

# Time Series Considerations in Updating the U.S. National Accounts

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# Aspirations and tradeoffs

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- Aspirations
  - Timeliness
  - Relevance
  - Accuracy
  - Transparency
- Tradeoffs
  - Revision policies
  - Backcasting and nowcasting choices
  - Evaluation of future improvements

# Revision policies

- For BEA, revision schedule largely dictated by data availability



# Every 5 years

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- Integrates the three GDP estimation processes
  - Production, expenditure and income
- Introduces major conceptual changes
  - Capitalization of IPP
- Opens the entire time span
  - Annuals 1929-present
  - Quarters 1947-present
- Updates the reference year for price and quantity estimates

# Move to “flexible” annual updates

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- In 2011, BEA adopted a “flexible” annual update policy
  - Span determined by the types of changes we introduce in a given year
    - “Minimum” span of revision was most recent 3 years
  - Can adopt methodological improvements more rapidly
  - Can incorporate full set of revisions to underlying source data
  - Eases burden on staff and users!

- Next summer (2019), BEA will expand its minimum annual update revision span to 5 years.
  - Motivated largely by analysis of quarterly estimates
  - Want to ensure our quarterly series incorporate accurate seasonal adjustments

- In general, BEA preference is to extend a methodological change back through the full time series
- This means we will wait for a comprehensive update to incorporate a major change
  - When the “full” time series is open for revision
  - Ensure the change is also incorporated in the input/output accounts
  - Allows adequate time to prepare users for the change

- For revised source data or smaller, more limited statistical changes, BEA may limit the period over which we incorporate the change
  - Example: International Transactions data
    - Revised data available late in our production process
    - Impact of the revised data assessed to be small
    - We inform users of our decision
- Backcasting as an abbreviation for historical data
  - Example: Historical GDP by industry pre-1997
    - Abbreviated Supply-Use methodology and double deflation



- Many new, alternative data sources available
- Potential to fill measurement gaps
- Potential to accelerate estimates
  - Early wins using machine learning techniques to predict consumer spending on healthcare and investment in software
  - Modeling transaction-level data to anticipate quarterly services data

# The Future of National Economic Accounts

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- Produce Economic Accounts in a comprehensive and synchronized process
  - Holistic approach that draws on strengths of existing practices
  - Comprehensive and annual updates produced **simultaneously** with (nearly) **coincidental release** at end of July each year
  - Current estimate produced **simultaneously** with (nearly) **coincidental release** within 90 days after quarter end
    - Facilitates acceleration of GDP by state
- Changes to production processes beginning with 2019 annual update; organizational design to follow

# Current Business Processes

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- Mostly sequential business processes:
  - “Third estimate” of GDP for the 4<sup>th</sup> quarter released on March 28; GDP by industry for the 4<sup>th</sup> quarter release on April 19
  - Comprehensive Update of GDP on July 27; GDP by industry on November 1
- Current directorates have strong working relationships but we have realized (most) efficiencies in the current process
- Currently we do not have a formal process to resolve Supply-Use asymmetries outside of Benchmark years to set GDP
  - Benchmarking process happens once every five years

- To best position BEA to maintain its innovative edge, improve existing products, develop new and valuable statistics, and to build and support a dynamic and flexible workforce
- Aspirations: Timeliness, Accuracy, Relevance, Transparency
- Guiding Principles
  - Exploit efficiencies to produce economic statistics
  - Harness advances in IT
  - Promote the quality and relevance of economic statistics
  - Develop staff by offering more opportunities for growth

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- Tradeoffs
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- The Future of the U.S. National Economic Accounts