Look Before You Leap: Exploring BEA Data Capture by Generative AI Technologies

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- The Bureau of Economic Analysis (BEA) promotes a better understanding of the U.S. economy by providing the most timely, relevant, and accurate economic accounts data in an objective and cost-effective manner.

- The emergence of Generative AI tools has unearthed new challenges for BEA to ensure that official economic statistics are being correctly interpreted and presented.

- BEA established a project, AI Readiness, to ensure BEA's publicly available data will be properly interpreted and presented by Generative AI tools.

Do We Have a Problem?

- Determine if these issues exist:
  - Do Generative AI tools provide responses about BEA publicly available data when asked?
  - If Generative AI tools are providing responses about BEA publicly available data when asked, how accurate are those results?

- Crafted 40 questions (and their respective answers) about BEA publicly available data to ask Generative AI tools.
  - Questions spanning:
    - BEA's International Directorate
    - BEA's National/Industry Directorate
    - BEA's Regional Directorate
    - BEA Satellite account data
    - General questions about the Bureau

Indeed, we have a problem.

- Generative AI tools provided responses to most questions on BEA publicly available data, but there were significant issues discovered with the accuracy of information being returned.

- Encountered instances where responses to questions about BEA's publicly available didn't yield results.

- BEA data that was revised wasn't being properly interpreted by Generative AI tools.

- Altering the phrasing of the questions impacted responses.

Open AI ChatGPT

- **16** of the **40** responses were accurate.

- **8** of the **40** responses were inaccurate.

- **15** of the **40** responses didn't return results.

- **1** response had inconclusive results.

Google Gemini

- **19** of the **40** responses were accurate.

- **17** of the **40** responses were inaccurate.

- **3** of the **40** responses didn't return results.

- **1** response had inconclusive results.

What's Next?

BEA is taking a couple of steps aimed to ensure its publicly available data will be properly presented and interpreted.

- Strengthen our understanding of Large Language Models and how they retrieve and present our data.

- Submit a Request for Solution to America's DataHub Consortium (ADC).

    o Request is to provide a solution to make federal statistical products more readily represented and interpreted by AI technologies.

    o Solution will become a National Secure Data Service (NSDS) that other federal agencies and partners can leverage.

    o Solution awarded; Details can be seen here: https://www.americasdatahub.org/ai-rd-24/

Questions?