How do anti-discrimination laws affect firm performance and financial policies? Evidence from the post-World War II period

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Internet Appendix A: Determinants of the timing of anti-discrimination laws

To investigate how state-level macroeconomic trends affect the timing of AD laws, we estimate Cox proportional hazard models. We adopt state-level demographic and economic characteristics studied by Collins (2003b) and employ hazard models where we fix covariates at a given point or time, as well as models where we employ time-varying covariates (subject to data availability). We examine the following demographic variables following Collins (2003b). First, we study the percentage of the state's population that is Black. In the fixed covariate models, this variable is measured based on the 1950 Census data. For the time-varying covariate model, we linearly interpolate the percentage of Black population using the 1940, 1950, and 1960 Census data. Second, to assess the impact of religious organizations in the state, we measure the Jewish and Catholic proportion of each state's population in 1952. We are unable to obtain this data in a time-varying fashion. Third, we calculate separate measures to capture the percentage of each state's population that is affiliated with the AFL and CIO unions in 1953. This data is collected from Troy (1957) and is available only at a fixed point in time.

To measure state economic conditions, we employ two main variables. First, we include the overall unemployment rate in the state. Alternatively, following Collins (2003b), instead of measuring unemployment across all races, we measure the unemployment rate among whites. In the fixed covariate model, unemployment is measured based on the 1950 Census data and for the time-varying covariate model, it is interpolated using the 1940, 1950, and 1960 Census data. Collins (2003b) argues that linear interpolation of unemployment rates during war years is infeasible. He forces each state's unemployment to reach the national average for years 1943, 1944, and 1945, and then continues with linear interpolation between 1945 and 1950 and then between 1950 and 1960. We implement a similar interpolation strategy as Collins (2003b). Second, we include the growth rate in the state-level real per capita personal income. Annual data is available on this variable from the Bureau of Economic Analysis. For the fixed covariate model, we measure this variable in year 1950. We use annual data on personal income for the time-varying covariate model. Overall, if deteriorating state-level economic conditions are driving AD law adoption, we should see that AD laws were implemented sooner in states with higher unemployment rates and lower growth in real per capita income. Alternatively, if greater economic growth led states to adopt AD laws sooner then we should see opposite results.

The results from the hazard model are presented in Internet Appendix Table 1. The sample comprises only those states that appear in our firm-year panel for which we are able to collect data on the above variables. The dependent variable is the number of years from 1940 to the year of adoption of the AD law. Hazard ratios are reported in the table. Hazard ratios greater than 1 indicate that an increase in that variable leads to faster adoption of the law. In Columns 1 and 2, we report results from hazard models based on fixed-covariates, and in Columns 3 and 4, we report results based on time-varying covariate hazard models. Our time-varying covariates, namely the percentage of each state's population that is Black, unemployment rate (overall and White), and the growth rate in the state-level real per capita personal income, are denoted with superscript mark (^{a}). In all four columns, we find that the coefficients on overall and White unemployment rate are statistically insignificant. Similarly, we find that the coefficients on the growth in real per capita personal income are also statistically insignificant. These findings allay concerns that state-level macroeconomic conditions are the drivers of AD law adoption. Finally, the signs on demographic variables are generally consistent with those found in Collins (2003b). Specifically, states with higher Jewish and Catholic affiliation are likely to adopt AD laws faster. Similarly, states with higher affiliation to AFL and CIO unions adopt AD laws faster, and states with a higher percentage of Black population are slower to adopt AD laws.

Internet Appendix Table 1: Determinants of timing of anti-discrimination laws (Cox proportional hazard model)

The table reports hazard ratios from Cox proportional hazard models estimating the timing of AD law adoption. *z*-Statistics are in parentheses and indicate whether the hazard ratios are different from 1. Columns 1 and 2 contain results from fixed covariate models, while Columns 3 and 4 contains results from time-varying covariate models. The time varying covariates are denoted by superscript '^{a}' and include four variables: *Unemployment rate, State Income Growth, White Unemployment rate,* and *% Black. Unemployment rate* is the state-level unemployment rate based on Census data. *Growth in Real Per Capita Income* is annual growth rate in the state-level real per capita income. *White Unemployment rate* is the state-level unemployment rate for Whites based on Census data. *% Jewish* (*% Catholic*) is the percentage of the state's population that is Jewish (Catholic). *% Black* is the percentage of the state's population that was Black. *% CIO Union* (*% AFL Union*) is the percentage of the state's population affiliated with the CIO (AFL) union in 1953. Columns 1 and 2 use robust standard errors and Columns 3 and 4 use robust standard errors clustered by state. Further details on variable construction are provided in Internet Appendix A. The symbols ***, **, and * * denote $p<0.01$, $p<0.05$, and $p<0.1$ respectively.

	(1)	(2)	(3)	(4)
	Fixed covariates		Time-varying covariates	
Unemployment rate^a	0.970		0.995	
	(-0.242)		(-0.424)	
White Unemployment rate^a		0.977		0.995
		(-0.181)		(-0.346)
State Income Growth^a	1.067	1.068	0.998	0.998
	(0.512)	(0.520)	(-0.400)	(-0.411)
% Jewish	1.320***	1.319***	1.286***	1.285***
	(3.043)	(3.047)	(3.345)	(3.345)
% Catholic	1.049**	1.049**	1.053***	1.053***
	(2.288)	(2.280)	(2.779)	(2.778)
% Black^a	0.823*	0.821*	0.857**	0.857**
	(-1.874)	(-1.950)	(-1.968)	(-1.972)
% CIO Union	1.103*	1.104*	1.106**	1.106**
	(1.645)	(1.649)	(1.978)	(1.978)
% AFL Union	1.102**	1.102**	1.094**	1.094**
	(2.113)	(2.104)	(2.268)	(2.267)
Number of states	34	34	34	34

Internet Appendix Table 2: Anti-discrimination laws and leverage, robustness to alternative measures

Ordinary least squares regressions for a sample of public firms from 1946 to 1964. *AD Law* is a dummy set to one if a state-level anti-discrimination law is in place, and zero otherwise. *Book Leverage* is the sum of debt in current liabilities and long-term debt (Compustat items *DLC* plus *DLTT*) divided by the book value of assets (*AT*). *Total Leverage* is total liabilities (*LT*) divided by the book value of assets (*AT*). *Market Leverage* is the sum of debt in current liabilities and long-term debt (*DLC* plus *DLTT*) divided by the market value of assets (*DLC+DLTT + CSHO*PRCC_F*). *Operating Profitability* is *OIBDP* divided by *AT*. *Log(1+Total Debt)* is the natural log of one plus debt in current liabilities and long-term debt (ln(1+DLC+DLTT)). Net measures simply subtract cash from the numerator. *Net Book Leverage* is (DLC+DLTT-CHE)/AT. *Net Market Leverage* is (DLC+DLTT-CHE) / (DLC+DLTT + CSHO*PRCC_F). *Earnings Volatility* is the standard deviation of NI/AT over the past 10 years (minimum of three years of data required). All other variables are described in the Appendix. All regressions include firm fixed effects, year fixed effects, and state-specific trends. Standard errors reported in the parentheses are based on heteroscedasticity robust standard errors that are clustered at the firm level. The symbols ***, **, and * * denote $p<0.01$, $p<0.05$, and $p<0.1$ respectively.

	(1)	(2)	(3)	(4)	(4)	(5)	(6)
Dep. Variable:	*Book Leverage*	*Total Leverage*	*Market Leverage*	*Operating Profitability*	*Log(1+Total Debt)*	*Net Book Leverage*	*Net Market Leverage*
AD Law	-0.014***	-0.019***	-0.021***	-0.011***	-0.073*	-0.012*	-0.019*
	(-2.819)	(-3.328)	(-2.716)	(-3.124)	(-1.717)	(-1.943)	(-1.689)
Log (Total Assets)	0.089***	0.089***	0.090***	0.011**	1.102***	0.094***	0.111***
	(10.064)	(9.536)	(7.094)	(2.240)	(20.709)	(9.180)	(5.836)
Return on Assets	-0.746***	-0.468***	-1.390***		-4.991***	-1.060***	-1.233***
	(-13.294)	(-7.721)	(-13.750)		(-12.771)	(-15.020)	(-10.567)
Fixed Assets	0.117***	-0.074*	0.154***	-0.129***	0.751***	0.457***	0.515***
	(3.146)	(-1.931)	(3.260)	(-5.709)	(3.614)	(10.265)	(7.819)
Dividend Payer	-0.024***	-0.013*	-0.054***	0.020***	-0.076*	-0.027***	-0.045**
	(-3.058)	(-1.661)	(-3.781)	(3.681)	(-1.649)	(-2.762)	(-2.534)
State Income Growth	0.000	0.001**	0.001*	0.002***	0.004	0.001	0.001
	(1.352)	(2.012)	(1.808)	(4.394)	(1.172)	(1.490)	(1.157)
Earnings Volatility	0.656***	0.710***	0.302	-0.646***	1.806	0.529**	0.635*
	(3.430)	(3.516)	(1.268)	(-4.913)	(1.511)	(2.317)	(1.843)
Firm and year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State-specific time trends	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	9,425	9,185	6,466	9,810	9,425	9,413	6,454
R-squared	0.84	0.84	0.84	0.74	0.92	0.87	0.81

Internet Appendix Table 3: Propensity score matching

Ordinary least squares regressions using a propensity score matched sample of public firms over a period of five years around the passage of *AD Law*. Treatment firms are those in states where an *AD Law* was adopted in year *t* whereas control firms are those where no AD law is in place. We require that each treatment and control firm have at least one year of data available in the five years prior to and five years after the adoption. We run a logistic regression model where we predict the likelihood of being a treated firm. The explanatory variables in the logistic regression are total assets, net income margin, and fixed assets when finding matches for *Book Leverage* regression. We do not include net income margin when finding matches for the *Operating Profitability* regression since the two would be highly correlated. We then match each treatment observation to a control observation with replacement in the same year and the closest propensity score calculated from the logistic regression. The sample comprises all observations of the treatment and matched control firms in the five years before and five years after the adoption of the laws. *Treatment* is a dummy set to one for firms with a state-level anti-discrimination law (*AD Law*) is in place, and zero for matched control firms. *Post* is a dummy set to one for years after the passage of *AD Law*, and set to zero otherwise. All variables are described in the Appendix. All models contain firm fixed effects and year fixed effects as well as state-specific trends. Standard errors reported in the parentheses are based on heteroscedasticity robust standard errors that are clustered at the firm level. The symbols ***, **, and * * denote $p<0.01$, $p<0.05$, and $p<0.1$ respectively.

Panel A: Differences between treatment and matched control firms

	Treatment	Control	Diff.
Log (Total Assets)	4.068	4.084	-0.016
			(-0.16)
Fixed Assets	0.379	0.364	0.015
			(1.13)
Net Income Margin	0.067	0.064	0.003
			(1.24)
Dividend Payer	0.881	0.881	0.00
			(1.00)
Book Leverage	0.165	0.176	-0.011
			(-1.12)

Panel B: Multivariate Analysis

	(1)	(2)	(3)	(4)
Dep. Variable:	*Book Leverage*	*Book Leverage*	*Operating Profitability*	*Operating Profitability*
Treatment x Post	-0.008*	-0.011***	-0.005	-0.006*
	(-1.677)	(-2.696)	(-1.613)	(-1.686)
Post	0.005	0.003	0.001	0.001
	(1.330)	(0.896)	(0.437)	(0.296)
Control variables	No	Yes	No	Yes
Firm and year fixed effects	Yes	Yes	Yes	Yes
State-specific time trends	Yes	Yes	Yes	Yes
Observations	7,103	7,094	7,471	7,466
R-Squared	0.78	0.83	0.73	0.74

Internet Appendix Table 4: Timing of law passage

Ordinary least squares regressions for a sample of public firms from 1946 to 1964. *Book Leverage* is the sum of debt in current liabilities and long-term debt (Compustat *DLC* plus *DLTT*) divided by the book value of assets (Compustat *AT*). *Operating Profitability* is operating profitability measured as the ratio of Compustat *OIBDP* over *AT*. *AD Law*$^{-2}$ is a dummy variable set to one for years where the law was passed in two years and zero otherwise, *AD Law*$^{-1}$ is a dummy variable set to one for years where the law was passed the next year and zero otherwise, *AD Law*^{0} is a dummy variable set to one for years where the law was passed in the current year and zero otherwise, *AD Law*^{1} is a dummy variable set to one to indicate years where the law was passed the previous year and zero otherwise, and *AD Law*$^{2+}$ is a dummy variable set to one to indicate years where the law was passed two or more years ago and zero otherwise. All other variables are described in the Appendix. All models contain firm fixed effects and year fixed effects as well as state-specific trends. Standard errors reported in the parentheses are based on heteroscedasticity robust standard errors that are clustered at the firm level. The symbols ***, **, and * * denote $p<0.01$, $p<0.05$, and $p<0.1$ respectively.

	(1)	(2)
Dep. Variable:	*Book Leverage*	*Operating Profitability*
AD Law^{-2}	-0.005	-0.002
	(-1.051)	(-0.726)
AD Law^{-1}	-0.010**	-0.004
	(-2.160)	(-0.900)
AD Law^{0}	-0.014**	-0.008*
	(-2.435)	(-1.716)
AD Law^{1}	-0.023***	-0.008
	(-3.218)	(-1.599)
AD Law^{2+}	-0.019***	-0.015***
	(-2.706)	(-2.832)
Log (Total Assets)	0.077***	0.005
	(10.678)	(1.249)
Fixed Assets	0.124***	-0.138***
	(4.083)	(-6.730)
Dividend Payer	-0.027***	0.026***
	(-4.280)	(5.697)
State Income Growth	0.000	0.002***
	(0.354)	(5.005)
Return on Assets	-0.703***	
	(-16.296)	
Firm and year fixed effects	Yes	Yes
State-specific time trends	Yes	Yes
Observations	12,721	13,235
R-Squared	0.83	0.71

Internet Appendix Table 5: Falsification (randomization) tests

This table shows summary statistics from a falsification exercise where we assign each state a different year of adoption while maintaining the distribution of adoption dates in Table 1. Thus, two states are randomly assigned an adoption year of 1945, one state is randomly assigned an adoption year of 1946, etc., and thirteen states are randomly assigned no adoption year. Next, we replicate the firm fixed effects panel regressions with *Operating Profitability* and *Book Leverage* as our dependent variables and an AD law dummy based on randomly assigned adoption dates as our key independent variable. Specifically, we use the specifications in Table 4, Panel A, Column 3 and Table 6, Panel A, Column 3. We repeat this process a total of 100 times and the table below shows the distribution of the coefficient on the AD law dummy, the standard error, and the t-statistic.

Dep. Variable:	*Operating Profitability*	*Book Leverage*
Randomized AD law dummy		
Coefficient, mean	-0.001	-0.002
Coefficient, median	0.0002	-0.002
Standard error, mean	0.005	0.006
Standard error, median	0.004	0.006
t-Statistic, mean	-0.158	-0.252
t-Statistic, median	0.042	-0.287
Number of replications	100	100
Control Variables	Yes	Yes
Firm and year fixed effects	Yes	Yes
State-specific time trends	Yes	Yes
Number of observations per replication	13,235	12,721