

Economic Outlook for the State of Pennsylvania

May Lin, *Economic Analyst*

Julia Wacker, *Associate I*

Julian Brubaker, *Associate I*

Welcome and Introductions

- REMI models
- Big Picture: REMI Regional Growth Matrix
- Economic outlook
 - Short-term forecast
 - Long-term forecast
- Model demonstration

Model



Regional Economic Models, Inc. (REMI) was founded in 1980 on a transformative idea: *government decision-makers should test the economic effects of their policies before they're implemented.* We are the nation's leader in dynamic local, state and national policy modeling. Our clients use REMI models to perform rigorous economic analysis that critically influences local, state and national policies.

OUR CLIENTS:

Business Roundtable • Sandia National Laboratories • Ernst & Young • Texas Comptroller
University of Michigan • Tennessee Valley Authority • National Education Association
South Coast Air Quality Management District • Florida Legislature
North Carolina Department of Commerce • Wyoming Department of Administration & Information
California Environmental Protection Agency • U.S. Army Corps of Engineers

Pennsylvania State Economy

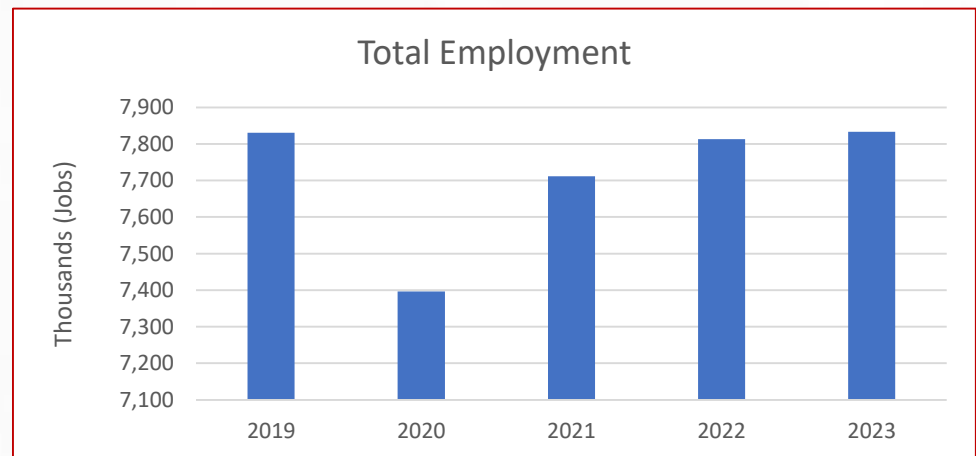
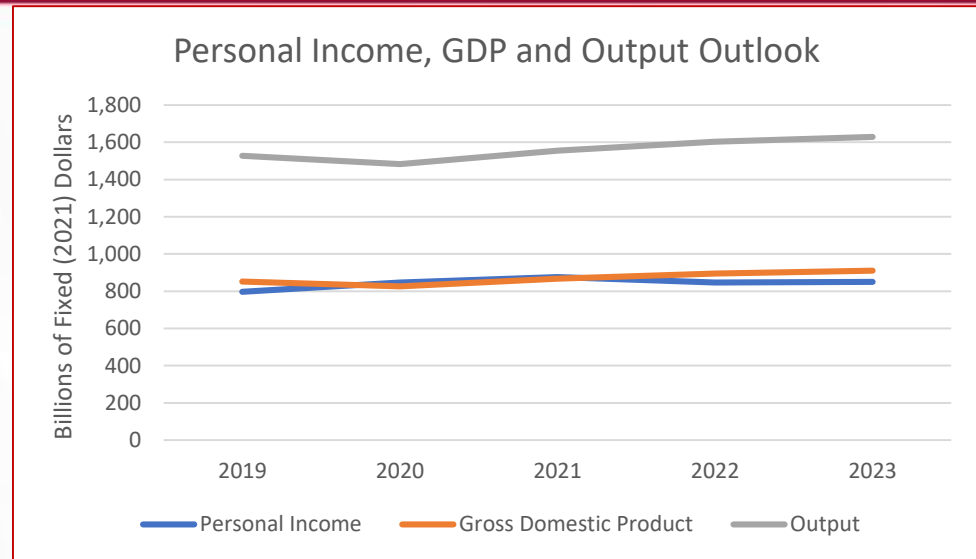


- Pennsylvania is the 6th most populous and the 33rd most expansive of the 50 United States.
- Population of 12.8 million; median age of 40.8; and a median household income of \$60,905.¹
- Largest contributors to GSP by sector include real estate and rental leasing, manufacturing, health care and social assistance and professional, scientific and technical services.²
- Key industries include natural gas, manufacturing, agribusiness, tourism, life sciences, plastics.³

Short-Term Outlook: Pennsylvania



- Years 2019-2023
- Growth 2020-2021
 - Personal income : 3.4%
 - GDP: 4.9%
 - Output: 4.9%
 - Employment: 315 thousand jobs
- Uncertainty



REMI Regional Growth Matrix: Economic & Demographic Factors



Economic Factors

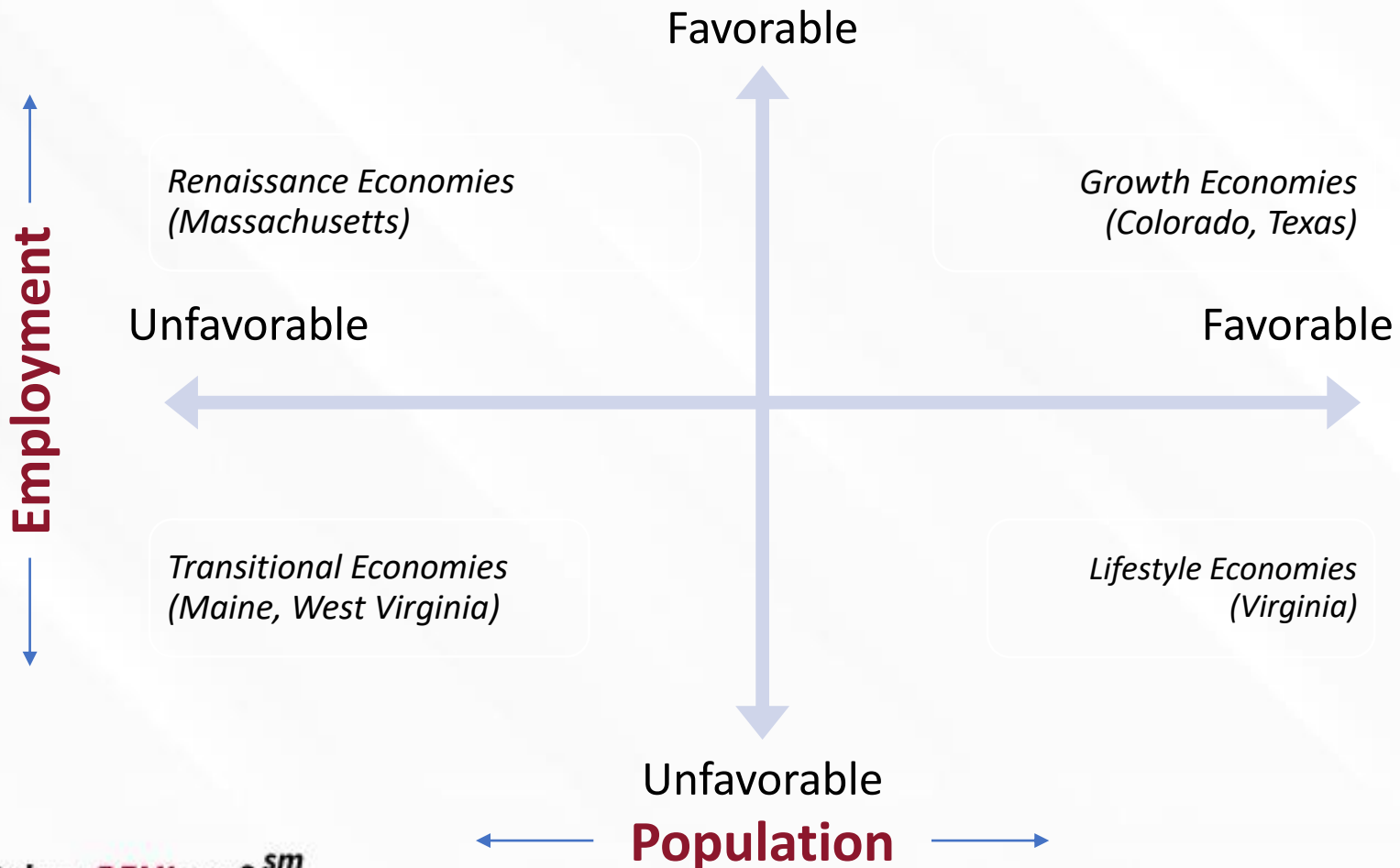
	Industry Growth	Industry Clusters	Pay	Productivity	Business Cost
Favorable	Growing	Strong	High-paid industries	High	Low
Unfavorable	Declining	Weak	Low-paid industries	Low	High

Demographic Factors

	Population Age	Retirees	Immigration	Amenities	Housing Cost
Favorable	Younger	Gains retirees	Immigration gateway	High	Low
Unfavorable	Older	Loses retirees	Low internat'l immigration	Low	High

what does **REMI** say? sm

Regional Growth Matrix



Growth Matrix

Difference in Growth from US Average (2021-2022)



Data Sources

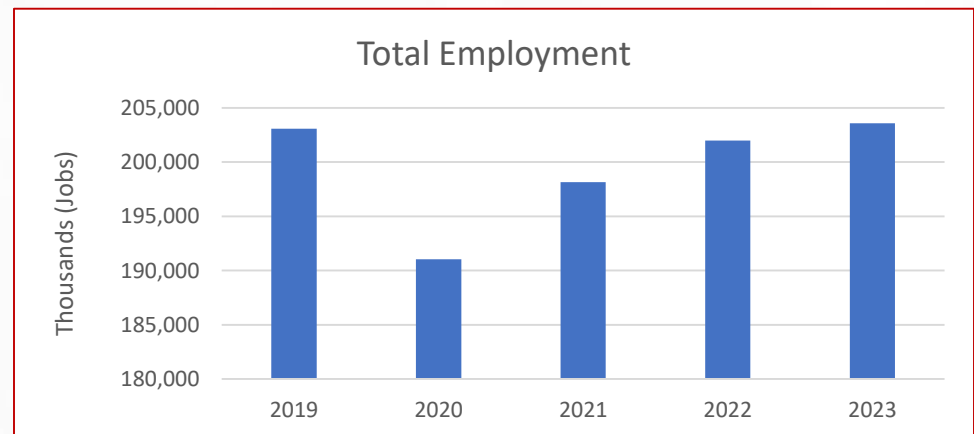
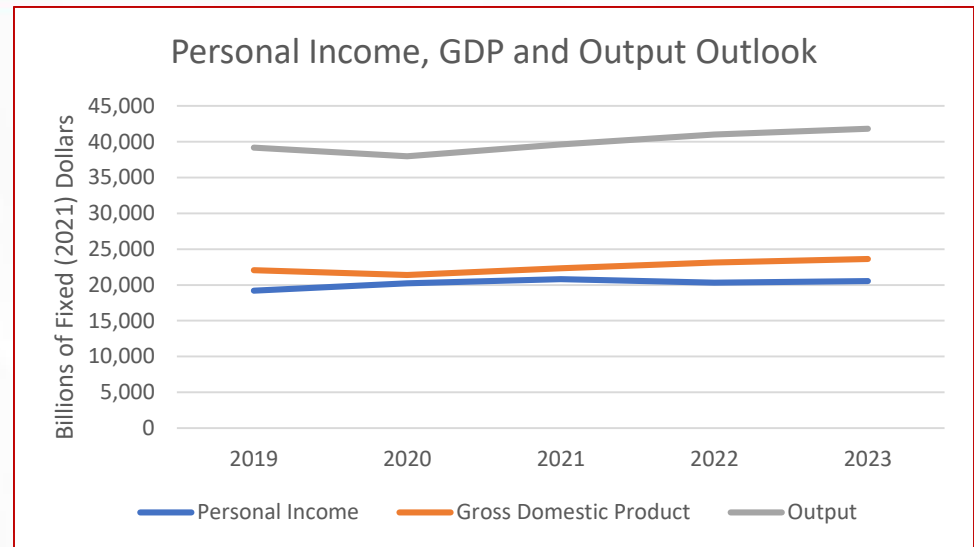
- Baseline (Standard National Control)
 - BLS Forecast Data
- Economic Forecast Update March 2021
 - 2019-2020 historical data from BEA
 - The U.S. Economic Outlook for 2020-2022 from the University of Michigan's Research Seminar in Quantitative Economics (RSQE)
 - An update to the Economics Outlook from CBO
 - Includes \$1.6 trillion stimulus, additional vaccination, and additional consumer spending¹

National Outlook

Short-Term Outlook: the U.S.

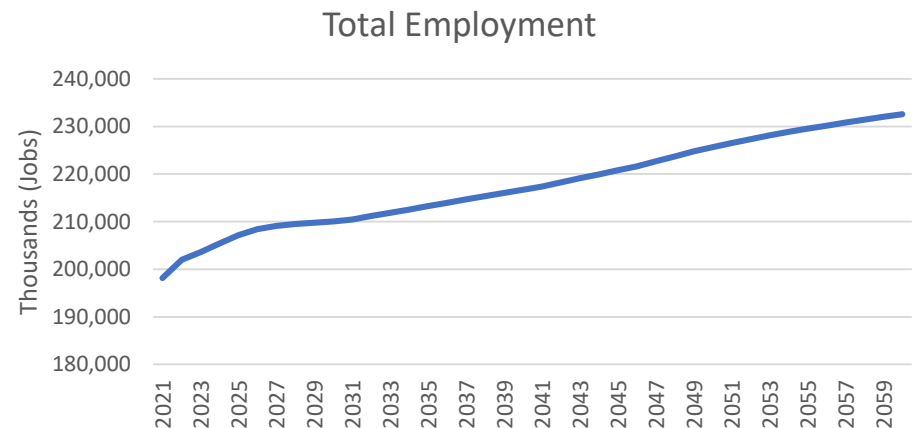
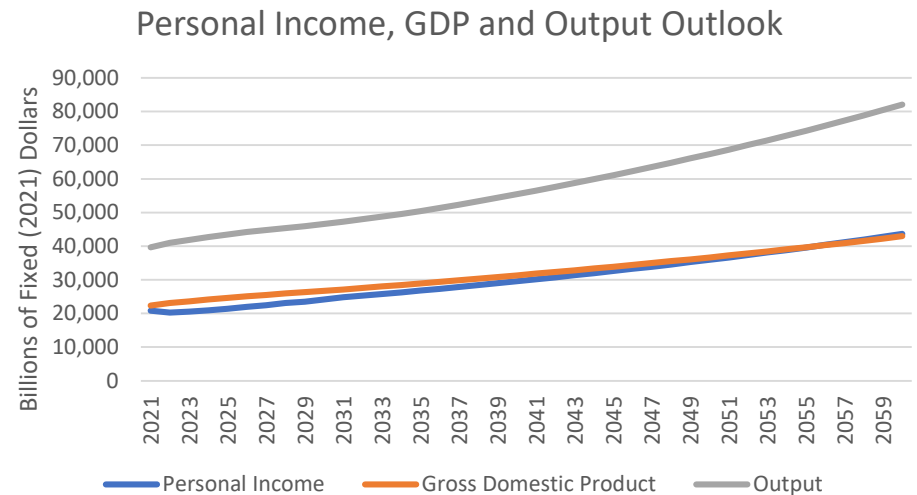


- Years 2019-2023
- Growth 2020-2021
 - Personal income: 2.9%
 - GDP: 4.4%
 - Output: 4.4%
 - Employment: +7 million jobs



Long-Term Outlook: The U.S.

- Years 2021-2060
- Average growth / year
 - Personal income: 1.9%
 - GDP: 1.8%
 - Output: 1.9%
- Total employment: +1,038 thousand jobs



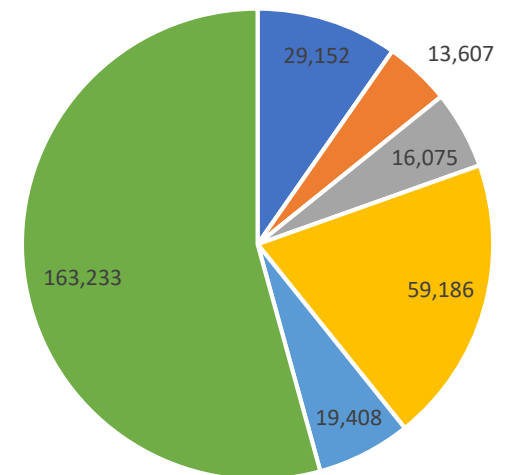
Regional Outlook: Pennsylvania

Short-Term Outlook: Employment by Industry



- Industries with largest employment growth rates in 2021
- 2020 - 2021: 137,428 jobs increasing in the top 5 fast growing industries

Job Increase in The Fastest Growing Industries in 2021

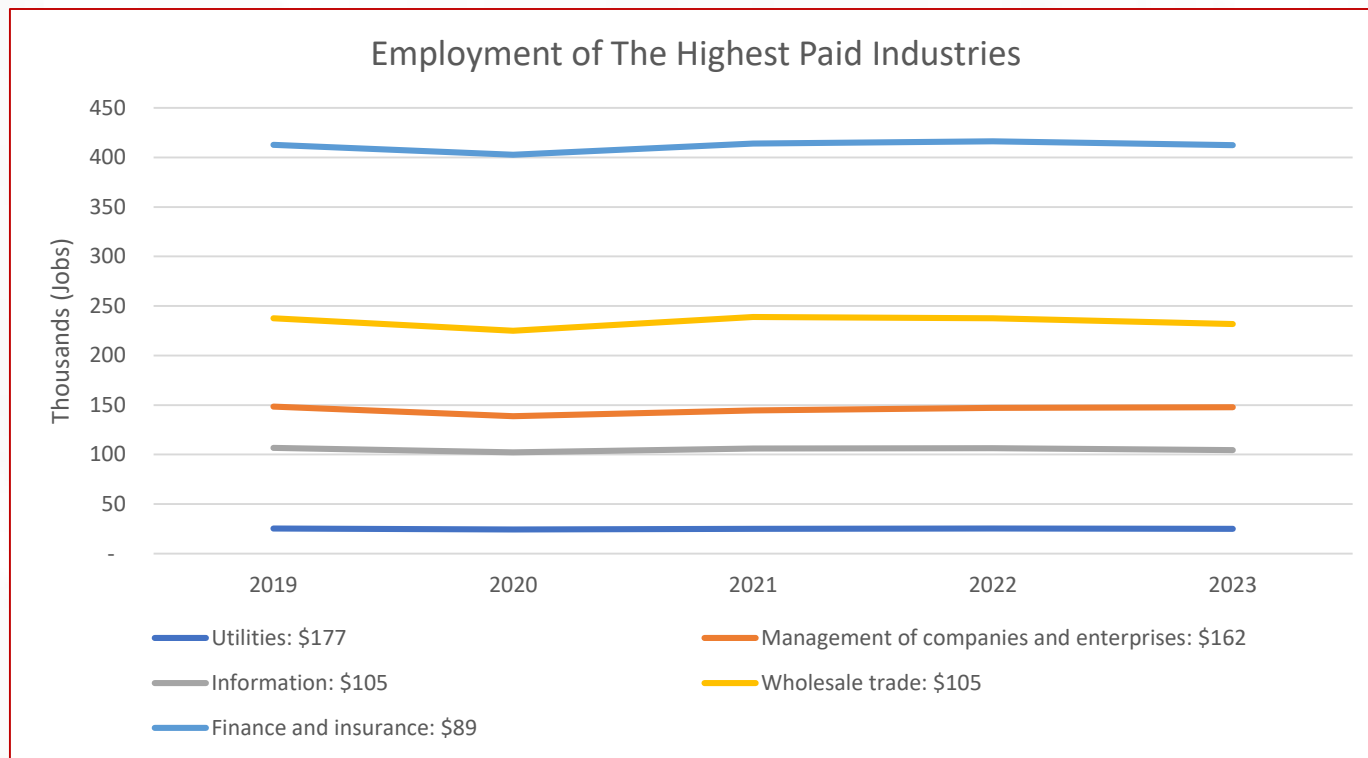


- Construction: 7.44%
- Wholesale trade: 6.04%
- Educational services; private: 5.68%
- Health care and social assistance: 5.61%
- Other services (except public administration): 5.09%
- All other industries

Short-Term Outlook: Employment by Industry



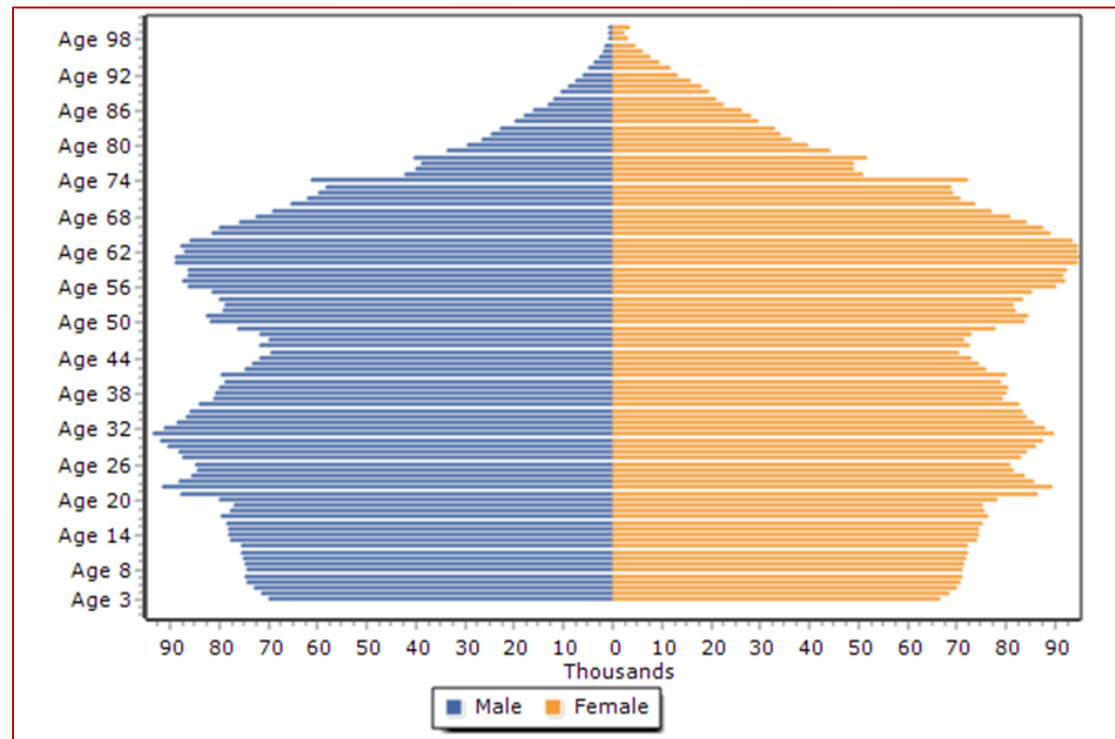
- Industries with highest average annual compensation rates in 2021



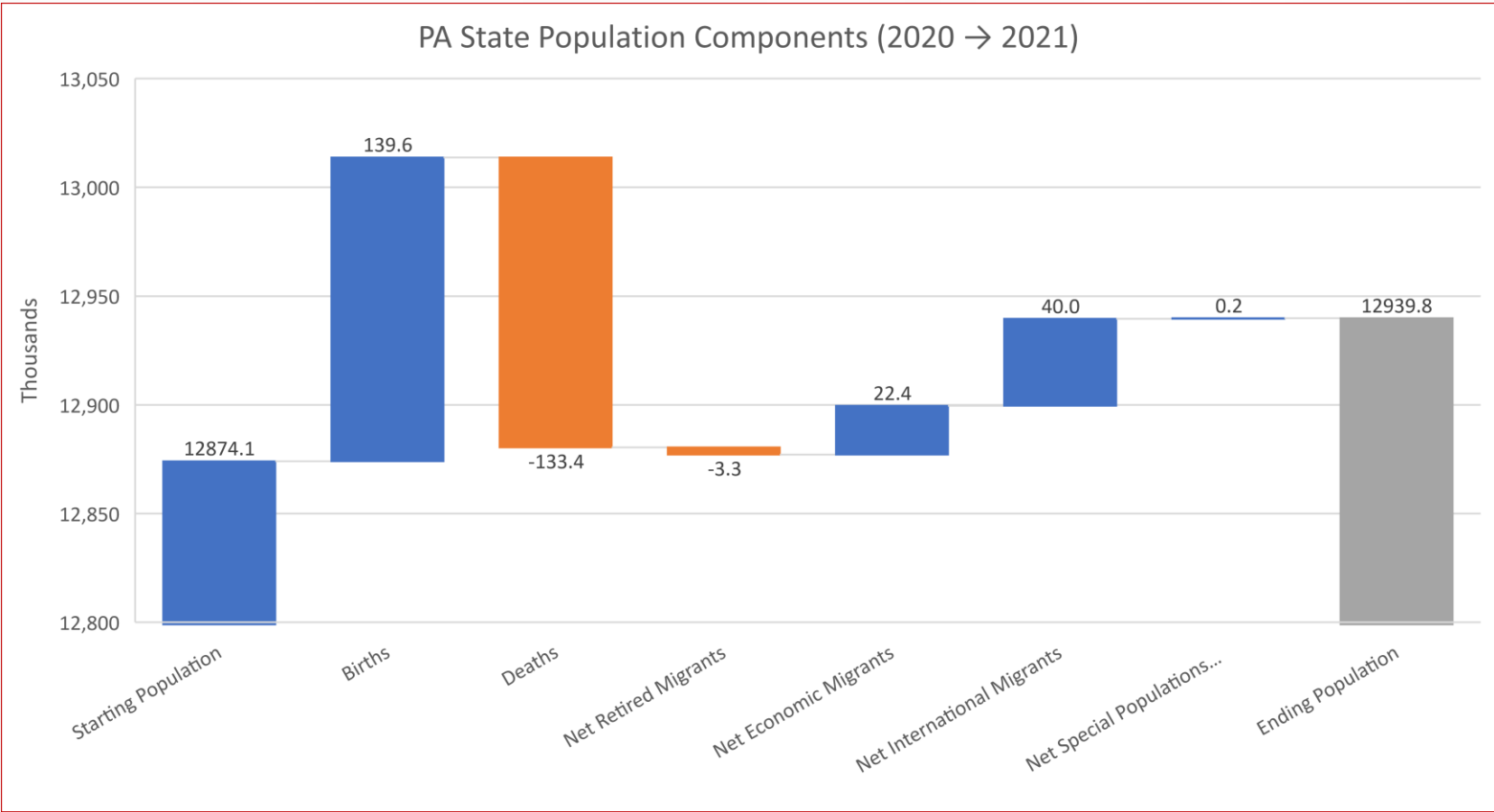
Short-Term Outlook: Population Pyramid (2021)



- Year 2021
- Constrictive

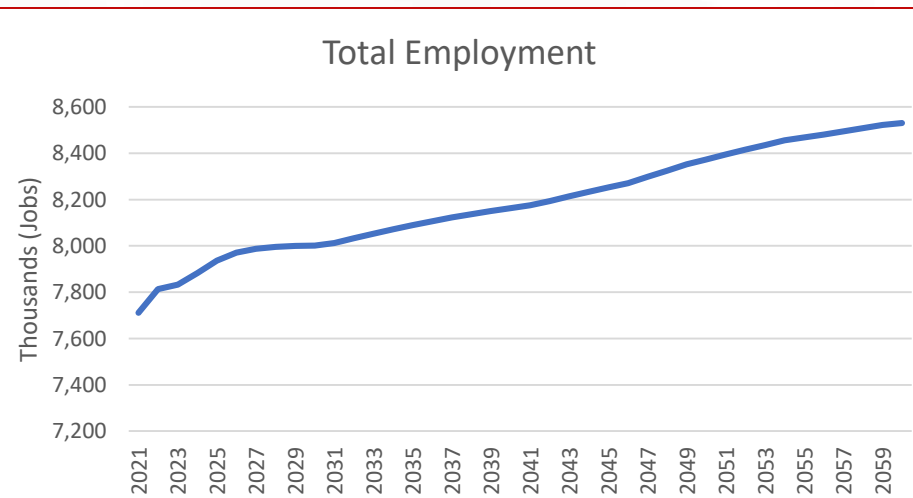
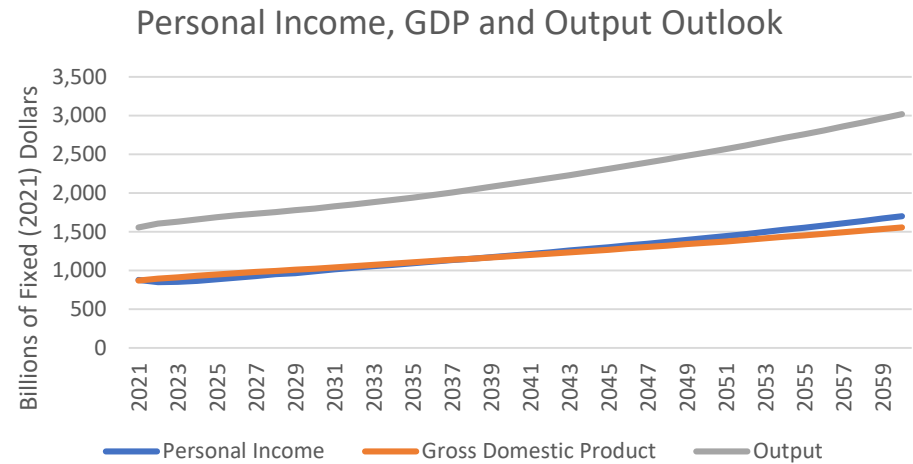


Short-Term Outlook: Population Components



Long-Term Outlook: Pennsylvania

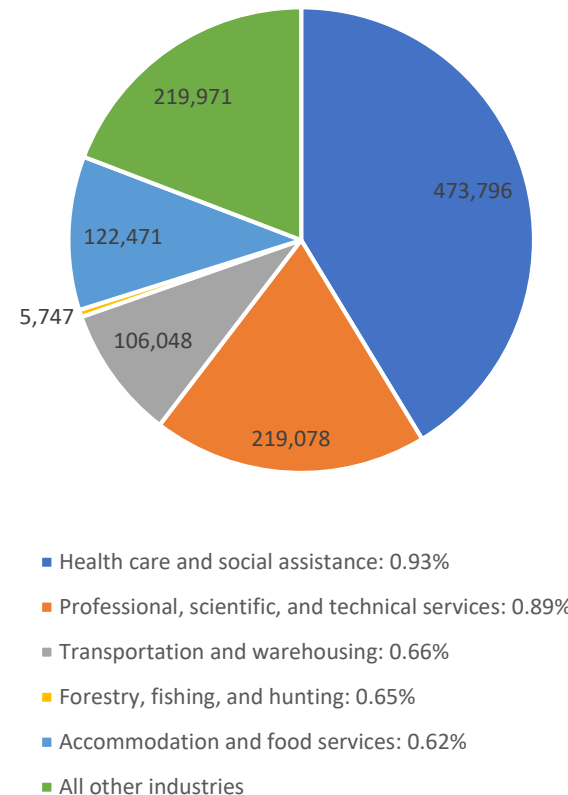
- Years 2021-2060
- Average growth / year
 - Personal income: 1.8%
 - GDP: 1.6%
 - Output: 1.8%
 - Total employment: 28 thousand jobs



Long-Term Outlook: Employment by Industry

- Industries with fastest employment increases
- 2020 - 2060: 927,140 jobs increasing in the top 5 fast growing industries

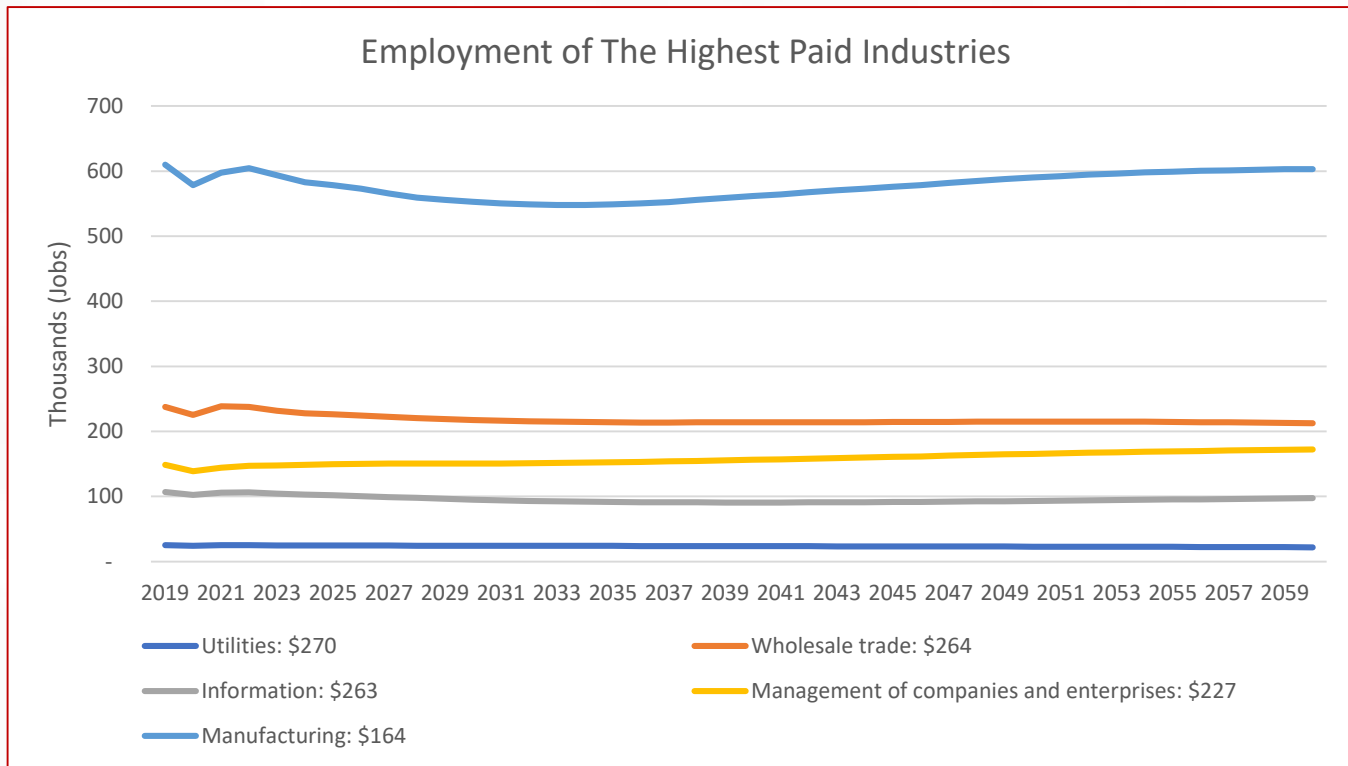
Job Increase in The Fastest Growing Industries
(2020 → 2060)



Long-Term Outlook: Employment by Industry



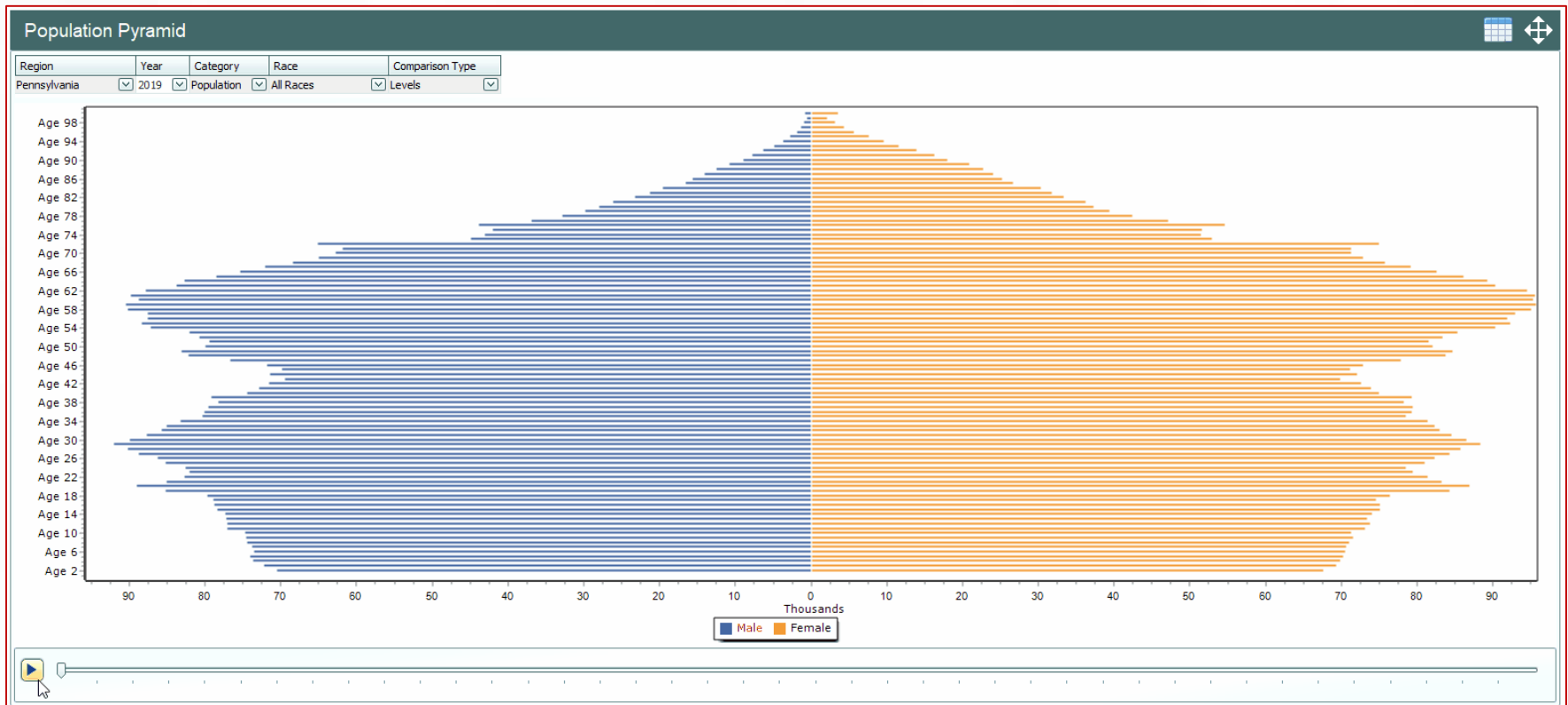
- Employment of industries with highest average annual compensation rates in 2060



Long-Term Outlook: Population Pyramid



- Year 2060

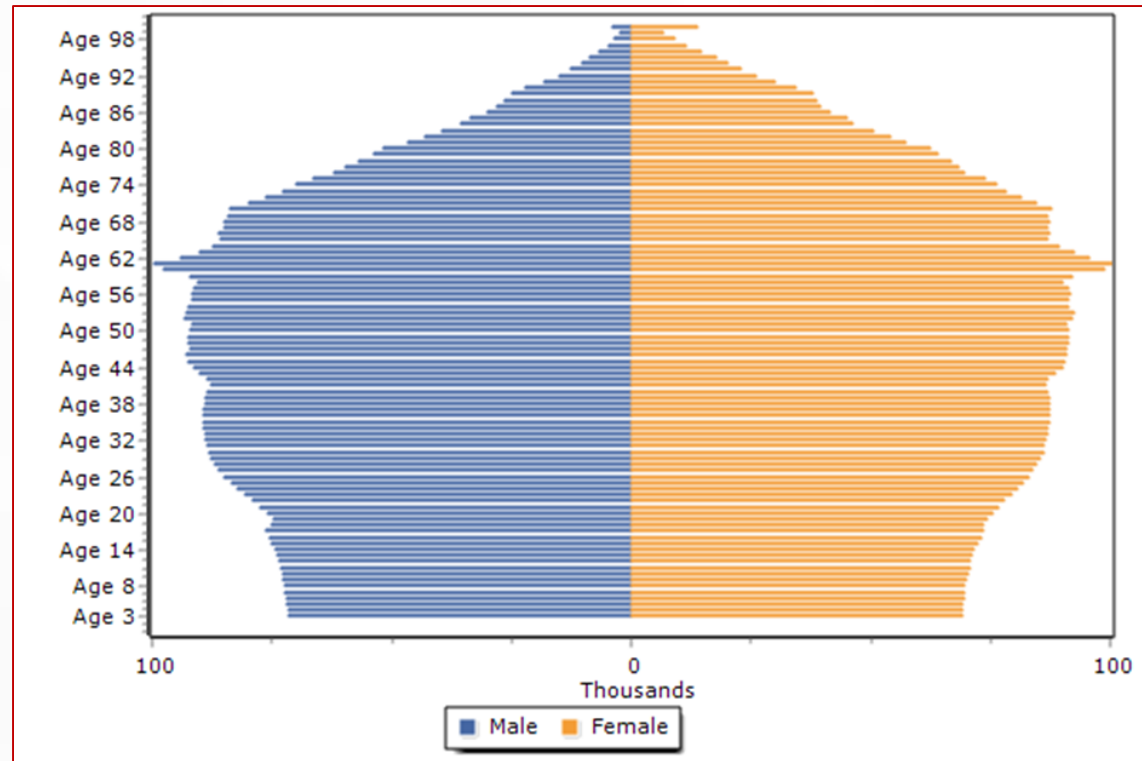


what does **REMI** say? sm

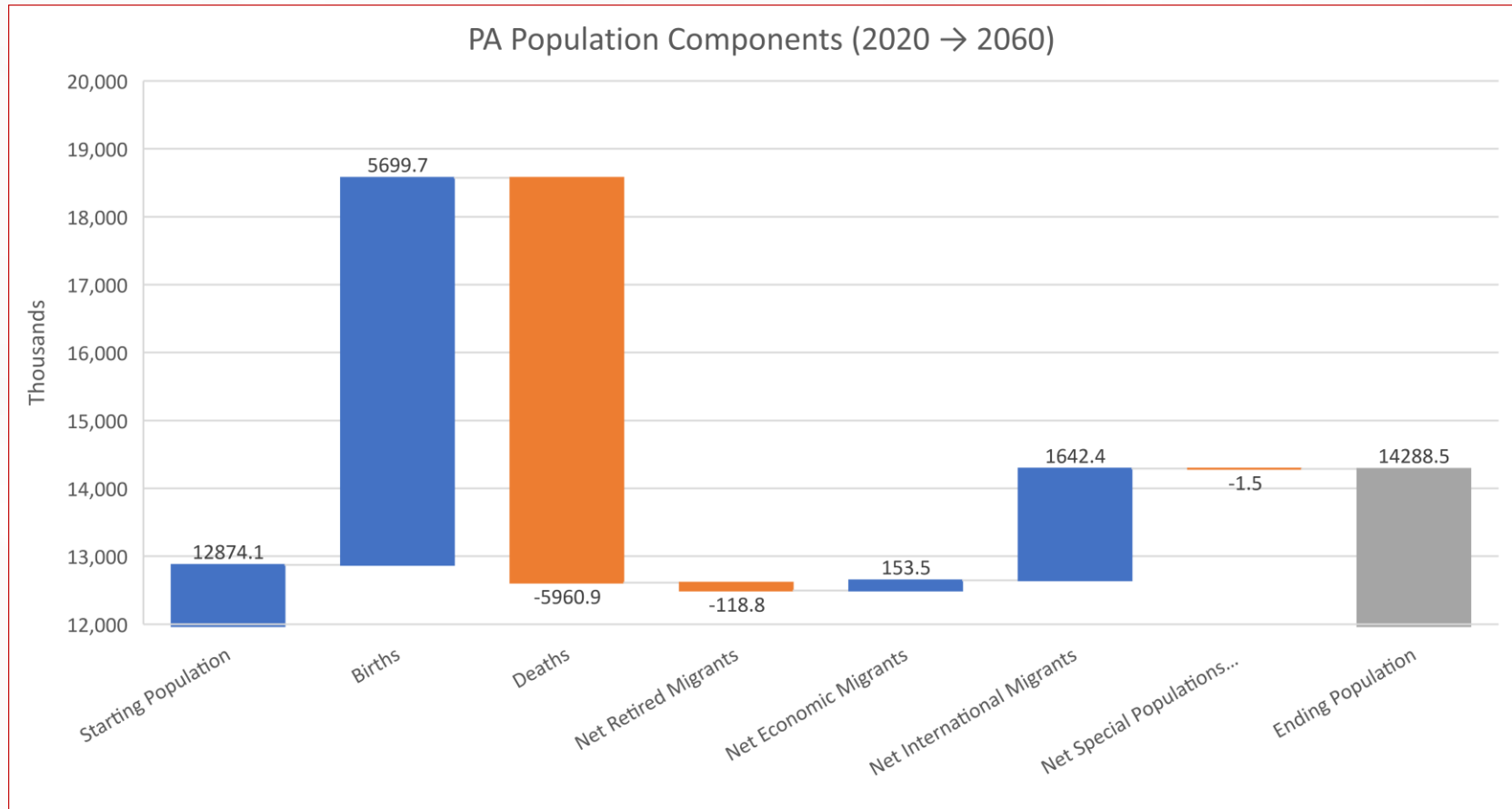
Long-Term Outlook: Population Pyramid



- Year 2060
- Constrictive



Population Components



Model Demonstration

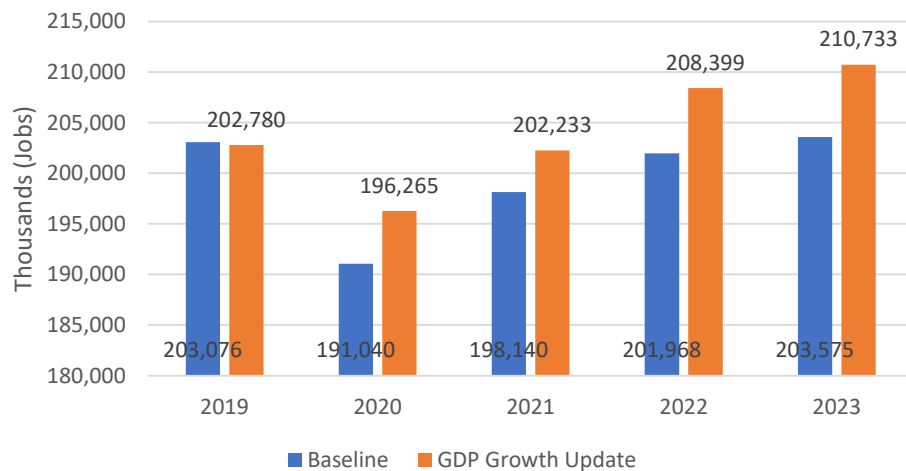
The Scenario

- Optimistic Outlook
 - Baseline – Total employment slowly comes back accompanied by steady growth
 - Uncertainty
 - large pent-up consumer demand
 - supports of vaccine
 - stimulus checks
- Macroeconomic update
 - Increase GDP growth rate by 2%
- Total Employment
 - The US vs Pennsylvania

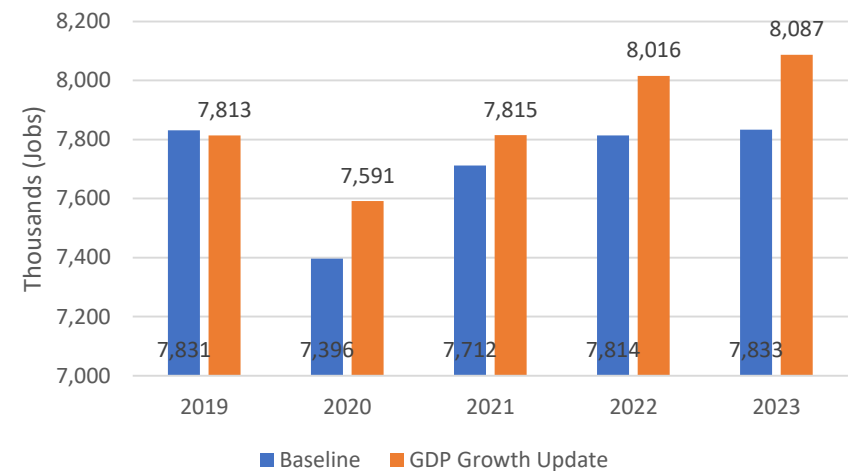
Optimistic Outlook

- Year 2019-2023

Total Employment of the US



Total Employment of Pennsylvania



Conclusion

- Economic forecasts can be difficult
 - The outbreak of COVID-19
 - The election of a new president
 - General uncertainty about the economy
- REMI can help
 - Forecasts: Macro modeling used to clarify, calculate, and communicate
 - Simulations: What-if scenarios
 - Dynamic results

Citations

1. Ehrlich, Gabriel M. "The U.S. Economic Outlook for 2021-2022 -- Executive Summary: February 2021." *College of Literature, Science, and the Arts, University of Michigan*, Research Seminar of Quantitative Economics, University of Michigan, 19 Feb. 2021, lsa.umich.edu/content/dam/econ-assets/Econdocs/RSQE%20PDFs/Exec_Sum_Feb_2021.pdf.

Q & A

May Lin, Economic Analyst
May.Lin@remi.com

Julia Wacker, Associate I
Julia.Wacker@remi.com

Julian Brubaker, Associate I
Julian.Brubaker@remi.com