

Estimate Broader Economic Impact of Lecanemab for Medicare Beneficiaries Alzheimer's Disease Patients: Budget Impact and Input-Output Models

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CONCLUSION

Lecanemab, an Alzheimer's disease treatment, minimally affects health plan budgets in the US. However, it holds substantial potential to impact the broader economy positively by improving employment and other macroeconomic indicators..

Background

Alzheimer's disease (AD) constitute a public health crisis affecting the US aging population and society.

- An estimated 6.7 million Americans aged 65 years and older are living with AD in 2023. Seventy-three percent are age 75 or older.¹
- By 2050, the total estimated prevalence of AD is expected to be 12.7 million.¹
- The pharmacological managements of AD include two symptomatic approaches: The inhibition of acetylcholinesterase and the inhibition of N-methyl-D-aspartate receptors.
- Acetylcholinesterase inhibitors (AChEIs) such as donepezil, galantamine, and rivastigmine are the recommended treatments for managing mild to moderate AD.^{1,2,3}
- In 2023, AD and other dementias will cost the nation \$345 billion — not including the value of unpaid caregivers.¹
- Medicare and Medicaid are expected to cover \$222 billion.¹

Methodology

A two-step approach evaluated the impact and broader economic impacts of Lecanemab for AD treatment.

- The first step used a three-year budget impact model, comparing scenarios with and without Lecanemab, factoring in market share, costs, therapy duration, and patient compliance projections. The budget impact was determined by calculating the difference in annual costs and per member per month (PMPM) expenses.
- In the second step, an input-output model, utilizing make and use tables from the Bureau of Economic Analyses, assessed sectorial and broader economic effects of the use of Lecanemab.
- Sensitivity and simulation analyses explored how changes in model parameters could influence model outcomes.

OBJECTIVE

To conduct a budget impact assessing the three-year impact of Lecanemab on US payer budgets.

To conduct input output model that estimate the broader effects of lecanemab on the US economy.

RESULTS

- Introducing Lecanemab for eligible AD patients in the US is estimated to result in a three-year budget impact of \$300,788,773.6 for a health plan with one million members.
- The incremental cost per member per month (PMPM) would be \$8.4, with a cost per treated member per month (PTMPM) of \$92.5.
- The input-output model projects a total impact of \$934.88 million, including a 0.2% increase in employment and a 0.04% rise in exports.
- Sensitivity analysis suggests that improved compliance and acquisition cost efficiency could contribute to a sustained GDP increase.

Table 1: Budget Impact Base Case Results.

	Budget impact		Per Member Per Month BI		Per Treated Member Per Month BI	
	Total (\$)	% of total	Total (\$)	% of total	Total (\$)	% of total
Cumulative						
Acquisition	\$298,480,532.3	99.2%	\$8.3	99.2%	\$91.8	99.2%
Administration	\$3,652,334.5	1.2%	\$0.1	1.2%	\$1.1	1.2%
Initiation	-\$151,613.4	-0.1%	\$0.0	-0.1%	\$0.0	-0.1%
Health state costs	-\$878,992.2	-0.3%	\$0.0	-0.3%	-\$0.3	-0.3%
Adverse events	-\$313,487.7	-0.1%	\$0.0	-0.1%	-\$0.1	-0.1%
EOL costs	\$0.0	0.0%	\$0.0	0.0%	\$0.0	0.0%
Total	\$300,788,773.6		\$8.4		\$92.5	

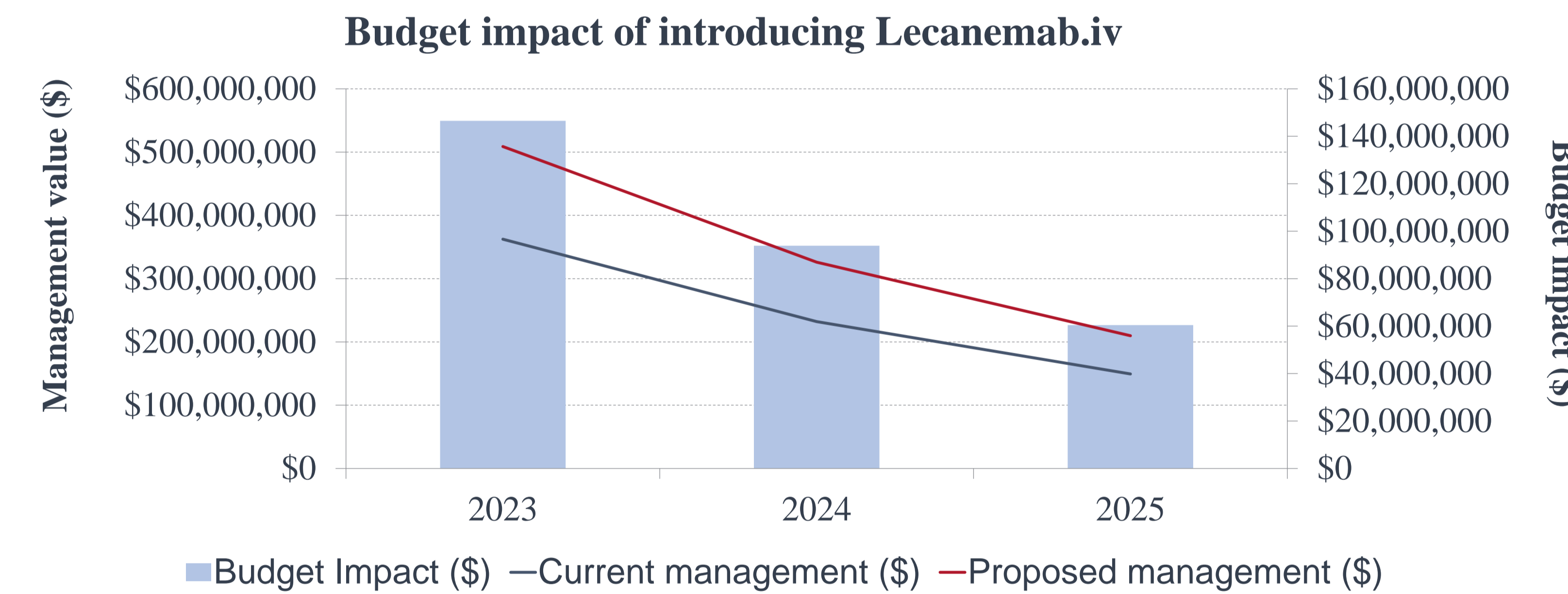


Figure 1: 3-year budget impact of Lecanemab

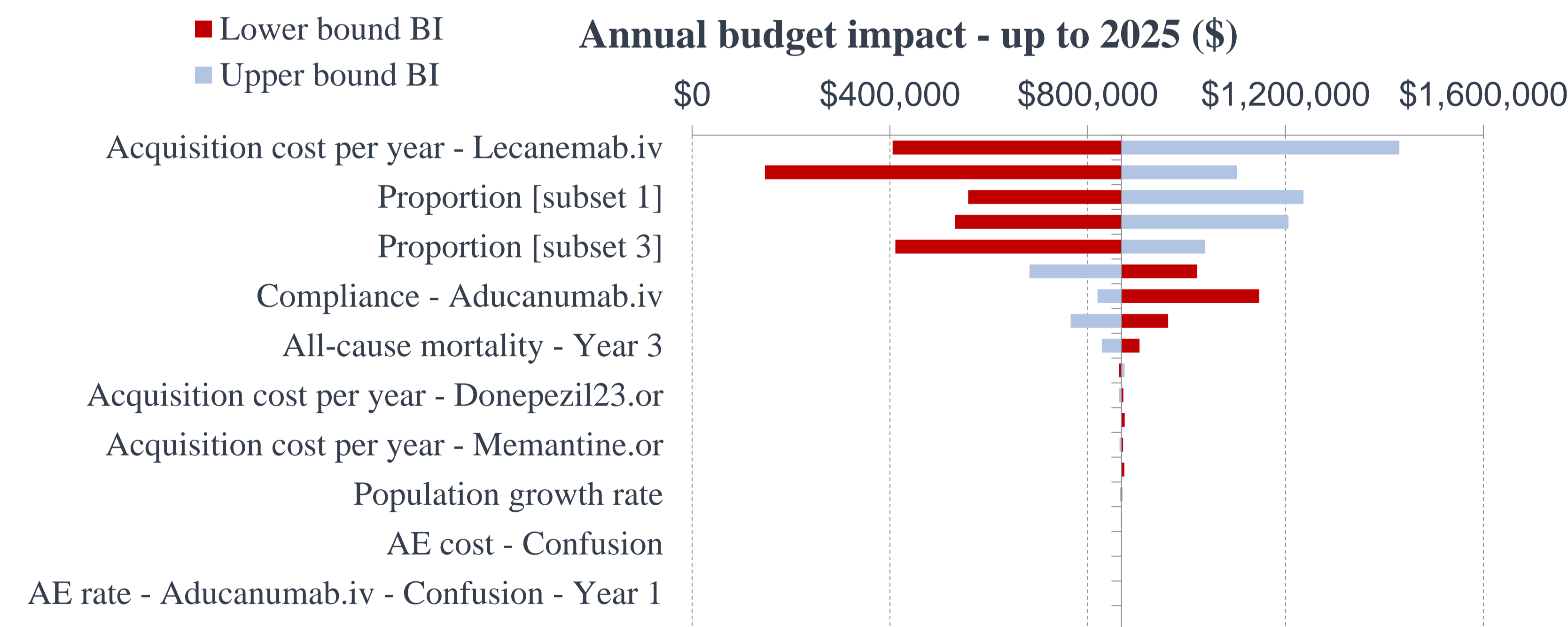


Figure 2: Tornado diagram for Lecanemab

Table 2: Industrial Economic Impact (\$million)

	Total Effects	Direct Effects	Indirect Effects
Biological & Medical Devices	\$83.42	\$8.13	\$75.30
Pharmaceutical Industry	\$265.17	\$430.47	-\$165.30
Health Insurance and Payers	\$1.42	\$0.14	\$1.28
Service Industries	\$7.71	\$0.79	\$6.92
Research & Development	\$4.00	\$16.57	-\$12.57
High Educational Schools	\$1.95	\$1.94	\$0.01
Healthcare Industries	\$1.58	\$0.48	\$1.11
State & Fed Health/Regulatory Agencies	\$0.07	\$0.05	\$0.02

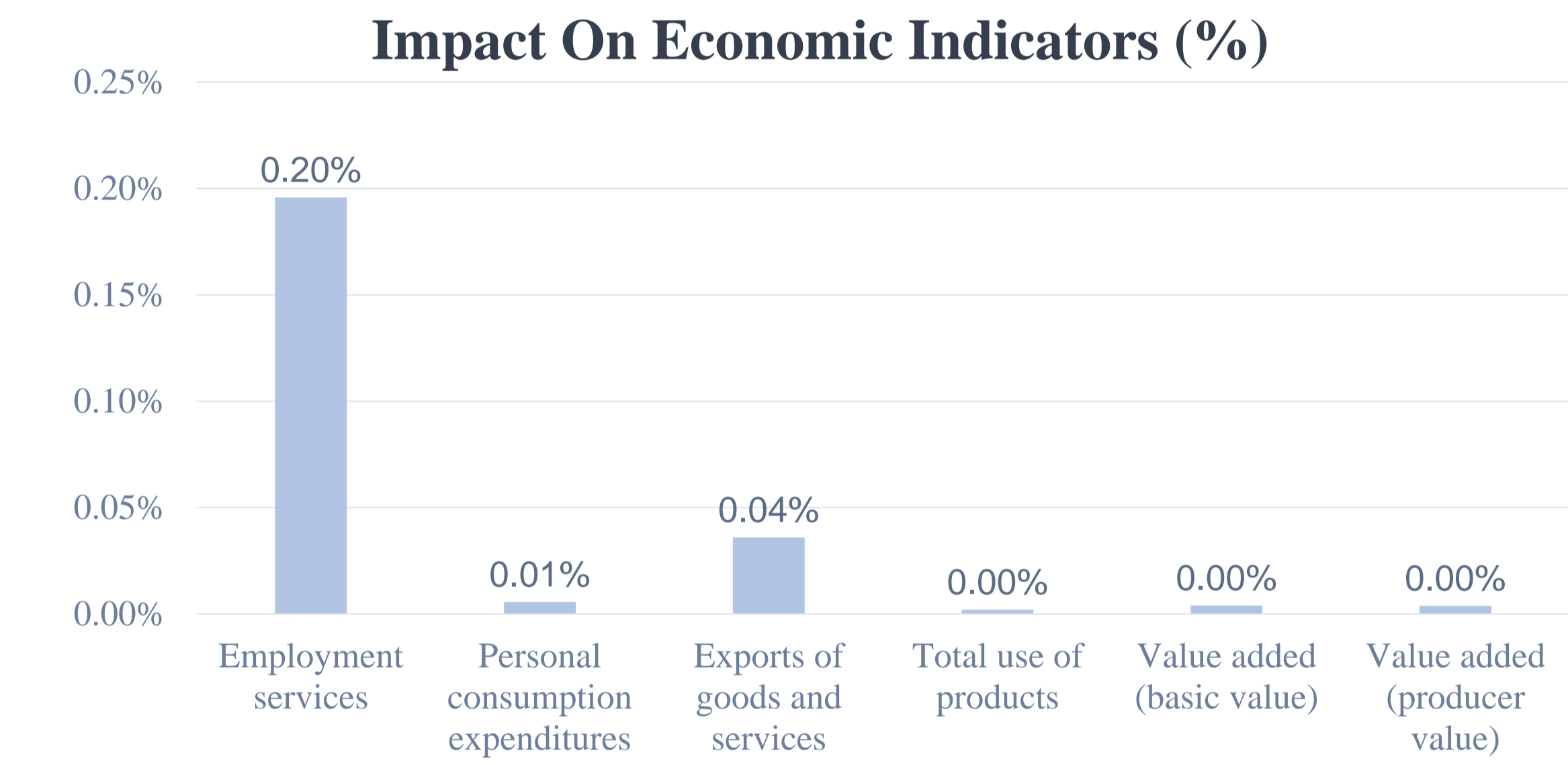


Figure 3: Lecanemab effect on economic indicators

Discussions

- This study report the three years budget impact and broader economic impact on the GDP, employment and exports.
- The study also evaluated the effect of lecanemab on the pharma industry and other economic sector.

References

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³. Alzheimer's Disease Program, Chronic Disease Branch Division for Disease Control and Prevention Services, Texas Department of State Health Services. Clinical best practices for early detection, diagnosis, and pharmaceutical and non-pharmaceutical treatment of persons with Alzheimer's Disease. Publication No 44-14023. February 2013. Available at: <http://dshs.state.tx.us/alzheimers/pdf/Early-Detection-Final.doc>

