772,724

Source: Massachusetts Gaming Commission, Massachusetts State Legislature, UMDI Calculations

Changes in Consumer Spending: Patrons and their Spending Patterns

Another important aspect of the economic effects of the gambling industry, or any new industry, is how consumers shift their spending in the face of new industries. Ahead of the legalization of casinos, this matter of consumer reallocation – sometimes referred to as cannibalization – was an important economic factor and a source of concern for many who opposed legalization. The SEIGMA team has endeavored over the course of the project to track these impacts to the best of our ability. To assess patron behavior relative to sports betting, and develop new assumptions for modeling, we are using new data available to the project.

Patron Data

Since our last full economic impact report, the data available to us has changed. Prior casino economic impact studies relied heavily on an in-person survey of casino patrons, which asked questions about the patrons, their spending at the casino, and their relationship with gambling in general. Since then, cost and logistical issues have meant that the SEIGMA team was not able to use the patron survey and needed to update our methods, accordingly, as discussed in the introduction.

Two data sources which were able to partially replace the patron survey are patron origin location data from AirSage and survey data from SEIGMA's 2024 Online Panel Survey (OPS24). Details on both data sources are available in the appendices to this report.[5] AirSage data allows us to determine the home address of individuals who visited the casinos but does not provide any further information beyond this. It is an important data source for modeling the economic impact of casinos but does not provide any utility in capturing the impact of mobile sports betting. OPS24 offers a rich data set with an extensive range of questions, but only surveys Massachusetts residents. This does leave some gaps in knowledge about the behavior of out-of-state patrons. On the other hand, this approach allows us to collect a significantly larger database providing information about consumer spending behavior (3,383 weighted responses in OPS24) at a reduced cost.

Patron Spending

In order for sports betting to have an economic impact on the Commonwealth, residents need to place bets with the operators. The revenue the operators accrue from these bets is the basis for all operating spending and all taxes paid. The choice to spend money on sports betting rather than some other activity also has its own economic ramifications, in the form of lost revenues to other businesses. On the other hand, money that was recaptured from out-of-state spending does not have an economic impact on Massachusetts outside of those impacts captured elsewhere (operating impacts and new state government revenue). Any negative impacts from the shift in spending occur outside of the state and are outside of the scope of this project. In 2023, bettors placed $4.7 billion worth of online sports bets in Massachusetts and approximately $4.25 billion was paid out in prizes to gamblers. The remaining $454 million represents both the total net losses of gamblers using Massachusetts-based sports betting services, and the gross revenue of those services. These funds are important for the purposes of economic impact studies; both in terms of how they were spent, and what they might have been spent on if sports betting did not exist in Massachusetts.

Of the $800 million in revenue collected by the mobile sports betting operators in their first 18 months of operation, $454 million was collected in 2023, with the remaining $346 million collected in the first

[5] Evans, V., Volberg, R.A., Williams, R.J. (2024). AirSage Smartphone Location Data: Technical Report. Amherst, MA: School of Public Health and Health Sciences, University of Massachusetts Amherst.

six months of 2024. This suggests that the market for sports betting in Massachusetts continues to expand. This could mean that the sports betting industry's impact on the economy of Massachusetts may be different in future years compared to what we have observed in its first year of existence.

As with prior research on casino spending, our focus is on the two types of spending behavior critical to modeling economic impacts: recapture and reallocation. We were able to estimate the amount of mobile sports betting spending that was recaptured from out-of-state or gray-market sports betting, versus the amount of spending that was reallocated away from other goods and services and towards mobile sports betting. Prior to legalization, it was still possible for individuals to place bets on sporting events, particularly online through offshore sportsbooks. This off-the-books, gray market betting continues to persist as an industry despite legalization, but based on results from the OPS24 survey, the SEIGMA team estimates that 29 percent of spending on mobile sports betting came from patrons who reported that they would have spent their money on some other type of sports betting if mobile sports betting had not been legalized in Massachusetts. In other words, of the $470 million that was spent on mobile sports betting in Massachusetts, we estimate that almost $137 million of that would have been spent on some sort of sports betting, legal or otherwise, regardless of whether Massachusetts legalized sports betting. This still leaves approximately $333 million dollars, 70.9 percent of sports betting spending that the SEIGMA team estimates was reallocated away from other types of economic activities in Massachusetts and towards mobile sports betting.

Table 4: Survey Responses to "If Massachusetts had not legalized sports betting, would you have spent the money that you spent gambling on sports at sportsbooks in other states or countries? (online or in-person)"

Response	Unweighted N	Weighted N	Share of Responses	Share of Weighted Responses	Estimated Share of Spending	Estimated Spending
No	126	64,644	38.3%	28.4%	70.9%	$333,716,960
Yes	203	162,601	61.7%	71.6%	29.1%	$136,942,004

Source: OPS24

Responses from OPS24 were transformed into inputs for our economic impact model by region of residence. While recaptured funds are considered "free" money to the Commonwealth (these are funds that would not have been spent in Massachusetts if not for the casino), reallocated funds are modeled as a decrease in consumer spending in each corresponding region. This has the potential to offset some or all the positive economic impacts associated with sports betting (e.g. new government spending).

Table 5: Reallocated and Recaptured Mobile Sports Betting Spending by Region, 2023

Region	Reallocated	Recaptured
Metro Boston	$113,781,922	$85,237,313
Southeast	$19,211,459	$27,380,804
Pioneer Valley	$17,494,524	$13,779,034
Central	$174,962,893	$9,079,845
Berkshires	$802,073	$1,255,725
Cape and Islands	$7,464,090	$209,283
Total	**$333,716,960**	**$136,942,004**

Source: Massachusetts Gaming Commission, OPS24

Total Economic Impacts: REMI Results

After collecting data on the economic activity for sports wagering summarized above, the SEIGMA team converted the employment and wage, vendor spending, revenue, and consumer spending data collected from operators into inputs for a REMI PI+ economic model. The SEIGMA team also modeled the economic impact of each of Massachusetts' three casinos. We did this for two reasons, to put the sports betting industry into context with the broader expanded gambling landscape, and because some sports betting does occur within the casinos. The SEIGMA team ran a single model which covered all the economic activity at all three casinos including in-person sports betting, as well as separate models breaking out the impacts by source, allowing us to estimate the impacts of different types of operators (e.g. individual casinos) or aspects of the model (e.g. operating impacts versus fiscal impacts).

For modeling purposes, the sports betting operators were grouped into a single group of Category 3 operators rather than presented separately. This was due to the relatively small impact of some of the operators, the less-detailed data that was available to the SEIGMA team when modeling their impact, and the nature of the data use agreements that the SEIGMA team established with the sports betting operators. We are comfortable doing this because our research to date suggests that the bulk of economic impacts occur in the broader economy through new government spending and reallocated consumer spending rather than employment or business to business spending from individual operators.

When all these impacts are taken together, the SEIGMA team estimates that the legalization of gambling in Massachusetts in 2023 created and supported a net of 15,459 jobs across the Commonwealth in both private and public settings. Of these jobs, almost all of them are the result of the casino industry, and just under half are the result of Encore Boston Harbor alone. We estimate that the sports betting industry, taken as a whole, creates or supports approximately 118 net jobs, with a loss of 655 private sector jobs. Legalized gambling also supports almost $3.6 billion in Output (sales), with $2.5 billion of that being Value Added (gross state product). Only 2.0 percent of Output from legalized gambling is generated by mobile sports betting. Mobile sports betting's relatively small share is likely a result of its limited in-state vendor spending and limited direct employment.

Table 6: Economic Impacts of Gambling in Massachusetts, 2023

Component	Encore Boston Harbor	MGM Springfield	Plainridge Park Casino	Mobile Sports Betting	Total
Total Employment	7,458	5,000	2,881	118	15,459
Private Non-Farm Employment	5,413	3,742	1,825	-655	10,327
Output (Millions of Dollars)	$1,874.10	$1,060.20	$581.10	$73.40	$3,589.20
Value Added (Millions of Dollars)	$1,418.30	$714.20	$336.80	$49.40	$2,518.90
Personal Income (Millions of Dollars)	$632.30	$317.90	$247.10	$55.20	$1,252.70

Source: Regional Economic Models, Inc., UMDI Calculation

Sports betting's positive impact on the economy is largely due to the revenue it generates for the Commonwealth, and the subsequent expenditure of those funds. For this reason, while approximately 2/3 (10,327) of the total jobs created or supported by the gambling industry as a whole are in the private sector, the impact of sports betting on private sector employment is negative. This is because the positive economic impacts of the sports betting operations in the state (after subtracting economic activity that was already present in the state prior to legalization) are outweighed by the negative impacts to the private sector from reallocated consumer spending. Jobs created or supported in the

public sector by taxes on mobile sports betting (773) outweigh the private sector job loss, so the net employment impact on the Commonwealth is still slightly positive. That said, the estimated number of public sector jobs supported by mobile sports betting is still smaller than the number created or supported by any given casino.

To summarize the impacts of mobile sports betting, we estimate that the reallocation of spending towards sports betting and away from other economic activities leads to the loss of approximately 2,465 jobs in Massachusetts. This number is based on our estimate that 71 percent of sports betting spending is reallocated from other types of spending, rather than recaptured from out of state or black/grey markets. These job losses are offset by estimated 722 jobs created or supported by the operation of the sports books, and an estimated 1,861 jobs created or supported by the expenditure of state tax money in Massachusetts. It is worth noting that these are total job numbers and not sectoral. State government spending can create or support jobs in both the public and the private sector, and revenue generated or lost from changes in economic activity in the private sector can lead to employment gains or losses in the public sector. Nevertheless, as summarized in Table 7, the legalization of sports betting has not led to significant new levels of employment in the Commonwealth, in contrast with the contributions of casinos.

The SEIGMA team ran twelve additional models covering different aspects of the industry's economic impact. Each of these models used a subset of the inputs from the main economic model in order to isolate and quantify the effects of various impacts of the gambling industry. First was a set of models covering "operating impacts," which includes employment, wages, industry sales, value added, and intermediate spending. The next set covered the fiscal impacts, which includes the state and local government revenue raised by the casinos, and their corresponding expenditure. Finally, the third set covers the consumer spending impact, which covers consumer reallocation towards gambling and away from other goods and services, as well as estimated new off-site spending by casino visitors. The impacts from these twelve models are shown in Table 7.

Of these three sets of impacts, operating impacts were the most significant, accounting for an estimated 12,350 jobs supported or created statewide. Fiscal impacts were not far behind, supporting or creating 10,906 jobs. This is in keeping with prior reports from the SEIGMA team, which have also shown the revenue generated by the casinos to be a critical part of their economic impact. In contrast, consumer spending impacts from all three casinos and mobile sports betting were negative, accounting for an estimated loss of 7,794 jobs across the Commonwealth.

Table 7: Employment Impacts by Source and Component

Source of Impact	Encore Boston Harbor	MGM Springfield	Plainridge Park Casino	Mobile Sports Betting	Total
Operating Impacts	7,596	3,444	588	722	12,350
Fiscal Impacts	4,399	2,256	2,389	1,861	10,906
Consumer Spending Impacts	-4,535	-700	-96	-2,465	-7,794
Total	**7,458**	**5,000**	**2,881**	**118**	**15,459**

Source: Regional Economic Models, Inc., UMDI Calculation

Nearly two thirds of the jobs created or supported by the gambling industry in Massachusetts were located in the Metro Boston region. Two of Massachusetts' three casinos are located in this region, as is the state capital and many state government jobs funded through casino revenues, so this is expected. Similarly, the presence of MGM Springfield in the Pioneer Valley region is likely the reason that this region has the second highest employment impact from the industry. That said, every region of

Massachusetts saw a net positive economic impact from the legalization of gambling as a whole, even after reallocation.

Table 8: Economic Impacts by REMI Region

Region	Total Employment
Metro Boston	9,555
Southeast	1,098
Pioneer Valley	4,717
Central	266
Berkshires	61
Cape and Islands	216

Source: Regional Economic Models, Inc., UMDI Calculation

Conclusion

Though the economic impacts of the casino industry have been modeled thoroughly in the past, this first year of research shows that the sports betting industry, and mobile sports betting in particular, is quite different from the casino industry in almost every way, except that they both involve gambling. The economic activities these operators engage in, and the degree to which they engage in these activities in Massachusetts, differs from casino operators. As such, the methods and data used to understand these impacts are different from those used for studying casino impacts.

A major finding from our early research on sports wagering is that, in every respect, the positive impacts to the Commonwealth generated by this new industry are dwarfed by the positive impacts generated by other forms of gambling in the state. Casino gambling remains by far the larger driver of economic activity in Massachusetts. While the amount of money wagered, won, and lost in sports betting is significant, the legalization of sports betting has not led to significant new levels of employment in the Commonwealth. Due to an estimated $333 million in patron spending reallocation, the new activity has had a net negative impact on private employment in other industry sectors and generated a net 118 jobs in contrast with the 15,341 jobs generated by the three casinos. When it comes to spending on Massachusetts businesses, mobile operators spent $70.8 million on payments to Massachusetts vendors in 2023 or about four percent of payments overall, in contrast to $84.2 million, or 45.8 percent of payments by casinos to Massachusetts firms.

Sports betting's positive impact on the economy is largely due to the revenue it generates for the Commonwealth, and the subsequent expenditure of those funds. Taxes on sports wagering revenue are 20% and 15% for mobile and retail operators, respectively, which generated a total of $90.8 million for the Commonwealth in 2023. When considered with casino gross gaming revenue taxes in 2023, sports betting taxes represented 22 percent of all non-lottery gaming tax revenue that year. For comparison, casinos raised nearly $334 million in tax revenue for the Commonwealth (approximately 78 percent of total non-lottery gaming tax revenue). In terms of overall economic impacts, the new sports betting activity generated $73.4 million in output, $49.4 million in value added, and $55.2 million in personal income in 2023.

The results of our economic modeling exercise indicate that the net economic impact of sports betting is slightly positive, but it is important to note that these results do not account for social impacts that may have "downstream" economic impact, such as bankruptcies and should be viewed with some degree of caution. Taken as a whole, the Massachusetts gambling industry supports a significant amount of economic activity in the Commonwealth. This includes direct employment, vendor spending, and new revenue for state and local governments. The SEIGMA team hopes that these findings will help the MGC to understand how legalized gambling interacts with the rest of the Massachusetts economy.

Appendix 1: Casino Direct Impacts

Direct Impacts

In 2023, casino operators supported nearly 5,130 employees who were paid almost $268 million in wages for over 9 million hours of work, for an industry-wide average hourly rate of $29.01 per hour. Mobile sports betting operators employed an average of 10,265 employees across the industry in a quarter. Nearly twelve percent of those employees, an average of 1,185 in a quarter, were employed in Massachusetts. However, the SEIGMA team estimates that about 118 employees are directly attributable to the legalization of mobile sports betting in Massachusetts.

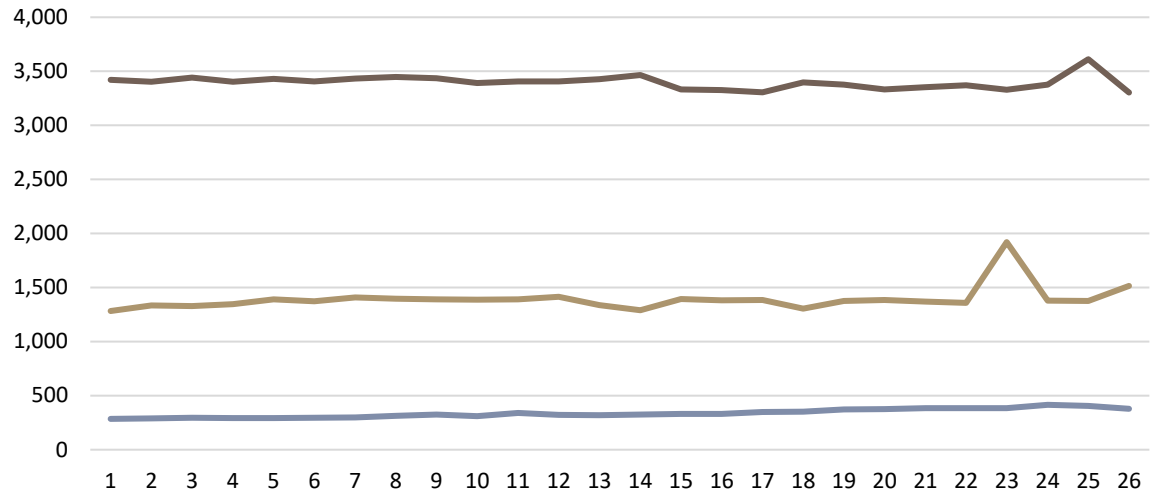
In terms of business-to-business spending, casinos paid a total of $184 million to vendors to support their operations in 2023. Wholesale trade constituted nearly a quarter of all spending, followed by professional, scientific, and technical services at ten percent. Of the $184 million, about $84.2 million, or 45.8 percent of the total, went to Massachusetts-based firms. Mobile operators made a total of $1.74 billion in payments to vendors across the state and nation in 2023. About four percent of those payments, $70.8 million, were made to Massachusetts firms. Primarily, operators reported spending needs related to setting up and maintaining data centers in a new location, including hardware costs and tech labor costs.

Employment and Wages

Casinos supported nearly 5,130 employees on a bi-weekly basis throughout the course of 2023. Encore Boston Harbor supported roughly 66 percent of that total, MGM supported 27 percent, and PPC supported 7 percent. Employment in the casino industry in Massachusetts stayed relatively level since the introduction of retail sports betting at the beginning of 2023 with no significant changes even after online sports betting was introduced in March. This trend applies to each casino separately as well.

After a number of tumultuous years following the opening of the three casinos, their closure during the COVID-19 pandemic, and the subsequent reopening process, 2023 was distinguished as being a relatively stable year for casino employment. In order to tally inputs to our economic input model, the SEIGMA team tallied the number of unique employee IDs receiving a paycheck during each pay period of 2023 (featured in Figure 5 below) and then took the average over the years. Nearly 5,130 employees were directly supported by the casinos over the course of 2023. Encore Boston Harbor was consistently the largest employer among the casinos, with an annual average of 3,398 employees per pay period. MGM Springfield was second, with 1,393 employees, and Plainridge Park Casino employed an average of 337 employees per pay period.

Figure 5: Bi-Weekly Employment by Pay Period, 2023



Source: Casino Operator Data, UMDI Calculations

Overall, in the year, casino employees were paid almost $268 million in wages for over 9 million hours of work, for an industry-wide average hourly rate of $29.01 per hour. The majority of those wages were paid out by EBH, which is unsurprising given their status as by far the largest employer. On a regional level, the majority of wages for both resort-style casinos were paid to employees living in the region where they worked. Plainridge Park Casino is the exception to this, a fact that can likely be explained by the casino's close proximity to both the Southeast region of Massachusetts and Rhode Island.

Table 9: Hours Worked, and Wages Paid by Casino and Region

Casino	REMI Region	Wages Paid	Hours Worked
Encore Boston Harbor	Metro Boston	$165,209,576	5,707,640
Encore Boston Harbor	Southeast	$6,179,838	193,148
Encore Boston Harbor	Pioneer Valley	-	-
Encore Boston Harbor	Central	$2,229,817	69,949
Encore Boston Harbor	Berkshires	-	-
Encore Boston Harbor	Cape and Islands	-	-
Encore Boston Harbor	Out of State/Nation	$17,473,469	548,932
MGM Springfield	Metro Boston	$574,723	14,381
MGM Springfield	Southeast	-	-
MGM Springfield	Pioneer Valley	$42,630,778	1,589,533
MGM Springfield	Central	$580,708	19,701
MGM Springfield	Berkshires	-	-
MGM Springfield	Cape and Islands	-	-
MGM Springfield	Out of State/Nation	$16,337,065	480,515
Plainridge Park Casino	Metro Boston	$2,856,980	103,524
Plainridge Park Casino	Southeast	$7,007,213	254,536
Plainridge Park Casino	Pioneer Valley	-	-
Plainridge Park Casino	Central	$310,114	15,435
Plainridge Park Casino	Berkshires	-	-
Plainridge Park Casino	Cape and Islands	-	-
Plainridge Park Casino	Out of State/Nation	$5,551,079	209,477
Total	**Total**	**$267,859,935**	**9,234,537**

Source: Casino Operator Data, UMDI Calculations

Note: Casino-Region combinations with less than 10,000 hours worked were omitted to protect the confidentiality of individual casino employees

Vendor Spending

Casinos paid a total of $184 million to vendors to support their operations in 2023. Wholesale trade constituted nearly a quarter of all spending, followed by professional, scientific, and technical services at ten percent. Of the $184 million, about $84.2 million, or 45.8 percent of the total, went to Massachusetts-based firms. As operators of large physical facilities in the state, casino operators spend a large proportion of operating expenditures on in-state vendors.

Business-to-business spending by casinos is an important component of the greater economic impact of the casino industry. In addition to the wages paid to employees, casino operators made millions of dollars in payments to third party vendors throughout 2023. These payments include purchases of goods from vendors, such as food and alcohol, payments to utility companies and third-party service providers, along with payments made on behalf of employees to various unions and membership organizations and charitable contributions. Overall, the casino industry paid a total of about $184 million to various vendors, with Encore Boston Harbor contributing $91.7 million, MGM Springfield contributing

$68.4 million, and Plainridge Park Casino contributing $23.9 million. Of the $184 million, about $84.2 million, or 45.8 percent of the total, went to Massachusetts-based firms.

Table 10 shows the top private industry sectors to which casino operators made business-to-business payments. Wholesale trade was the prominent top industry in terms of spending across the three casinos, accounting for 22.9 percent of all spending. Following wholesale trade is professional, scientific, and technical services at ten percent of spending. Common types of vendors in this industry include legal consulting, marketing, and IT services. Retail trade is the third most prominent industry with 6.7 percent of overall spending across the casinos.

Table 10: Top 10 Industries by Vendor Spending

Industry	Encore Boston Harbor	MGM Springfield	Plainridge Park Casino	Total
Wholesale trade	$20,108,089	$13,485,112	$8,459,858	$42,053,060
Prof., scientific, and technical services	$8,611,591	$8,363,097	$1,498,882	$18,473,570
Retail trade	$10,485,155	$944,860	$850,372	$12,280,387
Construction	$9,919,171	$1,511,874	$580,474	$12,011,518
Transit and ground passenger transportation	$9,257,514	$910,442	$85,781	$10,253,737
Performing arts, spectator sports, and related industries	$1,376,670	$6,522,584	$1,355,344	$9,254,598
Administrative and support services	$3,674,958	$4,039,389	$1,537,609	$9,251,957
Amusement, gambling, and recreation	$183,082	$5,592,021	$3,225,436	$9,000,539
Insurance carriers and related activities	$937,203	$5,804,814	$70,038	$6,812,055
Personal and laundry services	$4,967,660	$1,093,891	$36,069	$6,097,620
All Other Industries	$22,207,602	$20,110,808	$6,210,568	$48,528,978
Total	**$91,728,694**	**$68,378,893**	**$23,910,432**	**$184,018,018**

Source: Casino Operator Data, UMDI Calculations

Table 11 below breaks down vendor spending by regions in the state as well as the totals for spending out of the state. The majority of spending across the casino industry is done out-of-state, with 54.2 percent of spending going to vendors outside of Massachusetts. The second most prominent region was Metro Boston, consisting of Suffolk, Essex, Middlesex, and Norfolk Counties, which received 29.1 percent of all spending from casinos in 2023. The totals for Metro Boston are heavily influenced by Encore Boston Harbor, which is situated in the region and also spends more than the other two casinos. Outside of Metro Boston, the Pioneer Valley is the second-largest beneficiary with 9.1 percent of spending, followed by Southeast with 6.3 percent of spending. Much like Encore Boston Harbor influenced the Metro Boston spending, MGM Springfield's largest in-state region in terms of spending is the Pioneer Valley while Plainridge Park Casino's is Southeast, the regions in which they both operate.

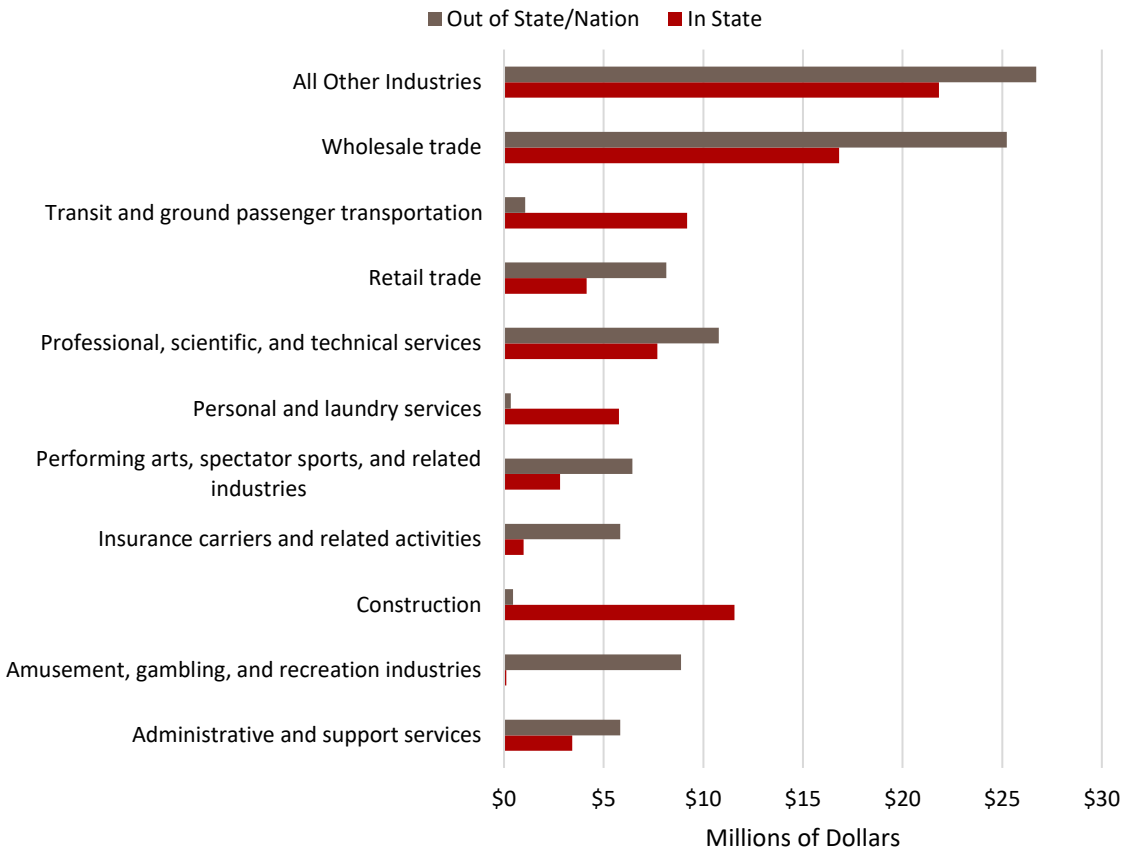
Table 11: Vendor Spending by REMI Region

Region	Encore Boston Harbor	MGM Springfield	Plainridge Park Casino	Total
Metro Boston	$40,815,841	$6,417,513	$6,287,844	$53,521,198
Southeast	$7,595,539	$1,994,724	$2,077,396	$11,667,659
Pioneer Valley	$317,191	$15,965,202	$498,264	$16,780,658
Central	$1,733,546	$245,916	$216,825	$2,196,287
Berkshires	$2,640	$107,229	$0	$109,869
Cape and Islands	$53,847	$0	$0	$53,847
Out of State/Nation	$41,210,090	$43,648,308	$14,830,103	$99,688,501
Total	**$91,728,694**	**$68,378,893**	**$23,910,432**	**$184,018,018**

Source: Casino Operator Data, UMDI Calculations

Figure 6 shows the breakdown of business-to-business spending between in-state and out-of-state or out of nation spending for the casino industry in 2023. Most of the spending done out-of-state went to firms in the wholesale trade, professional, scientific, and technical services, and amusement, gambling, and recreation industries. It is likely that most of these out-of-state payments were made to companies with whom the parent companies of the casinos have an existing relationship. For in-state spending, the most prominent industries provide products and services for which proximity to the casino is important including wholesale trade, construction, and transit and ground passenger transportation.

Figure 6: In-State and Out-of-State Spending by Industry



Source: Casino Operator Data, UMDI Calculations

Public Sector Impacts

In 2023, casinos grossed nearly $1.2 billion in revenue from gaming in Massachusetts, raising nearly $334 million in tax revenue for the Commonwealth (approximately 78 percent of non-lottery gaming tax revenue). Of the tax revenues raised, Encore Boston Harbor contributed nearly $189 million (57 percent of the total), Plainridge Park Casino paid $76 million (23 percent), and MGM Springfield paid nearly $69 million (21 percent).

One major reason for the legalization of gambling in Massachusetts was the increased tax revenue expected by state legislators. Category 1 resort-style casinos (Encore Boston Harbor, MGM Springfield) pay 25% of their gross gaming revenue (GGR) to the state and the Category 2 slots parlor (Plainridge Park Casino) pays 49% of their gross gaming revenue. Total GGR tax revenue has increased from $78 million in FY 2016, when just PPC was open, to over $330 million in FY 2024, with all three casinos open and operational. In CY 2023, the casino industry paid $333.6 million in gross gaming revenue taxes to the Commonwealth.

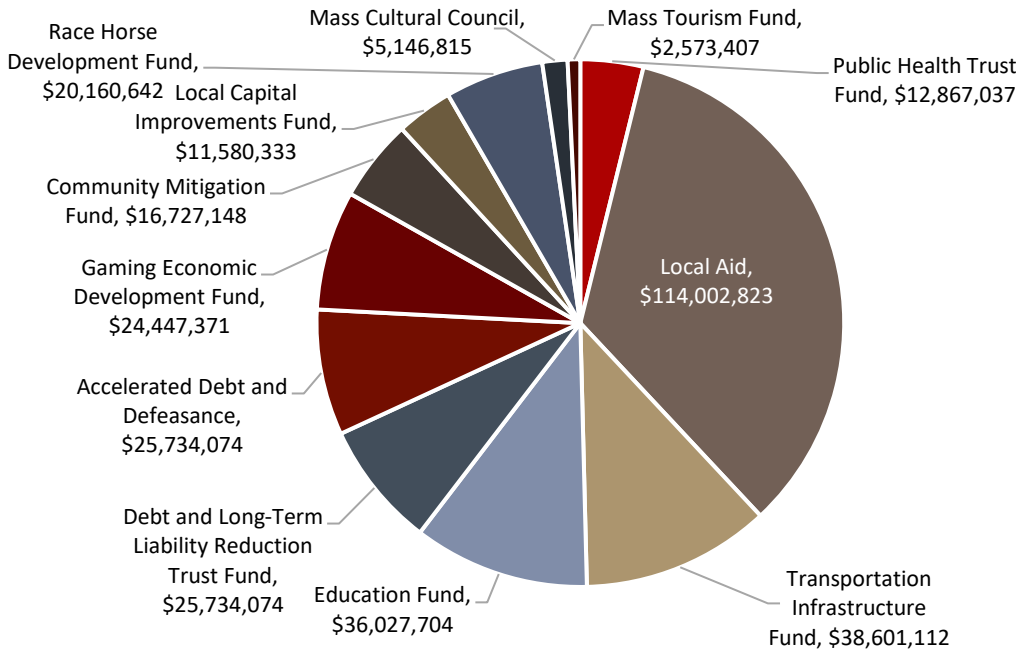
Table 12: Casino Revenue 2023

Casino	Gross Gaming Revenue	Tax Revenue
Encore Boston Harbor	$754,837,855	$188,709,464
MGM Springfield	$274,525,119	$68,631,280
Plainridge Park Casino	$155,636,323	$76,261,798
All Casinos	**$1,184,999,297**	**$333,602,542**

Source: Massachusetts Gaming Commission

This GGR tax is then allocated to 12 different state funds as seen in Figure 7, with the largest being Local Aid to Massachusetts' 351 cities and towns that is distributed based on population size and level of economic need. In CY 2023, the Local Aid fund received over $114 million from gross gaming revenue taxes. The other major areas of funding are the Transportation Infrastructure fund and the Education Fund, which both received over $35 million; a combined $50 million towards funds addressing state debt; almost $25 million to the Gaming Economic Development Fund, which funds various industry and workforce development initiatives; and over $16 million to the Community Mitigation Fund, which is available to help local communities affected by the casinos, along with other smaller amounts for public health, local capital improvements, and cultural/tourism funding. Notably, the Race Horse Development Fund was slated to receive over $20 million in FY 2024 despite no currently operating thoroughbred race tracks in the state.

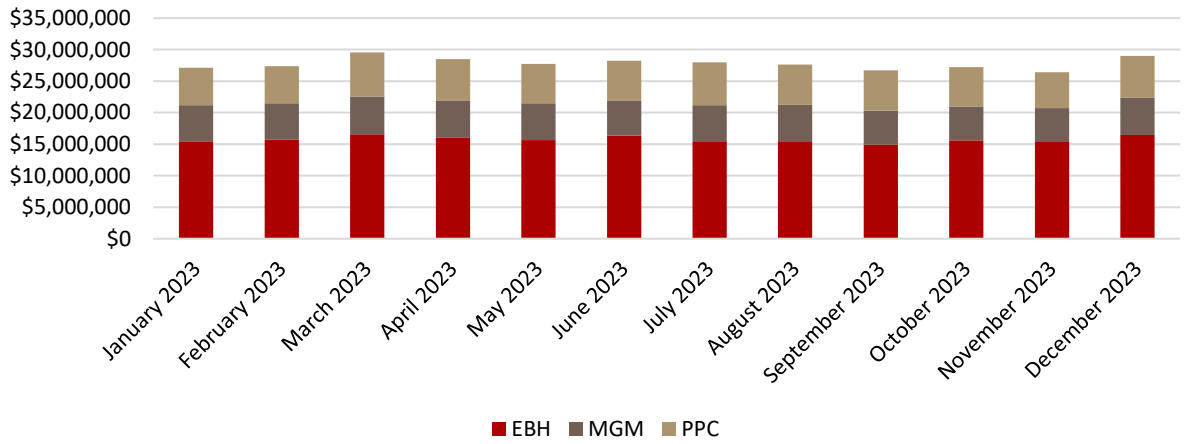
Figure 7: Disbursement of Taxes on Casino Gross Gaming Revenue CY23



Source: Massachusetts Gaming Commission

Unlike sports betting, which tends to see large fluctuation month to month depending on which sports are currently in season, casino spending remains relatively stable year-round. EBH provides between 50-60 percent of monthly tax revenue, with PPC typically providing around 25 percent and MGM providing around 20 percent. Notably, MGM's gross gaming revenue is nearly twice that of PPC; however, PPC, as a Category 2 casino licensee, is taxed at nearly twice the rate of MGM and EBH (49 percent vs 25 percent).

Figure 8: Monthly State Revenue Collected from Casino Gross Gaming Revenue CY23



Source: Massachusetts Gaming Commission

Patron Spending

Casino patrons placed $9.7 billion worth of bets at Massachusetts casinos in 2023, of which approximately $8.5 billion was paid out in prizes, with the remaining $1.2 billion representing both net losses to casino gamblers and the gross revenue of casinos. In total, casino patrons spent nearly $1.4 billion at Massachusetts casinos in 2023 (inclusive of gross gaming revenue and other on-site spending), with an additional $133 million in spending off-site at local businesses. Just over $1 billion of on-site spending is estimated to have been reallocated from other industries in Massachusetts, with an estimated $376 million in recaptured spending that would not have occurred in the Commonwealth if not for the casinos.

Most casino patrons were Massachusetts residents, although the share varied by casino. Situated close to the Connecticut border, MGM Springfield attracted the highest share of out-of-state patrons, at 38 percent. Despite also being located close to a state border, Plainridge Park Casino has the lowest share, at 8.2 percent. In the absence of any additional data on the behavioral decisions of these patrons, the SEIGMA team made a series of simplifying assumptions, based on in-person survey findings, for the purpose of this economic impact analysis. The first is that the per-patron spending of out-of-state casino patrons is similar to that of in-state casino patrons, and therefore the share of out-of-state patrons at each casino also approximates the share of gambling and non-gambling spending originating from these patrons. The second is that these patrons traveled to Massachusetts to gamble and would not have otherwise spent their money in Massachusetts. While our previous patron survey data tells us that these assumptions are not perfect, we believe they are the most reasonable assumptions to make in the face of lack of richer data on out-of-state patron behavior.

Table 13: Share of In-State and Out-of-State Patronage

Casino	Massachusetts Patrons	Out-of-State Patrons
Encore Boston Harbor	80.6%	19.4%
MGM Springfield	62.0%	38.0%
Plainridge Park Casino	91.8%	8.2%

Source: AirSage data, UMDI Calculations

Another important policy discussion ahead of the legalization of casinos in Massachusetts surrounded the recapture of existing casino spending by Massachusetts residents. Prior to legalization, Massachusetts residents would leave the state to gamble at out-of-state casinos, particularly in Connecticut and Rhode Island. While Massachusetts residents still do leave the state to patronize those casinos, the spending that now occurs in Massachusetts, rather than out-of-state, is considered recaptured spending. While that lost spending might have an impact on the economies of these neighboring states, from the perspective of Massachusetts, it is new spending that would not have occurred in the Commonwealth if not for the casinos.

For Massachusetts residents whose spending is not recaptured, the SEIGMA team considered their spending to be reallocated. This represents a shift in consumer spending towards spending on casinos. For the purpose of economic modeling, this was accomplished by taking the estimated amount spent at casinos and subtracting an equivalent sum of money from the consumer spending by Massachusetts residents, reflecting that these consumers are spending more on casinos and less on other goods and services.[6] This reduction of spending is referred to as reallocation, and based on the results of the OPS24 survey, it constitutes the majority of spending by casino patrons across all three casinos. Encore Boston Harbor had the highest share of reallocated patron gaming spending, which could be a function of its location in the Greater Boston area, while the other two casinos are located close to the state border.

Table 14: Recaptured Casino Spending

Casino	Spending Type	Gaming Spend	Non-Gaming Spend	Gaming Share	Non-Gaming Share
Encore Boston Harbor	Reallocated	$574,475,421	$155,011,681	75.6%	71.4%
Encore Boston Harbor	Recaptured	$185,319,491	$62,106,026	24.4%	28.6%
MGM Springfield	Reallocated	$174,360,787	$68,201,263*	63.4%	77.5%
MGM Springfield	Recaptured	$100,802,214	$19,800,395*	36.6%	22.5%
Plainridge Park Casino	Reallocated	$9,904,830	$9,142,308	58.0%	81.7%
Plainridge Park Casino	Recaptured	$7,183,355	$2,053,036	42.0%	18.3%

Source: Massachusetts Gaming Commission, casino operating data, OPS24, UMDI Calculation
Note: MGM Springfield did not provide non-gaming revenue for 2023. As a result, non-gaming revenue/spend numbers used for this projection are an estimate based on the ratio of gaming and non-gaming revenues at the other two casinos. Share represents the share of spending at that casino that is recaptured or reallocated.

[6] This is also a simplifying assumption. In reality, the expansion of gambling in Massachusetts could and likely often does cause casino patrons to both shift their gambling away from out-of-state casinos and towards in-state casinos as well as changing the total amount that they spend. The current SEIGMA survey relies on patrons accurately assessing how their behavior would have been different if casino gambling and sports betting had never been legalized in Massachusetts. This already relies on people to make honest and accurate assessments of how their behavior would be different in a hypothetical situation. Whenever possible, we attempted to make those questions as simple as possible.

Patron Spending Off-Site

While most patron spending occurs at the casino, casino visitors, particularly casino visitors from outside the immediate area, might spend money in the region outside the casino in the course of their visit. The SEIGMA team estimated the amount of off-site spending at the casinos by comparing reported off-site and on-site non-gambling spending from the OPS24 survey to the casinos' own reported non-gambling spending, where available. While small compared to on-site spending, the SEIGMA team estimates that casino patrons spent approximately $133 million in the Massachusetts economy in the course of their visits, about 10 cents for every dollar spent at the casinos.

Table 15: Share of Casino Patron Spending

Casino	Gross Gaming Revenue	Non-Gaming Revenue	Estimated Off-Site Spending	Total
Encore Boston Harbor	$759,794,912	$217,117,707	$69,287,800	$1,046,200,419
MGM Springfield	$275,163,001	$88,001,658	$55,737,735	$418,902,394
Plainridge Park Casino	$17,088,186	$11,195,344	$8,071,924	$36,355,454
Total	**$1,052,046,099**	**$316,314,709**	**$133,097,459**	**$1,501,458,266**

Source: Casino operating data, Massachusetts Gaming Commission, OPS24, UMDI Calculation

Appendix 2: Methodology

Overview

In the broadest sense, the goal of this report is to catalog as accurately as possible the ways in which the Massachusetts economy has been changed by the legalization of sports betting. Once those changes have been identified and quantified, they are turned into inputs to the SEIGMA team's REMI PI+ economic model. The output from this model allows us to capture the "ripple effects" that are caused by these initial impacts. For example, if a worker is hired at the casino, the model will allow the SEIGMA team to estimate the amount of additional spending in the Massachusetts economy that will be generated from that individual being employed. Or, if a mobile sportsbook makes a payment in taxes to the state government, the model will be able to estimate the number of jobs and intermediate spending generated by that money being spent by the government. The model can provide an estimate of this secondary/tertiary economic activity provided that it receives the correct primary inputs.

Because this report is intended for the Massachusetts Gaming Commission and a broader audience of policymakers and stakeholders in Massachusetts, we have constrained our analysis to economic activity that a) occurs in the gambling space (casinos and sports betting) and b) would not have occurred in Massachusetts if the Commonwealth had not legalized gambling. So, if there were a business in Massachusetts that was supplying goods or services to an out-of-state casino, that would not be included in our analysis, and in fact we would not receive any data on that. For similar reasons, economic activity related to mobile sports betting is excluded from our analysis in cases where the SEIGMA team determined that activity to be a continuation of activity that pre-dated the legalization of mobile sports betting in Massachusetts, and that likely would have continued regardless of whether or not Massachusetts legalized sports betting.

REMI's PI^{+} model is a commercial, off-the-shelf software program for assessing regional economic impacts used throughout the country for over 40 years. It relies on a wide array of built-in assumptions and parameters to estimate economic impacts including elements of input-output and general equilibrium models. As with all commercial software products, its source code is not available to the public. However, REMI does provide a description of the model's methods and equations available here: Model Equations. The economic impact analysis provides useful estimates of the direction and magnitude of gaming's economic impacts to be used alongside other quantitative and qualitative evidence when evaluating potential policy actions. Accordingly, in research for the SEIGMA project, economic impact modeling is used as one of several types of quantitative and qualitative analysis used to understand the impacts of legalized gambling.

The following sections summarize the data that the SEIGMA team collected from the operators, the Commonwealth, and gamblers in Massachusetts in order to build our economic model.

Operating Data

From the start of casino operations in Massachusetts, the three casino operators have supplied operating data to the SEIGMA team at regular intervals. These data include detailed records of employment, wages, vendor spending, attendance, and non-gaming revenue. These data have always formed the core of the SEIGMA team's economic modeling exercises and will continue to do so.

With the introduction of sports betting in Massachusetts, the SEIGMA team engaged with the operators to collect operating data for these entities as well. For Category 1 sports betting (in-person sports wagering at the casinos) this was fairly straightforward. Most of these operations were well-integrated into the same accounting systems that the casino operators already used to provide us with data on the rest of their operations. In cases where a third-party entity was involved, we were able to get high-quality data from the casino operator. In many cases, the Category 1 operations were difficult to distinguish from the rest of the casino operation. For example, an HR worker at a casino would handle HR matters for both sports-betting and non-sports-betting employees, and a vendor providing uniforms to a casino would provide them for both types of employees as well. For this reason, we present all Category 1 sports betting operations rolled in with the broader operations of their respective casinos.

When it came to Category 3 (mobile sports betting) operators, we needed to engage with a whole new group of operators to get the operations data necessary for this report. Much of that data collection process was conducted in service of two other deliverables from the SEIGMA project – the Early Impacts of Sports Betting report and the Diversity in Sports Betting report. The level of detail that we collected from these operators is less than what was collected from casino operators. There are several reasons for this, from the complexity of working with a large number of new operators in a rapidly changing field, to the nature of the data sharing agreements that were negotiated, to, perhaps most importantly, the relatively small economic footprint that each of these organizations had in Massachusetts. The one exception to this last point, DraftKings, had an established presence in Massachusetts long before the legalization of sports betting.

Given the low levels of economic activity specifically supported by the Massachusetts sports wagering, industry, it is clear that operational impacts are minimal. Rather than focusing on operational impacts, the SEIGMA team believes that economic impact work around mobile sports betting should focus instead on two factors: the impact of new state revenue, and the impact of consumer reallocation towards sports betting and away from other goods and services. These impacts were measured for casino impact studies in the past, but they will take on additional significance in sports betting studies, given the lack of major operating impacts. The MGC collects rich data on operator gross gaming revenues, and in lieu of on-site patron surveys that in prior casino reports provided information on patron behavior, we will use SEIGMA's online panel survey (OPS) data to gain insight into consumer behavior.

Fiscal Data

Data on gambling revenue and taxes paid is collected and published by the MGC on a monthly basis. This data informed two important parts of our analysis. First, it provides a number for the amount of revenue raised from legalized gambling in a given year. In performing an economic impact analysis, the SEIGMA team models a corresponding increase in government spending to reflect the impact of these new revenues. Due to the fungibility of government funds, we do not make any attempt to model the impact on specific programs that may have been funded via the casino revenue. We do however break out local aid from the rest of government spending, and we model that as local government spending rather than state government spending. Second, this data provides us with information on the amount of money lost by gamblers in Massachusetts. This is a key component in modeling consumption reallocation.

Online Panel Survey (OPS24)

In place of on-site patron surveys that in prior casino reports provided information on patron behavior, we use SEIGMA's online panel survey (OPS) data to gain insight into consumer behavior.
Online panels are commonly used in market research and increasingly in academic studies.[7] The advantages of online panel surveys are that the validity of answers to 'sensitive questions' (e.g., gambling) tends to be higher in self-administered formats; everyone has agreed and expects to be contacted (unlike telephone surveys); the results are obtained in a much shorter period of time; and they are much less expensive than probability sampling surveys.[8]

The main limitation of online panels is that panelists are not randomly selected but rather self-enrolled. While online panel companies generally stratify their samples to be demographically representative of the population, significant behavioral biases typically remain that are not corrected by this stratification or by demographic weighting.[9] In particular, online panels contain people with much higher levels of gambling and problem gambling. However, these behavioral biases are an advantage in studies such as SEIGMA where these biases can be utilized to obtain a higher 'yield' of people with gambling problems to better understand the features of this important subgroup.

While the online panel surveys have been historically used in SEIGMA primarily to understand the nature of MA problem gamblers, they can be used in a similar manner to the population surveys to examine changes from one time period to the next because behavioral biases are constant across surveys. To date there have been three online panel surveys in Massachusetts as listed in Table 1 (online panel surveys will continue on an annual basis for the foreseeable future). All online panel data in this report has been weighted to match the population census.

This year, the SEIGMA team used panel survey data for the first time to help measure consumer reallocation. Questions in the 2024 survey were developed with a clear focus towards understanding the economic impact of sports wagering. Questions were added to obtain information about sports betting participation and about non-gambling expenditures at Massachusetts casinos. Respondent answers to questions in the OPS24 survey were used to determine the populations of gamblers at each casino and at mobile sportsbooks. From there, they were used to determine the share of gamblers and of gambling spending that was recaptured versus reallocated, and to determine the geographical distribution of the gamblers. A key limitation of using survey and panel questions to determine economic impacts is the difficulty of obtaining accurate spending estimates from survey respondents. An in-depth discussion of these limitations can be found in a 2023 SEIGMA report (Appendix E1: Gambling expenditure data).[10]

Table 16: Online Panel Surveys in Massachusetts[11]

Survey	Time Period	Sample Size	Survey Company

[7] Callegaro, M., Baker, R., Bethlehem, J., Göritz, A.S., Krosnic, J.A., Lavrakas, P.J. (2014). Online panel research: History, concepts, applications and a look at the future. In M. Callegaro, R. Baker, J. Bethlehem, A.S. Göritz, J.A. Krosnic, P.J. Lavrakas (Eds.). Online Panel Research: A Data Quality Perspective. West Sussex: John Wiley & Sons, Ltd.
[8] Olson K., Smyth, J.D., Keeter, S., Lesser, V., et al. (2021). Transitions from telephone surveys in self- administered and mixed-mode surveys: AAPOR Task Force report. Journal of Survey Statistics and Methodology. 9(3):381-411. https://doi.org/10.1093/jssam/smz062
[9] Williams, R.J., Zorn, M., Volberg, R.A. & Evans, V. (2023). Can the Behavioral Biases of Opt-In Online Panels be Eliminated or Reduced through Corrective Weighting? Amherst, MA: School of Public Health and Health Sciences, University of Massachusetts Amherst.
[10] Volberg, R. A., Williams, R. J., Zorn, M., Evans, V. (2023). Gambling and Problem Gambling in Massachusetts: Results of a Follow-up Population Survey. Amherst, MA: School of Public Health and Health Sciences, University of Massachusetts Amherst.
[11] Williams, R.J., Pekow, P.S., Volberg, R.A., Stanek, E.J., Zorn, M., & Houpt, K.A. (2017). Impacts of Gambling in Massachusetts: Results of a Baseline Online Panel Survey (BOPS). Amherst, MA: School of Public Health and Health Sciences, University of Massachusetts Amherst.

Baseline Online Panel Survey (BOPS)	October 2013 – March 2014	5,046	Ipsos[5]
Follow-Up Online Panel Survey (FOPS)	March 2022	3,038	Qualtrics
Online Panel Survey 2023 (OPS23)	March – May 2023	3,380	Qualtrics
Online Panel Survey 2024 (OPS24)	March - April 2024	TBD	Qualtrics

Patron Origin Data

While online panel surveys offer valuable insights about gambler behavior, the sample of respondents is constrained to Massachusetts residents. From prior research, the SEIGMA team is aware that a significant share of casino patrons come from neighboring states. Without an on-site patron survey, the SEIGMA team does not have a way of reaching these gamblers to ask them about their behaviors, but we were able to gather data on the origin of casino patrons using cell phone tracking data from AirSage.[12] Without an opportunity to directly interview out-of-state gamblers about their activities, some simplifying assumptions were necessary to model their behavior. In particular, the assumption was made that all out-of-state gamblers were visiting Massachusetts in order to visit the casino and would not have visited otherwise. While this is not ideal, the AirSage data probably does provide the SEIGMA team with a more robust sample of patrons' geographic origins than was previously available via patron survey data.

Some disadvantages of AirSage data in estimating patron origins are: data collection is biased towards frequent patrons and thus overcounts their corresponding origin locations; it presents some difficulty distinguishing employees from patrons, potentially conflating employee origin locations with patron origin locations; it does not assess patron decision-making related to spending (for example, off-site spending areas; shifts in spending away from other locations, etc.); and it only collects patronage estimates for land-based venues, therefore, mobile sports wagering patrons are not measured.[13]

Economic Modeling Methodology

For the SEIGMA project, the research team works with a customized model from Regional Economic Models, Inc. (REMI), built with appropriate sub-state regions to measure casino facility regions and the rest of Massachusetts. The REMI model is comprised of comprehensive economic data and assumptions about economic relationships and linkages across industries which enables the analysis of new policies and economic change within a state or region. While there is another major commercial model available (IMPLAN software), using REMI allows for multi-year modeling and forecasting. The IMPLAN system is more commonly used for the analysis of an event at a specific point in time. The REMI P+ software is specifically customized to generate realistic, year-by-year estimates of the total regional effects of initiatives such as expanded gaming. Also, obtaining the REMI model allows a unique opportunity to

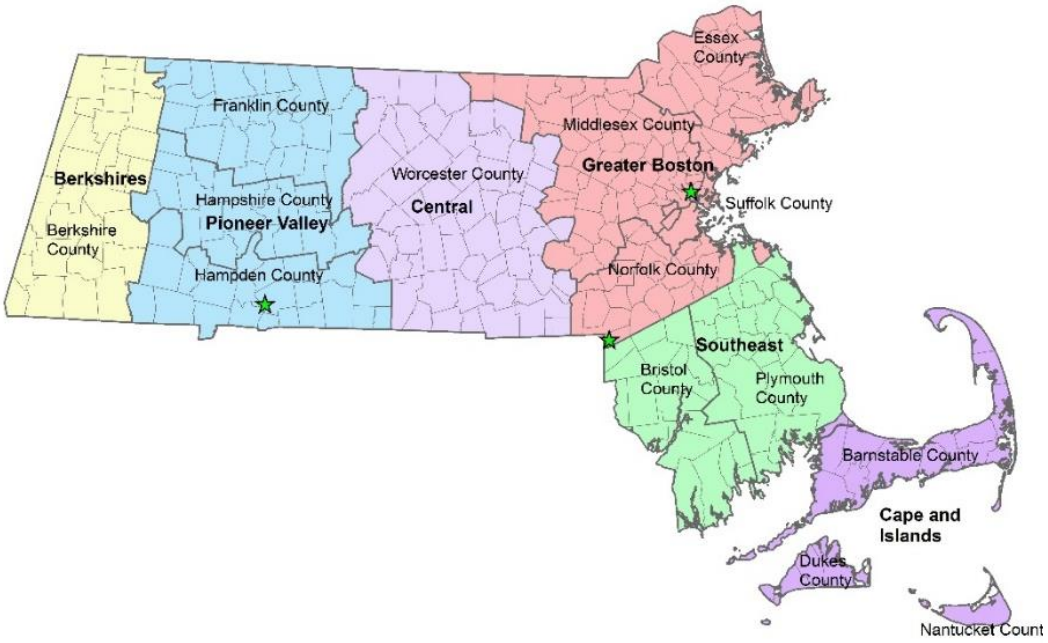
[12] The SEIGMA research team has published two reports exploring patron survey alternatives using smartphone location data in combination with online panel surveys to replace our earlier method using on-site patron and license plate surveys.

[13] For a detailed discussion examining the overall reliability, validity, and utility of AirSage data as a method of determining patron origin see Evans, V., Volberg, R.A., Williams, R.J. (2024). AirSage Smartphone Location Data: Technical Report. Amherst, MA: School of Public Health and Health Sciences, University of Massachusetts Amherst.

measure predicted economic impacts and then compare these economic impact projections with actual outcomes measured by this research project.

The REMI model for this project is built out of custom configurations of counties which can be matched with the three regions defined by the Expanded Gaming Act and to the regions impacted by the three land-based facilities. See Figure 1 for a map showing these regions. For this report, the SEIGMA team continued to use the same county configuration that has been used from all previous reports, as shown in Figure 9 below. Annual employment was modeled using the average employment across all pay periods in 2023. The REMI model's assumptions around sales, value added, and commuter earnings were adjusted based on primary data from the operators. Vendor data was manually coded for industry and then run, with the REMI model's assumptions about intermediate spending having been manually nullified. New state and local revenue was modeled as an equal increase in state and local government spending. Consumption reallocation was modeled based on shares of reported spending and answers to questions in the OPS24 data and then modeled as a decrease in spending on other goods and services. New off-site spending was modeled as tourism spending.

Figure 9: REMI Regions



Appendix 3: The PI+ Model

PI+ is a structural economic forecasting and policy analysis model. It integrates input-output, computable general equilibrium, econometric, and economic geography methodologies. The model is dynamic, with forecasts and simulations generated on an annual basis and behavioral responses to compensation, price, and other economic factors.

The model consists of thousands of simultaneous equations with a structure that is relatively straightforward. The exact number of equations used varies depending on the extent of industry, demographic, demand, and other detail in the specific model being used. The overall structure of the model can be summarized in five major blocks: (1) Output and Demand, (2) Labor and Capital Demand, (3) Population and Labor Supply, (4) Compensation, Prices, and Costs, and (5) Market Shares. The blocks and their key interactions are shown in **Error! Reference source not found.** and **Error! Reference source not found.**.

Figure 10: REMI Model Linkages

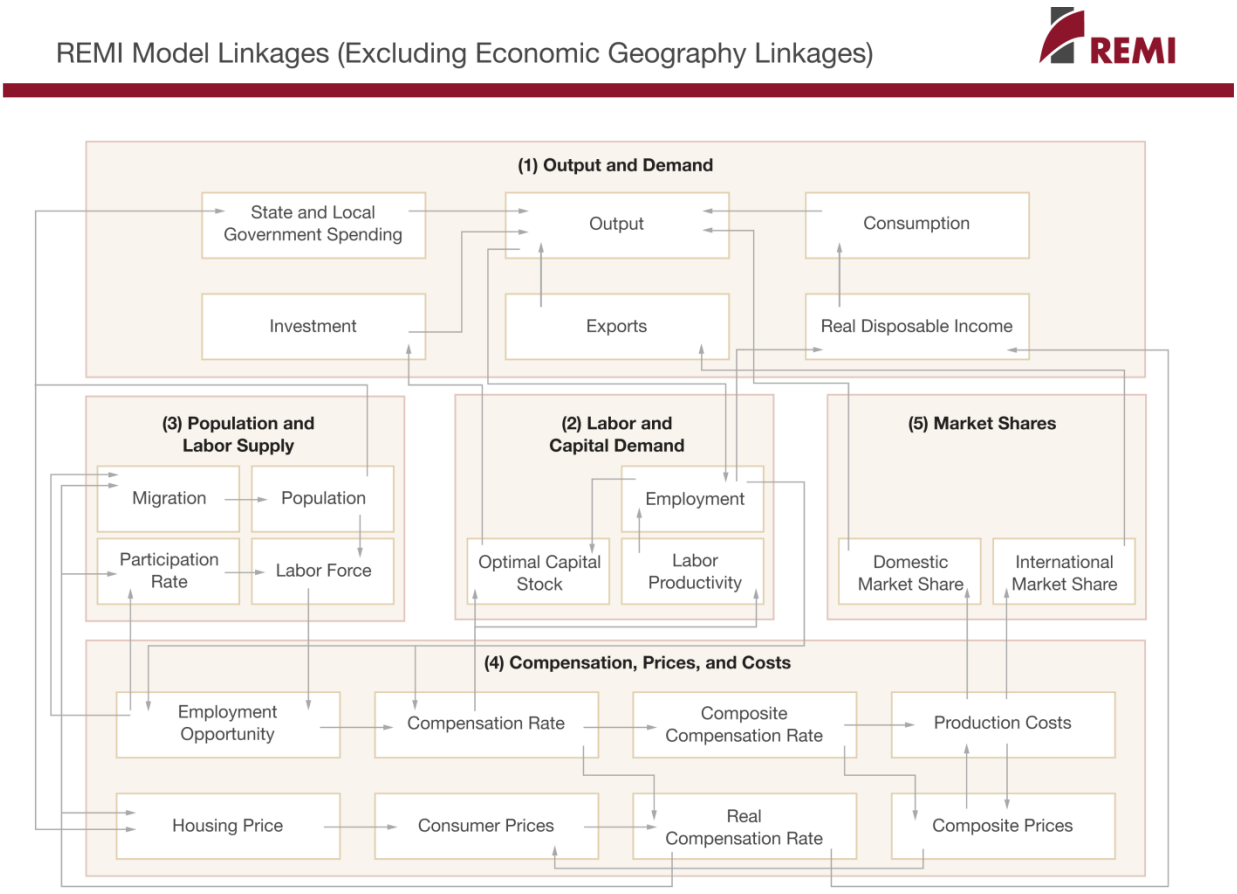
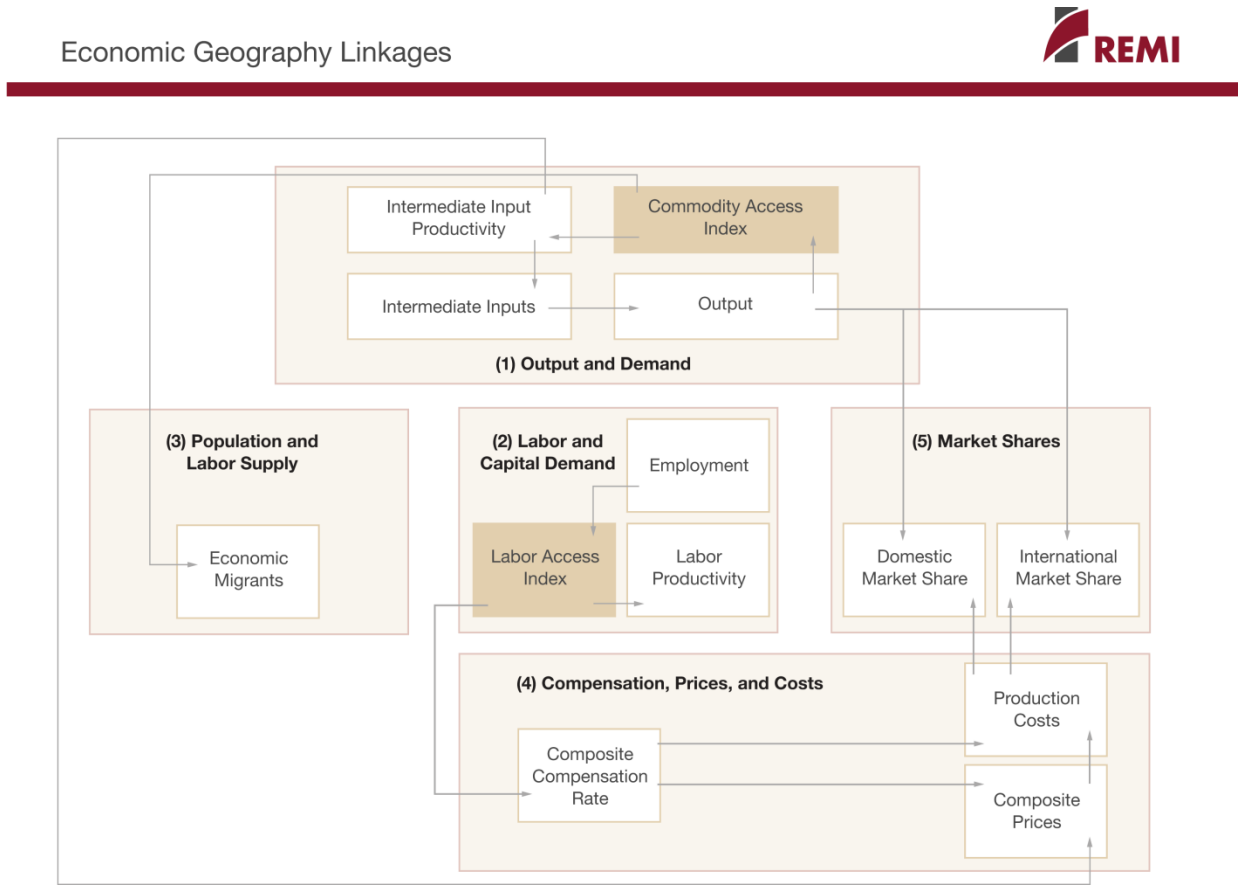


Figure 11: Economic Geography Linkages



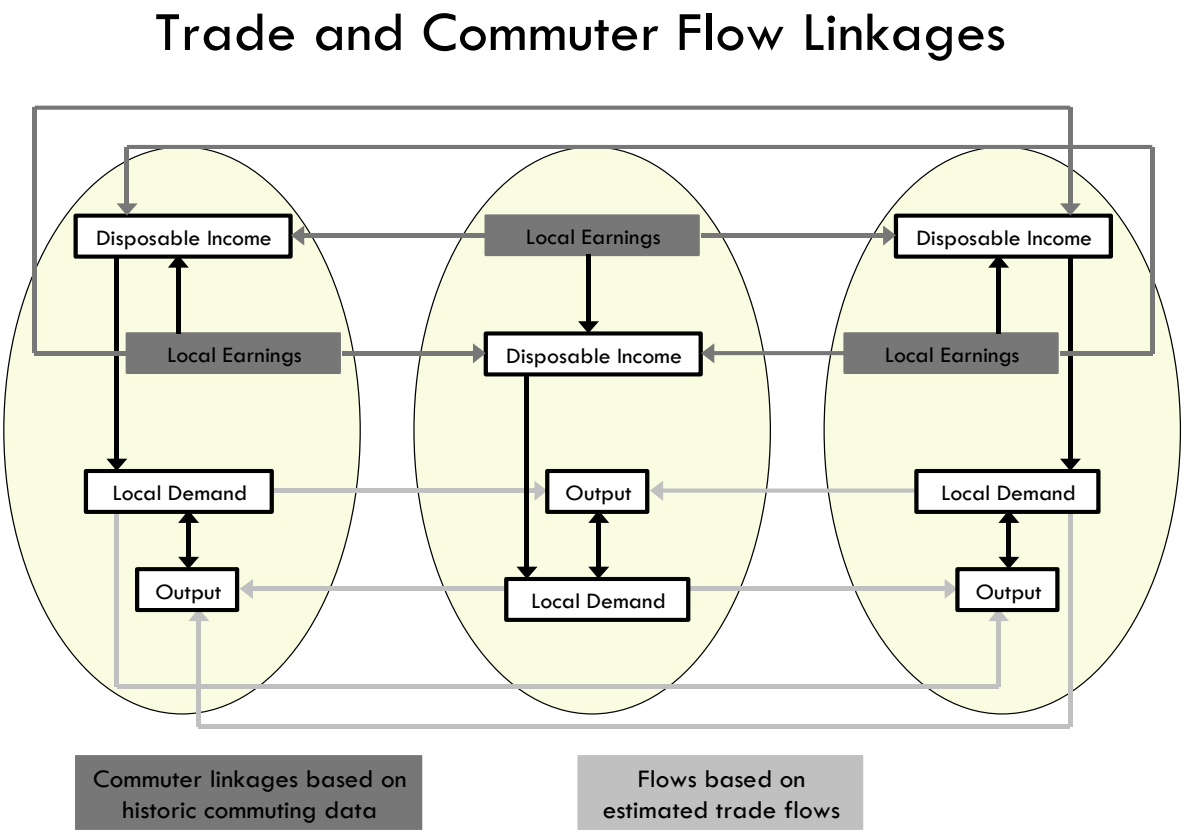
The Output and Demand block consists of output, demand, consumption, investment, government spending, exports, and imports, as well as feedback from output change due to the change in the productivity of intermediate inputs. The Labor and Capital Demand block includes labor intensity and productivity as well as demand for labor and capital. Labor force participation rate and migration equations are in the Population and Labor Supply block. The Compensation, Prices, and Costs block includes composite prices, determinants of production costs, the consumption price deflator, housing prices, and the compensation equations. The proportion of local, inter-regional, and export markets captured by each region is included in the Market Shares block.

Models can be built as single region, multi-region, or multi-region national models. A region is defined broadly as a sub-national area, and could consist of a state, province, county, or city, or any combination of sub-national areas.

Single-region models consist of an individual region, called the home region. The rest of the nation is also represented in the model. However, since the home region is only a small part of the total nation, changes in the home region do not have an endogenous effect on the variables in the rest of the nation.

Multi-regional models have interactions among regions, such as trade and commuting flows. These interactions include trade flows from each region to each of the other regions. These flows are illustrated for a three-region model in Figure 12.

Figure 12: Trade and Commuter Flow Linkages



Multiregional national models also include a central bank monetary response that constrains labor markets. Models that only encompass a relatively small portion of a nation are not endogenously constrained by changes in exchange rates or monetary responses.

Block 1. Output and Demand

This block includes output, demand, consumption, investment, government spending, import, commodity access, and export concepts. Output for each industry in the home region is determined by industry demand in all regions in the nation, the home region's share of each market, and international exports from the region.

For each industry, demand is determined by the amount of output, consumption, investment, and capital demand on that industry. Consumption depends on real disposable income per capita, relative prices, differential income elasticities, and population. Input productivity depends on access to inputs because a larger choice set of inputs means it is more likely that the input with the specific

characteristics required for the job will be found. In the capital stock adjustment process, investment occurs to fill the difference between optimal and actual capital stock for residential, non-residential, and equipment investment. Government spending changes are determined by changes in the population.

Block 2. Labor and Capital Demand

The Labor and Capital Demand block includes the determination of labor productivity, labor intensity, and the optimal capital stocks. Industry-specific labor productivity depends on the availability of workers with differentiated skills for the occupations used in each industry. The occupational labor supply and commuting costs determine firms' access to a specialized labor force.

Labor intensity is determined by the cost of labor relative to the other factor inputs, capital, and fuel. Demand for capital is driven by the optimal capital stock equation for both non-residential capital and equipment. Optimal capital stock for each industry depends on the relative cost of labor and capital, and the employment weighted by capital use for each industry. Employment in private industries is determined by the value added and employment per unit of value added in each industry.

Block 3. Population and Labor Supply

The Population and Labor Supply block includes detailed demographic information about the region. Population data is given for age, gender, and race, with birth and survival rates for each group. The size and labor force participation rate of each group determines the labor supply. These participation rates respond to changes in employment relative to the potential labor force and to changes in the real after-tax compensation rate. Migration includes retirement, military, international, and economic migration. Economic migration is determined by the relative real after-tax compensation rate, relative employment opportunity, and consumer access to variety.

Block 4. Compensation, Prices and Costs

This block includes delivered prices, production costs, equipment cost, the consumption deflator, consumer prices, the price of housing, and the compensation equation. Economic geography concepts account for the productivity and price effects of access to specialized labor, goods, and services.

These prices measure the price of the industry output, considering the access to production locations. This access is important due to the specialization of production that takes place within each industry, and because transportation and transaction costs of distance are significant. Composite prices for each industry are then calculated based on the production costs of supplying regions, the effective distance to these regions, and the index of access to the variety of outputs in the industry relative to the access by other uses of the product.

The cost of production for each industry is determined by the cost of labor, capital, fuel, and intermediate inputs. Labor costs reflect a productivity adjustment to account for access to specialized labor, as well as underlying compensation rates. Capital costs include costs of non-residential structures and equipment, while fuel costs incorporate electricity, natural gas, and residual fuels. The consumption deflator converts industry prices to prices for consumption commodities. For potential migrants, the

consumer price is additionally calculated to include housing prices. Housing prices change from their initial level depending on changes in income and population density.

Compensation changes are due to changes in labor demand and supply conditions and changes in the national compensation rate. Changes in employment opportunities relative to the labor force and occupational demand change determine compensation rates by industry.

Block 5. Market Shares

The market shares equations measure the proportion of local and export markets that are captured by each industry. These depend on relative production costs, the estimated price elasticity of demand, and the effective distance between the home region and each of the other regions. The change in share of a specific area in any region depends on changes in its delivered price and the quantity it produces compared with the same factors for competitors in that market. The share of local and external markets then drives the exports from and imports to the home economy.

Choice of Model and How it Was Built

SEIGMA assesses indirect economic impacts in two ways. The first is by measuring changes in economic indices (e.g., employment, business starts/failures) in secondary data sources (e.g., labor market statistics). The second is by economic modeling, using proprietary programs (i.e., REMI) that model the Massachusetts economy and project the likely impacts of new economic activity after inputting the direct/known casino impacts listed above.

The research team is experienced in building complex economic impact models and has used economic modeling to complete impact analyses and assess the economic contributions of many different types of facilities and industries throughout the state. The SEIGMA team has been using a customized REMI PI+ model of Massachusetts with six sub-state regions that align with existing economic linkages in the Commonwealth. The PI+ model is built using a variety of public sector data series, and is built from county-level data and aggregated to larger regions, as needed. The PI+ software generates realistic year-by-year estimates of the total regional effects of specific initiatives.

We choose the REMI PI+ model for the SEIGMA project because it allows for dynamic, multi-year modeling as compared to other, more simplistic modeling systems (e.g., IMPLAN, RIMS II). REMI thus has significant advantages for major complex initiatives that: a) have time-series based impacts that are likely to vary over time; b) require the use and interpretation of multiple economic variables; and c) emphasize economic interactions between regions within the state that add up to a true state-level impact.

The PI+ model serves to provide two critical elements to assess the economic impacts of casinos. First, the modeling will allow us to estimate how the changes created directly by the casinos and the taxes they generate ripple through the rest of the state economy. Second, the economic impact modeling is the best way to measure the net impact of the casinos after accounting for the reallocation of spending around the state and among industry sectors.

The analysis to estimate the total contribution of the casinos economic activities is built on the basic premise that an initial investment in one sector and region of an economy (i.e., through the operation of a casino) spurs additional economic activity in other sectors and regions as the money is re-spent. The

total economic contribution of the investment is estimated by tracing the flow of money between industries and households until all of the initial investment eventually leaves the region or state through foreign or domestic trade or is collected as a tax.

However, to measure statewide net economic impacts requires a more rigorous analysis that accounts for economic activity that is *net new* to the state versus *re-distributive*. In particular, we will use information from the various patron and population surveys to determine what proportion of visitor expenditures are from out-of-state trips, recaptured trips (money kept in state rather than leaving to be spent elsewhere), and reallocated (money diverted from other uses in the state). This kind of careful accounting—combined with data on the location of casino facility expenditures and the residential location of employees—is necessary to credibly isolate the effects of casino impacts on the broader regional and state economies.

Appendix 4: Glossary for Economic Impacts

In this section, UMDI defines terms common to economic modeling and analysis that are used in this report. They are as follows:

Employment: Employment is a count of jobs, not people, by place of work. It counts all jobs with the same weight regardless of whether the position is full- or part-time or the labor of a self-employed proprietor. Additionally, jobs are counted as job-years, which are equivalent to one job lasting for one year. This is a similar concept to "person-hours." Jobs often carry over from year to year and therefore the jobs in one year include many of the same jobs as in the previous year. For example, if a new business opens with 10 employees then the host community of that business will have 10 more jobs than it would have had in every future year that the company maintains its workforce. For example, over 5 years, the business will have created 50 job-years (10 jobs at the company x 5 years = 50 job-years) though it is possible that it is not the same 10 people who are working there over time. When reviewing changes in employment across multiple years, knowledge of the concept of job-years is vital to proper interpretation.

Output: Output is the total economic value of production, sales, or business revenues, whether final (i.e., purchased by the end user) or intermediate (used by another business to produce its own output). It includes the value of inputs to production, wages paid to employees, capital expenses, taxes, and profit. It is useful as an indicator of business activity, but it should not be construed as net new economic activity.

Personal Income: Personal income is income and benefits from all sources earned by all persons living in an area. It excludes the income earned by non-resident workers who commute into an area but includes the income of residents who commute out.

Value Added: Value added is the value of all final goods and services created in an economy. It represents new economic activity and is also known as gross product or net economic impact. It differs from output by the value of inputs to production. Value added provides a useful summary of the economy which is why all nations and U.S. states report their economic growth in this way, calling it either gross domestic product or gross state product as appropriate. Its usefulness derives from the elimination of the double-counting inherent in output, which stems from the inclusion of inputs. An example of the double-counting of inputs can be found and simplified in the process of making and selling a loaf of bread. A farmer sells wheat to a mill, which then sells flour to a baker, who then sells bread to the final customer. The sale price of the bread includes the cost of all necessary inputs including growing the wheat, milling the flour, and baking the bread. Value added only counts the sale price of the bread to the final consumer which is the net new value created in the economy. On the other hand, output counts the revenues earned by every business in the supply chain which means that the value of the wheat and flour are counted more than once.

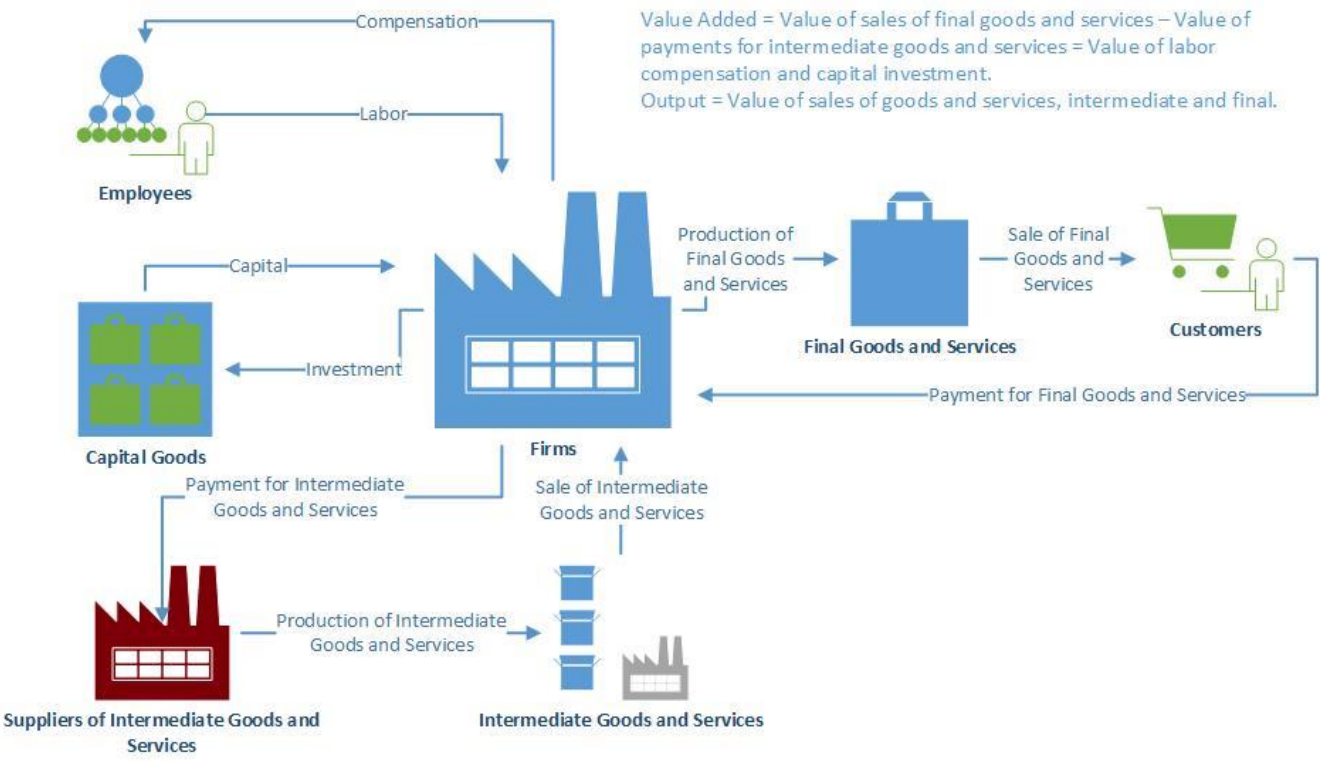
Appendix 5: The Concepts of Output and Value-Added

This appendix serves to clarify the distinctions between two related economic concepts discussed in this report – output and value added.

For any firm to produce goods and services to be sold on the market, it needs to pay for the things required to produce them. It needs to compensate workers for their labor and invest in the capital goods (machinery, for example) which those workers will use. It also needs to purchase intermediate goods and services from other firms. Workers then use the firm's capital goods to turn the intermediate goods and services purchased from other firms into final goods and services. These final goods and services are the output of the firm, and are equivalent to the value of its sales or revenue.

The concept of **value added** captures only the portion of the output which is directly created by the firm's capital goods and labor. In other words, value added is the value of the final goods and services produced minus the cost of the intermediate goods and services which were purchased to produce them. This can be interesting when examining an individual firm, since two firms can have similar outputs but very different value added, depending on the cost of their intermediate inputs.

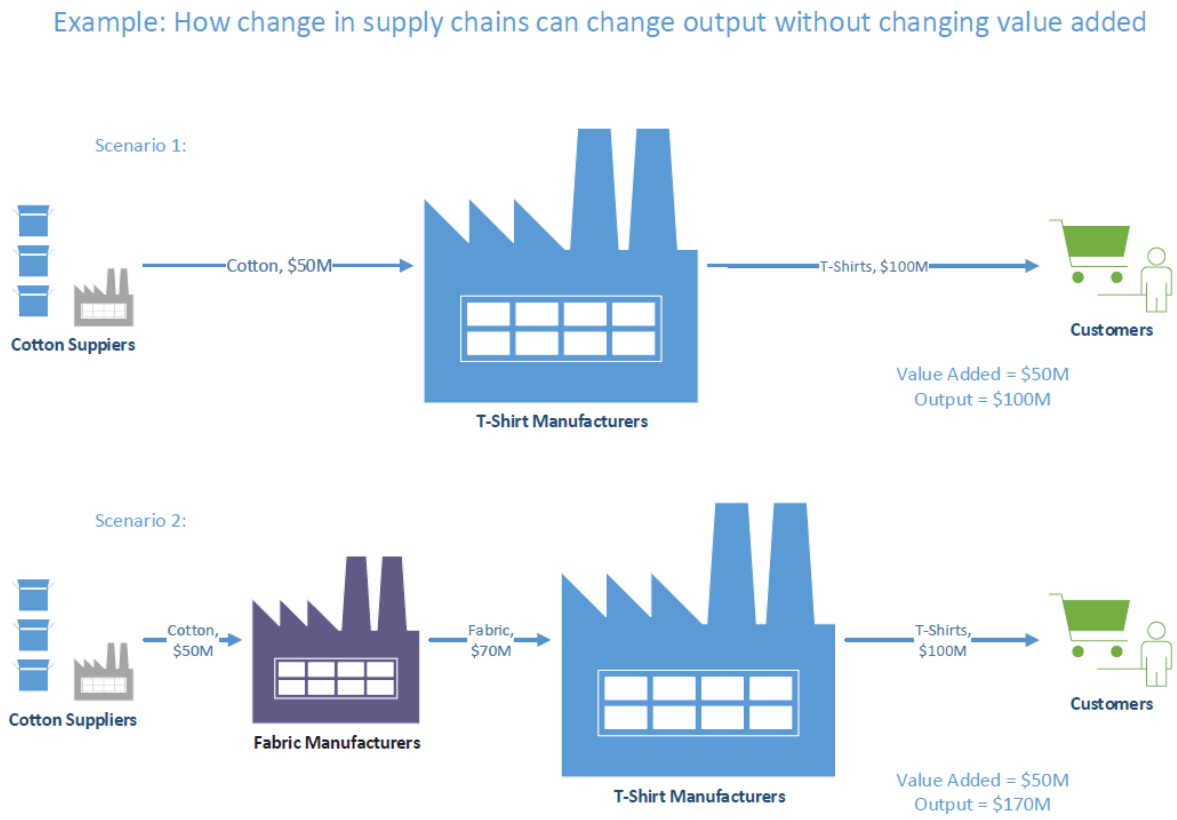
Figure 13: Output and Value Added



Consider the example of two different t-shirt manufacturers whose economic impact on a region is being evaluated. Both of the manufacturers ultimately sell $100 million in t-shirts, and in order to produce them, both manufacturers use $50 million in cotton. However, the structure of their supply

chains is different. One of the firms takes the cotton and performs every step required to turn the cotton into t-shirts at their facility. For this firm, value added is $50 million ($100 million in t-shirts minus $50 million in cotton) and output is $100 million. The other manufacturer instead opts to purchase fabric from a third-party fabric manufacturer, which has taken the $50 million in cotton and turned it into $70 million in fabric. When considering the economic impact of this operation, both firms will need to be considered. The fabric manufacturer has a value added of $20 million ($70 million in fabric minus $50 million in cotton) and an output of $70 million. The t-shirt manufacturer has a value added of $30 million ($100 million in t-shirts minus $70 million in fabric) and an output of $100 million, the same as the original factory. Considered together, this second operation has a combined value added of $50 million, the same as the first example, but a combined output of $170 million, much higher than the initial example. The lesson from this is that while output is a useful economic metric in many cases, it has the potential to double count the production of some goods and services and is best presented alongside value added for context.

Figure 14: Value Added - Supply Chain Example



Appendix 6: AirSage

Cell phone location data was employed to shed additional light on the geographic origin of casino patrons to the three Massachusetts casinos. AirSage (https://airsage.com/) is a telecommunications company based in Atlanta that began collating GPS data in 2016 and now has more than 5 billion location signals from more than 200 million mobile devices. AirSage collects, curates, and analyzes large volumes of location data to sell to businesses and universities for commercial or research purposes. Target Location Analysis is one AirSage product that provides device counts for a particular point of interest. Visitor information such as home location (county), visitation levels at the location, duration of stay, and estimated demographic profile of visitors can be obtained from this type of location data.

AirSage was contracted to provide cell phone location data for all cell phones detected at the three Massachusetts casinos as well as the eight major casinos within 100 miles of the state border for 14 consecutive days in January 2023 (January 16 – 29) and in October 2023 (October 2 – 15). This provides a fairly comprehensive picture of the casino's actual patronage, as more than 90% of U.S. adults currently carry a smartphone (Pew Research Center, 2024) which typically contains several apps that track location (e.g., Google Maps) (and very few people turn off their cell phones and/or disable all the apps that provide tracking). The eleven casinos selected for the latest study are listed below, along with information pertaining to size and gambling opportunities provided by each casino. In total, there were 1,213,741 cell phones detected in this four-week period (results between the two time periods were added together).

Table 17 Casinos within 100 miles of Massachusetts Border included in the AirSage Analysis

State	Casino	Date First Providing EGMs &/or Table Games	Current Square Footage	Current # EGMs	Current # Table Games	Driving Distance (miles) from MA State Line
MA	Plainridge Park Casino	2015	55,000	1,250	0	0
MA	Springfield MGM	2018	109,000	1,814	102	0
MA	Encore Boston Harbor	2019	210,000	1,800	254	0
RI	Bally's Tiverton Casino	2018	33,000	1,000	32	1
RI	Bally's Twin River Lincoln	1992	162,000	3,900	88	4
CT	Foxwoods Resort Casino	1992	340,000	3,420	265	43
CT	Mohegan Sun	1996	310,000	3,800	308	48
NY	Rivers Casino & Resort Schenectady	2017	50,000	1,150	83	43
NY	Saratoga Casino & Raceway	2004	55,000	1,630	0	53
NY	Empire City at Yonkers Raceway	2006	290,000	5,000	0	94
NY	Resorts World New York City	2011	330,000	6,500	1300	113

The geographic origin of cell phones detected at these venues was used to estimate: (a) the percentage and amount of Massachusetts casino revenue that comes from each state (as well as each Massachusetts county), and (b) the percentage and amount of casino revenue that other states are receiving from Massachusetts residents. This data informs the 'direct economic impacts.'

Note that all cell phones that were detected for 18 days or more during the months of January or October (based on data collection period) were excluded from the patron counts, as these were deemed to most likely be employees of the casino. However, this 18-day cut-off was subsequently determined to be insufficient to effectively exclude most part-time employees, who are estimated to constitute about 36% of all employees (and would represent thousands of individuals for the larger casinos). Thus, a 50% reduction in the counts was made in the 'home county' for all casinos, where the large majority of casino employees reside. The detailed rationale for this additional 'home county' adjustment is below.

Home Casino County Adjustment

AirSage excludes all cell phones that were present 18 or more days during either January 2023 or October 2023 in an attempt to eliminate casino employees from the counts. 18 days is a reasonable exclusionary criterion that should exclude most employees, but not inadvertently exclude most heavy gamblers, as the large majority of full-time employees will likely have worked 20 days or more, and less than one percent of MA and CT casino gamblers report gambling at a casino 4 or more times a week (Gemini Research, 2024; Volberg et al., 2023). Unfortunately, however**, this exclusionary criterion does not effectively exclude part-time casino employees**.

In MA, 32.4% of casino employees are part-time, which is a similar percentage to that found in other jurisdictions. Massachusetts has an average casino employment of 5,128 per pay period. If we assume that 32.4% of these 5,128 employees are part-time (i.e., 1,661) and might have been present an average of 12 days during the 28-day period (vs 20 days for full-time workers), then this would result in 19,932 additional counts that should have been excluded.

Prior research has established that the vast majority of Connecticut casino employees live in the same county at the Foxwood and Mohegan Sun casinos (Gemini Research, 2024). The same pattern has been established in Massachusetts. It is also much more likely for local residents to visit the many restaurants and non-casino amenities that are typically available at these casinos. Thus, it is clear that these additional AirSage counts should be subtracted primarily from the host casino county.

In an effort to correct these local overcounts, a 50% reduction has been made in the host casino(s) county AirSage count. In the case where there are two counties in close proximity to the casino(s), a 25% reduction has been made in each

Appendix 7: Questionnaire for the Massachusetts Gaming Commission

INTRODUCTION

Based on Section 25 of the 2022 Act to Regulate Sports Wagering (House Bill No. 5164), the Massachusetts Gaming Commission is tasked with conducting a study focused on diversity in the sports wagering industry and developing recommendations to ensure diversity, equity and inclusion are included in this method of sports wagering. The Commission has engaged the Donahue Institute, based at the University of Massachusetts, Amherst to carry out this project. The Sports Wagering Diversity Research Services project is tasked with conducting a study on the participation by minority, women, and veteran business enterprises and workers in the sports wagering industry. Our team is conducting key informant interviews with representatives like yourself to obtain recommendations about ensuring and improving employment and vendor diversity.

LOGISTICS

Based on conversations with members of the Massachusetts Gaming Commission (MGC), it was agreed that for the MGC, a questionnaire will be sent, and written responses will be provided by the MGC in lieu of in person interviews. These questionnaires ***will not*** be confidential as officials/representatives will be participating in their professional capacity and in their area of expertise. Excerpts from the responses may be used in reported findings. However, we will not attribute statements or quotes directly to an individual or organization.

Introduction

1. For all participants answering, can you please share your name, job title, and describe your current work as it relates to the gambling industry?
2. Who are the professionals within your organization that are involved in diversity planning and policies? In what capacities do they work?

Employees

3. How diverse would you say the workforce within your institution is? When thinking about diversity, please include gender, race/ethnicity, and veteran status.
4. What organizational programs, policies and practices are in place related to recruitment of a diverse workforce in your institution, or in the institutions you work with?
5. Can you describe some of the positive and negative outcomes that have come from these programs, practices, and policies?
6. What considerations are there related to employment impact, compensation, benefits, trajectory, and turnover for women, minority, and veteran employees compared to employees from other groups?
7. What workforce training programs are in place to promote the retention and development of a skilled and diverse workforce and to provide access to promotion opportunities?

Business enterprises

8. We are also interested in diversity as it relates to businesses that contract with or provide services to the Massachusetts Gaming Commission, specifically, minority-owned, veteran-owned, and women-owned businesses.
    a. Which of these types of diverse businesses are most plentiful and engaged in contracting with your institution? What are the factors at play which positively influence the supply of these businesses? What are the factors at play which create challenges to the supply and engagement of these businesses?
    b. Are these businesses certified as such? In what business areas are diverse businesses most plentiful and engaged with your institution?
    c. What organizational policies and practices are in place related to solicitation of and contracting with minority, women, and veteran business enterprises in the Commonwealth?
    d. Can you describe some of the positive and negative outcomes that have come from these programs, practices, and policies?

Evaluation

9. Regarding the employees in your institution, can you please answer the following questions:
    a. Can you give an assessment about the current levels of engagement and **the barriers** to hiring and employment of women, minorities, and veterans in your institution?
    b. What are the main barriers to employment of women, minorities, and veterans in your institution and in state regulatory agencies?
    c. In contrast to barriers, what are the main factors that encourage greater diversity in the employment of women, minorities, and veterans in your institution and in state regulatory agencies?
    d. Please share some of the challenges / difficulties and some successes you have encountered in the attempts to increase diversity in your institution.
10. Regarding the vendors who work with the Massachusetts Gaming Commission (MGC), please answer the following questions:
    a. Can you give us an assessment about current levels of engagement and **the barriers** to contracting with diverse business enterprises in the Commonwealth?
    b. Please share some of the challenges / difficulties and successes you have encountered in the attempts to increase diversity in terms of vendors who work with the MGC.
11. Regarding the role of the Massachusetts Gaming Commission (MGC) in regulating the sports wagering industry, please answer the following questions:

a. What is the role of the MGC in fostering diversity among sports books licensees and sports books vendors?
b. How is this role different from the MGC's role regulating diversity among casino operators and their vendors?
c. What accountability procedures are in place to promote and encourage diversity among sports books employees and vendors?

12. Do you have any documents about your institution's diversity policies and programs which you could share with us? These could be documents about employee or vendor diversity policies.

Recommendations

This section is intended to collect final / definitive thoughts on the most effective policies and recommendations to increase the participation of diverse employees and vendors in state regulatory agencies.

13. Can you define the most critical recommendations as to how to improve diversity, equity, and inclusion in your organization?
14. In what ways can your organization enhance the workforce success of minority, female, and veteran employees?
15. Can you define the most critical policies or approaches to increase the levels of engagement and the volume and scale of business contracting with minority, female, and veteran-owned enterprises in your organization?
16. Do you have additional perspectives and suggestions about designing best programs, policies, and practices to increase racial, gender and veteran diversity in the workforce and among the business enterprises engaged for contracting?

Final Request

17. Is there anyone else you think we should interview or speak with to find out more about diversity in state regulatory agencies? Specifically, can you recommend someone from:
    a. A diversity owned business, such as a black owned or hispanic owned business.
    b. A spokesperson from a BIPOC or woman employee affinity group.
    c. A union representative for employees in state regulatory agencies.

Appendix 8: Operator Questionnaires

Category 1

Sports Betting Impacts

Start of Block: Welcome

Welcome!

At the direction of the Massachusetts Gaming Commission, we are seeking information related to your company's sports betting operation in Massachusetts. If you're receiving this survey, we ask that you answer some questions about employment, vendor spending, diversity efforts, fiscal impacts, and consumer behavior in light of the introduction of retail sports betting at the casino.

The goal of this survey is to obtain information critical for research for the Massachusetts Gaming Commission. The questions are mostly qualitative in nature; a few require numeric estimates. In these cases, we ask that you answer them to the best of your ability, consulting with other staff if necessary. The survey should take between 20 and 30 minutes to complete and contains four parts:

- Payroll and Employment - including Employee Diversity Programs
- Vendor Spending - including Vendor Diversity Programs
- Government Spending
- Patron Behavior

If you have any questions, please reach out to Kassie Breest <kbreest@donahue.umass.edu>

Thank you for your time. We appreciate your help!

Page Break

Q1.3 Please provide your name, title, and email.

- Name (1) _____
- Title (3) _____
- Email (4) _____

Q1.4 Which casino are you affiliated with?

- Encore Boston Harbor (1)
- MGM Springfield (2)
- Plainridge Park Casino (3)

End of Block: Welcome

Start of Block: Part 1: Payroll and Employment

Part 1: Payroll and Employment

Q2.2 Is the payroll information on sports betting-related employees included in the operator dataset that UMDI collects from the casino on a regular basis? In other words, do checks cut for sports betting related employees appear in the casino payroll?

- Yes (1)
- No (2)

Q2.3 What company is responsible for paying wages for retail sports betting employees at the casino?

_____

Q2.4 How is this company related to the casino operator?

- ○ Shared parent company/corporate, tethered (1)
- ○ Unrelated company, tethered (5)
- ○ Other (please describe the nature of the company below) (6)

_____

Q2.5 Please provide the name and title of the primary contact that you will work with to fulfill the payroll data request (for retail sports betting), similar to the one asked bi-annually of the casinos. This question for informational purposes only.

_____

_____

_____

Q2.6 We will need to clearly distinguish sports betting employees in the payroll data. Please provide the information (such as departments names/codes or occupation titles/codes) that can be used to clearly identify sports wagering operations employees in the payroll data.

_____

_____

_____

End of Block: Part 1: Payroll and Employment

Start of Block: Payroll and Employment: Impacts

Payroll and Employment: Impacts

Q3.2 While we realize that this may be difficult to quantify, please do your best to estimate the impact that the introduction of sports betting has had on operational employment at the casino in the following questions.

Q3.3

To what extent has the casino increased employment or added hours **in other departments** to meet the

demands of sports betting customers? To the best of your ability, estimate the scale to which sports betting customers have increased the need for additional staff hours **in other departments**.

- ○ Not at all increased (5)
- ○ Slightly increased (6)
- ○ Moderately increased (7)
- ○ Significantly increased (8)

Q3.4
In what ways has the expansion of sports betting impacted employment at the casino in other departments (outside of those directly related to sports betting such as food service or hospitality) to meet additional demand for sports betting?

- ☐ Additional employees hired (1)
- ☐ New administrative or fiscal positions created (2)
- ☐ Hours increased for existing employees (3)
- ☐ Employees reassigned to different/new departments (4)
- ☐ Hours decreased for existing employees (6)
- ☐ Layoffs or terminations (8)
- ☐ No new hiring/no new replacements (9)
- ☐ Other (please specify) (5) _____

Q3.5
Please click and drag a department from the list on the left to a box on the right to reflect employment impacts.

Growing	Shrinking	Unchanged
_____ General & Administrative (2)	_____ General & Administrative (2)	_____ General & Administrative (2)
_____ Gaming & Recreation (NOT including sports betting) (3)	_____ Gaming & Recreation (NOT including sports betting) (3)	_____ Gaming & Recreation (NOT including sports betting) (3)
_____ Food & Beverage (4)	_____ Food & Beverage (4)	_____ Food & Beverage (4)
_____ Hotel (5)	_____ Hotel (5)	_____ Hotel (5)
_____ Entertainment (6)	_____ Entertainment (6)	_____ Entertainment (6)
_____ Retail (7)	_____ Retail (7)	_____ Retail (7)
_____ Maintenance & Facilities (8)	_____ Maintenance & Facilities (8)	_____ Maintenance & Facilities (8)
_____ Other (9)	_____ Other (9)	_____ Other (9)

End of Block: Payroll and Employment: Impacts

Start of Block: Payroll and Employment: Diversity Programs

Employee Diversity Programs

Q4.2 Is the retail sports betting operation at the casino included as a part of casino **employee diversity** programs or initiatives related to minority, female, and veteran employees?

- ○ Yes (1)
- ○ No (2)
- ○ I don't know (3)

Q4.3
What kinds of organizational policies and practices are in place related to **recruitment of a diverse workforce**? Please describe the major policies and practices.

_____

_____

_____

Q4.4
What kinds of **special considerations** are there related to compensation, benefits, career trajectory, and turnover for minority, women, and veteran employees compared to employees in other groups? Please describe the major policies and practices.

_____

_____

_____

Q4.5
What kinds of **workforce training programs** are in place to promote the retention and development of a skilled and diverse workforce ***and*** to provide access to promotion opportunities? Please describe the major policies and practices.

_____

_____

_____

Q4.6 Please provide the name, title, and email of a contact who can provide information on employee diversity policies and practices if necessary.

- ○ Name (1) _____
- ○ Title (2) _____
- ○ Email (3) _____

End of Block: Payroll and Employment: Diversity Programs

Start of Block: Part 2: Vendor Spending (business-to-business)

Part 2: Vendor (business-to-business) Spending

Q5.2 Are the purchases of goods and services related to retail sports betting included in the regular operator dataset that UMDI collects from the casino on a regular basis? In other words, do the businesses that the casino solicits for retail sports betting goods or services appear in the casino's business-to-business spending data?

- ○ Yes (1)
- ○ No (2)

Q5.3 What company is responsible for maintaining vendor spending data related to retail sports betting operations at the casino?

_____

Q5.4 How is this company related to the casino operator?

- ○ Parent company/corporate (1)
- ○ Tethered operator (2)
- ○ Some combination of the two (3)
- ○ Other (please describe the nature of the company below) (4)

_____

Q5.5 Please provide the name and title of the primary contact that you will work with to fulfill the vendor spending data request (for retail sports betting), similar to the one asked bi-annually of the casinos. This question for informational purposes only.

_____

_____

_____

Page Break

We will need to clearly distinguish sports betting related vendors IF those vendors appear in the regular, casino vendor spending data.

Q5.7 Please identify any businesses that provide advertising, marketing, or promotional services **exclusively or primarily to the retail sports betting** part of your operation IF those businesses appear in your casino vendor spending data. (List name(s) of business(es))

_____

_____

_____

Q5.8 Please identify any other vendors that provide goods and services **exclusively or primarily to the retail sports betting** part of your operation IF those vendors appear in your casino vendor spending data. (List name(s) of business(es))

_____

_____

_____

End of Block: Part 2: Vendor Spending (business-to-business)

Start of Block: Vendor Spending: Impacts

Vendor (business-to-business) Spending: Impacts

Q6.2 Are there any departments outside of sports betting within the casino operation where spending has **increased** to accommodate an increase in patronage (e.g. food and beverage service) or employees (e.g. uniforms) due to sports betting?

- ○ Yes (1)
- ○ No (2)
- ○ I don't know (3)

Q6.3 Please list departments of the casino operation where spending has increased

_____

Q6.4 To what extent has spending **increased** across these departments? To the best of your ability, estimate the scale to which spending has **increased** overall.

- ○ Not at all increased (1)
- ○ Slightly increased (2)
- ○ Moderately increased (3)
- ○ Significantly increased (4)

Q6.5 Are there any departments within the casino operation where spending has **decreased** as a result of changes in patron spending or because those costs are now covered by an outside operator?

- ○ Yes (1)
- ○ No (2)
- ○ I don't know (3)

Q6.6 Please list areas of the casino operation where spending has **decreased**

_____

_____

_____

Q6.7 To what extend has spending **decreased** across these departments? To the best of your ability, estimate the scale to which spending has **decreased** overall.

- ○ Not at all decreased (1)
- ○ Slightly decreased (2)
- ○ Moderately decreased (3)
- ○ Significantly decreased (4)

Q6.8 Did the casino hire any outside vendors/personnel to facilitate the integration of the sports betting operation? (e.g. construction/architecture firms to manage renovations or legal, consulting, or advertising/marketing/promotional services)

- ○ Yes (1)
- ○ No (2)
- ○ I don't know (3)

End of Block: Vendor Spending: Impacts

Start of Block: Vendor Spending: Diversity Programs

Vendor Diversity Programs

Q7.2 Is the retail sports betting operation at the casino included as a part of casino **vendor diversity** programs or initiatives to promote and increase contracting with minority-, woman-, and veteran-owned businesses?

- ○ Yes (1)
- ○ No (4)
- ○ I don't know (5)

Q7.3 What kinds of organizational policies and practices are in place related to **solicitation of** and **increasing the number of contracts** with minority-, woman-, and veteran-owned enterprises located in the Commonwealth? Please describe the major policies and practices.

_____

_____

_____

Q7.4 What kinds of organizational policies and practices are in place related to **increasing the size** (dollar value) of contracts with minority-, woman-, and veteran-owned enterprises located in the Commonwealth? Please describe the major policies and practices.

_____

_____

Q82 Please provide the name, title, and email of a contact who can provide information on vendor diversity policies and practices if necessary.

- ○ Name (1) _____
- ○ Title (2) _____
- ○ Email (3) _____

End of Block: Vendor Spending: Diversity Programs

Start of Block: Part 3: Government Spending

Part 3: Government Spending

Q8.2 Are there any one-time or recurring payments to state or local government entities in Massachusetts, other than the assessment on gross gaming revenue, that are directly related to the expansion of retail sports betting? Choose all that apply.

- ☐ Yes, paid by casino. (1)
- ☐ Yes, paid by tethered operator. (5)
- ☐ No (2)
- ☐ I don't know (4)

Q8.3 Please list the Massachusetts state or local government entities **and** type of payment that the casino paid/pays directly related to the expansion of retail sports betting.

_____

_____

_____

Q8.4 Do these government payments related to sports betting appear in the regular vendor spending dataset that UMDI collects from the casino on a regular basis, as requested?

- ○ Yes (1)
- ○ No (2)
- ○ I don't know (3)

Q8.5 Will these government payments related to sports betting appear in the vendor spending dataset that UMDI will collect from the tethered operator on a regular basis, as requested?

- ○ Yes (1)
- ○ No (2)
- ○ I don't know (3)

Q8.6 To the best of your ability, please estimate the **total annual dollar amount** of any sports betting-related payments made to state or local government entities in Massachusetts (other than the assessment on gross gaming revenue) that are ***not*** included in the vendor data.

_____

End of Block: Part 3: Government Spending

Start of Block: Part 4: Patron Behavior

Part 4: Patron Behavior

Q9.2 To the best of your ability, please estimate the breakdown in patronage between the following groups of retail sports betting patrons. Input a number in the box that corresponds to each group of patrons totaling to 100.

New patrons, those who did not previously visit the casino, but now do : _____ (1)
Existing casino patrons, those who have increased their gambling spending to include retail sports betting : _____ (2)
Existing casino patrons, who have shifted their casino spending away from other gambling activities and to retail sports betting : _____ (3)
Other, not specified above : _____ (4)
Total : _____

Category 3

Sports Betting Impacts - Online/Mobile Operators

Welcome!

Sports betting has been expanding across many U.S. states. Our team at the UMass Donahue Institute (UMDI) leads the Massachusetts Gaming Commission (MGC) research agenda aimed at understanding the social and economic impacts of gambling in Massachusetts. Our current research projects include a study of the early impacts of sports wagering and a study examining diversity within the industry.

We are using this questionnaire to gather data to answer research questions in studies for the MGC. The answers will help us gain a better understanding of what moving into a new state means for Category 3 sports betting licensees. We want to understand how (if at all) your organization increases your economic activity (new hiring or spending) in the course of doing business in a new state. In addition to these economic questions, we also want to get a general idea of your business' approach to diversity in hiring and in spending on outside firms. We plan to report the data in the most aggregated way possible which still allows us to answer the required research questions. We will report observed trends in responses (e.g. “X percent of operators indicated”). Results may be reported using categories such as ‘all mobile operators,’ ‘in-state headquarters,’ ‘out-of-state headquarters,’ etc. Operators will also have the opportunity to review our work prior to its release and provide feedback.

We ask that you answer these questions to the best of your ability, consulting with other staff if necessary. The survey should take between 10 and 20 minutes to complete.

If you have any questions, please reach out to Tom Peake <tpeake@donahue.umass.edu>

Thank you for your time. We appreciate your help!

Page Break

Q0.1 Please provide your name, title, and email.

- ○ Name (1) _____
- ○ Title (3) _____
- ○ Email (4) _____

Q0.2 Which online/mobile sports betting operator are you affiliated with?

- ○ Bally Bet (2)
- ○ BetMGM (3)
- ○ Caesar's Sportsbook (5)
- ○ DraftKings (6)
- ○ ESPN Bet (7)
- ○ Fanatics (8)
- ○ FanDuel (9)

End of Block: Welcome

Start of Block: Part 1: Economic Activity - Operating in a New State

Part 1: Economic Activity: Operating in a New State

The questions in this section are focused on how your economic activity changes when you move into **any new state**.

Q1.1 When a new state legalizes gambling, what are the strategic factors that inform whether your organization will operate in that state, if any? In other words, what factors influence your organization's decision to operate in a particular state?

_____

Q1.2 When your organization chooses to operate in a new state, is that decision generally accompanied by any additional **hiring** within your organization?

- ○ Yes (1)
- ○ No (2)

Q1.3 What departments or occupations tend to see increased hiring in response to your organization operating in a new state? For example, does the choice to move into a new market generally prompt your organization to hire additional marketing, customer support, or legal staff?

_____

Q1.4 Are there any types of workers who you tend to hire within a state when your organization chooses to begin operating in that state?

_____

Q1.5 Are there any staff in your organization who are assigned a portfolio of work which is specific to a particular state? For example, are there employees who specifically focus on customers or other stakeholders in a particular state?

_____

Q1.6 When your organization chooses to operate in a new state, is that decision generally accompanied by additional **spending** to other firms?

- ○ Yes (1)
- ○ No (2)

Q1.7 What sorts of goods, services, or firms does your company tend to purchase or hire in the course of moving into a new state? For example, does the labor involved with moving into a new state require your organization to spend additional money on vendors, consultants, lawyers, or advertisers?

_____

Q1.8 Are there any types of firms that you tend to hire within a state (in-state vendors) when your organization chooses to begin operating within that state? Please list the types.

_____

End of Block: Part 1: Economic Activity - Operating in a New State

Start of Block: Part 2: Economic Activity - Operating in Massachusetts

Part 2: Economic Activity: Operating in Massachusetts

The previous questions were focused on how your economic activity changes when you move into *any* new state. Next, we want to specifically ask about your organization's choice to move into **Massachusetts**.

Q2.2 What factors led you to make the decision to begin doing business in Massachusetts specifically?

_____

Q2.3 Did your organization hire any additional staff specifically as a result of Massachusetts opting to legalize sports betting?

- ○ Yes (4)
- ○ No (5)

Q2.4 Do any of those employees work in jobs that require them to live or perform their work in Massachusetts? In other words, do you have any employees who live or work in Massachusetts, and who would not be able to perform their tasks remotely or in an out-of-state office? If yes, please describe.

_____

_____

_____

Q2.5 Did your organization spend any new money on goods and/or services from other firms (such as vendors of IT products, consultants, lawyers, advertisers, etc.) specifically as a result of Massachusetts opting to legalize sports betting?

- ○ Yes (4)
- ○ No (5)

Q2.6 In the course of expanding into Massachusetts, did your organization purchase any of these goods and/or services from firms located in Massachusetts?

- ○ Yes (1)
- ○ No (2)

Q2.7 Did any of these firms perform work that requires them to be located in Massachusetts? If yes, please describe.

_____

_____

_____

End of Block: Part 2: Economic Activity - Operating in Massachusetts

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Start of Block: Part 3: Diversity Policies

Part 3: Diversity Policies

Q3.1 Does your organization have any specific policies or practices related to diversity and inclusion in *hiring*? Please describe.

_____

Q3.2 Does your organization have any specific policies or practices related to diversity and inclusion in *employee retention*? Please describe.

_____

Q3.3 Does your organization have any specific policies or practices related to spending on or contracting with diverse vendors/outside firms (i.e. minority-, women-, and veteran-owned firms)? Please describe.

_____

Q3.4 Is there anything else you would like to share with us around your organization's approach towards diversity?

_____

Q3.5 Please provide the name, title, and email of a contact who can provide information on diversity policies and practices if necessary.

- ○ Name (1) _____
- ○ Title (2) _____
- ○ Email (3) _____

End of Block: Part 3: Diversity Policies

Start of Block: Part 4: General Operational Spending

Q4.1 **Spending to Outside Vendors**

To the best of your ability, please drag and drop each business sector into the box which indicates the relative level of spending to outside vendors by your organization each year (High, Medium, Low or None).

High	Medium	Low	None
_____ **Utilities** Electric; Water (1)	_____ **Utilities** Electric; Water (1)	_____ **Utilities** Electric; Water (1)	_____ **Utilities** Electric; Water (1)
_____ **Wholesalers** Durable Goods - Computers, Electronics, Technical Equipment and Infrastructure; Other Equipment (4)	_____ **Wholesalers** Durable Goods - Computers, Electronics, Technical Equipment and Infrastructure; Other Equipment (4)	_____ **Wholesalers** Durable Goods - Computers, Electronics, Technical Equipment and Infrastructure; Other Equipment (4)	_____ **Wholesalers** Durable Goods - Computers, Electronics, Technical Equipment and Infrastructure; Other Equipment (4)
_____ **Transportation and Warehousing** Couriers and Messengers; Warehousing and Storage (6)	_____ **Transportation and Warehousing** Couriers and Messengers; Warehousing and Storage (6)	_____ **Transportation and Warehousing** Couriers and Messengers; Warehousing and Storage (6)	_____ **Transportation and Warehousing** Couriers and Messengers; Warehousing and Storage (6)
_____ **Information Services** Software Publishers; Telecommunications; Data Processing Hosting and Related Services; Other (8)	_____ **Information Services** Software Publishers; Telecommunications; Data Processing Hosting and Related Services; Other (8)	_____ **Information Services** Software Publishers; Telecommunications; Data Processing Hosting and Related Services; Other (8)	_____ **Information Services** Software Publishers; Telecommunications; Data Processing Hosting and Related Services; Other (8)
_____ **Finance and Insurance** Insurance Carriers and Related	_____ **Finance and Insurance** Insurance Carriers and Related	_____ **Finance and Insurance** Insurance Carriers and Related	_____ **Finance and Insurance** Insurance Carriers and Related

Activities Funds, Trusts, and Other Financial Vehicles and Services (2) _____ **Real Estate, Rental, and Leasing** Real Estate Purchases Rentals and Leases (9) _____ **Professional, Scientific, and Technical Services** Consulting Services Research and Development Services; Legal Services; Accounting and Payroll Services; Specialized Design Services; Computer Systems Design Services; Advertising and Marketing Services (10) _____ **Administrative and Support Services** Employment Services (including Temp Agencies); Travel Arrangement and Reservation Services; Investigation and Security Services; Services to Buildings and Dwellings; Other Support Services (3) _____ **Other Business Sectors** Construction; Manufacturing; Retailers; Educational Services; Health Care and Social Assistance; Arts, Entertainment, and Recreation; Accommodation and Food Services; Etc. (11)	Activities Funds, Trusts, and Other Financial Vehicles and Services (2) _____ **Real Estate, Rental, and Leasing** Real Estate Purchases Rentals and Leases (9) _____ **Professional, Scientific, and Technical Services** Consulting Services Research and Development Services; Legal Services Accounting and Payroll Services; Specialized Design Services; Computer Systems Design Services; Advertising and Marketing Services (10) _____ **Administrative and Support Services** Employment Services (including Temp Agencies); Travel Arrangement and Reservation Services; Investigation and Security Services; Services to Buildings and Dwellings; Other Support Services (3) _____ **Other Business Sectors** Construction; Manufacturing Retailers; Educational Services; Health Care and Social Assistance; Arts, Entertainment, and Recreation; Accommodation and Food Services; Etc. (11)	Activities Funds, Trusts, and Other Financial Vehicles and Services (2) _____ **Real Estate, Rental, and Leasing** Real Estate Purchases Rentals and Leases (9) _____ **Professional, Scientific, and Technical Services** Consulting Services Research and Development Services; Legal Services Accounting and Payroll Services; Specialized Design Services; Computer Systems Design Services; Advertising and Marketing Services (10) _____ **Administrative and Support Services** Employment Services (including Temp Agencies); Travel Arrangement and Reservation Services; Investigation and Security Services; Services to Buildings and Dwellings; Other Support Services (3) _____ **Other Business Sectors** Construction; Manufacturing; Retailers; Educational Services; Health Care and Social Assistance; Arts, Entertainment, and Recreation; Accommodation and Food Services; Etc. (11)	Activities Funds, Trusts, and Other Financial Vehicles and Services (2) _____ **Real Estate, Rental, and Leasing** Real Estate Purchases Rentals and Leases (9) _____ **Professional, Scientific, and Technical Services** Consulting Services Research and Development Services; Legal Services Accounting and Payroll Services; Specialized Design Services; Computer Systems Design Services; Advertising and Marketing Services (10) _____ **Administrative and Support Services** Employment Services (including Temp Agencies); Travel Arrangement and Reservation Services; Investigation and Security Services; Services to Buildings and Dwellings; Other Support Services (3) _____ **Other Business Sectors** Construction; Manufacturing; Retailers; Educational Services; Health Care and Social Assistance; Arts, Entertainment, and Recreation; Accommodation and Food Services; Etc. (11)

End of Block: Part 4: General Operational Spending