



**Kem C. Gardner**  
**POLICY INSTITUTE**  
THE UNIVERSITY OF UTAH

DAVID ECCLES SCHOOL OF BUSINESS

# Communications Surrounding Modeling with REMI

**Nate Lloyd and Phil Dean, Kem C. Gardner Policy Institute**  
**REMI Users' Conference**

October 23, 2024

INFORMED DECISIONS™

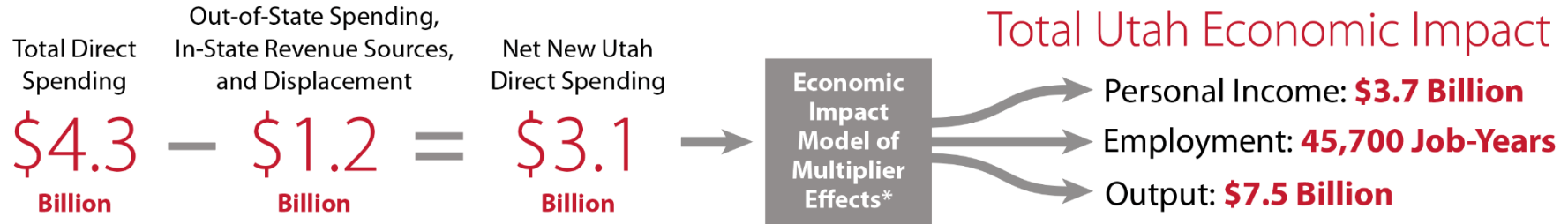
# Case Study 1: Olympics (3 Reports)

- **2002 Olympic & Paralympic Winter Games: Economic & Fiscal Impact Study** (multiple years)
- **Utah Olympic Legacy Foundation: Economic Contribution Study** (single-year analysis)
- **2034 Olympic & Paralympic Winter Games: Economic & Fiscal Impact Study** (multiple years)

# 2002 Olympic and Paralympic Winter Games

## Spending and Impacts

(2023 Dollars)



\*The economic impact model estimates the true multiplier, dynamic, and other effects resulting from the net new direct spending activity  
Source: Kem C. Gardner Policy Institute analysis of Salt Lake City-Utah Committee for the Games budget data, using the REMI PI+ model

# Utah Olympic Legacy Foundation

## History and Mission

- Organized in 2002 with an operational budget
- Manages and maintains key Olympic facilities, ensuring Utah's readiness to host the 2034 Winter Games
- Offers recreation opportunities for all ages and abilities, helping to promote healthy lifestyles and well-being



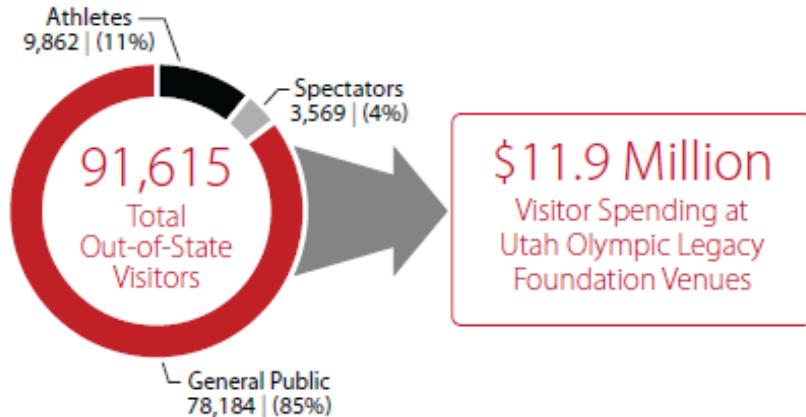
Source: Kem C. Gardner Policy Institute's research report "Utah Olympic Legacy Foundation: Contributing to Utah's Economy and Community Needs" (July 2024)

# Utah Olympic Legacy Foundation

## Annual Economic Contributions

Economic Indicator	Direct Contribution (People/Millions USD)	Total Contribution (People/Millions USD)	Multiplier
Jobs	660	932-1,160	1.4x-1.8x
GDP	\$47.4	\$73.2-\$82.4	1.5x-1.7x
Output	\$58.5	\$124.7-\$138.9	2.1x-2.4x

- Direct contributions capture spending by UOLF (\$46 million) and visitors to the Olympic venues (\$12 million)
- Annual total contributions expected to increase leading up to the 2034 Winter Games

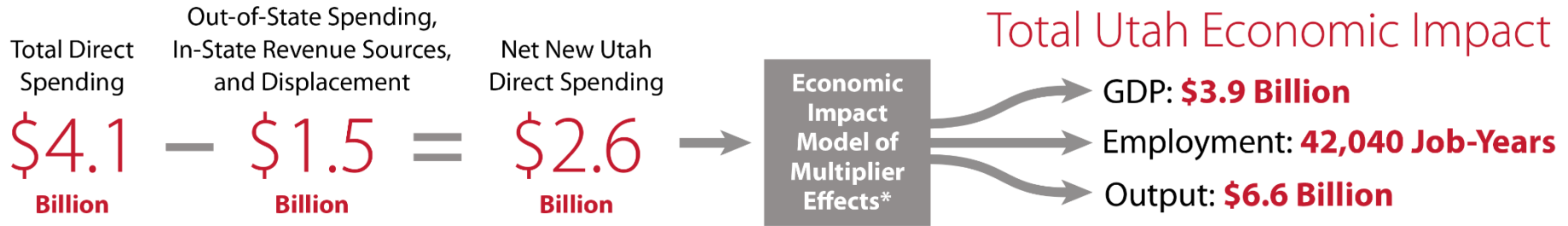


Source: Kem C. Gardner Policy Institute's forthcoming research report "Utah Olympic Legacy Foundation: Contributing to Utah's Economy and Community Needs" (July 2024)

# 2034 Olympic and Paralympic Winter Games

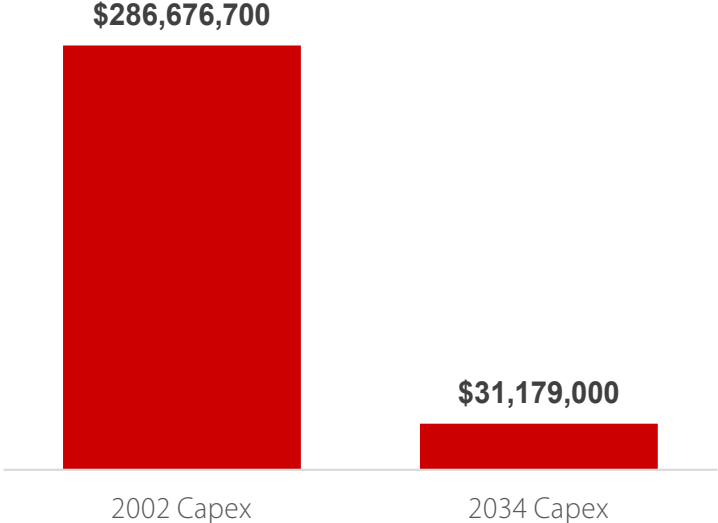
## Spending and Impacts

(2023 Dollars)



\*The economic impact model estimates the true multiplier, dynamic, and other effects resulting from the net new direct spending activity  
Source: Kem C. Gardner Policy Institute analysis of Salt Lake City-Utah Committee for the Games budget data, using the REMI PI+ model v3.1.0

# 2034 Olympic and Paralympic Winter Games Capital Expenditures



**SLC-UT Committee for the Games’ Budgeted Capital Investments for the 2034 Winter Games (2023 Dollars)**

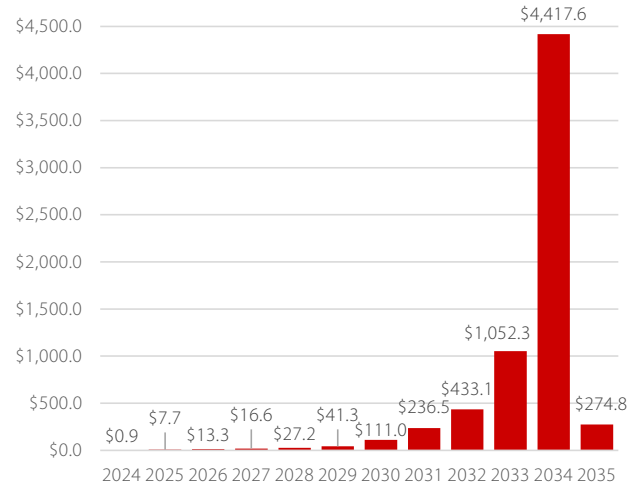
Venue	Estimated Cost
Utah Olympic Oval	\$4,502,000
Utah Olympic Park	\$23,192,000
Soldier Hollow	\$3,485,000
<b>Total Permanent Construction Expenditures</b>	<b>\$31,179,000</b>

Source: Salt Lake City-Utah Committee for the Games

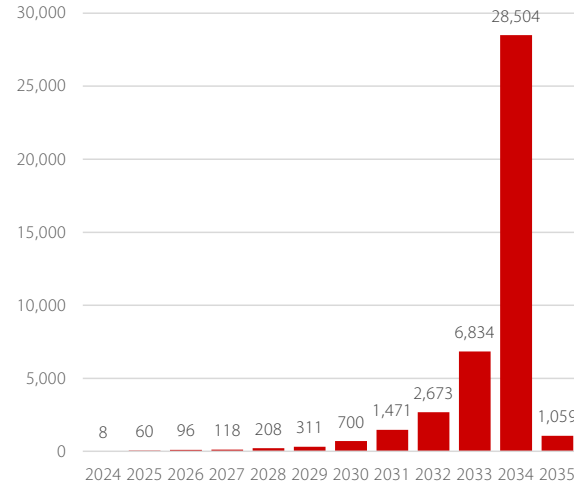
# 2034 Olympic and Paralympic Winter Games

## Economic Impacts

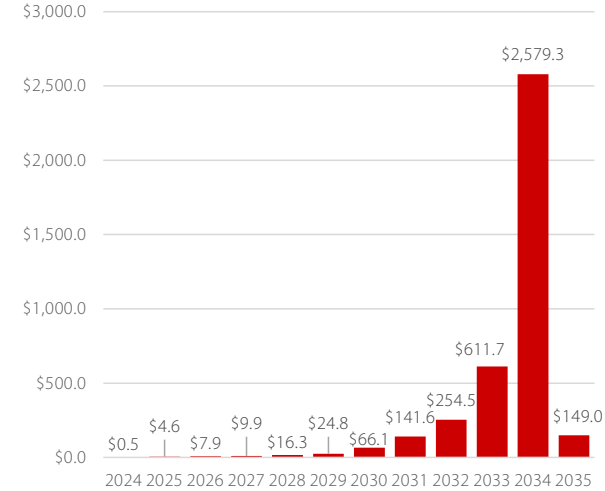
### Output (Industry Sales)



### Jobs



### GDP



Source: Kem C. Gardner Policy Institute analysis of Salt Lake City-Utah Committee for the Games budget data, using the REMI PI+ model v3.1.0



# 2034 Olympic and Paralympic Winter Games

## Fiscal Impacts

### Cumulative State and Local Fiscal Impacts of the 2034 Winter Games (Millions of Constant 2023 Dollars)

<b>Impact</b>	<b>Total</b>
<b>Estimated State Fiscal Impacts</b>	
Total State Revenues	\$167.2
Total State Operating Expenditures	\$146.2
<b>Net State Operating Revenue (Expenditure)</b>	<b>\$21.0</b>
<b>Estimated Local Fiscal Impacts</b>	
Total Local Revenues	\$138.1
Total Local Operating Expenditures	\$108.8
<b>Net Local Operating Revenue (Expenditure)</b>	<b>\$29.3</b>

Source: Kem C. Gardner Policy Institute analysis using the REMI PI+ model and the Gardner Institute fiscal model

# 2034 Olympic and Paralympic Winter Games

## Estimated State and Local Fiscal Impacts of the 2034 Winter Games (Millions of Constant 2023 Dollars)

Impact	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	Total
<b>Estimated State Fiscal Impacts</b>													
Total State Revenues	\$0.0	\$0.2	\$0.3	\$0.4	\$0.6	\$1.0	\$2.4	\$5.1	\$9.2	\$23.5	\$122.3	\$2.3	\$167.2
Total State Operating Expenditures	\$0.0	\$0.1	\$0.3	\$0.4	\$0.7	\$1.0	\$2.0	\$4.1	\$7.8	\$17.9	\$65.3	\$46.5	\$146.2
<b>Net State Operating Revenue (Expenditure)</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>(\$0.1)</b>	<b>(\$0.1)</b>	<b>(\$0.1)</b>	<b>\$0.3</b>	<b>\$1.0</b>	<b>\$1.4</b>	<b>\$5.6</b>	<b>\$56.9</b>	<b>(\$44.1)</b>	<b>\$21.0</b>
<b>Estimated Local Fiscal Impacts</b>													
Total Local Revenues	\$0.0	\$0.1	\$0.2	\$0.2	\$0.4	\$0.7	\$1.6	\$3.4	\$6.2	\$16.0	\$107.3	\$1.8	\$138.1
Total Local Operating Expenditures	\$0.0	\$0.1	\$0.2	\$0.3	\$0.5	\$0.8	\$1.5	\$3.0	\$5.8	\$13.3	\$48.3	\$35.0	\$108.8
<b>Net Local Operating Revenue (Expenditure)</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>(\$0.0)</b>	<b>(\$0.1)</b>	<b>(\$0.1)</b>	<b>(\$0.1)</b>	<b>\$0.1</b>	<b>\$0.4</b>	<b>\$0.4</b>	<b>\$2.7</b>	<b>\$59.0</b>	<b>(\$33.2)</b>	<b>\$29.3</b>

Source: Kem C. Gardner Policy Institute analysis using the REMI PI+ model and the Gardner Institute fiscal model

# Lessons Learned from Case Study 1

1. Fiscal analysis only of the impacts resulting from the Salt Lake City-Utah Committee for the Games budget (excludes state appropriations)
2. Economic and fiscal impacts are largely temporary

Winter Sports Venue Appropriations from Utah Legislature

Fiscal Year	One-time	Ongoing	Total
2019	\$6.0	\$3.0	\$9.0
2020	\$0	\$3.0	\$3.0
2021	\$0	\$3.0	\$3.0
2022	\$8.6	\$3.0	\$11.6
2023	\$22.0	\$3.0	\$25.0
2024	\$40.0	\$3.0	\$43.0
<b>Total</b>	<b>\$76.6</b>	<b>\$18.0</b>	<b>\$94.6</b>

Source: Office of the Legislative Fiscal Analyst (2023). Utah Olympic Legacy Foundation Funding Items.

# Case Study 2: Economic Development

- **State economic development office incentive review** (Governor's Office of Economic Opportunity)
- **Evaluate potential firm-level subsidy** via economic development tax credit (up to 30% of state revenue generated)

# Case Study 2: Economic Development

- **Consider seen and unseen impacts**
- **Includes both benefits AND COSTS**
  - Impacts on labor markets amid full employment, in-migration drives up housing prices, wages elsewhere, etc.
  - Impacts on tax revenues (net of up to 30% subsidy) AND government costs
  - Impacts on natural resources (especially water)

# Business and Economic Subcommittee Folio

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## ABC, Inc.

ABC is a privately-held company with headquarters in Duluth, MN. ABC manufactures all-terrain vehicles (ATVs) to support the growing local and national demand. (NAICS code 336999). ABC is looking to expand manufacturing operations into Utah (Salt Lake County). Beginning this year through 2032, the company proposes to create 185 new direct jobs in Utah, pay out about \$20 million in wages annually by 2032, and invest up to \$28 million over the next 10 years in the Greater Salt Lake Region. This proposal contemplates a post-performance refundable tax credit of 30% over ten years, estimated at \$5.1 to \$6.3 million.

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## SUMMARY FINDINGS

The economic and fiscal analysis yields the following summary findings:

- **Economic context** – This proposal comes to the state during significant economic uncertainty. The national and Utah economies appear poised for slower growth and a potential downturn over the next 12 months. Salt Lake County had the same unemployment rate as the state average (2.4% in February), and lower than the U.S. average (3.6%).
- **Economic challenges** – Inflation remains elevated, and Juab and Utah counties face serious housing and labor shortages like many parts of the state.
- **Economic analysis** – ABC’s specific industry (NAICS 336999) has an output multiplier of 1.95. The broader non-automobile transportation equipment manufacturing industry has a specialization score of 1.15 (more concentrated in Utah than in the nation at large).
- **Economic and fiscal impact** – ABC at steady state (years 3–4) is estimated to create 550–590 jobs (total economic impact), \$34–37 million in wages (total economic impact), and about \$1.7–1.9 million in direct state revenue annually.
- **Considerations** – There is one major competitor located in Utah - XYZ. The introduction of ABC to Utah would increase competitive forces between ABC and XYZ, especially with respect to products in the ATV industry, at the risk of government intervention creating an uneven playing field.

# Folio screenshots

# Folio screenshots

## Economic Insights

Economic data, trends, and challenges provide the essential context for understanding the market environment for this incentive decision.

### Economic Regions



- ★ Regional Center
- Greater Salt Lake
- Uintah Basin
- West Central
- East Central
- Southwest
- Southeast

### U.S. and Utah Economic Outlook *Prepared by the Utah Economic Council*

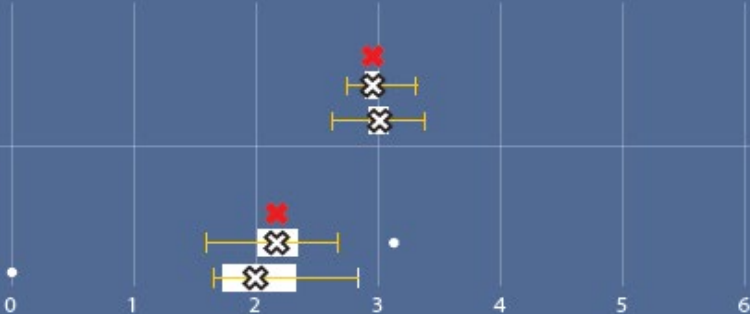


### Utah Unemployment Rate

2024 (Actual to date): **2.9%**  
2024 Forecast: **2.9%**  
2025 Forecast: **3.0%**

### U.S. Real GDP (% Change)

2024 (Actual to date): **2.3%**  
2024 Forecast: **2.3%**  
2025 Forecast: **2.0%**



# Folio screenshots

## Firm Impacts *(annual unless specified)*

Component	Data (Yr 8)	Notes
Average wage Total wages and salaries (direct + indirect + induced effects) on average	\$86,000 \$93-\$111 million (1.7x – 2.0x)	All jobs – 137.2% of Utah average; 118.6% of U.S. average  Sector-specific jobs* – 106.8% of Utah average; 107.7% of U.S. average
Direct jobs Total jobs (direct + indirect + induced effects)	633 1,500–1,800 (2.4x – 2.9x)	820 new jobs anticipated by 2038
Capital investment (direct)	About \$34,800,000	For land purchase, construction, office equipment, machinery, and vehicle

\*Sector here is broader than Edwards Lifesciences's 6-digit sector and includes all miscellaneous manufacturing (NAICS 339).

Source: Kem C. Gardner Policy Institute



# Folio screenshots

## Government Costs (annual unless specified)

Component	Data (Yr 8)*	Notes
K-12 education	\$2,640,000– 3,180,000	About \$11,000 state and local cost per student in Salt Lake County
Higher education	\$760,000 –920,000	About \$9,300 state cost per student
Transportation	\$1,220,000– 1,470,000	Statewide per capita estimate
Water	\$470,000–570,000	Statewide per capita estimate
General government and social services	\$3,170,000 –3,830,000	Statewide per capita estimate
<b>Total</b>	<b>\$8,260,000 - 9,970,000</b>	

\*Number ranges are from two different assumptions of the proposed project's effects on the market shares of existing firms in Utah and the local labor market. The government costs assume the population numbers from the table below.

Source: Kem C. Gardner Policy Institute

## Estimated Benefits (annual unless specified)

Component	Data (Yr 8)	Notes
Estimate of direct state revenue	+\$2,790,000	Average direct state revenue includes individual income tax of the firm's employees, corporate income tax, and state sales tax receipts associated with the firm's in-state taxable purchases.  \$38,010,000 total over 15 years
Tax rebate inducement	-\$700,000	\$9,500,000 over 15 years
Net direct state revenue	+\$2,090,000	
Estimate of direct local revenue	+\$640,000	Average impacts primarily from property tax. Any RDA impact would reduce this estimate.
Estimate of indirect* state and local revenue	+\$6,270,000– 7,920,000	Statewide per capita estimate
Industry output multiplier (RIMS Type II)	1.9 (NAICS 339112: Surgical and Medical Instrument Manufacturing)	Measure the extent of indirect and induced output effects caused by spending in the given industry. As context, national estimates indicate a multiplier of 2.4 for higher education spending on low-income students. The six-digit industry with the highest Utah output multiplier is cheese manufacturing (3.36), and many industries have 1.0 multipliers (no multiplier effects).
<b>Total</b>	<b>\$9,000,000 - 10,650,000</b>	

\*Indirect includes both indirect and induced effects

Source: Kem C. Gardner Policy Institute

# Communicating Results

- Why do people pay to conduct a study? To garner support
  - Ensure bias doesn't influence analysis
  - Don't overstate results / acknowledge limitations
- Consider audience sophistication (or lack thereof)
- Convey modeling uncertainty
  - Ranges under alternative assumptions
  - Rounding where appropriate

# Thank You!

Nate Lloyd | [Nate.Lloyd@utah.edu](mailto:Nate.Lloyd@utah.edu)  
Phil Dean | [Phil.Dean@utah.edu](mailto:Phil.Dean@utah.edu)

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# **Kem C. Gardner Policy Institute**

Thomas S. Monson Center | 411 E. South Temple Street  
Salt Lake City, UT 84111 | 801-585-5618 | [gardner.utah.edu](http://gardner.utah.edu)

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# Appendix

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# 2002 Olympic and Paralympic Winter Games

“Far and away, the most successful Olympics, summer or winter, in history.”

– Dick Ebersol, President of NBC Sports  
(Feb. 2002)

- Surplus of **\$163 million** (2002 dollars)
- Endowment of **\$76 million**, preserving venues and developing Utah as a winter sports capital
- Increase in state’s visibility and awareness
- Travel and tourism impacts
- Increase in civic pride, social capital, physical and mental well-being, business development opportunities, etc.

Sources: Kem C. Gardner Policy Institute’s Policy Brief “Utah’s Olympic Economic Legacy” (Feb. 2018) and research report “2030 Olympic and Paralympic Winter Games in Utah (Report Supplement)” (April 2023)

# REMI Policy Variables for Study of 2034 Games

Olympics 2034

Save Forecast Import Export Print Tools Select Inputs [Inputs List](#) Forecast Options Results

Policy Variable Inputs		
Active	Edit	Group
<input checked="" type="checkbox"/>		Expenditures - Demand
<input checked="" type="checkbox"/>		Expenditures - Sales
<input checked="" type="checkbox"/>		Investment
<input checked="" type="checkbox"/>		Detailed Sales
<input checked="" type="checkbox"/>		Property Income
<input checked="" type="checkbox"/>		Employment
<input checked="" type="checkbox"/>		Visitor Spending
<input type="checkbox"/>		Federal Security Spending
<input checked="" type="checkbox"/>		Federal Security Spending (detailed)

60 out of 61 policy variables active. Saved Utah (UT) - Single Region 70 Sector Mode

Source: REMI PI+ model v3.1.0

# REMI Industry Sales for Study of 2034 Games

Policy Variable Inputs																		
Active	Edit	Group																
<input checked="" type="checkbox"/>				Expenditures - Sales														
Active	View	Category	Detail	Region	Units	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
<input checked="" type="checkbox"/>		Industry Sales (Exogenous Production)	22 - Utilities	Utah	Nominal \$ (000s)	0	0	0	0	0	0	0	37,996,148	154,720,521	393,715,961	1006,906,914	4728,014,441	1880,796,210
<input checked="" type="checkbox"/>		Industry Sales (Exogenous Production)	23 - Construction	Utah	Nominal \$ (000s)	0	0	0	0	0	0	0	0	0	0	17,192,253	12,256,177	356,700,056
<input checked="" type="checkbox"/>		Industry Sales (Exogenous Production)	323 - Printing and related support activities	Utah	Nominal \$ (000s)	0	0	0	0	0	0	0	0	32,260,122	98,486,164	167,097,481	537,597,691	2,605,646,510
<input checked="" type="checkbox"/>		Industry Sales (Exogenous Production)	334 - Computer and electronic product manufacturing	Utah	Nominal \$ (000s)	0	0	0	0	0	0	0	167,923,991	683,053,500	1,736,484,911	1,766,433,711	1,797,388,881	2,744,244,711
<input checked="" type="checkbox"/>		Industry Sales (Exogenous Production)	339 - Miscellaneous manufacturing	Utah	Nominal \$ (000s)	0	0	0	0	0	0	0	0	0	240,198,751	171,345,401	498,953,591	1,000,000,000
<input checked="" type="checkbox"/>		Industry Sales (Exogenous Production)	42 - Wholesale trade	Utah	Nominal \$ (000s)	0	0	0	0	0	0	31,735,212	182,968,481	629,852,821	1,567,617,172	1,623,997,701	1,826,949,411	3,736,693,811
<input checked="" type="checkbox"/>		Industry Sales (Exogenous Production)	44-45 - Retail trade	Utah	Nominal \$ (000s)	0	0	0	0	0	0	50,714,914	77,430,414	356,403,351	730,237,541	1,095,502,211	1,747,079,211	12,134,997,111
<input checked="" type="checkbox"/>		Industry Sales (Exogenous Production)	481 - Air transportation	Utah	Nominal \$ (000s)	0	0	0	0	0	0	0	77,390,191	157,529,631	200,477,471	204,130,231	166,317,861	1,000,000,000
<input checked="" type="checkbox"/>		Industry Sales (Exogenous Production)	485 - Transit and ground passenger transportation	Utah	Nominal \$ (000s)	0	0	0	0	0	0	2,467,388,911	3,767,596,511	42,376,520	122,883,891	199,684,421	216,812,311	3,394,209,311
<input checked="" type="checkbox"/>		Industry Sales (Exogenous Production)	487-488 - Scenic and sightseeing transportation; Support activities	Utah	Nominal \$ (000s)	0	0	0	0	0	0	0	20,099,997	203,050,161	344,642,461	1085,696,631	545,189,961	1,000,000,000
<input checked="" type="checkbox"/>		Industry Sales (Exogenous Production)	493 - Warehousing and storage	Utah	Nominal \$ (000s)	0	0	0	0	0	0	0	0	90,940,830	154,332,681	628,651,791	2,305,193,111	1,000,000,000
<input checked="" type="checkbox"/>		Industry Sales (Exogenous Production)	512 - Motion picture and sound recording industries	Utah	Nominal \$ (000s)	0	0	0	0	0	0	167,173,901	680,741,021	1,732,295,311	1,763,854,411	1,796,181,311	2,744,244,711	1,000,000,000
<input checked="" type="checkbox"/>		Industry Sales (Exogenous Production)	517 - Telecommunications	Utah	Nominal \$ (000s)	0	0	0	0	0	0	334,691,175	1,362,609,011	3,466,786,111	3,529,208,511	3,593,131,111	5,488,489,511	1,000,000,000
<input checked="" type="checkbox"/>		Industry Sales (Exogenous Production)	518, 519 - Data processing, hosting, and related services; Other	Utah	Nominal \$ (000s)	0	0	0	84,201,862	85,741,084	87,305,603	444,501,421	905,144,231	921,470,501	1,876,527,511	1,910,795,511	3,113,470,411	1,000,000,000
<input checked="" type="checkbox"/>		Industry Sales (Exogenous Production)	521, 522 - Monetary authorities - central bank; Credit intermediation	Utah	Nominal \$ (000s)	0	0	0	0	0	0	0	425,147,551	432,836,011	881,606,931	897,926,041	1,829,496,511	1,000,000,000
<input checked="" type="checkbox"/>		Industry Sales (Exogenous Production)	524 - Insurance carriers and related activities	Utah	Nominal \$ (000s)	0	0	0	456,029,631	464,311,411	472,719,551	481,264,581	489,096,411	749,584,111	765,341,011	1,033,009,111	1,893,850,111	1,000,000,000
<input checked="" type="checkbox"/>		Industry Sales (Exogenous Production)	531 - Real estate	Utah	Nominal \$ (000s)	0	0	71,775,950	73,148,046	94,658,170	131,136,881	239,684,481	445,449,651	636,832,361	835,212,521	1,175,632,511	4,553,263,711	1,000,000,000
<input checked="" type="checkbox"/>		Industry Sales (Exogenous Production)	532, 533 - Rental and leasing services; Lessors of nonfinancial assets	Utah	Nominal \$ (000s)	0	0	0	0	0	0	554,677,351	1,079,792,511	2,637,728,411	6,711,613,811	26,090,539,111	1,000,000,000	1,000,000,000
<input checked="" type="checkbox"/>		Industry Sales (Exogenous Production)	54 - Professional, scientific, and technical services	Utah	Nominal \$ (000s)	0	2,208,413	7,415,969	32,513,853	34,527,899	117,956,231	295,652,961	2,228,548,711	4,773,723,811	6,805,810,011	8,697,273,811	14,208,293,111	1,000,000,000
<input checked="" type="checkbox"/>		Industry Sales (Exogenous Production)	561 - Administrative and support services	Utah	Nominal \$ (000s)	0	32,755,132	346,496,991	404,751,511	512,259,271	665,548,571	1,151,703,211	3,410,741,011	6,263,058,411	10,327,414,111	19,849,752,511	85,355,757,111	1,000,000,000
<input checked="" type="checkbox"/>		Industry Sales (Exogenous Production)	562 - Waste management and remediation services	Utah	Nominal \$ (000s)	0	0	0	0	0	0	51,541,352	157,413,201	267,173,021	1,088,439,511	3,936,189,511	1,000,000,000	1,000,000,000
<input checked="" type="checkbox"/>		Industry Sales (Exogenous Production)	61 - Educational services; private	Utah	Nominal \$ (000s)	0	6,078,166	20,389,188	53,638,841	58,429,182	94,170,372	134,518,811	181,557,511	354,478,781	632,157,291	1,427,860,711	1,944,958,811	1,000,000,000
<input checked="" type="checkbox"/>		Industry Sales (Exogenous Production)	621 - Ambulatory health care services	Utah	Nominal \$ (000s)	0	0	0	0	0	0	0	248,610,381	1,266,137,311	1,289,695,711	2,338,718,811	1,000,000,000	1,000,000,000
<input checked="" type="checkbox"/>		Industry Sales (Exogenous Production)	711 - Performing arts, spectator sports, and related industries	Utah	Nominal \$ (000s)	0	0	76,772,245	216,604,951	262,550,711	1,265,402,911	1,321,471,511	1,455,276,211	2,740,654,211	2,888,076,511	4,313,788,811	13,495,515,111	1,000,000,000
<input checked="" type="checkbox"/>		Industry Sales (Exogenous Production)	713 - Amusement, gambling, and recreation industries	Utah	Nominal \$ (000s)	0	0	117,952,311	120,151,841	183,510,201	1,868,488,711	1,902,458,511	2,582,459,911	2,628,863,911	2,676,934,111	6,815,496,111	11,455,198,111	1,000,000,000
<input checked="" type="checkbox"/>		Industry Sales (Exogenous Production)	721 - Accommodation	Utah	Nominal \$ (000s)	0	6,229,640	6,348,059	9,694,769	9,870,089	10,048,376	101,499,981	103,307,321	469,369,841	499,512,241	893,261,311	1,000,000,000	1,000,000,000
<input checked="" type="checkbox"/>		Industry Sales (Exogenous Production)	722 - Food services and drinking places	Utah	Nominal \$ (000s)	0	2,225,981	7,466,526	11,130,828	12,727,898	21,754,965	38,796,420	60,925,764	127,788,341	1,685,141,611	639,105,111	231,69,826	1,000,000,000
<input checked="" type="checkbox"/>		Industry Sales (Exogenous Production)	812 - Personal and laundry services	Utah	Nominal \$ (000s)	0	0	0	0	0	0	0	70,411,583	214,290,591	362,592,071	368,265,171	643,650,141	1,000,000,000
<input checked="" type="checkbox"/>		Industry Sales (Exogenous Production)	813 - Religious, grantmaking, civic, professional, and similar activities	Utah	Nominal \$ (000s)	0	0	0	0	0	0	0	0	0	0	0	1,989,021,211	1,000,000,000

Source: REMI PI+ model v3.1.0



# Policy Variables Expanded for Study of 2034 Games

Investment																		
Active	View	Category	Detail	Region	Units	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
<input checked="" type="checkbox"/>		Investment Spending	Nonresidential Structures	Utah	Nominal \$ (000s)	0	0	0	0	0	0	0	0	0	0	17585.926	11939.831	0
<input checked="" type="checkbox"/>		Detailed Investment	Furniture and fixtures	Utah	Nominal \$ (000s)	0	0	0	21.737126	22.178005	22.609845	46.097833	117.47739	239.49529	629.43494	944.68440	2456.3050	7202.5326
<input checked="" type="checkbox"/>		Detailed Investment	Other equipment	Utah	Nominal \$ (000s)	0	0	0	10.868563	11.089025	11.304922	23.048916	58.738695	119.74764	314.71747	472.34220	1228.1525	3601.2663
<input checked="" type="checkbox"/>		Investment Spending	Nonresidential Equipment	Utah	Nominal \$ (000s)	0	0	0	0	0	0	0	0	0	0	-12523.842	-10365.166	0
<input checked="" type="checkbox"/>		Investment Spending	Nonresidential Intellectual Property Products	Utah	Nominal \$ (000s)	0	0	0	0	0	0	0	0	0	0	-4132.9161	-4797.9561	0
Detailed Sales																		
Active	View	Category	Detail	Region	Units	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
<input checked="" type="checkbox"/>		Detailed Industry Sale	GSLGE - State and local government educat	Utah	Nominal \$ (000s)	0	0	0	357.83447	365.40904	559.21253	570.45898	581.85931	683.59245	1089.3844	1302.7358	2585.9752	4384.7368
<input checked="" type="checkbox"/>		Detailed Industry Sale	GSLGO - State and local government other se	Utah	Nominal \$ (000s)	0	0	0	653.97959	667.22229	680.64094	694.24321	708.04438	722.01385	736.13634	1500.8848	765.03158	0
Property Income																		
Active	View	Category	Detail	Region	Units	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
<input checked="" type="checkbox"/>		Property Income	Rent	Utah	Nominal \$ (000s)	0	0	0	0	0	0	0	0	25.805272	26.343022	134.44167	137.21024	2464.6869
Employment																		
Active	View	Category	Detail	Region	Units	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
<input checked="" type="checkbox"/>		Compensation	Compensation: 711 - Performing arts, specta	Utah	Nominal \$ (Units)	0	0	15468	403818.25	638275.98	734459.58	1054779.8	2617882.9	4047064.5	9215260.5	18272938.5	73220756.1	144464131
<input checked="" type="checkbox"/>		Employment	Industry Employment,Cancel Out Effect on Ir	Utah	Units	0	0	3.825	9.9454105	15.683147	17.978242	25.628558	63.115105	96.776495	218.41651	428.80020	1700.2826	3404.0080
Visitor Spending																		
Active	View	Category	Detail	Region	Units	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
<input checked="" type="checkbox"/>		Industry Sales (Exog)	44-45 - Retail trade	Utah	Nominal \$ (Units)	0	0	0	0	0	0	0	0	0	0	0	0	39405356.0
<input checked="" type="checkbox"/>		Industry Sales (Exog)	485 - Transit and ground passenger transpor	Utah	Nominal \$ (Units)	0	0	0	0	0	0	0	0	0	0	0	0	29727484.8
<input checked="" type="checkbox"/>		Industry Sales (Exog)	532, 533 - Rental and leasing services; Lessc	Utah	Nominal \$ (Units)	0	0	0	0	0	0	0	0	0	0	0	0	29164385.4
<input checked="" type="checkbox"/>		Industry Sales (Exog)	713 - Amusement, gambling, and recreation i	Utah	Nominal \$ (Units)	0	0	0	0	0	0	0	0	0	0	0	0	25042737.7
<input checked="" type="checkbox"/>		Industry Sales (Exog)	721 - Accommodation	Utah	Nominal \$ (Units)	0	0	0	0	0	0	0	0	0	0	0	0	42718913.2
<input checked="" type="checkbox"/>		Industry Sales (Exog)	722 - Food services and drinking places	Utah	Nominal \$ (Units)	0	0	0	0	0	0	0	0	0	0	0	0	14413467.2
<input checked="" type="checkbox"/>		Industry Sales (Exog)	812 - Personal and laundry services	Utah	Nominal \$ (Units)	0	0	0	0	0	0	0	0	0	0	0	0	3659146.75
Federal Security Spending																		
Active	View	Category	Detail	Region	Units	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
<input checked="" type="checkbox"/>		Detailed Industry Sale	561600 - Investigation and security services	Utah	Nominal \$ (000s)	0	0	0	0	0	0	0	0	2237.8630	6831.7254	11589.109	23595.071	194611.41

Source: REMI PI+ model v3.1.0

# REMI Policy Variables for UOLF Study

Policy Variable Inputs				
Active	Edit	Group		
 <input type="checkbox"/>	  	Industry Employment shock		
 <input checked="" type="checkbox"/>	  	Compensation shock		
 <input checked="" type="checkbox"/>	  	CapEx - Exogenous Final Demand		
 <input checked="" type="checkbox"/>	  	Nonpayroll Op Expenses - Exogenous Final Demand		
 <input checked="" type="checkbox"/>	  	Visitor Spending - Industry Sales (Exogenous Production)		
 <input checked="" type="checkbox"/>	  	Firm Employment Shock		

Source: REMI PI+ model v3.1.0

# REMI Compensation and Employment Variables for UOLF Study

Policy Variable Inputs									
Active	Edit		Group						
<input type="checkbox"/>			<input type="checkbox"/> Industry Employment shock						
<input checked="" type="checkbox"/>			<input type="checkbox"/> Compensation shock						
Active	View	Category	Detail	Region	Units	2022	2023	2024	
<input checked="" type="checkbox"/>		Compensation	Compensation: 61 (Educational services; private)	Utah	Nominal \$ (Units)	0	-964402	0	
<input checked="" type="checkbox"/>		Compensation	Compensation: 711 (Performing arts, spectator sports, and re	Utah	Nominal \$ (Units)	0	-4925024	0	
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>									
<input checked="" type="checkbox"/>			<input type="checkbox"/> CapEx - Exogenous Final Demand						
<input checked="" type="checkbox"/>			<input type="checkbox"/> Nonpayroll Op Expenses - Exogenous Final Demand						
<input checked="" type="checkbox"/>			<input type="checkbox"/> Visitor Spending - Industry Sales (Exogenous Production)						
<input checked="" type="checkbox"/>			<input type="checkbox"/> Firm Employment Shock						
Active	View	Category	Detail	Region	Units	2022	2023	2024	
<input checked="" type="checkbox"/>		Employment	Firm Employment: 61 (Educational services; private)	Utah	Units	0	-68.6	0	
<input checked="" type="checkbox"/>		Employment	Firm Employment: 711 (Performing arts, spectator sports, anc	Utah	Units	0	-353.2	0	
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>									

Source: REMI PI+ model v3.1.0

# REMI Exogenous Final Demand for UOLF Study

Policy Variable Inputs												
Active	Edit	Group										
<input type="checkbox"/>				Industry Employment shock								
<input checked="" type="checkbox"/>				Compensation shock								
<input checked="" type="checkbox"/>				CapEx - Exogenous Final Demand								
Active	View	Category	Detail	Region	Units	2022	2023	2024	20			
<input checked="" type="checkbox"/>		Exogenous Final Demand	23 (Construction)	Utah	Nominal \$ (Units)	0	-3382520	0	0			
<input checked="" type="checkbox"/>		Exogenous Final Demand	333 (Machinery manufacturing)	Utah	Nominal \$ (Units)	0	-8198364	0	0			
<input checked="" type="checkbox"/>		Exogenous Final Demand	3361-3363 (Motor vehicles, bodies and trailers, and parts man	Utah	Nominal \$ (Units)	0	-328035	0	0			
<input checked="" type="checkbox"/>		Exogenous Final Demand	44-45 (Retail trade)	Utah	Nominal \$ (Units)	0	-139918	0	0			
III												
<input checked="" type="checkbox"/>				Nonpayroll Op Expenses - Exogenous Final Demand								
Active	View	Category	Detail	Region	Units	2022	2023	2024	20			
<input checked="" type="checkbox"/>		Exogenous Final Demand	22 (Utilities)	Utah	Nominal \$ (Units)	0	-3049320	0	0			
<input checked="" type="checkbox"/>		Exogenous Final Demand	521, 522 (Monetary authorities - central bank; Credit interme	Utah	Nominal \$ (Units)	0	-573514	0	0			
<input checked="" type="checkbox"/>		Exogenous Final Demand	524 (Insurance carriers and related activities)	Utah	Nominal \$ (Units)	0	-1886485	0	0			
<input checked="" type="checkbox"/>		Exogenous Final Demand	54 (Professional, scientific, and technical services)	Utah	Nominal \$ (Units)	0	-888561	0	0			
<input checked="" type="checkbox"/>		Exogenous Final Demand	711 (Performing arts, spectator sports, and related industries	Utah	Nominal \$ (Units)	0	-3524031	0	0			
<input checked="" type="checkbox"/>		Exogenous Final Demand	811 (Repair and maintenance)	Utah	Nominal \$ (Units)	0	-1209887	0	0			
III												
<input checked="" type="checkbox"/>				Visitor Spending - Industry Sales (Exogenous Production)								
<input checked="" type="checkbox"/>				Firm Employment Shock								

Source: REMI PI+ model v3.1.0

# REMI Visitor Spending for UOLF Study

Policy Variable Inputs											
Active	Edit	Group									
+ <input type="checkbox"/>				Industry Employment shock							
+ <input checked="" type="checkbox"/>				Compensation shock							
+ <input checked="" type="checkbox"/>				CapEx - Exogenous Final Demand							
+ <input checked="" type="checkbox"/>				Nonpayroll Op Expenses - Exogenous Final Demand							
- <input checked="" type="checkbox"/>				Visitor Spending - Industry Sales (Exogenous Production)							
Active	View	Category	Detail	Region	Units	2022	2023	2024			
<input checked="" type="checkbox"/>		Industry Sales (Exogenous Production)	44-45 (Retail trade)	Utah	Nominal \$ (Units)	0	-2444492	0			
<input checked="" type="checkbox"/>		Industry Sales (Exogenous Production)	532, 533 (Rental and leasing services; Lessors of nonfinancial	Utah	Nominal \$ (Units)	0	-1156696	0			
<input checked="" type="checkbox"/>		Industry Sales (Exogenous Production)	711 (Performing arts, spectator sports, and related industries	Utah	Nominal \$ (Units)	0	-646254	0			
<input checked="" type="checkbox"/>		Industry Sales (Exogenous Production)	713 (Amusement, gambling, and recreation industries)	Utah	Nominal \$ (Units)	0	-646254	0			
<input checked="" type="checkbox"/>		Industry Sales (Exogenous Production)	721 (Accommodation)	Utah	Nominal \$ (Units)	0	-4000878	0			
<input checked="" type="checkbox"/>		Industry Sales (Exogenous Production)	722 (Food services and drinking places)	Utah	Nominal \$ (Units)	0	-3012259	0			
<div style="border: 1px solid black; padding: 2px;"> <span style="float: left;">&lt;</span> <span style="float: right;">&gt;</span> <span style="display: inline-block; width: 100%; text-align: center;">  </span> </div>											
+ <input checked="" type="checkbox"/>				Firm Employment Shock							

Source: REMI PI+ model v3.1.0