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American Water Works Association
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# Water Sector Economics and the 2024 Economy

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## 1 NABE

The 2024 National Associate of Business Economists (NABE) had their $40^{th}$ annual economic policy conference in Washington, DC centered around navigating geopolitical turbulence and domestic uncertainty. Here are some finding from top economists and research analysts.

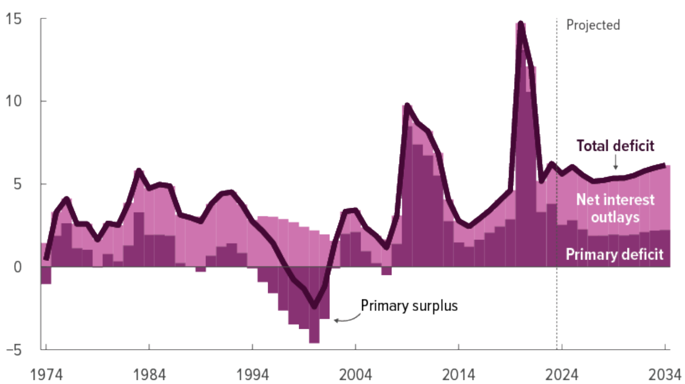


Figure 1: CBO's 2024-2034 historic budget and budget projection by percentage of GDP [2].

### 1.1 National Deficit

*"A rising deficit is not new."* - Wendy Edelberg, a senior fellow at the Brookings Institution Edelberg points out the robust economic, and budget projections from Congressional Budget Office (CBO) which historically produces bipartisan analysis. Edelberg comments that in 2009, CBO correctly projected labor force participation for the pre and post pandemic periods [2]. Prior to the pandemic, CBO also correctly predicted post pandemic GDP growth at 2.5%. CBO projected deficit increase from currently \$1.6 trillion to about approximately \$2.6 trillion in 2034 [2]. CBO cites most of the 2034 debt is attributed to interest as illustrated in Figure 1, which has implications for lending practices. CBO presented larger projected deficit from the loss of revenue due to 2017's Tax Cuts and Jobs Act (TCJA). CBO calculated that the American Taxpayer Relief Act of 2012 which reinstated many of the Bush Jr.'s tax cuts increase the deficit by 50% from 2013 to 2024. Edelberg comments how the 2012 reinstatement of the Bush Jr. era tax cuts and the Trump era TCJA tax cuts contributes to a loss of revenue, and loss of revenue increases the deficit.

Scenario analysis of cutting social security by 20% to 30% in efforts to allocate spending results in a negligible saving rates with small, non-meaningful influence on CBO's high, middle and low baseline deficit projections. There is bipartisan voter sentiment and support for maintaining social security while also increasing retirement to 70 years as reported by Rachel Snyderman, the director of economic policy at the Bipartisan Policy Center. Additionally, Snyderman found that presidential candidates platforming, or engaging in dialogue about social security incur negative likability effects regardless of position.

While taxes are politically unpopular, in the long run they provide revenue to reduce future deficit. Advancements in energy and infrastructure will likely incur more borrowing despite lack of revenue from taxes. This is mainly attributed to the opportunity costs of development and growth compared to foregoing development. For the water sector, financing of infrastructure has options for public and private borrowing or pay-as-you-go debt financing.

### 1.2 Labor

Anu Madgavkar, a partner at McKinsey Global Institute presented research that artificial intelligence will augment job-related tasks increasing productivity and automation of roughly 2/3 of existing jobs. AI augments labor productivity and automation to streamline tasks for certain industries. As AI integrates into various industries and sectors, Chad Syverson from University of Chicago Booth school of business reported that J-curves offer an analytical model to measure AI's productivity effects. Characteristics of this curve include an initial under-measuring the productivity followed by a period of over-measuring the influence of AI. Syverson also distinguished *"AI displaces tasks not jobs"* which further frames AI's role in the labor as leonteif production functions. Leonteif production functions specify a fixed relationship between capital and labor where both are needed for production. A historical example is needing both the textile workers, and machines to produce linens. Technology augments labor and tasks, which does not replace the operator role, but certain jobs and sectors could experience displacement which could exacerbate existing systemic labor force inequalities.

Work has become flexible in regards to working in the office, from home, and hybrid options. All three options offer varying advantages based on industry, job role, and tasks. Work from home and hybrid settings offer flexibility and an expanded, inclusive labor force. Besides the benefit of reducing commercial real estate costs, on the labor side hybrid and working from home decreases the motherhood and fatherhood gap associated with exiting the labor force for child-rearing equally for both men and women.

Michael Horrigan, Upjohn Institute presided and former BLS associate commissioner shared his research that workers with less than a bachelor's degree will be left behind in the job market. Graduate degrees offer a job market premium ROI. Horrigan also found an increase of worker with a bachelors degree in manual production jobs from 2007 to 2019. The implications for the water sector are candidates with knowledge, but who still need sector specific on-the-job training. However while applicants may require less training due to knowledge gains from their degrees, the costs of student debt could influence retention. Employee training and retention incentives at water utilities will be needed mitigate the potential negative effects of automation.

## 1.3 Commercial Real Estate (CRE)

Erin Patterson managing director of Manulife Investment Management presented the social reallocation of commercial real estate for work or leisure. Recent examples are pandemic related urban flight leaving downtowns reallocating CRE for other purposes, and the population influx to the sunbelt region pushing growth. Renegotiation of space is likely to disrupt how supporting infrastructure serve communities.

Water utilities are fragmented and localized. In 2020, 85% of water utilities serve populations less than 3,300 people [1]. Many water utilities often operate on tight budgets which present challenges for infrastructure advancement. How will water utilities respond when serviced population increases or decreases? How would this affect a water utility's revenue structures and operational demands and costs?

Similar to the water sector, financing of CRE is a local, and fragmented market. Investment banks occupy 40% to 45% of the debt of CRE. 60% to 65% CRE is held by insurance companies and small banks. The latter, drive local revenue and lending. So could the fragmented water sector adjust to the movement of people and reallocation of CRE? Are there more viable private financing at the local level for water utilities? If so, is this a recipe for financial distress or crises?

A pervasive conflation of financial crises usually has narratives laced with environments of high inflation, and high default risks. Aaron Klein, a senior economist at the Brookings Institution offers a robust, principle-driven classification of financial crises. Klein notes two criteria creating financial crises: *(1) a fundamental misvalue of an asset* and *(2) leverage of said asset*. Implosion occurs as conditions reveal the true value of an asset. Klein asserts that the stock market indices as generally stable due to regulation and generally not prone to grossly misvaled assets with minimal leveraging. Klein compares how real estate market is almost always leveraged since it's a collateralized asset.

Applying Klein's framework of financial crises to the intersection of the water sector and CRE renegotiation. Water utility revenue collecting systems will likely respond to reflect the change in populace served by that utility. This would prevent misvaluing their services. Affordability gaps and are likely be a heightened challenges. Conversely water utilities experiencing population decreases may experience revenue loss, and decreased infrastructure demand. If the water sector utilizes private financing, misvaluations could be a risk exposure from local, private lenders with portfolios of CRE debt. Sustainable infrastructure bonds along with other infrastructure loan programs at the federal level offer alternatives to mitigate exposure to private lender risks.

## 1.4 The Global Economy

Catherine Mann, a monetary policy committee member of the Bank of England found an increase of global interactions between central banks compared to the early 2000s. Adam Szubin, a distinguished practitioner in residence at John's Hopkins advanced International studies commented *"food and climate security have become systemic risks in globalization compared 2004 standards, but* *the returns are so large you do not want to miss out"*. In an increasing global economy, the returns on investments are not without global risks domestically, and internationally. Lack of revenue is likely not a motivating factor to forgo the opportunity costs of exposure to the global economy.

In a panel with representatives from the Japanese, British, and United States diplomats described new supply chain like-minded partnerships. Hidaeki Fujisawa, the minister of the embassy of Japan described this partnership as The Three Ps: *(1P) Promotion of country* - each country serves to promote its own products while also promoting each other's products, *(2P) Production* - where individual countries in this informal agreement specialize in a product that the others demand, *(3P) Parsimonious relationship* - each country is involved to mutually optimize trade and national growth.

In short this is a combination of friendly relations, and product specialization so that each country can develop there economic growth in a parsimonious relationship. All three representatives commented on barriers to entry in these partnerships for countries mainly with international human rights violations related to their resource production. One could comment as a new form of country specific product specialization alliance.

These diplomats also commented on the challenges of securing supply chains for critical minerals and other rare earth minerals. Paul Rennie, the head of the Global Economy Group of the British Embassy described a goal of recycling mining slag for critical minerals. The US International Trade Administration assistant secretary of commerce, Grant Harris comments on Dept. of Energy shared goals of utilizing slag to process critical minerals. The localized water utilities will likely have increased contaminant processing as a result, as well as exposure to international risks in securing supply chain chemicals to treat water. The latter raises national security concerns for the water sector.

## 2 Concluding Notes

Compared to the last twenty years, we are experiencing an even more global world with exposure to monetary policy changes of other countries, global conflict, supply chain alliances. There is also changes in local level privatization in financing climate change, clean energy, and other infrastructure. This is not without exposure to risks associated with private financing. Despite an increasing deficit, the opportunity costs of national development remain strong. Innovative financing mechanisms, such as public-private partnerships or infrastructure grants and loan programs could address infrastructure development while managing financial risks.

## References


[1] American Water Works Association (2020). Buried no longer: Confronting america's water infrastructure challenge. https://www.awwa.org/Portals/0/AWWA/Government/BuriedNoLonger.pdf?ver=2013-03-29-125906-653. American Water Works Association.

[2] Congressional Budget Office (2024). The budget and economic outlook: 2024 to 2034. https://www.cbo.gov/publication/59946. Washington, DC: Congressional Budget Office.



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The American Water Works Association is an international, nonprofit, scientific and educational society dedicated to providing total water solutions assuring the effective management of water. Founded in 1881, the Association is the largest organization of water supply professionals in the world. More information about AWWA at: https://www.awwa.org/.