Does Centralization Matter? The Equity and Cost Implications of State Property Tax Assessment

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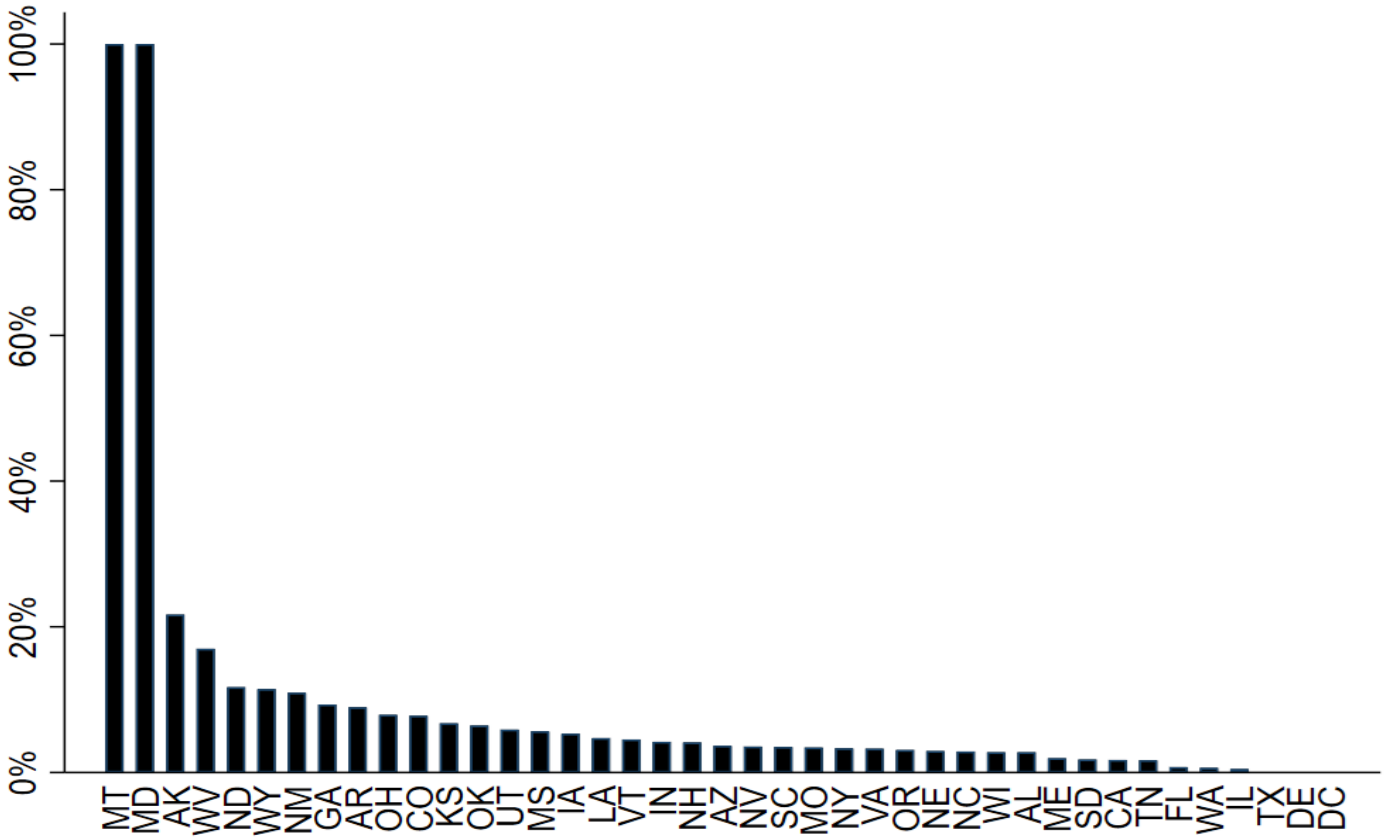
Background and Motivation

Figure: Share of Taxable Market Value Assessed by Selected State Governments, 2023



Source: Authors' calculations based on state and/or local assessment rolls.

Background and Motivation

Table: U.S. Assessing Jurisdictions by Level of Government, 1940–2024

Level of Government	**Jurisdictions**
Total, all levels in 1940	26,304
Total, all levels in 1970	13,516
Total, all levels in 2024	9,379
Municipalities	6,783
Counties	2,593
States	3

Notes: Maryland and Montana have assessment jurisdiction over all property in the state. Maine assesses property in unincorporated areas. Most states centrally assess certain unusual types of property, such as utilities or airplanes. Some counties assess real property within a subset of their municipalities. Washington, DC is tallied as a municipality.

Source: U.S. Census Bureau (1975) and authors' calculations.

Background and Motivation

The U.S. Advisory Commission on Intergovernmental Relations (1963) recommended widespread adoption of state property assessment administration. Why?

- Allows for larger and diversified staffing
- Abolishes the interlocal assessment competition
- Eliminates potential confusion and inconvenience caused by the varying levels of assessment
- Simplifies assessment administration for mobile and border-spanning property
- Reduces local variation in roll prep, clerking, and bill administration

Source: Page 92-93 of *The Role of the States in Strengthening the Property Tax, Volume 1*

Background and Motivation

- Maryland was the only state to fully embrace the ACIR's recommendations
  - Maryland adopted state assessment administration in 1973
  - Hawaii fully decentralized in 1981

- Today, assessment centralization runs across a spectrum:
  - Fully decentralized: nothing assessed at state level (ex. Texas)
  - Fully centralized: everything assessed at state level (Maryland)
  - Hybrids closer to fully centralized: Montana and Kentucky
  - Hybrids closer to fully decentralized: most states

Research Questions

- We exploit Maryland's transition to state assessment administration to test several hypotheses about the benefits of centralization. Specifically, does it affect:
  1. Statewide inter-area uniformity?
  2. Local-level intra-area uniformity?
  3. The cost of assessment?
  4. Local governments' spending decisions?

- We apply synthetic control methods (SCM) on data from the Census Bureau's historical ratio studies to answer (1) and (2)
- We evaluate (3) by comparing assessment expenditures across states and a single county SCM case study
- We test (4) by applying a difference-in-differences strategy to Maryland and California counties

Maryland's Centralization Reform

Maryland governor Marvin Mandel signed legislation on May 24, 1973 (HB 531):

- July 1, 1973: County assessment directors transferred to State Department of Assessments & Taxation (SDAT) payroll
- July 1, 1974: Staff assessors transitioned to SDAT payroll
- July 1, 1975: All remaining county staff absorbed by SDAT

Other notable features of the reform:

- Prior to the reform, counties routinely failed to appropriate sufficient funds to satisfy Maryland's constitutional requirements around uniformity of assessments (Cardin and Rombro, 1973)
- Reporting indicates that SDAT increased staffing, implemented standardized valuation techniques, and facilitated IT investment (Dilts, 1974)
- All counties placed on a 3-year assessment cycle with 1/3rd of properties revalued, along with revaluation at sale
- The law also authorized the creation of state-administered county appeals boards

Conceptual Framework

State centralization may affect assessment uniformity through three principal mechanisms:

- **Professionalization**: Assessment quality is influenced by administrative capacity and institutional design (Bowman and Mikesell, 1989; Eom, 2008; Chicoine and Giertz, 1988; Beltrán et al., 2025).

- **Standardization**: Consistency of valuation, reassessment, appeals procedures affect assessment uniformity (Eom, 2008; Ross, 2013; Plummer, 2014; Amornsiripanitch, 2022; Kim and Hou, 2024)

- **Assessor incentives**: Shifts discretion away from local officials, reshaping the incentive structure of assessors (Bowman and Mikesell, 1989; Ross, 2011; Combs, Foster, and Troland, 2023; Chen and Cohen, 2024)

Assessment Data

We draw on (discontinued) data from the Census Bureau's Sales Ratio Studies to evaluate assessment uniformity:

- Sales-ratio portion of the Taxable Property Value reports from 1957 to 1992
  - Published every 5 years
- Contains intra- and inter-area performance statistics for an average of 1,421 sampled local areas across the United States
  - Performance statistics are derived from approximately 100,000 residential sales recorded in the preceding year
- Maryland's performance statistics are reported for an average of 18 local areas based on about 2,100 sales per report

Performance Measures

- Intra-area — within local areas
  - Median Assessment Sales Ratio (ASR): Median of all class-specific parcels in an area
  - Coefficient of dispersion (COD): Mean deviation of parcels from local area median divided by local area median
- Inter-area — across local areas
  - Statewide median ASR: Median of all local area medians
  - COD: Local area mean deviation from statewide median divided by statewide median
- Intra- and inter- CODs range over different geographies but otherwise have the same interpretation
  - Higher CODs mean less uniformity, either within areas (intra) or across areas (inter).

Performance Measures

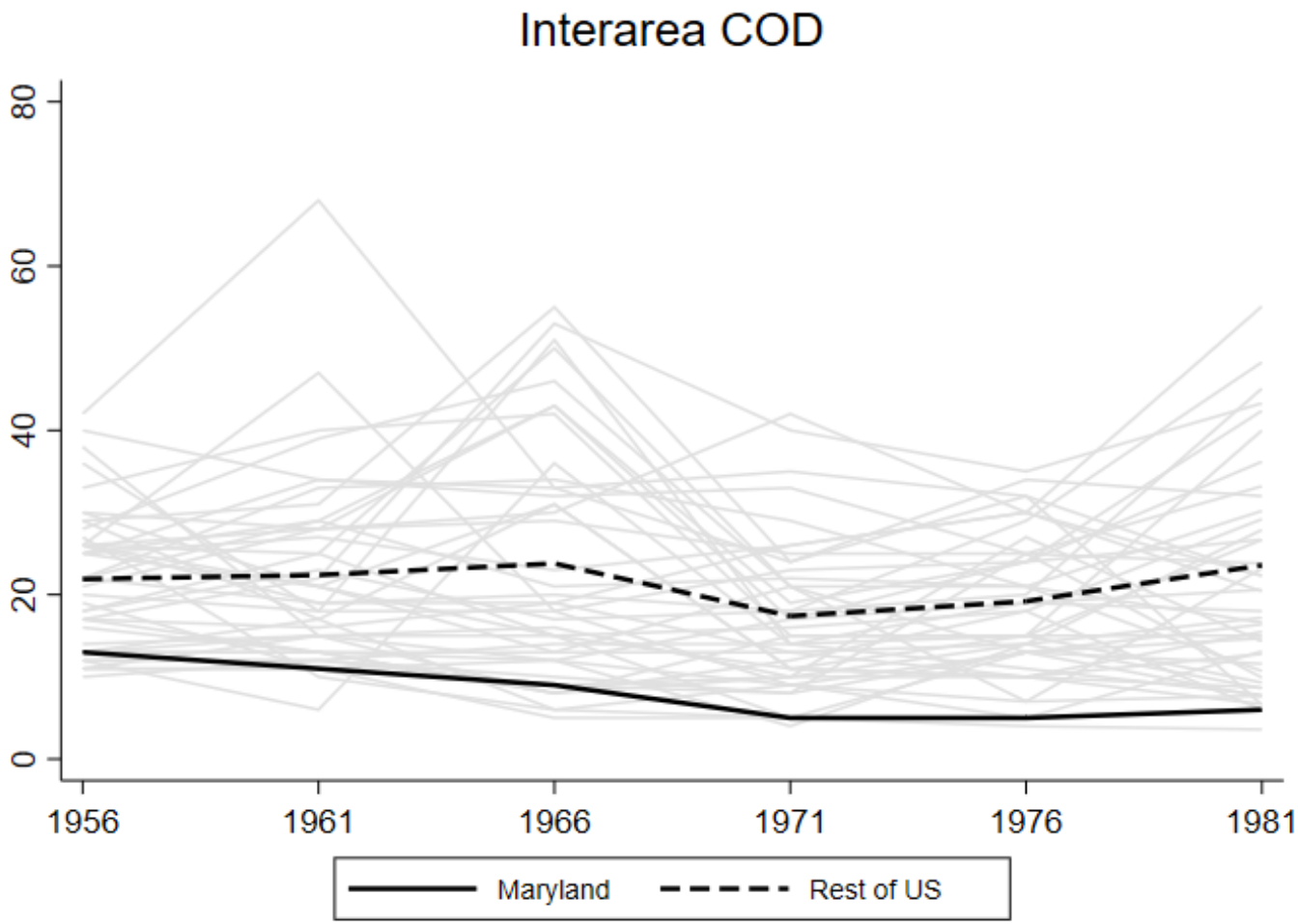
Table: Summary Data from Census's National Sales Ratio Studies, 1956–1981

	Maryland				Rest of U.S.			
Year	Est. No. of Sales	Median Area ASR	Mean Dev	Inter COD	Est. No. of Sales	Median Area ASR	Mean Dev	Inter COD
1956	2,280	45.4	5.9	13.0	102,220	25.8	5.5	22.2
1961	2,054	49.1	5.2	10.6	107,646	27.1	5.7	21.7
1966	2,174	52.6	4.9	9.3	117,426	32.7	7.4	23.6
1971	2,882	49.1	2.3	4.7	104,618	33.0	5.4	16.8
1976	1,863	39.2	2.0	5.1	106,137	31.8	5.1	18.2
1981	1,115	34.5	2.1	6.1	54,185	35.9	6.3	22.9

Notes: The Census Bureau reports the actual number of transactions nationally but provides only estimates at the state and local area level. The "Mean Dev" is the mean area absolute deviation from statewide median ASR. The inter-area coefficient of dispersion (COD) is the mean absolute deviation scaled by the statewide median ASR.

Performance Measures

Figure: Inter-Area (Statewide) Uniformity in Maryland and the Rest of U.S., 1956-1981



Empirical Strategy

- We use SCM to construct a "synthetic Maryland" based on other states that matches Maryland's assessment uniformity in the pre-reform period (Abadie, Diamond, and Hainmueller, 2010; Abadie, Diamond, and Hainmueller, 2015; Abadie, 2021)
  - Key identifying assumption: the weighted combination of control states approximates Maryland's untreated path in the post period

- Match on pre-reform outcomes and covariates as available in Census ratio studies: the mean deviation in 1961, number of areas, number of sales sampled, mean sales price, and median ASR

- We report classic and bias-corrected SCM estimates, plus placebo and donor-pool robustness checks using `allsynth` by Wilshire (2022)
  - Helps address potential interpolation and small donor pool bias (Abadie and L'hour, 2021; Ben-Michael, Feller, and Rothstein, 2021).

Inter-Area (Statewide) Uniformity: SCM Results

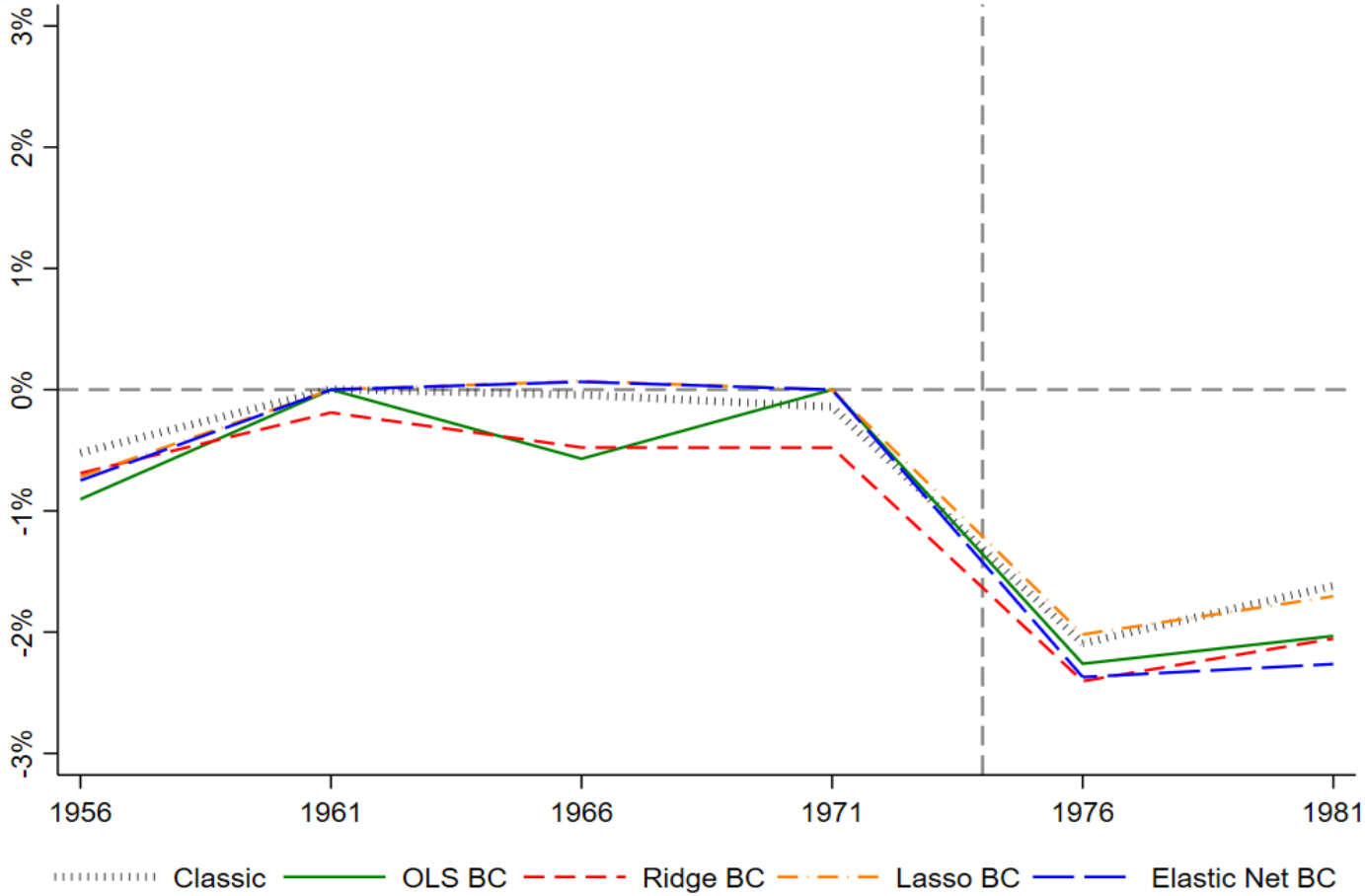
Table: Summary of Matching Variables in the Pre-Reform Period

Variable	Maryland	Synthetic Maryland	Mean of All States
Average deviation, 1961	5.2	5.2	5.7
Average deviation, 1971	2.3	2.4	5.4
Number of areas	17.7	18.1	27.5
Number of sales	14,920	13,632	13,689
Mean sales price	30,979	26,945	14,664
Median ASR	45.0	36.9	29.7

Notes: The synthetic Maryland is composed of Nevada (46.1 percent), Iowa (32.8 percent), Florida (20.2 percent), and Ohio (0.01 percent). Hawaii, Montana, Alaska, Washington DC, and California were excluded from the donor pool.

Inter-Area (Statewide) Uniformity: SCM Results

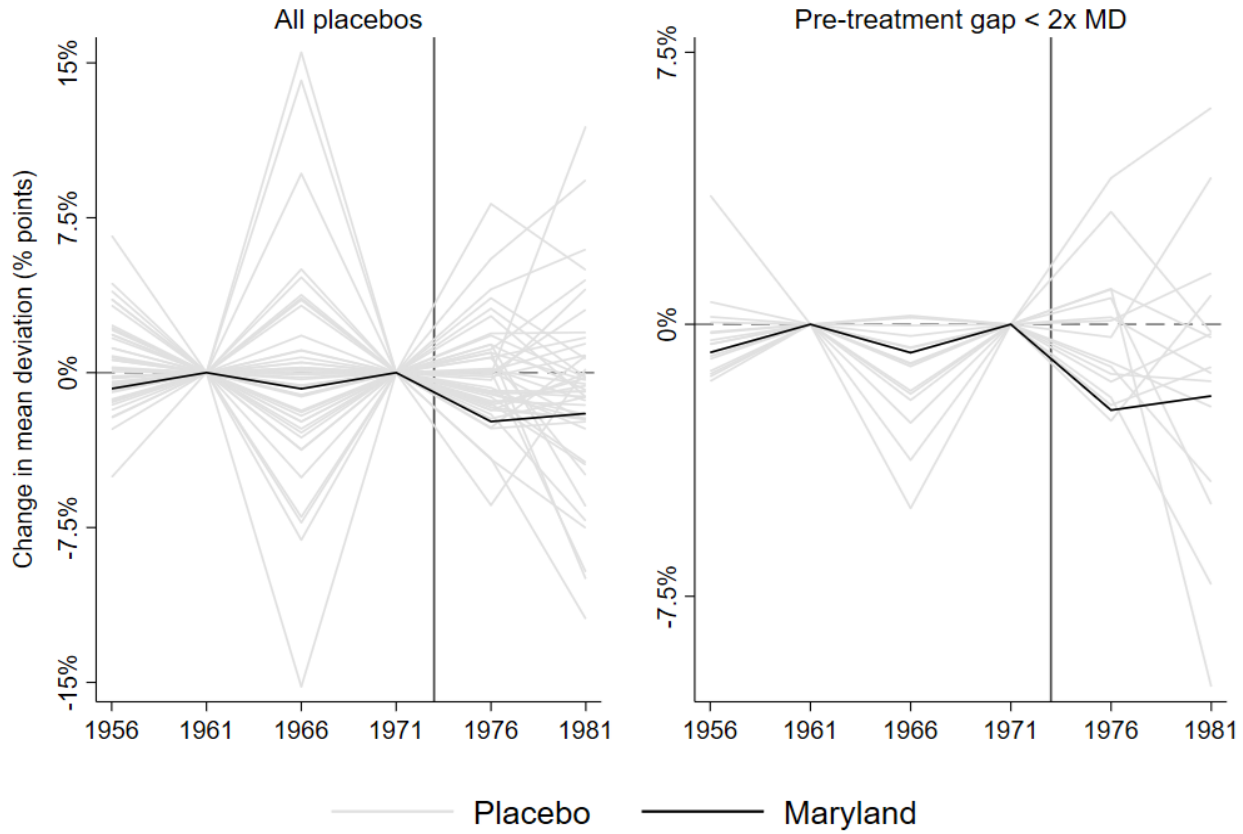
The ∼2pp decline in Maryland's COD (relative to the synthetic control) following centralization equates to a ∼40% post-reform improvement in assessment uniformity across local areas:



Inter-Area (Statewide) Uniformity: Robustness Checks

This baseline result is robust across standard SCM robustness checks, including:

1. The "leave-one-out" test on the donor pool
2. Successively shrinking the donor pool to states with similar pre-reform CODs
3. Placebo treatment checks on donor pool states:



Intra-Area (County) Uniformity: Data and Method

- We repeat this analysis at the county-level for 7 of 24 Maryland counties
  - The Census Bureau only reports data for larger counties
- We similarly construct a synthetic counterfactual for each county composed of donor counties/cities in other states
  - We restrict the full donor pool to 201 counties/cities with CODs within $\sim$ 2pp of each Maryland county to ensure valid matches
  - Restriction loosened to 5pp for two counties to improve match quality

Intra-Area (County) Uniformity: Data and Method

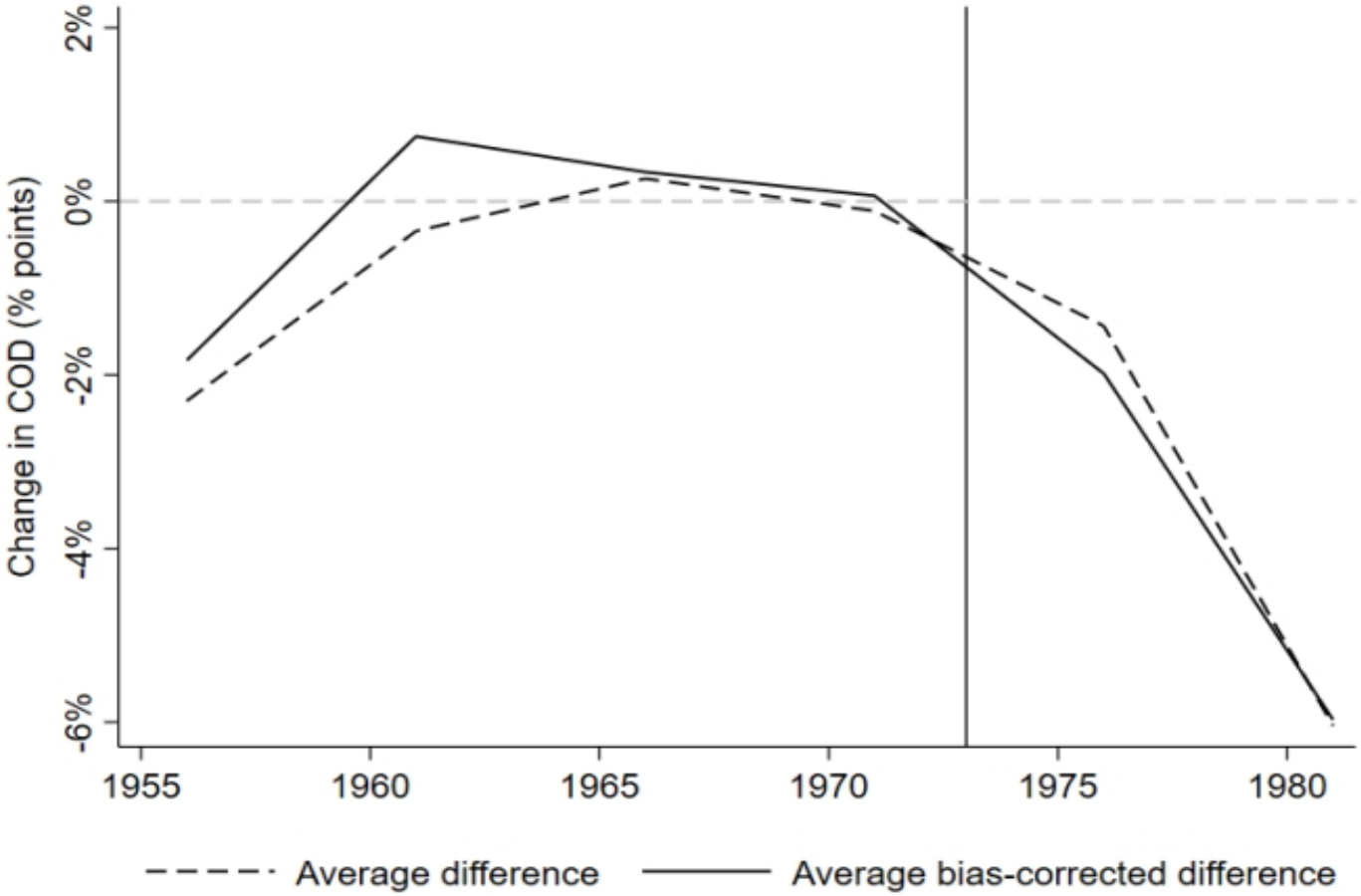
Table: Assessment Performance by Sampled Local Area

Area	% Population Black 1970	Per Capita Income 1970	Pre-Reform		Post-Reform	
			ASR	COD	ASR	COD
Anne Arundel County	11.1	$4,663	45.8	17.9	34.5	14.0
Baltimore County	3.2	$5,026	54.6	15.8	37.9	13.2
Baltimore City	46.4	$4,052	65.5	28.0	36.3	61.0
Frederick County	6.9	$4,211	47.4	18.3	37.9	18.6
Harford County	8.2	$4,428	46.5	19.2	38.3	10.1
Montgomery County	0.2	$7,207	49.4	11.4	37.2	12.3
PG County	13.9	$5,245	47.6	16.1	38.6	9.6
Rest of U.S.	10.8	$4,134	30.8	22.4	35.8	25.8

Notes: The "pre-reform" column corresponds is the average of each county and the rest of the U.S. from 1956 to 1974. The "post-reform" column is the average from 1974 to 1981. The "Rest of U.S." corresponds to the average values of 929 localities outside of Maryland that appeared in one or more of the Census Bureau's ratio studies between 1956 and 1981. The "Rest of U.S." black population and per capita income is the U.S. average excluding Maryland.

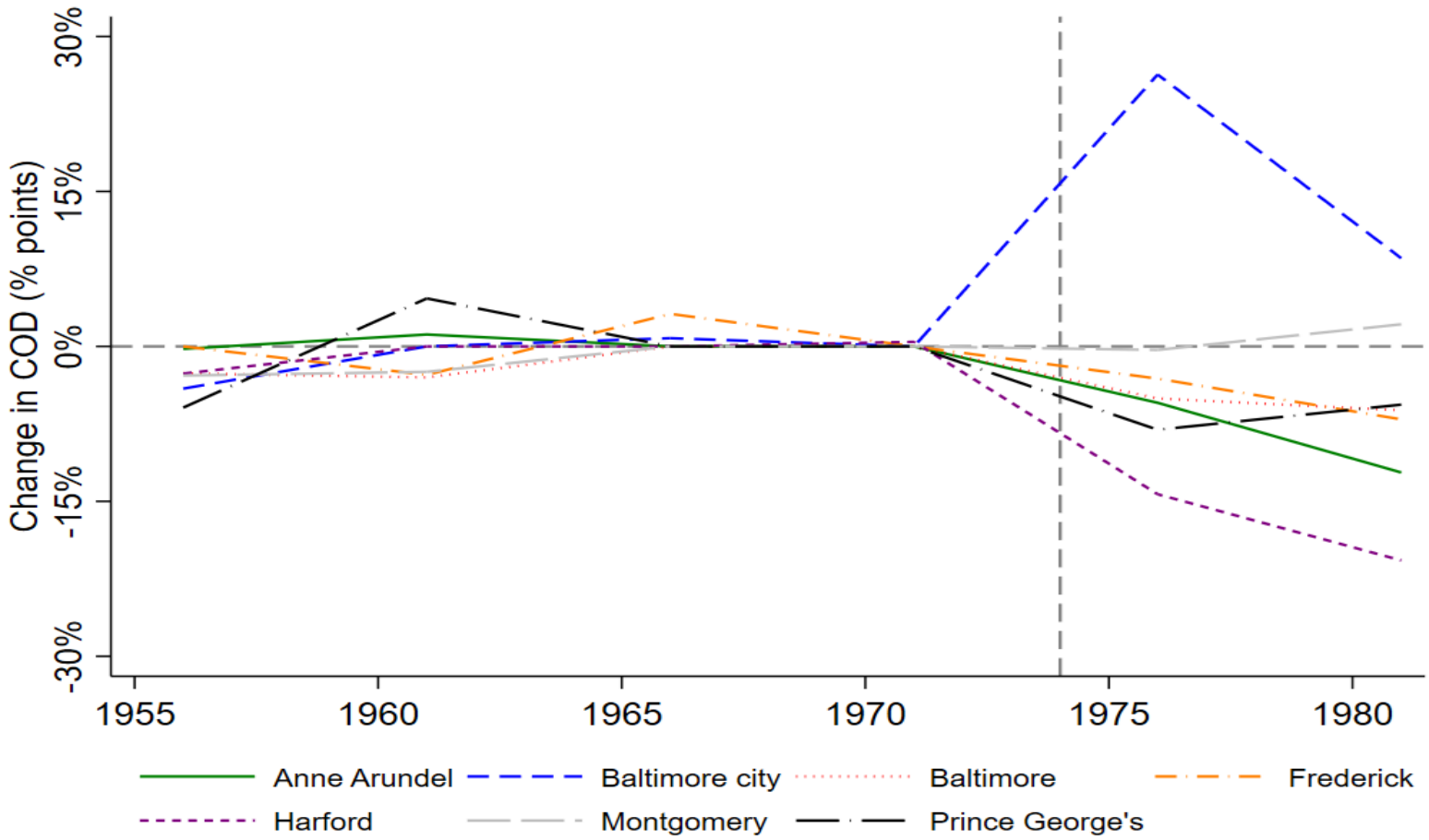
Intra-Area (County) Uniformity: Aggregate SCM Results

In aggregate, the 7 sampled Maryland counties experienced intra-area assessment uniformity improvements ranging from 15-22%, depending on specification:



Intra-Area (County) Uniformity: SCM Results by County

However, one jurisdiction (Baltimore City) experienced a sizable post-reform deterioration in within-area uniformity:



Intra-Area (County) Uniformity Results

Table: Maryland Counties by Post-Reform Change in Assessment Uniformity

Variable	Better Off	Worse Off	Not Significant
COD	18.5	28.0	15.4
Median ASR	46.1	65.5	49.8
Population, 1970	208,087	904,585	474,565
% Black, 1970	9.6	46.4	6.1
Per capita income	$4,546	$4,052	$5,422
Average sales price	$16,624	$9,994	$19,641

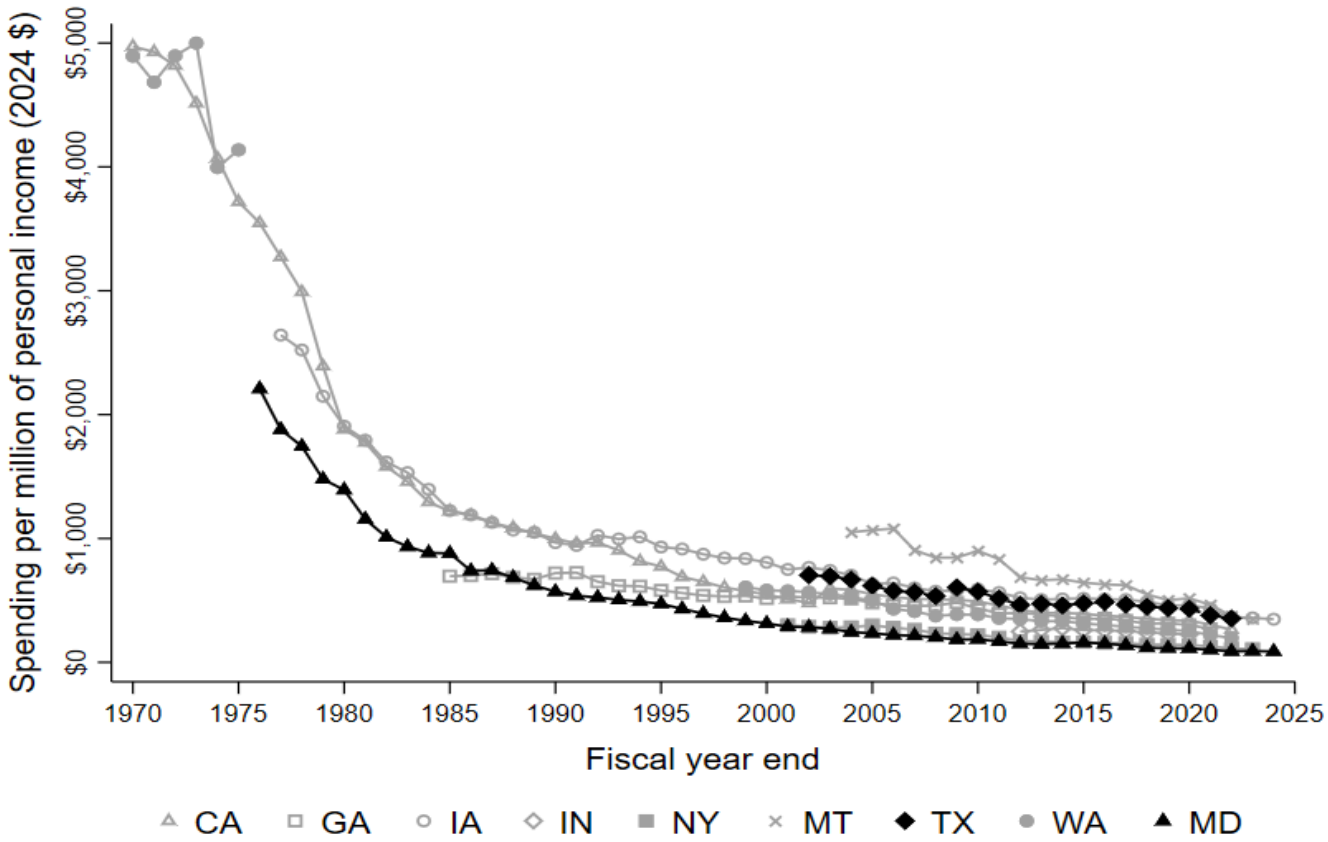
Notes: The "better off" column includes Anne Arundel and Harford counties. The "worse off" column contains Baltimore City only. The remaining four counties appear in the "Not Significant" column.

Assessment Cost Analysis: Motivation

- We next consider whether Maryland's centralization reform altered the cost of assessment administration
- Prior research on local assessment consolidations indicates that property assessment exhibits economies of scale (Mehta and Giertz, 1996; Sjoquist and Walker, 1999; Krupa, 2016; Kim, Hou, and Yinger, 2023)
- Evaluating cost in this setting is challenging because:
  1. There's no national dataset that documents local assessment expenditure
  2. Maryland's reform coincided with a widespread decline in the cost of assessment

Assessment Cost Analysis: Background

Figure: Spending on Assessment Administration in Selected States, 1970-2024



Notes: Spending reflects state or local dollars spent or budgeted toward assessment administration, excluding appeals (where possible), aggregated to the state level. Data are reported in 2024 dollars as a share of state personal income (in millions).

Assessment Cost Analysis: Data and Method

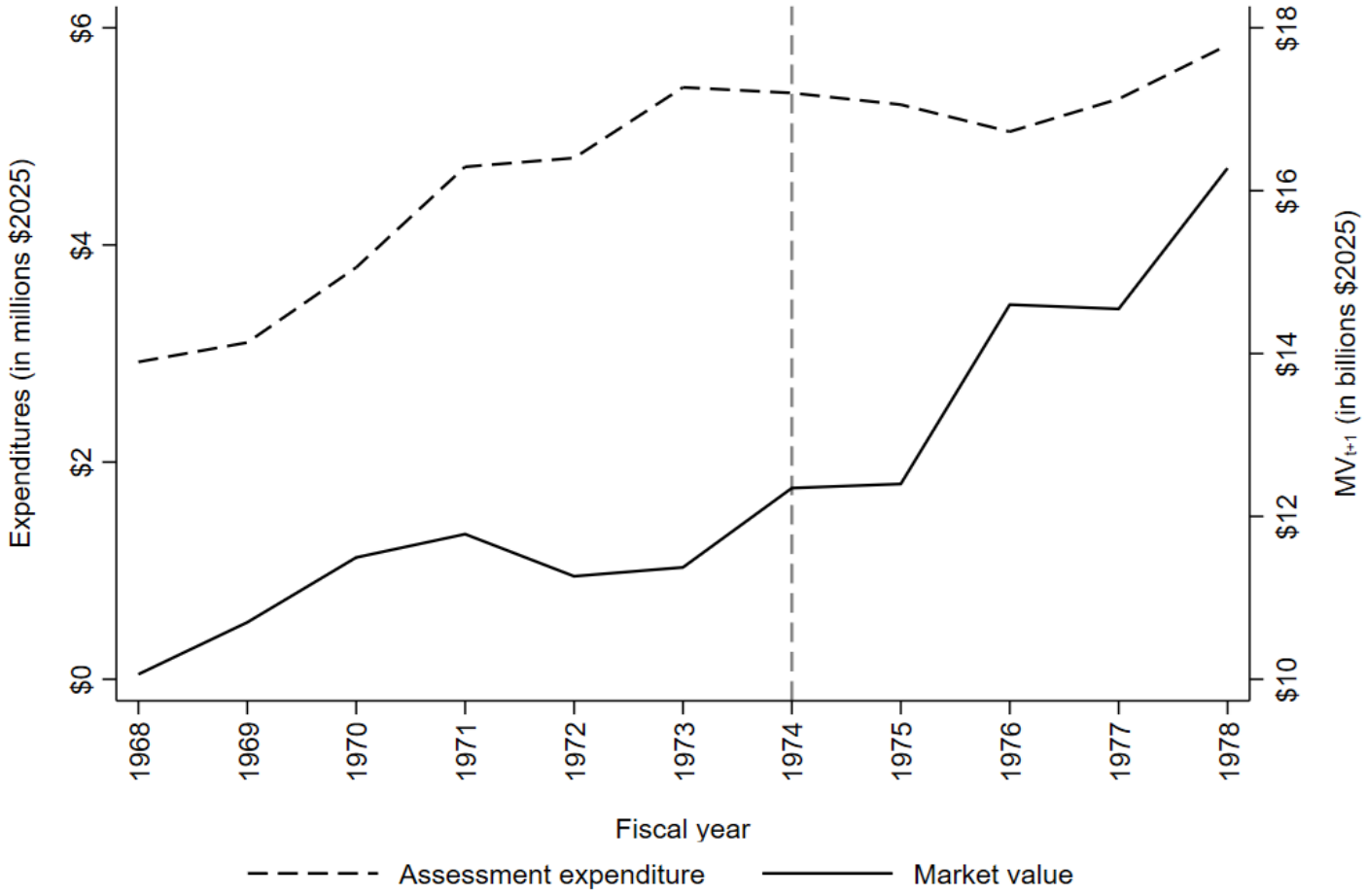
- We obtained assessment expenditure records for Anne Arundel County, MD from the Maryland State Archives from 1968 to 1978. We combine these with state budget records that show the state's spending on assessment administration within Anne Arundel County from 1973 onward

- The outcome of interest is assessment expenditures per dollar of assessed market value, E_t/V_{t+1}, where E is the assessment expenditure in fiscal year t and V is the assessed market value in $t+1$

- We construct a synthetic Anne Arundel County from a donor pool of 52 California counties based on pre-reform assessment expenditures and other relevant characteristics (e.g. effective tax rate, total market value)
  - California county data were obtained from the California Board of Equalization

Assessment Cost Analysis: Data and Method

Figure: Anne Arundel County, MD Assessment Expenditure vs. Market Value, 1968-1978



Anne Arundel Assessment Spending: SCM Results

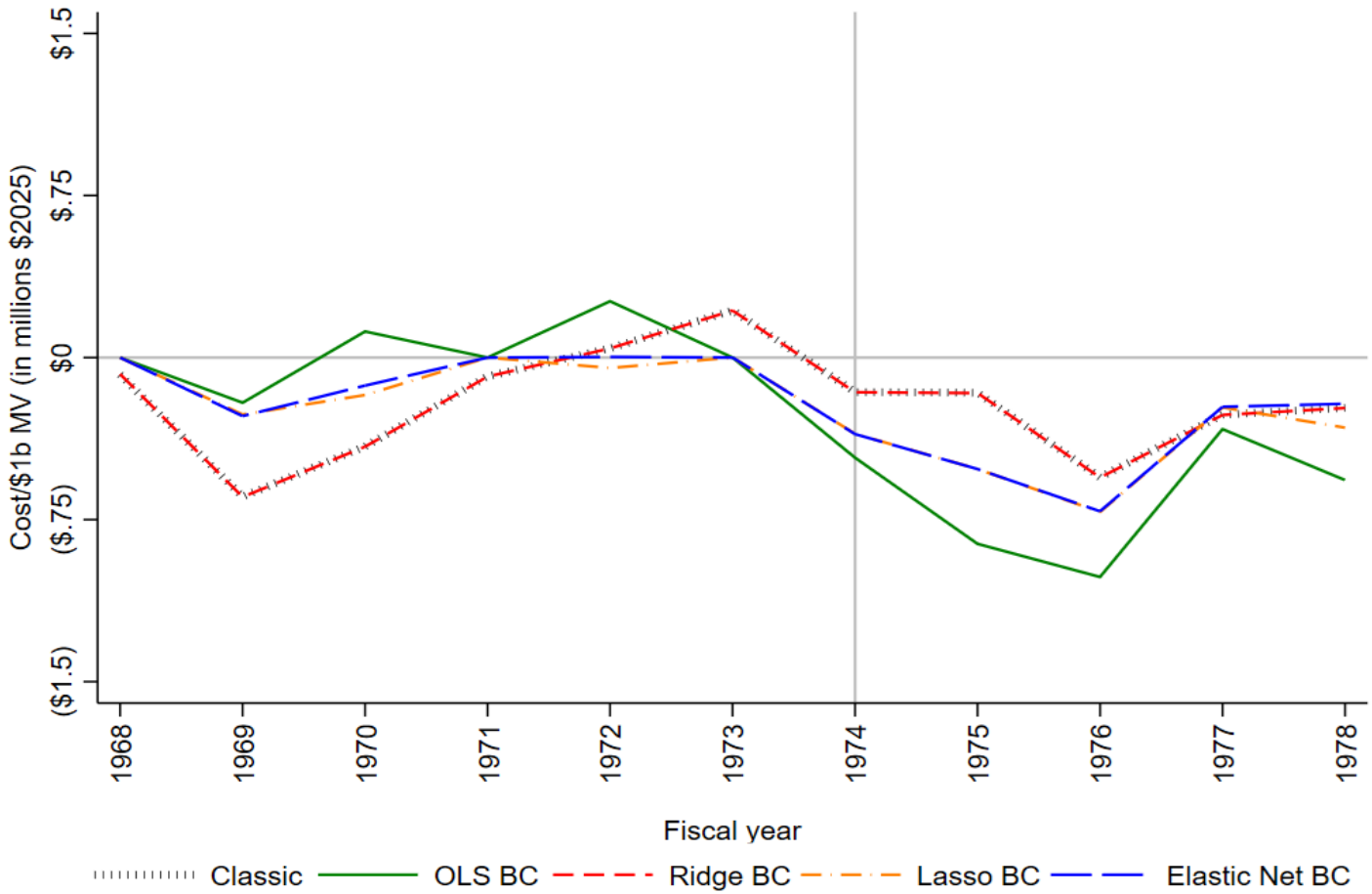
Table: Summary of Matching Variables in the Pre-Reform Period

Variable	Actual	Synthetic	Donor Pool Mean
Cost per $1b of MV, 1968 (millions $)	$2.7	$2.8	$3.2
Cost per $1b of MV, 1971 (millions $)	$3.2	$3.3	$2.8
Cost per $1b of MV, 1973 (millions $)	$3.5	$3.3	$2.8
Absolute value of LOA difference (% pt)	16.4	9.7	8.2
Effective tax rate (%)	2.2	0.8	0.7
Market value$_{t-1}$ (billions $)	11.7	16.1	31.2

Notes: Assessment cost and market values are inflation-adjusted to 2025 dollars. The synthetic Anne Arundel County is composed of Merced County (45.1 percent), Santa Barbara County (43.8 percent), Sacramento County (6.3 percent), and Siskiyou County (4.8 percent).

Anne Arundel Assessment Spending: SCM Results

The elastic-net bias correction results suggest the reform yielded about $400,000 in cost savings annually, which is a 12.5% inflation adjusted reduction in expenditure on assessment relative to the pre-reform period:



Budgetary Fiscal Illusion: Motivation

- Finally, we test whether Maryland's shift to state property assessment administration influenced county spending
- After centralization, county assessment departments were abolished, so county general government expenditures *should* decline if assessor budgets were eliminated rather than repurposed
- If general government spending did not change post-reform, counties likely reallocated assessor resources to other administrative functions instead of returning savings to taxpayers
  - Consistent with a budgetary fiscal illusion (Dollery and Worthington, 1996).

Budgetary Fiscal Illusion: Data

- We obtained simplified budget records for all 24 Maryland counties and 57/58 California counties (excluding San Francisco) from 1967 to 1977

- The variable of interest is the change in "general government" expenditures
  - This category includes administrative functions (e.g. finance, human resources, etc.) rather than functional spending
  - We estimate that assessment administration makes up around 10% of this expenditure category vs 0.5% of total county spending
  - More likely to detect the effect (if any) on local spending by focusing on this sub-category

Budgetary Fiscal Illusion: Data

Table: Local General Government Expenditure in California and Maryland, FY 1967-77

	California			Maryland		
Variable	All Years Mean (Std Dev)	Pre Mean (Std Dev)	Post Mean (Std Dev)	All Years Mean (Std Dev)	Pre Mean (Std Dev)	Post Mean (Std Dev)
Gen Gov't Expenditure	\$86 (329)	\$108 (417)	\$70 (252)	\$29 (58)	\$36 (66)	\$25 (52)
Market Value	\$30,445 (80,965)	\$31,711 (80,187)	\$29,602 (81,585)	\$6,785 (9,695)	\$7,126 (9,875)	\$6,557 (9,602)
GG Exp per million MV	\$2,650 (1,304)	\$3,062 (1,707)	\$2,376 (841)	\$3,340 (2,644)	\$4,076 (3,307)	\$2,948 (1,975)
Effective Tax Rate	0.6 (0.2)	0.6 (0.2)	0.6 (0.2)	2.3 (0.7)	2.3 (0.6)	2.3 (0.7)

Notes: General government expenditure and market values are reported in millions of nominal (1977) dollars. The "pre-reform" period corresponds to FY 1967-68 to FY 1973-74 and the "post-reform" period is 1973-74 to 1976-77. The California data correspond to 57 of the state's 58 counties with San Francisco excluded due to missing data. Maryland data correspond to all 23 counties and Baltimore City.

Budgetary Fiscal Illusion: Method

The baseline difference-in-differences model is

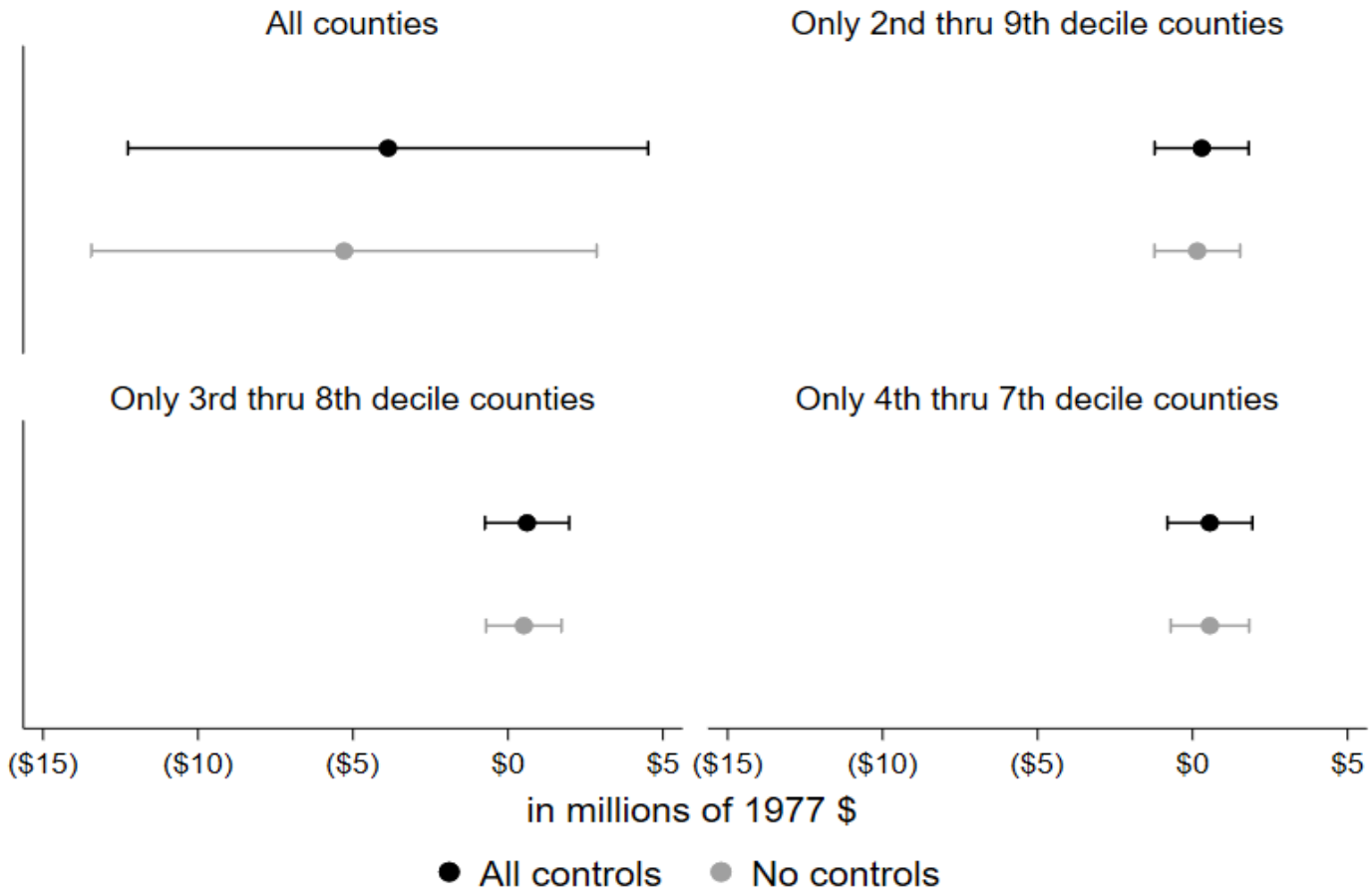
$$Y_{ct} = \alpha + \beta\Big(\text{MD}_c \times \text{Post}_t\Big) + \gamma_c + \delta_t + X'_{ct}\theta + \varepsilon_{ct}.$$

Where:

- Y_{ct}: county general government expenditures (in 1977 dollars)
- MD_c: indicator for Maryland counties
- Post_t: indicator for post-centralization years
- γ_c and δ_t: county and year fixed effects
- X_{ct}: covariates: market value of assessed property and the effective property tax rate
- β: post-reform change in Maryland relative to California

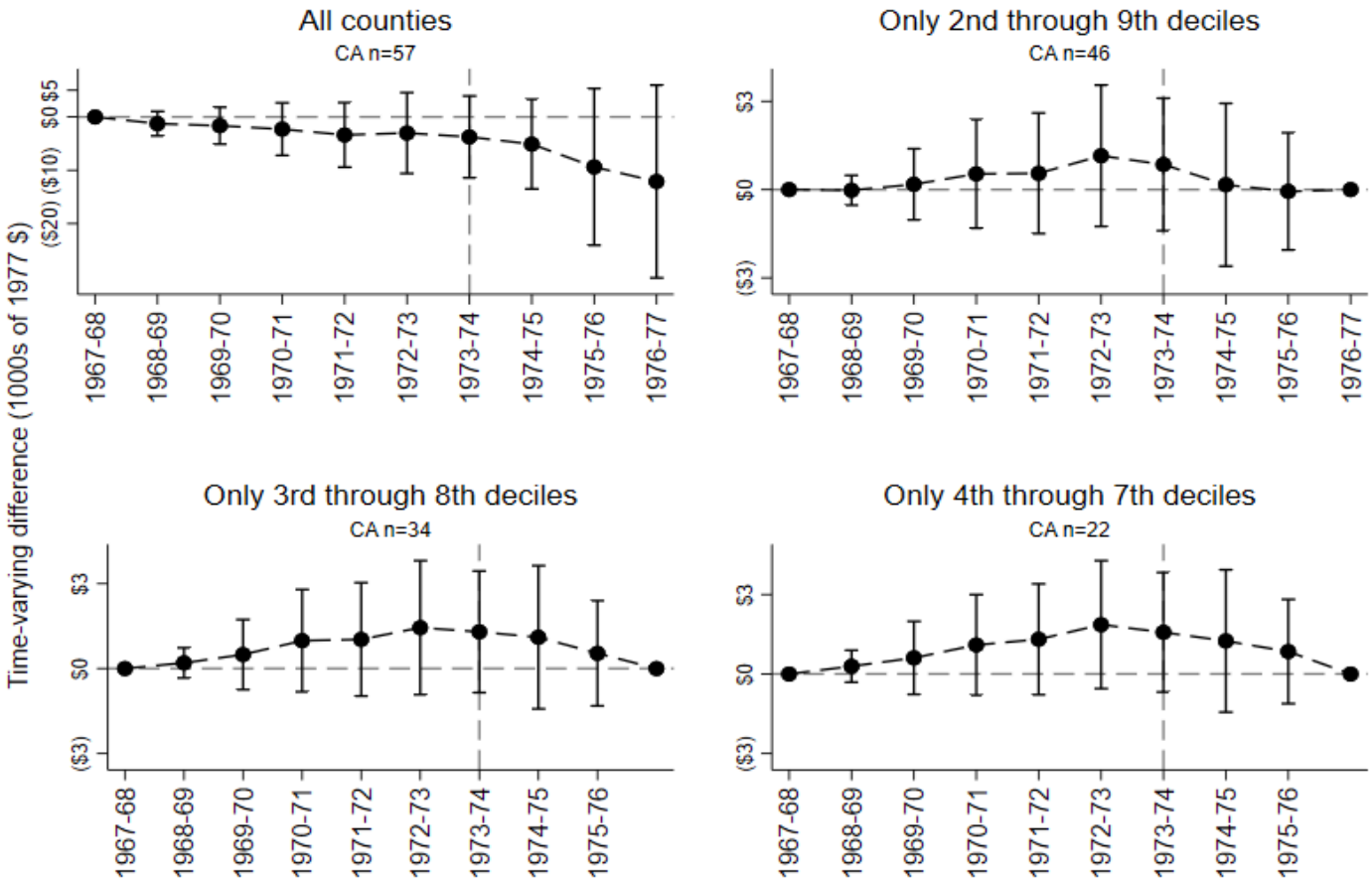
We separately estimate an event study to assess pre-trends, and repeat the analysis using using progressively narrower California subsamples (by 1970 population deciles) to improve comparability, following Autor (2003).

Budgetary Fiscal Illusion: Difference-in-Differences Results



Notes: Bars correspond to a 95% confidence interval around the estimated ATE.

Budgetary Fiscal Illusion: Event Study Results



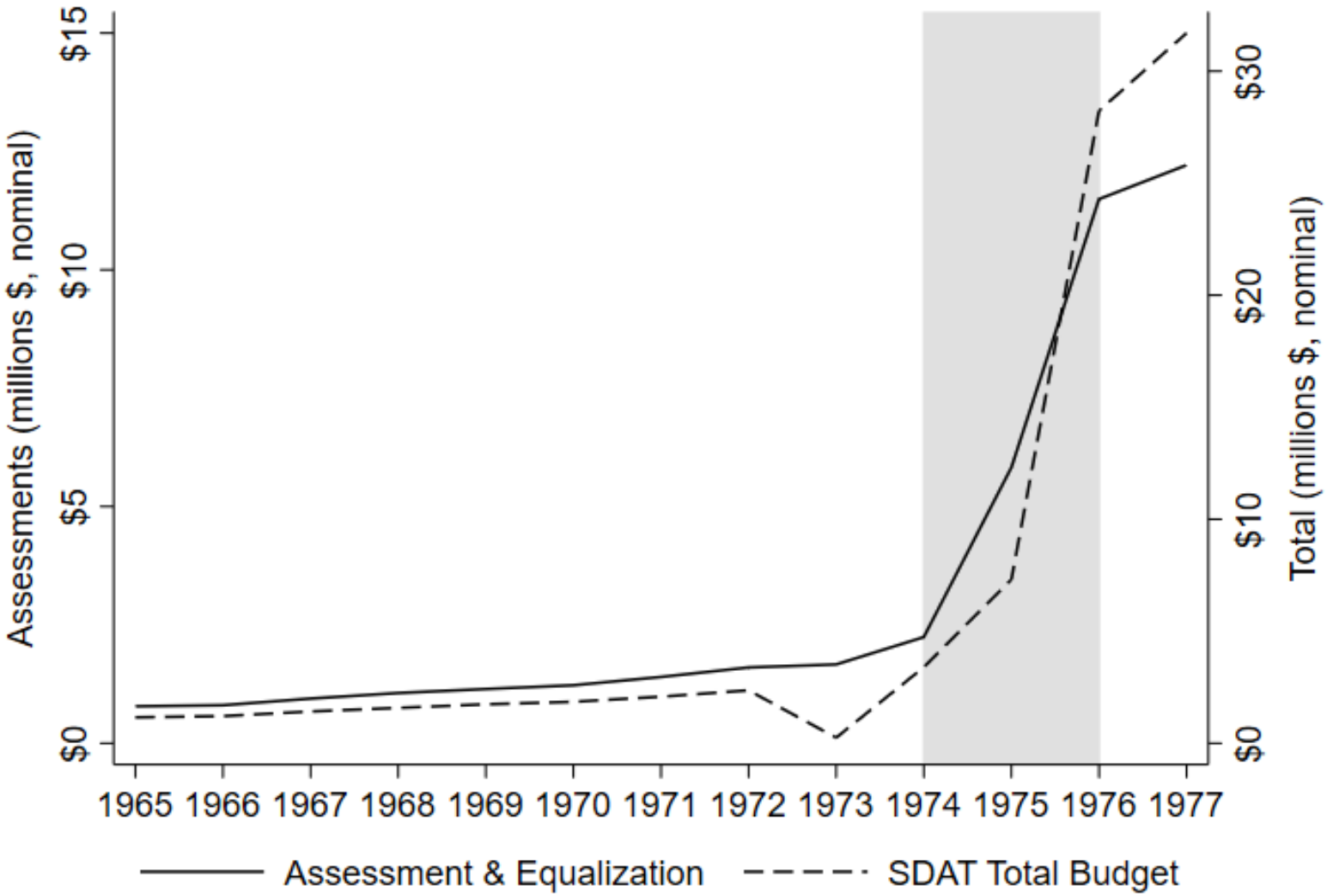
Notes: Bars correspond to a 95% confidence interval around the estimated ATE.

Conclusion

- The primary goal of this paper is to test whether state assessment administration influences assessment uniformity
- We found that Maryland's statewide inter-area uniformity declined following state centralization of assessment
  - Assessment uniformity also improved within counties (on average), though Baltimore City's assessments became less uniform
  - We cannot evaluate long-run outcomes because the Census dataset was discontinued
- Our single county case study suggests that centralization generated modest cost savings. Maryland currently spends less on assessment administration than other states
- Additional results suggest that the transition led to no reduction in local public spending on administrative functions

Backup Slides

Maryland SDAT Budgeted Expenditures, FY 1965-77

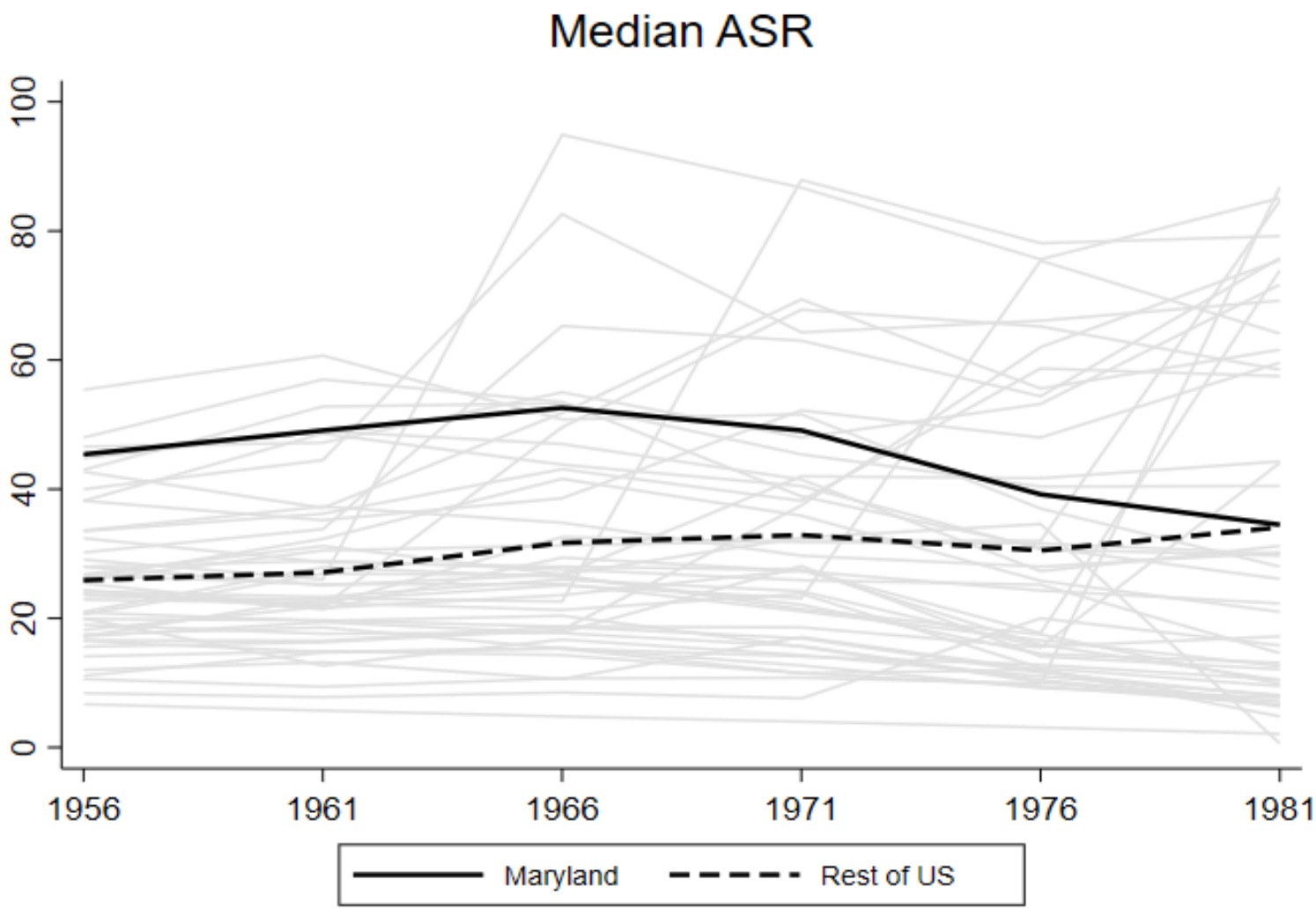


Inter-area (Statewide) Uniformity, 1956-1981

Table: Distribution of MD sampled areas' median ASR (in percent) by range

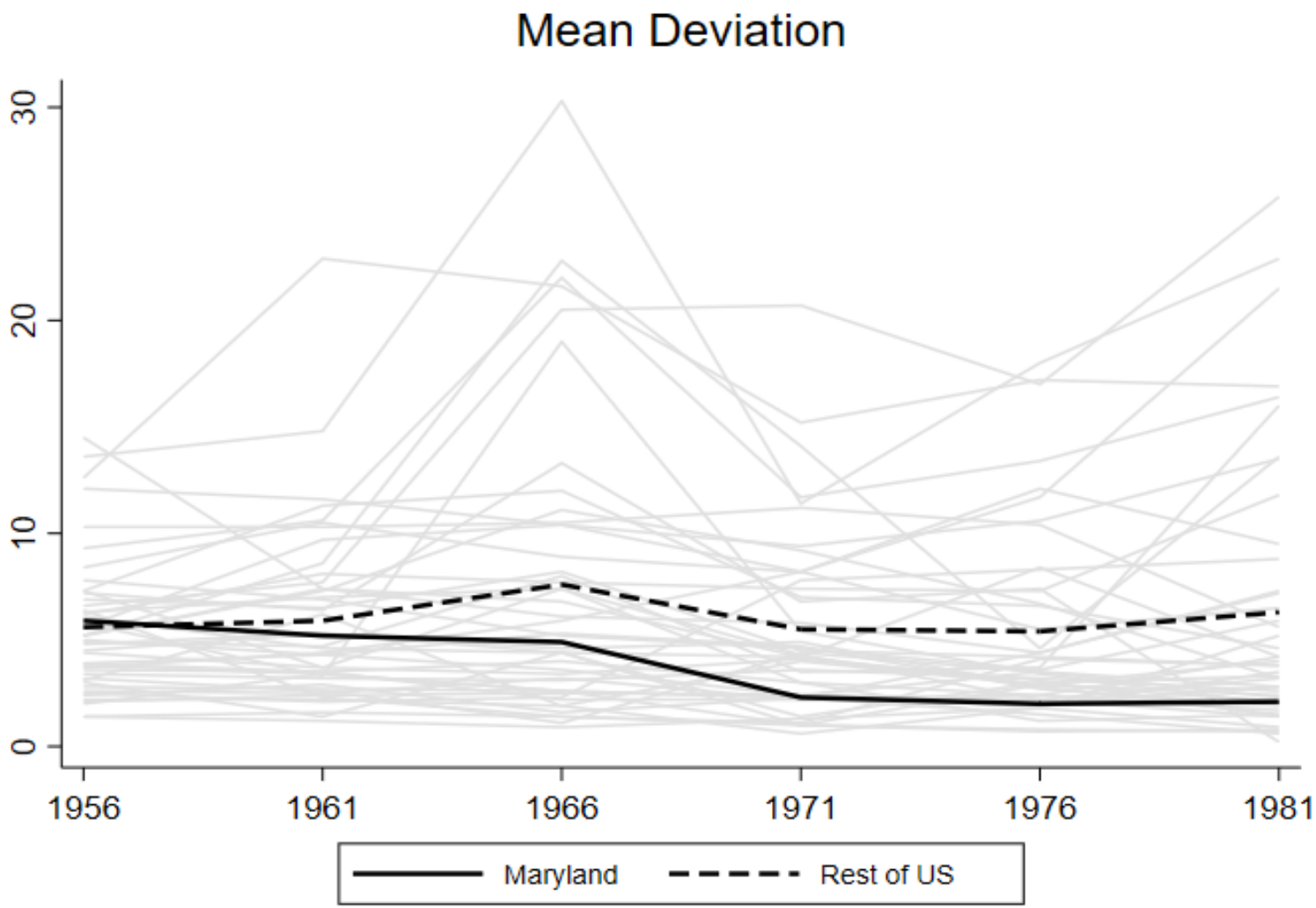
Year	Sampled areas	25-29.9%	30-39.9%	40-49.9%	50%$\geq$
1981	16	1	15	0	0
1976	16	0	10	6	0
1971	17	0	0	12	5
1967	17	1	0	5	11
1962	22	1	0	12	9
1957	18	0	5	8	5

Statewide Median Assessment-Sales Ratio, 1956-1981



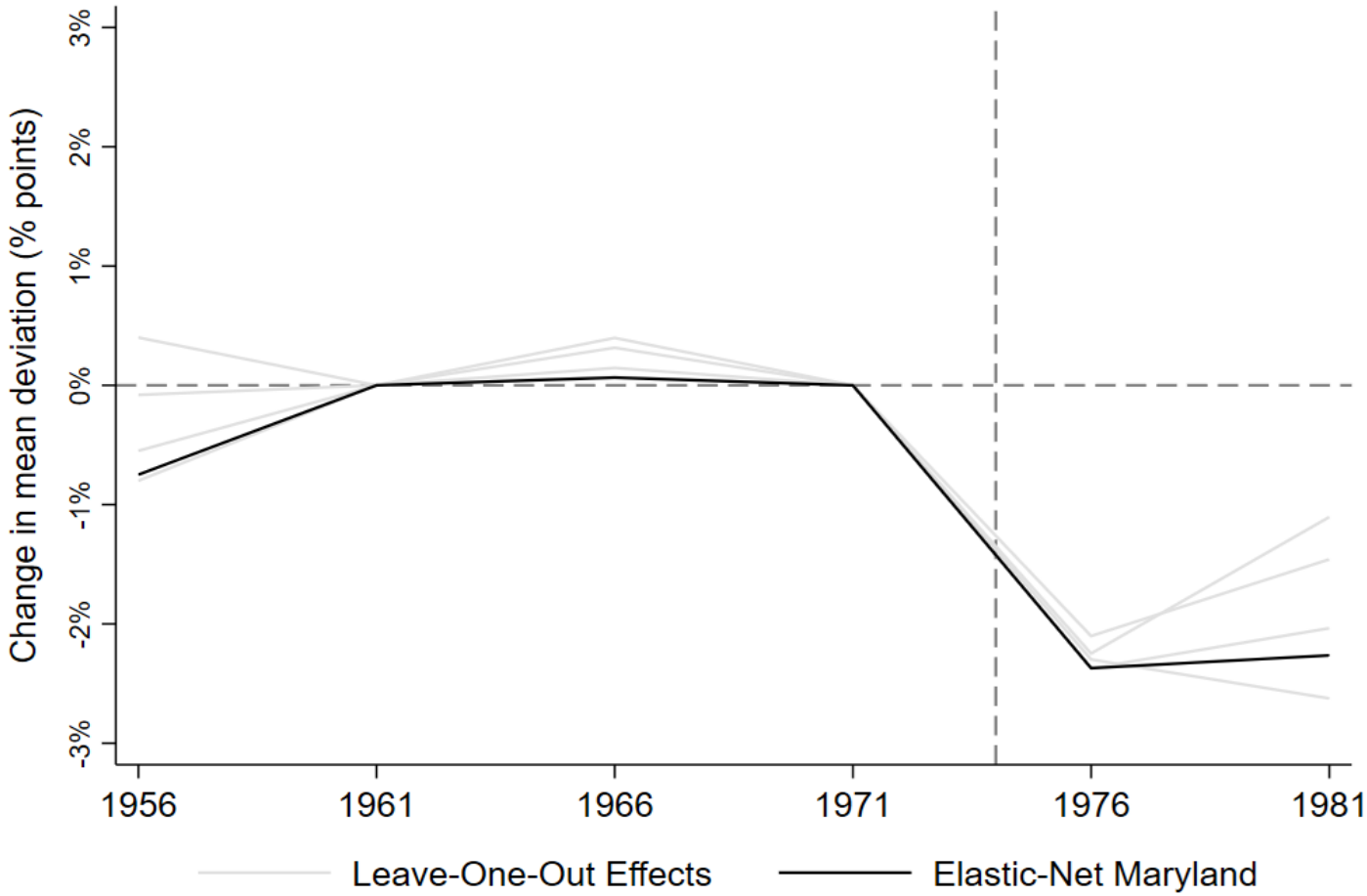
Notes: The statewide median ASR is the median of local-area median ASRs.

Statewide Mean Deviation, 1956-1981



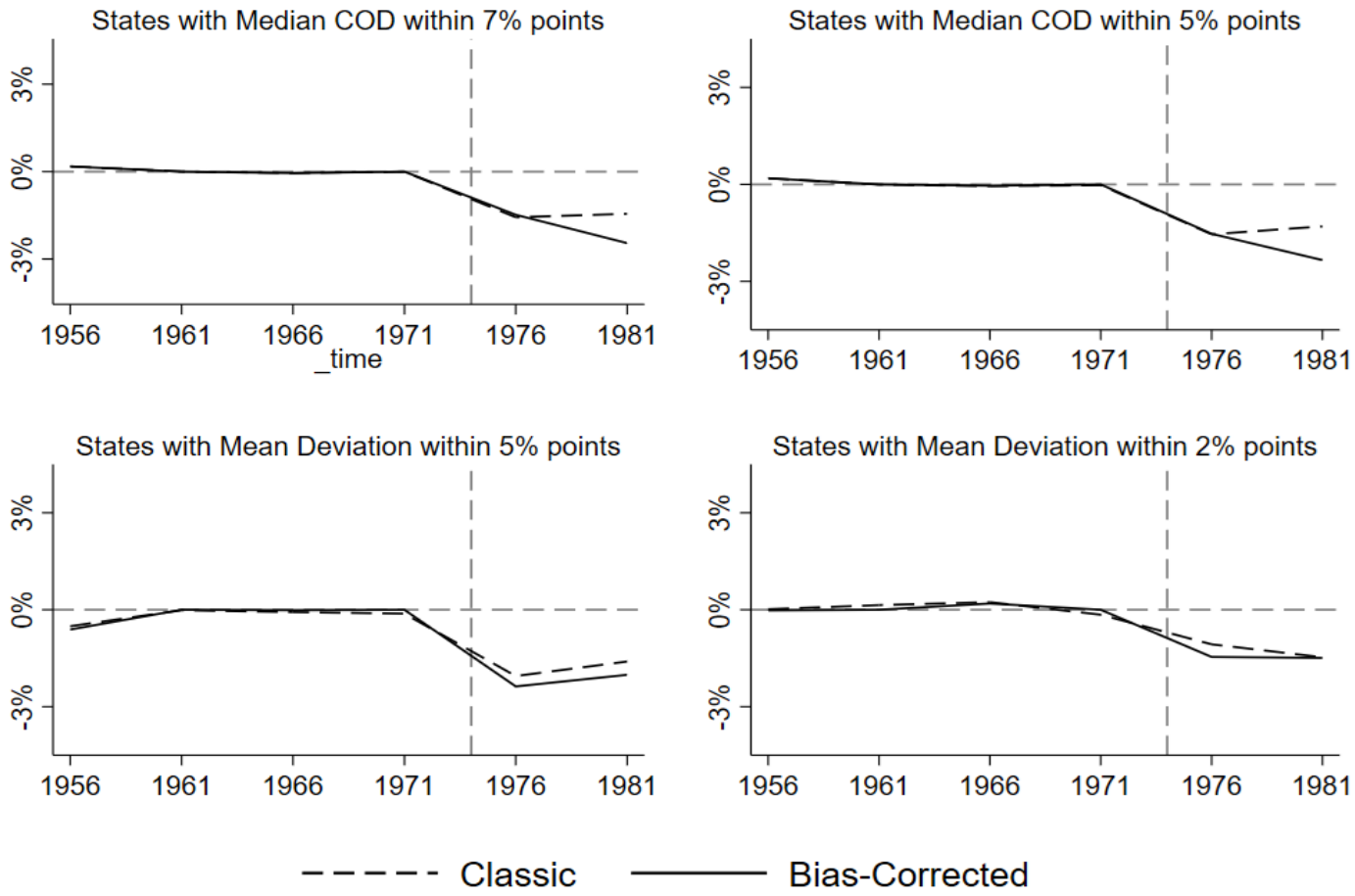
Notes: The mean deviation is the average of each local area's absolute deviation from the statewide median ASR.

Inter-Area (Statewide) Uniformity: "Leave-one-out" test



Notes: This test sequentially excludes each donor state that received a non-zero SCM weight in the baseline analysis and re-estimates the treatment effect with the state excluded to ensures that no single donor state influences the baseline SCM estimate.

Inter-Area (Statewide) Uniformity: Donor Pool Robustness Checks



Notes: In these figures, we successively shrink the donor pool to states that had a similar COD and median deviation as Maryland in the pre-reform period and re-estimate the treatment effect.

County Intra-Area Uniformity: Difference-in-Differences Estimation Results

Variable	Rest of U.S.	Mid-Atlantic
Post Reform (=1)	.218***	.292**
	(.047)	(.099)
Maryland County (=1)	-.017	-.049
	(.042)	(.108)
Post (=1) × Maryland Co. (=1)	-.244**	-.166*
	(.049)	(.069)
Number of Sales (1000s)	-.003	.041
	(.001)	(.027)
Median ASR	-.008***	-.007***
	(.001)	(.002)
Mean Sales Price ($1000s)	-.012***	-.021***
	(.004)	(.004)
Constant	3.601***	3.813***
	(.091)	(.102)
Observations	1,223	282

Notes: Statistical significance indicated by *** $p < .010$ ** $p < .050$ * $p < .100$. The dependent variable is the log of the coefficient of dispersion for sampled single-family homes in the Census Bureau's sales ratio studies.

County Intra-Area Uniformity: In-Space Robustness Checks for Anne Arundel Co., Harford Co., and Baltimore City