Strategy for Addressing Residual Seasonality

• 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)
Evaluating Residual Seasonality (RS)

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

• 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

• 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

• 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
Weak Q1 investigations

• 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