

# Seasonal Adjustment Update



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# Strategy for Addressing Residual Seasonality

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- Maintain our policy of applying indirect seasonal adjustment
- Use SA data from source agencies to greatest extent possible
- Use X-13ARIMA-SEATS
  - Ensure consistent approach within NEA
- Resolve residual seasonality in NIPA aggregates for:
  - GDP by final expenditure (1.1.x level series)
  - GDI by major component (1.10 level series)
- Over two time spans:
  - “Full” (1947-present)
  - “Most recent 15” (2003-2017)

# Evaluating Residual Seasonality (RS)

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Three criteria evaluated to determine presence of RS:

– QS statistic

- Evaluates positive serial autocorrelation in series
- Tests null hypothesis that no seasonality is present ( $p < 0.01$ )

– F test

- Tests for stable seasonality ( $F > 7.00$ )

– M7 test

- Tests for stable and moving seasonality ( $M7 < 1.00$ )

# Recent Seasonal Adjustment Improvements

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- Carryback previously introduced improvements, including:
  - Federal defense services
  - Consumer spending on services
  - State and local investment in structures
  - Inventories (selected industries)
- Federal pay raises
- Exports of services
- Increased collaboration with data providers

# Approach Beyond 2018 CR

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- Follow proposed procedures/strategies for future annual updates
  - Test 15-year time spans
- Expand minimum revision period open for annual updates to 5 years
- Continue to collaborate with Census

# Newly Available NSA Estimates

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- Estimates available for current dollars, prices and quantities
  - At time of the current-estimate release
  - Initial publication level with be NIPA Tables 1.1.x (product side) and 1.10 (income side)
  
- Estimates beginning with 2002 released July 27th
  - Current dollar estimates prior to 2002 to be published later this year

- Applied a variety of statistical tests to evaluate this more rigorously
  - Various regressions with dummies, including GDP percent change against GDP percent change lagged, with dummies:
    - Dummies for Q1, Q2, and Q3
    - Dummy for Q1
- As with RS testing, results vary depending on the span tested
  - Analyzed several different permutations of spans
- No consistently weak component