Evaluating the Economic Impact of the Eastern States Exposition on Western Massachusetts

Prepared by Regional Economic Models, Inc.

For

Eastern States Exposition

August 2008

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I. Overview of Project

Regional Economic Models, Inc (REMI) has constructed this comprehensive study evaluating the economic impact of the Eastern States Exposition (ESE) on Western Massachusetts. The comprehensive analysis is based upon economic activity generated by the planning and implementation of the fair. Using data inputs provided by the Eastern States Exposition and its own Policy Insight model for the primary analysis, REMI is able to recreate economic interactions on a regional basis. The report of economic indicators will include changes in measures of employment, gross regional product, income, consumer spending, and total population. The analysis built on this strong framework will provide a solid understanding of the short and long-term economic impact of the Eastern States Exposition, not only in Western Massachusetts, but all of New England.

In 2001, the Eastern States Exposition commissioned REMI to conduct a study to assess its economic impact on Western Massachusetts region. Working with financial information from the Exposition, surveys by Market Street Research, and its own internal modeling software, REMI released its findings. In 2000-dollar terms, the Eastern States Exposition increased regional output by over $87 million, personal income per capita by $28, and created 1,681 additional jobs within Hampden County, excluding the additional 3,500 temporary jobs necessary for the ESE.

For the assessment of the Eastern States Exposition's economic impact upon Western Massachusetts, REMI utilized its new, 70 sector Region Policy Insight Model for its 2008-projected impact. In addition to examining broad economic indicators, this report will take a specific focus on the implications that the Eastern States Exposition has for on-site employment, local contractors, and both on and off-site consumer spending.

To assess these effects, an economic simulation model, using REMI's Policy Insight software, was used as the basis for analysis. A model of Western Massachusetts was constructed using a wealth of data to create a control, or baseline, of the economy, that is, a Western Massachusetts without the Eastern States Exposition. Subsequently, a simulation was conducted using inputs provided by the Eastern States Exposition to simulate the impact it would have upon the region. The economic impact of the Eastern States Exposition is then taken to be the difference in values between the simulation and the control. It is most critical to note that this measures only exogenous spending, that is, spending of visitors from outside of the region.

II. Background of Eastern States Exposition

The Big E, on the grounds of Eastern States Exposition (ESE), is held annually in the town of West Springfield in Hampden County and runs for 17 days every September. Joshua L. Brooks founded ESE in the early 20th century in response to the decline in farming throughout New England and the continuous rise in production costs. Brooks wanted farmers to demonstrate new agricultural techniques and share farming technology. The National Dairy Show, the Exposition's inaugural event, opened in 1916. The first Eastern States Exposition took place in 1917. In an effort to make the Exposition a regional event, Brooks convinced the six states of New England to create a building that would spotlight each state's culture and major products.

New England Connected – The Avenue of the States
Is there a way to experience all the New England States have to offer in one day? The answer is yes! Eastern States Exposition offers a one-of-a-kind attraction, the Avenue of States, where one can visit the region without leaving the fairgrounds since the buildings and the land surrounding them are owned by each individual state.

Brooks envisioned all the New England states coming together to share ideas and improve regional agriculture in one location. Brooks thought the best way for this to happen would be for each state to construct a building to showcase traditional and new products, along with attractions, that made each New England state unique. His quest began with the construction of the Massachusetts Building in 1918 and its dedication the following year by then governor, Calvin Coolidge, marking the official launching of the Avenue of States. The Maine building was introduced in 1925. Four years later the Avenue received its third addition with the Green Mountain State's Vermont Building. The building was a Georgian Structure built with corners, windowsills, heads, columns and pilasters made of Vermont marble. Its roof is made of Vermont variegated slate. During the Great Depression of the 1930s, Brooks convinced The Granite State to construct the New Hampshire Building, which features the state's granite for its columns and trim and a curved porch and tall columns resembling those of the White House. The fifth addition came in 1938 with the Connecticut Building. The Nutmeg State's building was modeled after the Old Statehouse in Hartford, famous for its Bulfinch front, and features brownstone, brick and dignified wooden columns.

The Avenue of States was finally completed in 1957 with The Ocean State's Rhode Island Building. A replica of Newport's Old Statehouse, it marked the realization of Brooks' dream.

From New England Present to New England Past – Storrowton Village Museum
New England's past comes to life for those who step on the grounds of Storrowton Village.

Storrowton Village Museum represents the vision of another great contributor to ESE's development – Helen Osborn Storrow. The Village gives visitors, young and old, the opportunity to experience what New England life was like in the 19th century.

Storrow, who was born in upstate New York and married to Boston banker and attorney James Storrow, was the driving force behind the assembling of Storrowton Village. In 1927, she began

the creation of a permanent home for ESE's Home department, which she chaired. She personally directed the re-location of nine structures to the current Storrowton site. A one-room schoolhouse, a blacksmith's shop, meeting house and historic homes were taken apart "board by board, brick by brick and nail by nail," moved from their New Hampshire and Massachusetts locations and reassembled around a typical New England village green.

Today the antique village is a living history museum with authentic craftsmen and docents demonstrating how New Englanders lived in the 1800s. For two weeks in August children from across Western Massachusetts get a chance to live New England life of that era through Storrowton's seasonal enrichment program, "Early American Summer Days." During the summer as well as The Big E, tours of the Village are offered.

Storrowton also plays a role in education though its school programs, teacher workshops and other community outreach opportunities.

Today, The Big E, known as "New England's Autumn Tradition," accommodates numerous vendors and amusement rides and features The Big E Super Circus, crafts and agricultural competitions. ESE is also home to entertainment stages, the Mallary Agricultural Complex and most famously, the Eastern States Exposition Horse Show.

III. Customer Trends

The Eastern States Exposition attracts different customers from all over the country. In 2004 the average age of an ESE customer was 43 years old while the average visitor party size was 4. The average household had a median income of about $59,788. About 69.6% of the visitors who attended the ESE in 2004 were college educated. The average ESE visitor spent about $128. More specifically, 10.3% spent $0-$25, 58.4% spent $26-$100, and 31.3% spent over $100. About 86% of the visitors of the ESE have visited the previous years. The ESE also had a 95.7% customer satisfaction rate with 97% wishing to return.

Percentage of Visitors	Amount Spent
10.3%	$0-$25
58.4%	$26-$100
31.3%	$100

Past Economic Study

An economic study completed in 2001 by Regional Economic Models Inc. shows that the Eastern States Exposition had a positive impact on the Hampden County during 2001. Overall economic output as a result of outside tourists was $87 million annually for the Hampden County. The total visitor spending in 2001 was $73,153,966. The gross regional product was $51 million dollars. The ESE created 1,681 permanent jobs for the Hampden County along with 3,500 temporary jobs. The personal income that was derived from the ESE was $18,498,368, which increased the average person's income by $28.07. The Eastern States Exposition accounted for 9% of overall recreation and amusement in Hampden County in 2001.

Economic Concept	Amount
Overall Economic Output	$87,000,000
Total Visitor Spending	$73,153,966
Gross Regional Product	$51,000,000
Personal Income	$18,498,368
Permanent Jobs Created	1,681
Temporary Jobs Created	3,500

IV. Simulation Input Variables

Total Revenue

The revenue figures were extracted from the Eastern States Exposition Comparative Financial Statements for the period ending December 31, 2007. These revenue numbers were included for all fair and event categories, not the general operation of the business. The revenues generated from these events were treated within the REMI model as new business, based on the assumption that this money would not have occurred within the economy if the event did not exist.

Total revenue was aggregated into two categories, Total Amusement Revenue and Total Food Revenue, in order to input the amounts properly into the REMI model. The revenue figures are interpreted by the REMI model as additional output or sales in the Amusement and Recreation along with the Eating and Drinking industries. The revenue is translated into actual sales reflecting a new business in Hampden County that produces output in these industries. This study assumes that these figures would not have been generated and thereby introduced into Hampden County had the Eastern States not existed. In this case, the Eastern States Exposition generated $ 179 million into the Hampden County Economy.

Food Revenue figures include Vendor Revenues collected at the Big E. The figure is computed based on a survey given to Vendors doing business at the ESE this year.

Input Category	Dollar Amount
Amusement, gambling, recreation	89635897
Food services, drinking places	89635897
Amusement, gambling, recreation	-24380964
Food services, drinking places	-24380964
Amusement, gambling, recreation	13920908
Personal, laundry services	2287444
Local	1279267
Accommodation	4260480

V. Results

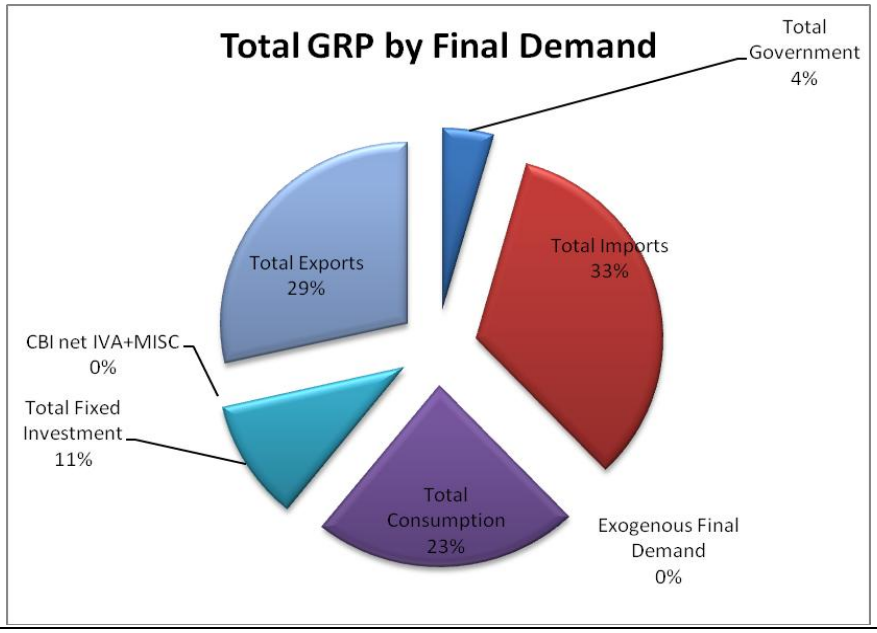
GRP (Gross Regional Product)

Gross Regional Product is defined as output or sales less intermediate inputs. GRP by final demand represents this concept in dollars. The main components of GRP are Investment, Consumption, Net Exports (Total Exports minus Total Imports), and Government Spending. The Big E generates an average of $150,588,000 of annual gross regional product which is .80 percent of the Hampden County Economy. This number is conservative because is accounts for 100 percent substitution for spending outside the Big E and in Hampden County and Western Massachusetts.

Total Exports represents the amount of local production (goods and services) sold out of the local region. Total Exports represented about $129.60 million of the total GRP exports within the Hampden County.

Total Consumption is defined as the total expenditure on goods and services out of local real disposable income, and is a final demand component of Gross Regional Product. Within the Hampden County, Total Consumption accounts for $104.35 million. The additional consumption leads to $3.9 million dollars of additional tax revenue for Massachusetts.

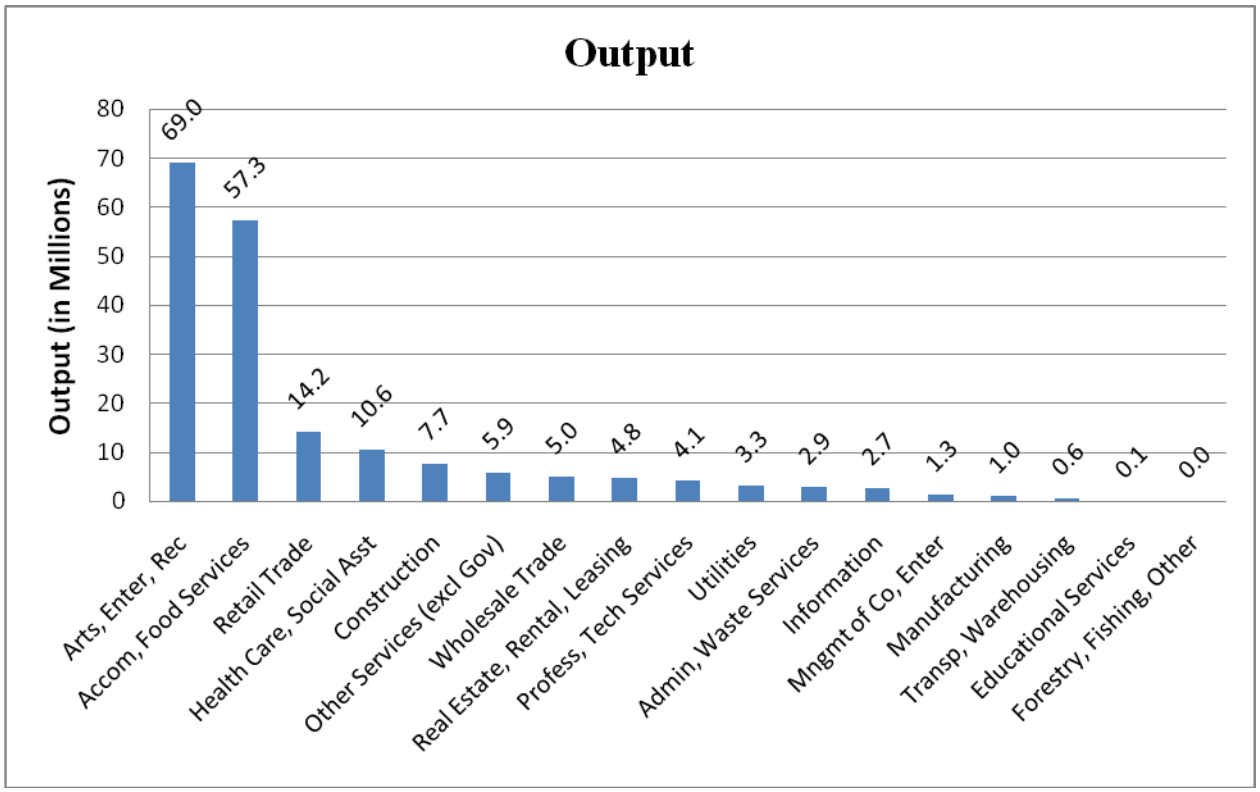
Fixed Investment represents dollars spent on additional business facilities and equipment, as well as new housing facilitates an increase in production. Any growth in output or sales will increase the number of businesses and the size of the business. In order to sustain certain levels of output, it becomes necessary to purchase capital investments. Fixed Investments accounted for $48.53 million of additional investments in Hampden County.



Output

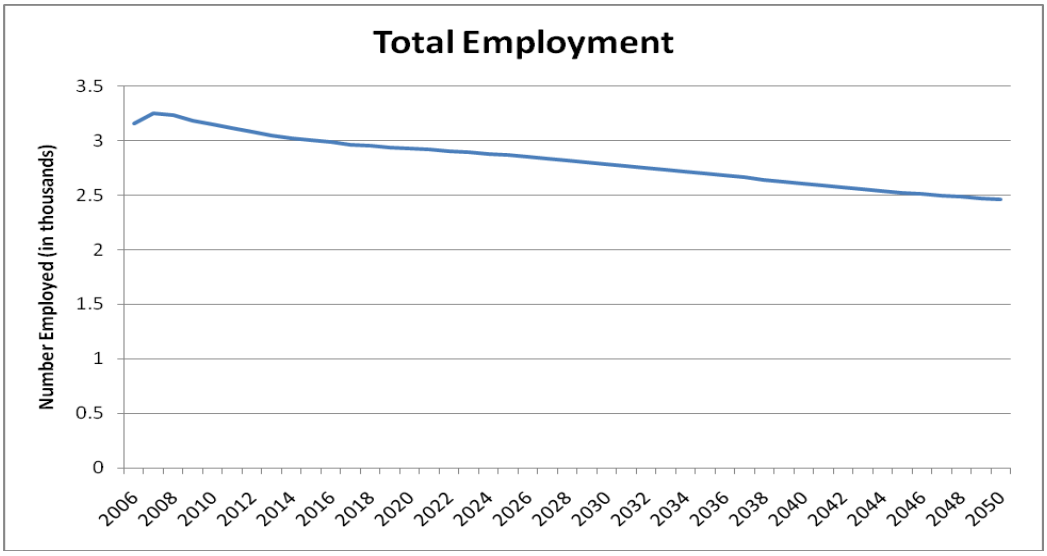
Total Output is defined as the amount of production, including all intermediate goods purchased as well as value added. Output can be considered actual sales for industries or sectors. As a direct result of this simulation, output increased by $224 million relative to the baseline.

Arts, Entertainment, and Recreation constituted $69 million while Accommodations and Food Services constituted $57.3 million of the total output in the Hampden County.

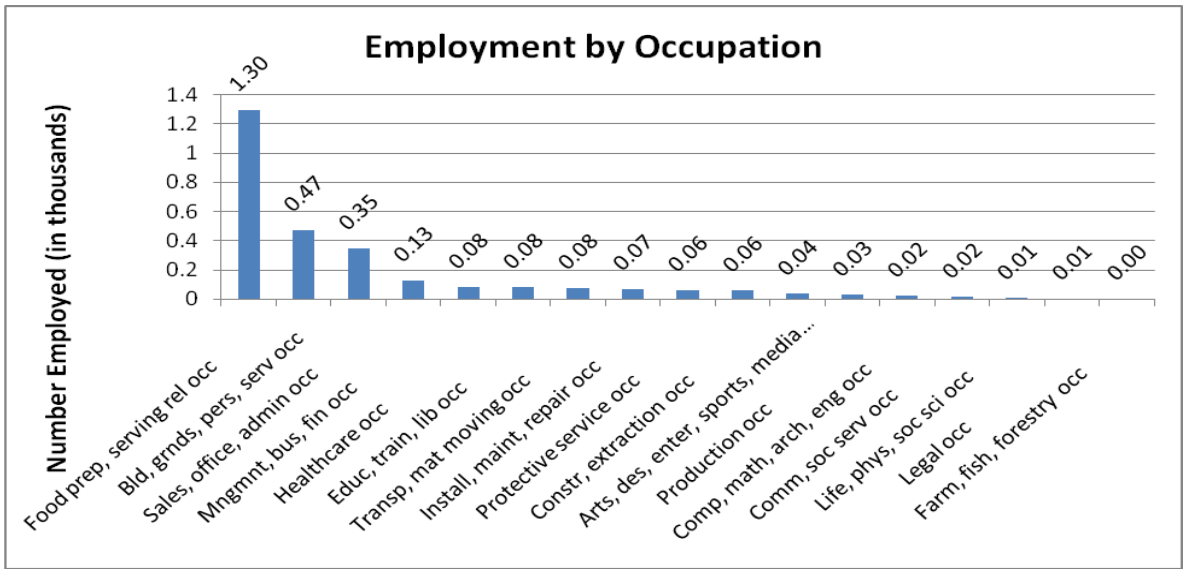


Employment

The ESE created 2,800 full-time equivalent, permanent jobs for the Hampden County. As technology and the use of resources continue to improve, employment decreases slightly over time due to increase in productivity and technology. Employment is comprised of estimates of the number of jobs, full-time plus part-time, by place of work. Full-time and part-time jobs are counted at equal weight. Employees, sole proprietors, and active partners are included, but unpaid family workers and volunteers are not included. Employment is affected by changes in Output and Labor Productivity.



Changes or shifts in Employment are directly linked to increase or decrease in output or sales of goods and services. REMI reports employment by industry or sector at different aggregate levels. The Hampden County model is a 70-sector model, which can generate detailed employment data for all 70 sectors.

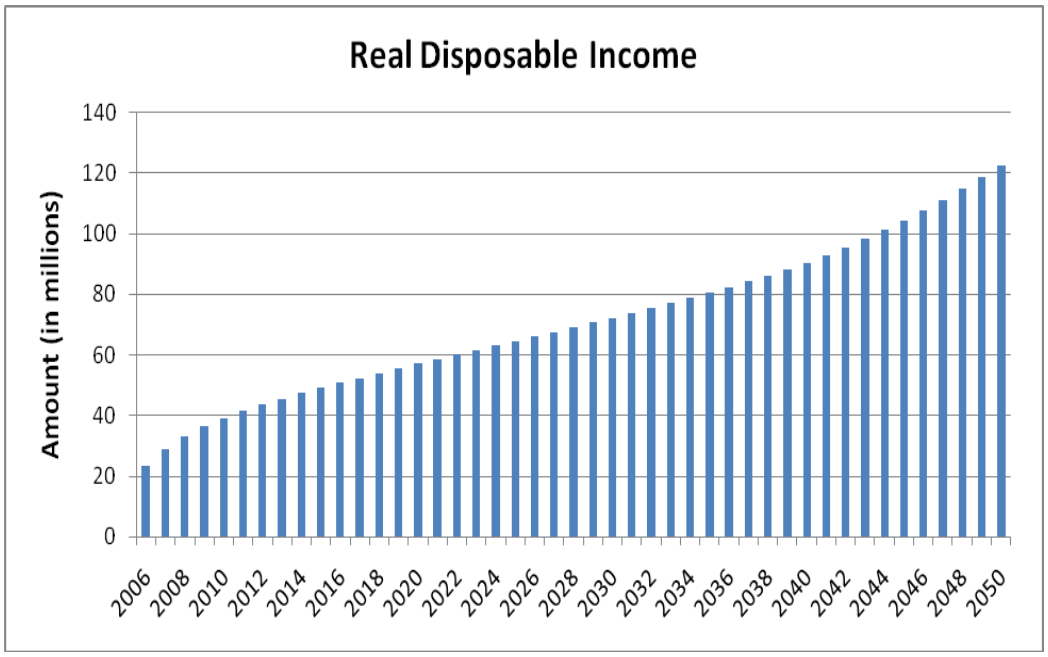


Personal Income

The REMI model defines Personal Income as the difference between Total Labor and Proprietors' Income less any Personal Contributions to Social Insurance plus Net Resident Adjustment plus any earned Dividends, Interest or Rent plus any Transfer Payments. Disposable Personal Income is equal to Personal Income less any Income Taxes.

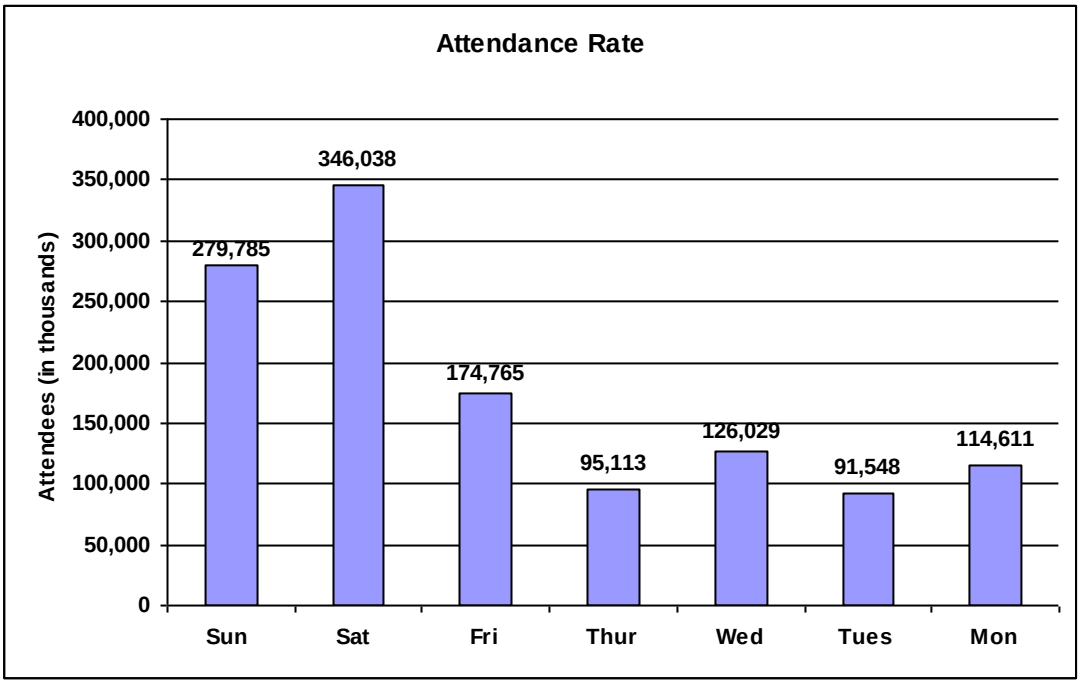
The Big E creates an annual average of 2800 of fulltime equivalent jobs, which leads to an additional annual average of $85.11 million of disposable income within Hampden County.

An increase in employment influences an increase in income, resulting in benefits reaching all members of the community. The Eastern States Exposition Center is responsible for economic growth in Hampden County.



Attendance

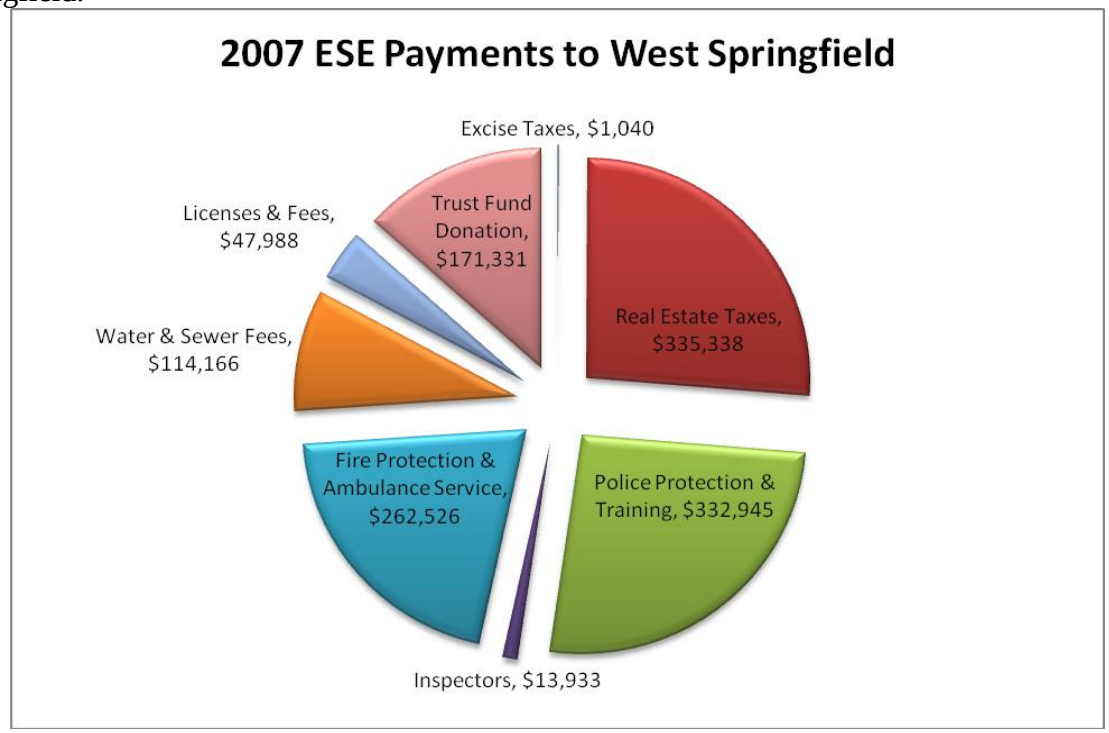
The attendance rate during the Eastern States Exposition varied day to day. Gross Revenues for the Fair totaled $13,920,908 in 2007.



VI. Eastern States Exposition Donations

Every year the Eastern States Exposition pays state expenses derived from taxes and other town services. This exceeded 1.25 million dollars in 2007. The Exposition payments included Real Estate Taxes, Police Protection and Training, Fire Protection and Ambulance Service, Water and Sewer Fees, Licenses and Fees, Inspectors, and Excise Taxes. The largest expense paid by the ESE is the Real Estate Taxes at $335,338. These taxes and service costs paid by the ESE to the greater West Springfield area expands the budget for the school systems, public services, and other beneficial community programs.

In 2007, Eastern States Exposition donated 1% of their 2006 revenue to the Big E/W. Springfield Trust Fund. This amounted to $171,331 resulting in a total of $1,279,267 to the town of West Springfield.



The Eastern States Exposition compliments parking fees for such events as agricultural shows. The ESE allows town residents to have a free parking pass for year-round events. The ESE grants free admission for all town students who attend during “West Springfield Day”, a donation valued at $45,000.

All the above demonstrated how the Eastern States Exposition greatly impacts the West Springfield community as well as the surrounding areas. The ESE will continue to positively affect the surrounding communities in years to come.

VII. Conclusion

This report, conducted for the Eastern States Exposition, analyzed the impacts of increased economic activity within the Hampden County. The Big E generated a total of $150,588,000 of Gross Regional Product. This number accounts for 100% substitution for spending outside the Big E and in Hampden County and Western Massachusetts. The Eastern States had a total output of $244,970,000 for Hampden County. The additional economic activity leads to an additional tax revenue of 7.53 million dollars for the state of Massachusetts and an additional hotel tax revenue of 468,653 from hotel stays during the Big E.

Economic Concept	2000 dollars
Gross Regional Product	$150,588,000
Output	$224,970,000
Massachusetts Sales Tax Revenue	$7,529,000
Hotel Tax Revenue	$468,653

The Eastern States Exposition creates employment, which is indicative of a growing economy, which of course benefits Hampden County as a whole. A rise in employment has a direct effect on rising income. The Eastern States employment rate averaged 2,800 jobs a year over a fifty-year span. The Eastern States creates $83,697,000 of personal disposable income due to its large number of employment.

Economic Concept	2000 dollars
Total Employment	2,800
Disposable Personal Income	$85,105,000

This analysis looked at the economic impact on Hampden County and assumed a benefit to the County. However, the economic effects resulting from the absence of the Eastern States Exposition theoretically would impose the opposite impact. The economic stimulation would not have been created thereby providing a loss to Hampden County.

VIII. REMI Overview

George I. Treyz, Professor of Economics at the University of Massachusetts at Amherst, founded Regional Economic Models Inc. in 1980. George founded REMI with the idea that government decision makers should test the economic effects of their policies before they're implemented. REMI Constructs models, which reveal the economic effects that policy initiatives or external events, may cause in the local economy. REMI is devoted to develop and support the use of economic models that inform government and corporate decisions. REMI is dedicated to understanding how government actions and other changes affect the world around us. REMI strongly believes that improved knowledge and conformation will lead to better decision making. REMI works to develop and support the use of economic models that inform government and corporate decisions.

REMI use's its Policy Insight model to advance in regional modeling. Policy Insight generates realistic year-by-year estimates of the total regional effects any specific policy initiative. Policy Insight has a wide range of policy variables for an accurate economic prediction. REMI's models have been used throughout the United States by state governments, planning agencies, universities, utilities and private consulting firms. The company's client list includes the AARP, Federal Aviation Administration, Environmental Protection Agency, New York Metropolitan Transport Authority, the state of Florida and the New England Governors Conference. REMI has had seminal papers on its model published in the *American Economic Review,* the *Review of Economics and Statistics,* and the *Journal of Regional Science.*

Data supplied by Eastern States Exposition and Market Street Research in Northampton, MA were used by REMI, in addition to REMI's own access to relevant economic data, in its analysis of the impact of tourism generated by ESE on Hampden County.

Appendix A: Overview of REMI Policy Insight

REMI utilized their Policy Insight tool to conduct the analyses. REMI Policy Insight 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 wage, price, and other economic factors.

The REMI 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 model. 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) Wages, Prices and Costs, and (5) Market Shares. The blocks and their key interactions are shown in Figures 1 and 2.

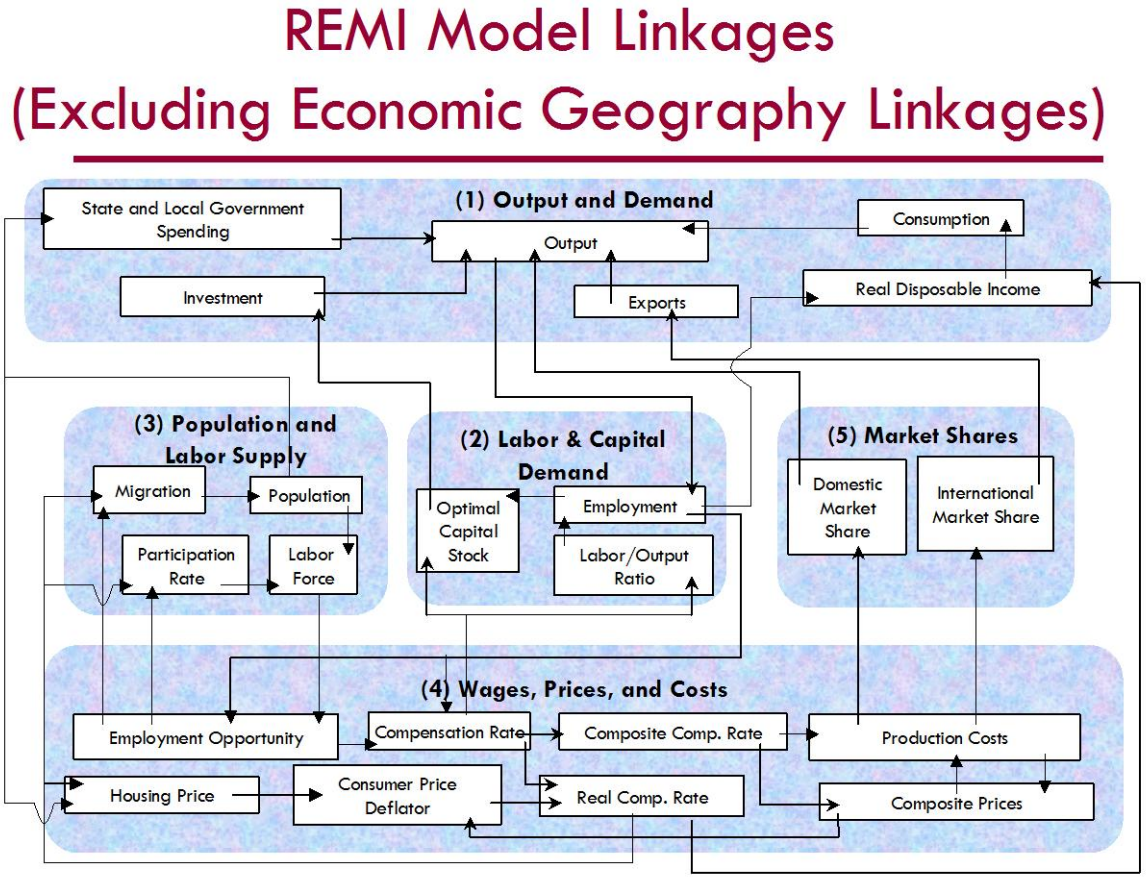


Figure 1

Block 1. Output and Demand

This block includes output, demand, consumption, investment, government spending, import, product access and export concepts. Output for each industry in New Mexico is determined by industry demand in the state and its trade with the US market, and international imports and exports.

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 the larger the choice set of inputs, the more likely that the input with the specific characteristics required for the job will be formed. 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 and gender, 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. Wages, Prices and Costs

This block includes delivered prices, production costs, equipment cost, the consumption deflator, consumer prices, the price of housing, and the wage 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, taking into account 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 output in the industry relative to the access by other uses of the product.

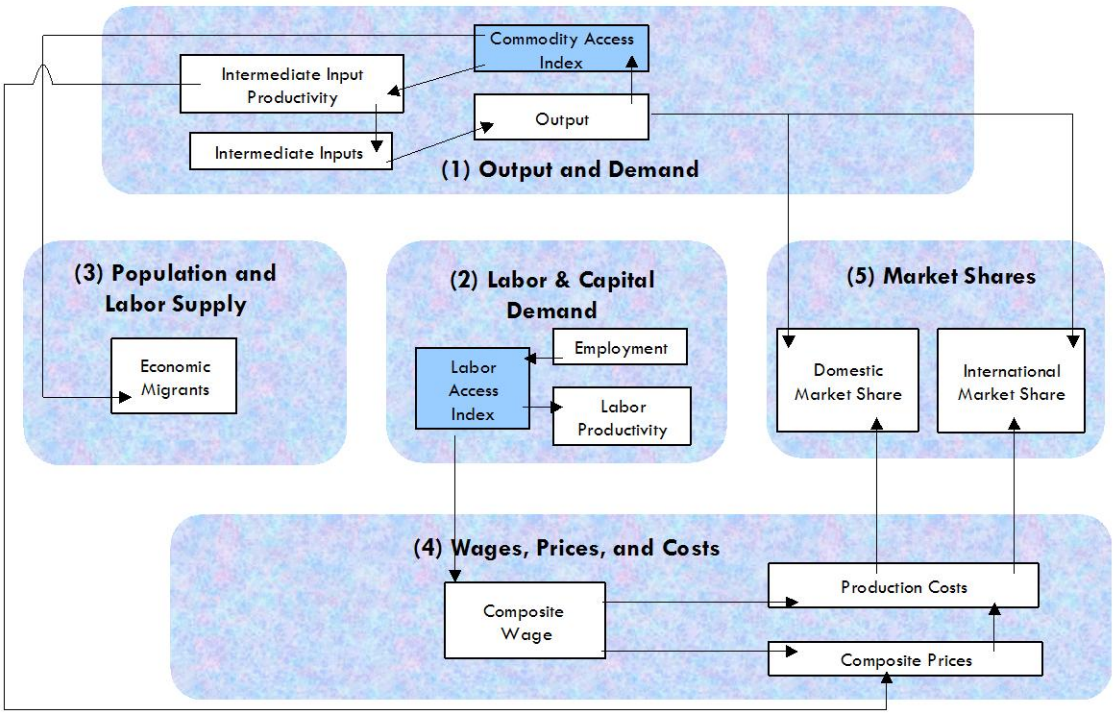
The cost of production for each industry is determined by cost of labor, capital, fuel and intermediate inputs. Labor costs reflect a productivity adjustment to account for access to specialized labor, as well as underlying compensation rates. Capital costs include costs of non-residential structures 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 price changes from their initial level depend 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 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.



As shown in Figure 2, 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 Force block. The Wages, Prices and Costs block includes composite prices, determinants of production costs, the consumption price deflator, housing prices, and the wage equations. The proportion of local, inter-regional and export markets captured by each region is included in the Market Shares block.

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