

Economic Impacts of Casinos – Applying a Community Comparison Matching Method

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Economic Analysis: Objectives

Measure and determine the net economic and fiscal impacts of casino facilities at the local, regional, and state level through primary and secondary data collection and estimating methods

- Government finance
- Business dynamics
- Labor market conditions
- Property values

Two Complementary Approaches to Measure Economic and Fiscal Impacts

- Direct impacts and primary data collected directly from the casino operations such as employees, wages, construction investment, and local expenditures modeled with REMI to isolate economic impacts
- Secondary data sources primarily from public government data sets to track conditions over time (e.g., unemployment rate, household income, and property values) and compare trends before/after and with comparison regions

Economic Analysis Techniques

- A defined set of *economic and fiscal indicators* to monitor and track trends using the most reliable secondary data sources
- *Economic impact analysis* using primary data from the casinos' actual spending, payroll and patrons and applying a *REMI economic model* to estimate and isolate impacts for the regional and statewide economies
- *Key informant interviews* with economic development experts to verify and enrich the quantitative analysis of local business/market dynamics
- *In-depth analysis* of issues of particular interest, such as workforce changes, property values, local/regional business dynamics, etc.
- *Statistical analysis* using comparison communities to create a counterfactual 'what-if' scenario (i.e., What would have happened economically had casinos not been introduced to these communities?)

Timing: Three Phases

- Baseline analysis

Current research is focused on the baseline analysis, taking place in the first one to two years, and involving an analysis of existing conditions within the Massachusetts economy, its regions and the host communities

- Development/construction analysis

As the gaming facilities are selected, an analysis of pre-development, development and construction impacts (development/construction analysis) is starting to take place

- Operations phase

In subsequent years of the research, gaming facilities will be fully operational and data will be available to estimate and track current and ongoing impacts made by gaming facilities (operational analysis)

Economic Indicators — Business and Resident

Economic/ Fiscal	Category	Measure	Data Source
Economic	Business Indicators	Payroll Employment (Total and by 2-digit NAICS and selected 4-digit NAICS)	Source: Massachusetts Office of Labor and Workforce Development (OLWD), Labor Market Information, ES-202; U.S. Bureau of Labor Statistics (BLS), Quarterly Census of Employment and Wages (QCEW) (for U.S. level data)
		Business Establishments (Total and by 2-digit NAICS and selected 4-digit NAICS)	Source: Massachusetts Office of Labor and Workforce Development (OLWD), Labor Market Information, ES-202; U.S. Bureau of Labor Statistics (BLS), Quarterly Census of Employment and Wages (QCEW) (for U.S. level data)
		Wages (Total and by 2-digit NAICS)	Source: Massachusetts Office of Labor and Workforce Development (OLWD), Labor Market Information, ES-202; U.S. Bureau of Labor Statistics (BLS), Quarterly Census of Employment and Wages (QCEW) (for U.S. level data)
		Business Bankruptcies	Source: U.S. Courts, Report F-5A: Filings by Chapter and Nature of Debt, by District and County http://www.uscourts.gov/Statistics/BankruptcyStatistics/2013-bankruptcy-filings.aspx ; Public Access to Court Electronic Records (PACER), Report F-5A http://www.pacer.gov/ (for historical data only)
	Resident Indicators	Unemployment Rate	Source: Bureau of Labor Statistics, Local Area Unemployment Series (LAUS); Bureau of Labor Statistics, Current Population Survey (CPS) (for U.S.-level data)
		Labor Force	Source: Bureau of Labor Statistics, Local Area Unemployment Series (LAUS); Bureau of Labor Statistics, Current Population Survey (CPS) (for U.S.-level data)
		Household Employment	Source: Bureau of Labor Statistics, Local Area Unemployment Series (LAUS); Bureau of Labor Statistics, Current Population Survey (CPS) (for U.S.-level data)
		Household Income (Median, Quintiles)	Source: U.S. Bureau of the Census, American Community Survey (ACS), tables B19013 and B19081
		Poverty Rates	Source: U.S. Bureau of the Census, American Community Survey (ACS), table S1701
		Per Capita Transfer Payments	Source: U.S. Department of Commerce Bureau of Economic Analysis, Local Area Personal Income Accounts, table CA35: Personal Current Transfer Receipts

Economic Indicators — Housing and Tourism

Economic/ Fiscal	Category	Measure	Data Source
Economic	Housing / Real Estate	Assessed Property Values, Commercial and Residential	Source: Massachusetts Department of Revenue (DOR), Division of Local Services, Property Tax Trend Report
		Residential Building Permits	Source: University of Massachusetts Donahue Institute (UMDI) State Data Center, Building Permit Data Census Bureau Construction Statistics, 2000-2011. http://www.massbenchmarks.org/statedata/data/Building%20permits%202000-2011.xls
		Rent	Source: U.S. Bureau of the Census, American Community Survey (ACS), table B25058
		Property Sales Value	Source: Warren Group
		Net Market Absorption (retail and commercial)	Source: C.B. Richard Ellis
		Vacancy Rate	Source: C.B. Richard Ellis
		Lease Rate Per Square Foot	Source: C.B. Richard Ellis
	Tourism/ Visitation	Tourism spending	Source: Massachusetts Office of Travel and Tourism (MOTT), Economic Impact of Travel on MA Counties (USTA)
		Number of visitors	Source: Massachusetts Office of Travel and Tourism (MOTT), Total Domestic Trips (TNS, Travels America)
		Leisure/Hospitality Jobs at Non-Casino Gaming Establishments	Source: Massachusetts Office of Labor and Workforce Development (OLWD), Labor Market Information, ES-202; U.S. Bureau of Labor Statistics (BLS), Quarterly Census of Employment and Wages (QCEW) (for U.S.-level data)

Fiscal Indicators — Revenues and Expenditures

Economic/ Fiscal	Category	Measure	Data Source
Fiscal	Gambling-Related Revenue	Gambling Fees, Tax	Source: Massachusetts Gaming Commission (MGC)
		Lottery Sales	Source: Massachusetts State Lottery Commission
		Lottery Revenue Distributed Locally	Source: Massachusetts State Lottery Commission
		Charitable Gambling Revenue	Source: Massachusetts State Lottery Commission
		Horse Racing Revenue	Source: Massachusetts Gaming Commission, Division of Racing, Racing Annual Report. http://massgaming.com/the-commission/division-of-racing/
	Non Gambling Revenue /In-Kind Received	Sales Tax	Source: Massachusetts Department of Revenue, Office of Tax Policy Analysis, Sales Tax by Municipality
		Personal Income Tax	Source: U.S. Bureau of Economic Analysis, Regional Data, Annual State Personal Income and Employment Series, SA50 Personal Income and Taxes, Personal Current Taxes
		Property Tax	Source: Massachusetts Department of Revenue (MA DOR), Division of Local Services, Property Tax Trend Report. http://www.mass.gov/dor/local-officials/municipal-data-and-financial-management/data-bank-reports/property-tax-information.html
	Government Expenditures	Services spending (Police, Fire, Ambulance, Sewer & Water Maintenance, etc.)	Source: Massachusetts Department of Revenue (DOR), Division of Local Services. http://www.mass.gov/dor/local-officials/municipal-data-and-financial-management/data-bank-reports/municipal-actual-revenues-and-expenditures.html
		Built Infrastructure Costs	Source: Massachusetts Department of Revenue (DOR), Division of Local Services. http://www.mass.gov/dor/local-officials/municipal-data-and-financial-management/data-bank-reports/municipal-actual-revenues-and-expenditures.html
		Regulatory Costs, including offset of fees within gambling-related revenue	Source: Massachusetts Gaming Commission (MGC)

Overview of Progress to Date

- Secondary data collection – significant progress across most measures
 - Preliminary baseline analysis of key measures and development of graphs/tables
 - Current focus on data profiles for host communities
- Data management system at UMDI and shared with SEIGMA Data Management Center
- Primary data collection for construction underway
 - Focus on mechanisms to collect employee/vendor info
- Community matching methodology for comparison analysis

Economic Impact: Goal and Challenges

- Goal: determine economic impact that casino opening has on host and surrounding communities
- Greatest challenge: absence of knowing what would have occurred if casino had not opened
- What do we compare casino community with?

Economic Impact: Methods

- Compare casino community before and after.
 - Ignores changing trends at state, regional, or national level. All changes attributed to casino
- Compare casino community with trends of Massachusetts, New England, and/or U.S.
 - Casino communities likely to be economically different than state, region, and nation. Possibly why they selected to allow a casino

Economic Impact: Methods

- Compare casino communities with matched control communities.
 - Choose a community or set of communities that are economically and demographically similar but do not have a casino and are not influenced by the casino. “Nearest neighbor” method
 - Matched community or communities are compared with casino community to improve estimation of economic impact

Nearest Neighbor Example

- Consider single selection variable, unemployment rate
- Nearest neighbor for Springfield is the city with an unemployment rate closest to Springfield's
- Extend this to other selection variables, e.g., per capita income
- Nearest neighbor for Springfield is city that is most similar across unemployment rate and per capita income

Economic Impact: Selection Variables

<i>Matching Variables</i>	Description
Unemployment Rate	Average unemployment rate (percent of the labor force that is unemployed), 2008-2012.
Job Growth	Average annual growth in the number of jobs, 2007-2011.
Labor Force Participation Rate	Average percent of population over 16 in the labor force, 2008-2012.
Household Income	Median household income over the period 2008-2012.
Percent of Population in Poverty	Percent of population living in poverty over the period 2008-2012.
Percent of the Population with College Degree	Percent of the population over age 25 with only a Bachelor's degree over the period 2008-2012.
Total Population	Total population over the period 2008-2012.
Percent of the Population that is Black	Percent of the population that is Black or African American over the period 2008-2012.
Percent of the Population that is Hispanic	Percent of the population that is Hispanic or Latino over the period 2008-2012.
Percent of Workforce Employed in Manufacturing	Average percent of the workforce employed in manufacturing, 2007-2011.
Sources: a. Local Area Unemployment Statistics (LAUS), Bureau of Labor Statistics (BLS) b. Employment and Wages Data (ES-202), BLS and State Employment Security Agencies c. Longitudinal Employer Household Dynamics Origin Destination Employment Statistics (LODES) U.S. Census Bureau d. American Community Survey (ACS), U.S. Census Bureau.	

Economic Impact: Selection Variables

- Selection variables chosen so that control communities are economically and demographically similar to casino communities
- Selection variables for period 2008-2012: *prior* to casino community selection
- Five best matched communities combined to create control jurisdiction

Economic Impact: Selection Variables

- We choose potential matched communities from New England (MA, CT, RI, VT, NH, ME) and NY, PA, and NJ
- Allows for large number of suitable matches
- Suitable matches: highest matching score, not within 25 miles of existing casino, similar population size and per capita income (75-150% of host community)

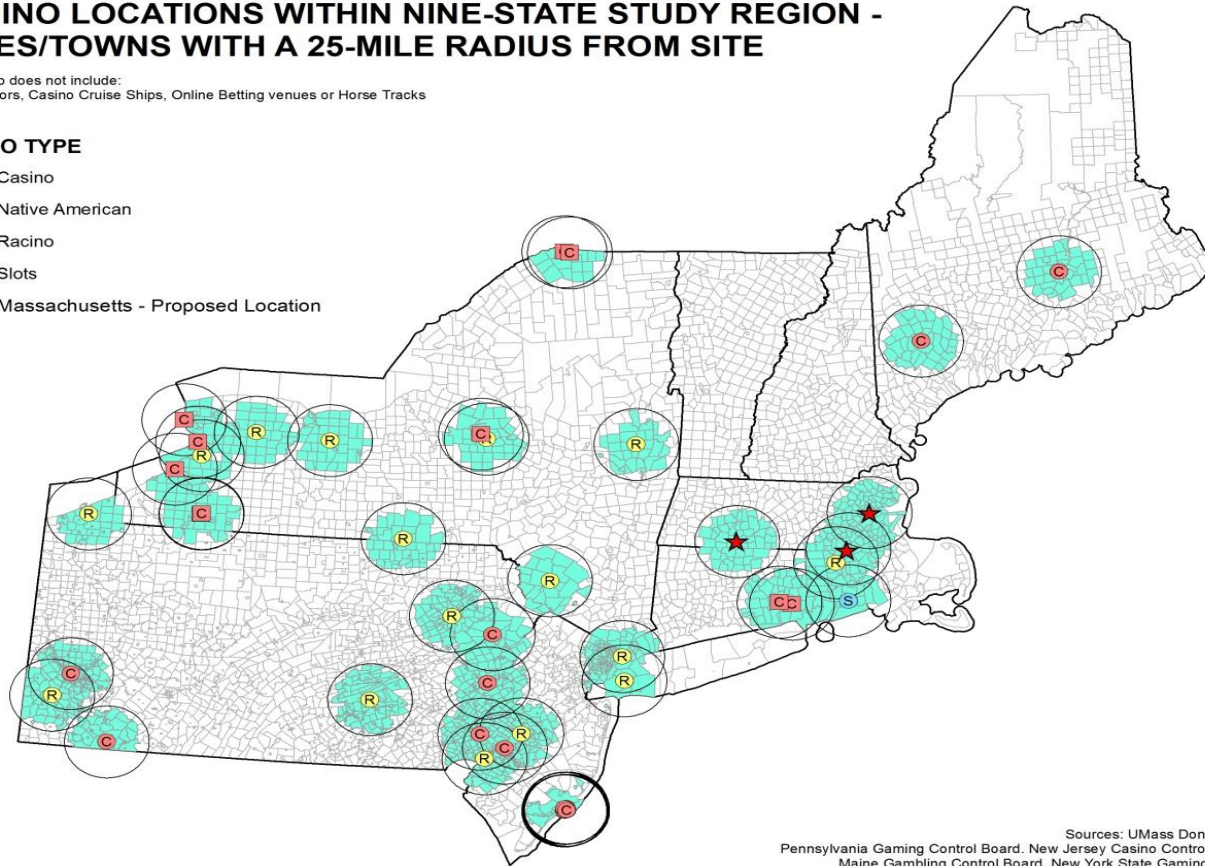
Northeast Casino Locations

CASINO LOCATIONS WITHIN NINE-STATE STUDY REGION - CITIES/TOWNS WITH A 25-MILE RADIUS FROM SITE

*Note: Map does not include:
Bingo Parlors, Casino Cruise Ships, Online Betting venues or Horse Tracks

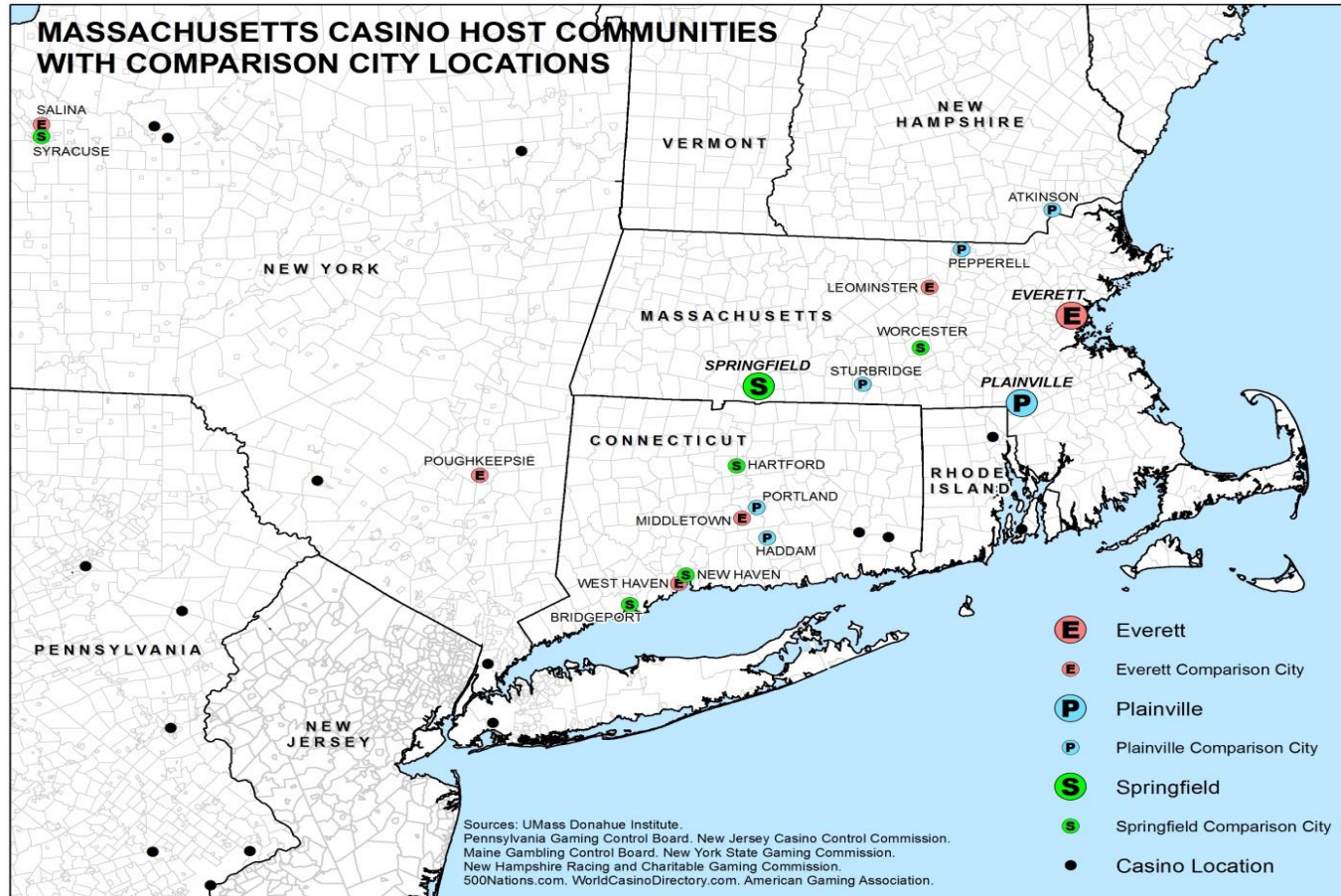
CASINO TYPE

- ⊙ Casino
- ⊠ Native American
- Ⓡ Racino
- Ⓢ Slots
- ★ Massachusetts - Proposed Location



Sources: UMass Donahue Institute.
Pennsylvania Gaming Control Board. New Jersey Casino Control Commission.
Maine Gambling Control Board. New York State Gaming Commission.
New Hampshire Racing and Charitable Gaming Commission.
500Nations.com. WorldCasinoDirectory.com. American Gaming Association.

Host and Matched Communities



Host and Matched Control Communities

Host and Matched Control Communities												
City/town	Population	Household Income	Percent Black	Percent Hispanic	Percent College Degree	Percent Poverty	Unempl. Rate	Percent Manuf.	Labor Force Partic.	Job Growth	Percent of Host City Population	Percent of Host City Household Income
Springfield, MA	153,278	\$35,163	21.6	39.5	10.5	28.7	10.9	5.08	56.97	-0.56	100%	100%
Bridgeport, CT	144,446	\$39,822	35.6	37.4	10.1	23.6	12.06	10.55	59.54	-1.53	94%	113%
Worcester, MA	181,473	\$45,679	11.3	20	18.4	20.1	8.54	7.25	58.1	-0.51	118%	130%
Hartford, CT	124,879	\$28,931	37.7	43	8.6	33.9	14.68	1.2	52.67	-1.37	81%	82%
New Haven, CT	129,898	\$38,482	35	26.5	14.8	26.9	11.56	3.5	55.78	0.58	85%	109%
Syracuse, NY	144,703	\$31,459	29.3	7.6	14.5	33.6	9.12	3.61	54.95	-3.01	94%	89%
Average match community	145,080	36,875	29.8	26.9	13.3	27.62	11.19	5.22	56.21	-1.17	95%	105%
Everett, MA	41,621	\$49,702	14.1	19.8	11.6	12.8	7.44	7.34	60.01	-1.55	100%	100%
West Haven, CT	55,386	\$51,911	19.7	16.2	12.7	11.7	9.18	7.63	68.53	-1.73	133%	104%
Poughkeepsie, NY	44,357	\$68,886	9.1	9	19.2	10	7.36	18.18	58.75	-1.52	107%	139%
Salina, NY	33,682	\$51,952	4.3	3.5	14.7	8.4	7.34	16.78	64.21	-0.4	81%	105%
Leominster, MA	40,879	\$59,604	5.7	13.4	17.6	9.9	9.16	15.97	61.44	-1.62	98%	120%
Middletown, CT	47,530	\$60,542	12.8	8.7	19.7	10.9	7.68	14.56	68.46	-3.18	114%	122%
Average match community	44,367	\$58,579	10.3	10.2	16.8	10.18	8.14	14.62	64.28	-1.69	107%	118%
Plainville, MA	8,278	\$83,750	0.9	1.7	26.6	4.7	8.44	11.93	76.89	-0.53	100%	100%
Haddam, CT	8,308	\$89,184	0	2.3	27.4	3.8	5.76	3.7	78.94	0.31	100%	106%
Atkinson, NH	6,756	\$82,889	0	1.8	26.5	4	6.24	8.89	70.96	-1.15	82%	99%
Pepperell, MA	11,537	\$85,150	0.2	1.6	26	4.2	6.22	6.34	70.69	-0.85	139%	102%
Portland, CT	9,500	\$92,344	1.2	3.8	25.1	5.1	6.98	13.06	70.01	-2.05	115%	110%
Sturbridge, MA	9,230	\$83,375	0.2	4	24.3	9	6.78	10.42	70.57	0.15	112%	100%
Average match community	9,066	\$86,588	0.3	2.7	25.9	5.22	6.4	8.48	72.23	-0.72	110%	103%
Average Massachusetts community	23,897	\$78,971	2.74	4.77	23.17	7.39	7.02	10.04	67.42	-0.61		

External Reviews

- Approach reviewed externally by Dr. Doug Walker and Dr. Michael O'Neil
- Also reviewed by MGC, DPH, SEIGMA team
- Reviewers validate methodology
- Concerns raised: proximity of some controls to casinos; lack of tourism and crime variables as selection criteria; using REMI for long-term prediction

Use of Matching Results

- Casino versus control communities used to analyze economic impacts (unemployment rate, job growth, labor force participation, and income)
- Compare host community's unemployment rate, job growth, etc. after casino opening with control communities to estimate impact of casino

Next Steps

- Community comparison analysis is only one component of economic analysis
- Combined with before/after analysis, other secondary data (comparison with MA and US, and primary impacts/REMI modeling
- Will revise and finalize white paper based on feedback received
- Working towards more comprehensive April reporting with data profiles of host communities, key informant interviews, construction effects

Questions/Comments