Local Liquor Control from 1934 to 1970*

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This work considers the state liquor policy over the period 1934 to 1970 as a case study of decentralization. While historical analyses of liquor control have tended to focus on the Prohibition period (Miron and Zweibel, 1991), the period following re-legalization in 1933 remains largely unexplored. The 21st Amendment explicitly assigns to states the power to regulate liquor, and state policies can be grouped into three categories: legalization throughout the state, prohibition throughout the state or local option. Under local option, local governments, such as municipalities or counties, set their own liquor legalization policy typically through a referendum. States with local option have decentralized liquor policy to local governments.

The traditional economic theory of federalism posits that more heterogeneous preferences result in more decentralized policy-making (Oates, 1972). This suggests that a state will select local option/decentralization when citizens on both sides of the legalization issue have intense preferences. We test this presumption by comparing preferences in centralized states with preferences in decentralized states. In states with local option, we can observe how local characteristics such as demographics and religious affiliation influence the probability that a county's residents choose to legalize liquor. We interpret this local policy choice as a measure for the unobserved local preferences over liquor policies. In centralized states, no local liquor policies are observed but we observe the local characteristics (such as religion) whose relationship to local liquor policy is known from the decentralized states. In this manner, we generate for every state the distribution of local tastes and use these to test the theoretical prediction. Our results suggest that states do decentralize liquor policies when there are intense preferences on both sides of the issue, just as theory predicts.

While this is just a case-study, the lessons of this paper can likely be applied to other policy-settings. The intuition that preference heterogeneity induces decentralization immediately applies to any other binary policy issue such as whether to permit the death penalty or to legalize abortion. Under certain conditions this logic can also be extended to the more typical case of continuous policy issues. And while this paper focuses on state decision-making, the reasoning also holds for central governments. This suggests one of the forces contributing towards the

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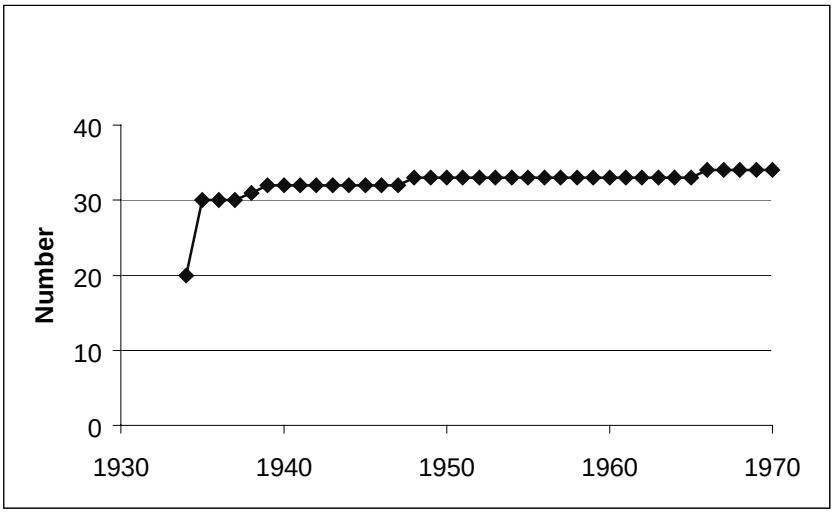
current push for decentralization in the United States may be an intensification of preferences on issues such as welfare.

The remainder of this paper has the following structure. Section I provides historical background and an overview of the theoretical model and the econometric approach. Section II discusses the data with a complete listing of the data sources relegated to the Data Appendix. Section III presents the empirical results and Section IV concludes.

I. Background

In this section we present background on the history, theory and econometrics which underlie the empirical results. Following the passage of the 21st Amendment in December 1933, states were assigned control over liquor regulation. Despite the common perception that the national Prohibition did little to restrict consumption and promoted criminal activity (Gebhardt, 1932), several groups actively promoted prohibition at the state-level. Baptist, Methodist and Calvinist churches lobbied for prohibition while Catholics, Lutherans and to some extent Episcopalians generally favored legalization. In addition many women and Social Reform groups supported the prohibition cause. The prohibition groups were successful in getting state-wide prohibitions enacted in 7 states.[1] While the remaining states did permit the sale of liquor, several also allowed local governments to ban liquor sales through a voter referendum. In addition many of the initial prohibition states eventually changed to a local option system. Figure 1 plots the number of local option states in each year between 1934 and 1970.

Figure 1 Local Option States: 1934-1970



With this historical overview in place, we next turn to a discussion of the theoretical model. This model is laid out more formally in the accompanying paper, Strumpf and Oberholzer-Gee (1999). Imagine that a state legislature composed of local representatives must decide on a liquor policy for the state. Each representative's preference over the liquor policy is determined by the preferences of the citizens he represents. The legislature has three possible choices: it can permit liquor sale throughout the state, it can prohibit sale throughout the state, or it can allow each local government to independently set its own policy. The policy selected will depend on the preferences of the local representatives. When all representatives support (oppose) legalizing liquor, the policy will be to permit (prohibit) sale throughout the state. However, consider the case where some representatives strongly support legalization while others strongly oppose legalization. A uniform policy of either legalization or prohibition will be quite costly to some group of representatives. To be concrete, say a majority of representatives support liquor prohibition but there is a minority of representatives who strongly want to permit liquor sales. It is natural to think that representatives in the minority group will offer some transfer to the remaining representatives to select an alternative policy. These transfers can be thought of as a log-roll on some later legislation or perhaps a direct redistribution.[2] When these side-payments are sufficiently attractive for the majority that supports prohibition, the legislature will select a policy of local option. The conclusion from this discussion is that a local option policy ("decentralization") is more likely to be selected when preferences are more heterogeneous.[3]

As mentioned in the introduction, this model can be readily applied in other contexts. So long as transfers between representatives are possible, when a minority group has intense preferences it should be able to obtain decentralization. One potential issue which is particular to liquor regulation is ignored in the model. It is possible that citizens who oppose legalization do so for moral reasons, and that such citizens prefer to ban sales throughout the state. These citizens will try to block decentralization because even liquor sales in towns far away from where they live make them worse off. Alternatively, citizens favoring legalization are only likely to care about the policy in the town they live in. This suggests that in the presence of "moral externalities" decentralization will be more difficult to obtain when the prohibitionists rather than the legalizers are in the majority. However, this potential asymmetry does not change the basic reasoning that a *necessary* condition for decentralization is preference heterogeneity among citizens.

The theoretical model directly motivates the econometric approach. The interested reader is again referred to Strumpf and Oberholzer-Gee (1999) for technical details and a discussion of possible econometric problems. The first step is to get an estimate of local preferences over liquor policy. While local tastes are unobserved, we presume that they determine local liquor policy if a local option is available. That is, localities with citizens who favor permitting (prohibiting) liquor sales will permit (prohibit) liquor sales if there is local option. A second assumption is that the aggregate preferences of a locality are determined by exogenous, observable local characteristics which will be discussed in the next section. The particular relationship between these local characteristics and the unobserved local tastes can be obtained by estimating a probit over the sample of all localities where local option is available.[4]

These probits provide an estimate of local preferences. For every locality the estimated preferences are the product of the probit parameters and the associated

local characteristic values. This has the virtue that local preferences can be estimated in states without local option because the local characteristics are always observed. The local preferences can be used to test the theoretical prediction regarding decentralization. According to the theory, a state should be more likely to permit local option if there is greater preference heterogeneity. To evaluate this prediction, we use the estimated local preferences to calculate for each state a measure of preference heterogeneity. For example, we can calculate the variance or inter-quartile difference among the local preference estimates within a state. This measure of state-level preference heterogeneity can then be related to a state's decision to permit local option. The appropriate approach is to estimate a probit over all state policy decisions, and the theory predicts that preference heterogeneity will have a positive effect on the propensity to allow local options.[5]

II. Data

We consider observations over the period 1934-1970 for the lower 48 states. Descriptive statistics for all variables may be found in Strumpf and Oberholzer-Gee (1999). In the first stage which estimates local preferences from a probit, the sample is all counties in local option states. Counties are used as the locality because this is the smallest areal unit at which many of the characteristics discussed below are available. The dependent variable in this analysis is whether the county permits or prohibits liquor sale for off-premises consumption.[6] The dependent variable over the period 1940-1970 is based on listings in Distilled Spirits Institute (1940-1970) while values for earlier years are based on a variety of published and unpublished sources listed in the Data Appendix.

We consider several characteristics which may influence the county-level preference to legalize liquor. These variables are: 14 religious denominational families, population, percent urban population, racial composition, percent greater than 21 years old, percent married, median income, educational attainment, median home value and percent renters. A full discussion of the sources and construction of these variables is contained in the Data Appendix. Some suggestive evidence linking these characteristics to individual preferences over liquor is presented in the next section.

In the second stage the estimated local preferences are related to state policies in all 48 states. For each state, annual indicators of the availability of local option is generated. The Data Appendix contains the sources for this variable. In addition, states might have exogenous preferences for or against policy centralization. We consider five proxies for this sentiment: the potential strength of liquor retail interests, the ratio of state to local government spending, the per capita number of governments in the state, the mean of the senators' Poole-Rosenthal (1997) D-NOMINATE scores, and the number of motor vehicles registered per capita. A full description of these variables and further justification of their interpretation may be found in the Data Appendix.

III. Empirical Results

A. Local Characteristics and Individual Preferences

One of the main presumptions in the empirical approach is that the characteristics discussed in the last section reflect local preferences over liquor policies. It is therefore important to assess whether these characteristics are reasonable indicators of *individual* preferences.[7] While individual surveys from our sample period are unavailable, some suggestive contemporary evidence is provided in the General Social Survey (1999). The General Social Survey (GSS) is an individual survey of attitudes, behavior and personal characteristics and has been collected in almost every year since 1972. While the GSS does not ask respondents whether they think liquor sales should be prohibited, it does ask whether the respondent ever drinks alcoholic beverages. Presumably individuals who oppose liquor sales are unlikely to drink while those who favor liquor sales are likely to at least occasionally have a drink.

Using GSS data over the period 1972-1996, there is a statistically significant relationship (as measured by a chi-square statistic) between an individual drinking indicator and the following demographic variables: religious denominational affiliation, gender, race, age, marital status, education, and income.[8] In addition, these relationships are in the expected direction and will confirm the empirical results in the next section. For example only 56.0% of Baptist respondents (N = 3,448) said they drink, while 84.3% of Catholics (N = 4,008), 86.7% of Episcopalians (N = 384) and 83.2% of Lutherans (N = 1,152) drink. While the relationships discussed here consider liquor consumption rather than preferences over liquor policy and are conducted following our sample period, they are suggestive evidence that the characteristics we consider are reasonable correlates of individual liquor policy preferences.

B. County-Level Preferences

In the companion paper Strumpf and Oberholzer-Gee (1999) we present estimates which relate county characteristics to local liquor policies in local option states for the years 1935, 1940, 1950, 1960 and 1970. In these probits a positive parameter indicates a characteristic for which higher values increase the propensity to legalize liquor. Several characteristics have significant parameters in all years. Among the religious groups, Baptists, Calvinists and Methodists have negative parameters while Catholics, Episcopalians, and Lutherans have positive parameters.[9] These results are consistent with the historical review in Section II which stated that the first three religions supported liquor prohibition while the latter three opposed it. They are also consistent with the individual survey data from the GSS discussed in the last sub-section.

Among the Census characteristics, land area, percent male (in the earlier years), percent black, median income, percent with a high school degree (for most of the years) and percent renters have significant positive parameters. Population density, percent with a college degree and median home value have significant negative parameters. These signs also seem plausible. The positive male parameter in the initial years likely reflects the strong role of women in the early prohibition

movement. The positive black parameter may be due to the more tolerant attitude of various black ministries towards liquor. The positive income parameter could reflect the fact that higher income individuals are more likely to drink at least in the GSS data.[10] The negative population density parameter may indicate the larger social cost (in terms of crime) from legalizing liquor when people live close to one another. The negative college parameter can be explained by the prominent role of intellectuals in the Social Reform movement which favored prohibition (many college towns are dry during the sample). Finally, the negative home value parameter and the positive renter parameter could reflect the opposition of home-owners to liquor legalization since it may depress property values.

A few issues need to be addressed before turning to the state-level analysis. First, the county-level parameters just discussed do in fact vary over time. For example the percent Baptist parameter becomes noticeably more positive over the sample (even relative to some other significant parameter such as the percent black). This suggests that preferences over liquor policies are changing, or that there is dynamic sample selection. Under either of these explanations it is still appropriate to pool the values across years in the state-level analysis. That is, the same basic relationship between preference heterogeneity and state policy discussed before should still hold even if the underlying preferences are changing.

A second issue involves the role of individual mobility. It is possible that individuals move to localities in which their preferred liquor policy is in place. What this means is that the characteristics used to *explain* local liquor policies are themselves influenced by the liquor policies. In principle this means that we should estimate a system of equations in which local policies and local characteristics feed-back to one another. Estimating the policy equation in isolation could bias the parameters if either individual moves or local polices are influenced by expectations of the future. For example, a community with only weak prohibition sentiment may forbid liquor sales with the intention of attracting future residents who strongly oppose liquor sales. However, our single equation approach is appropriate if either policies or individual moves are *myopic*. For local liquor policies to be myopic, they must be set simply to satisfy the preferences of current residents and not to influence the future composition of residents. For individual moves to be myopic, an individual's choice of where to live should be determined only by the previous policies and resident composition.

Both of the myopic conditions are likely to hold in practice. For example, we explored whether a change in local liquor policy (from prohibition to legalization or vice versa) influenced the future composition of residents. In the sample of local option counties we considered whether various local characteristics (each of the religion variables, income, race, educational attainment and renter status) changed significantly five or ten years after a policy change. To do this we estimated a series of OLS regressions in which the dependent variable is one of the local characteristics and the regessors include measures of recent policy changes. The policy change measures are dummies for a change from legalization to prohibition 5 and 10 years ago as well as dummies for a change from prohibition to legalization 5 and 10 years ago (we include separate measures for the two policy changes, since legalization and prohibition are likely to induce opposing migration flows).[11] The parameters on the four dummies are not statistically different from zero in any of the estimates which indicates that policy changes do not induce large changes in resident composition. This suggests that local policies are myopic, at least in equilibrium.

A third issue is the possibility of historical reversion in local liquor policies. Prior to the passage of the 18th Amendment in 1919, many local governments had the authority to set their own liquor policies. One possible conjecture is that following the lifting of Prohibition, local governments simply reverted to the policies which were in place before 1919. To investigate this possibility we compare county liquor policies in 1935, just after Prohibition, with polices in 1915 and 1905, just before Prohibition (we consider some lags before and after Prohibition since some governments did not promptly change policies in this period). Table 1 presents this comparison and shows that we can reject at 95% confidence the null hypothesis that counties simply revert to their pre-Prohibition policy in 1935. Table 1 does make clear that local policies in the two periods have a strong positive correlation. This is not, however, evidence against the presumption in this paper that local policies are linked to local preferences. This is because community composition is unlikely to have changed much between 1915 (or 1905) and 1935, so the appropriate local policy is likely to be quite similar in the two periods.

C. State-Level Policies

The main estimates involve the state decision about whether to permit local option. The objective is to test the prediction that states with more heterogeneous preferences are more likely to be decentralized/grant local option. Columns (1) and (2) of Table 2 presents probit estimates where the dependent variable is an indicator for whether a state permits local option and the sample pools observations from 1935, 1940, 1950, 1960 and 1970. The key explanatory variables involve the estimated local preferences derived from the results in the last sub-section. Greater preference heterogeneity, as measured by the variance or inter-quartile difference of the distribution, significantly increases the probability of decentralization as the theory suggested. In addition states in which local preferences are heavily biased in favor or against legalizing liquor, as measured by the absolute value of the mean or median, are less likely to be decentralized. This is also consistent with the theory because there is unlikely to be a strong minority group willing to offer transfers when the overall preference distribution is biased in one direction. Finally, the measures of preferences over centralization behave in the expected manner. For example, states in which the ratio of state to local spending is high are less likely to be decentralized.

Columns (3) and (4) of Table 2 contain additional evidence which is consistent with the theoretical model. Centralized states should be more likely to permit liquor sales if a "typical" citizen prefers legalization to prohibition (see endnote 5). We use our fitted tastes measure to evaluate this prediction. The mean or median of the imputed taste distribution in a state represents the typical taste of a citizen. Again we estimate a probit where the dependent variable is an indicator for whether the (centralized) state allows liquor sales. The empirical results show that centralized states in which the mean or median is higher (indicating a more favorable preference for legal liquor) are more likely to permit liquor sales.

It is important to investigate other possible explanations of state policy choice. For example, it is possible that states simply revert to their pre-Prohibition policy in 1935. Table 3 considers this by comparing state polices in 1935 with those in 1915 and 1905 (as with county policies, some lag before and after Prohibition is

included due to the delayed response in certain states). We can reject at 95% confidence the null hypothesis that states simply revert to their pre-Prohibition policy in 1935 (there is one instance in which we cannot reject the reversion hypothesis, but this cell only involves three observations). The companion paper Strumpf and Oberholzer-Gee (1999) discusses several additional robustness tests.

Table 1 A Test of County-Level Policy Reversion (H_0: p=1)

(a) 1935 vs. 1915 reversion

Transition matrix

	1935 Policy			
1915 policy	Wet	Mixed	Dry	N
Wet	937	179	26	1142
Dry	759	162	954	1875
N	1696	341	980	

Statistical test of reversion

		p	Z	N	Conclusion
Wet	Wet	0.977	5.158	1142	reject
Dry	Dry	0.595	35.710	1875	reject

(b) 1935 vs. 1905 reversion

Transition matrix

	1935 Policy			
1905 policy	Wet	Mixed	Dry	N
Wet	1372	297	212	1881
Dry	241	43	756	1040
N	1613	340	968	

Statistical test of reversion

		p	Z	N	Conclusion
Wet	Wet	0.887	15.457	1881	reject
Dry	Dry	0.768	17.711	1040	reject

Source for 1915 and 1905 data: Sechrist (1985)

Notes:

"Wet" means liquor sales permitted throughout the county. "Dry" means liquor sales prohibited throughout the county. "Mixed" means there are both wet and dry portions in the county.

p empirical probability of historical reversion (proportion of 1915/1905 policies which are identical to 1935 policies). No information about mixed counties is available in 1915/1905; mixed counties in 1935 are included in the category which increases p (e.g. makes it more difficult to reject H_0).

N number of observations.

Z (1-p)/ where $(p(1-p)/N))^{0.5}$

t(0.95,N) t-statistic at 95% confidence and N degrees of freedom. Critical t-value at 95% confidence is 1.645.

Table 2 Probit Estimation of State Decentralization and of State Centralized Policy Choice

VARIABLE	(1)	(2)	(3)	(4)
Preference Measures				
||MEAN(Preferences)||	-0.330	---	---	---
	(-1.65)			
MEAN(Preferences)	---	---	0.223	---
			(1.94)	
VAR(Preferences)	0.079	---	0.136	---
	(2.36)		(0.73)	
||MEDIAN(Preferences)||	---	-0.034	---	---
		(-1.62)		
MEDIAN(Preferences)	---	---	---	0.253
				(2.70)
INTER-QUARTILE	---	0.223	---	0.120
DIFFERENCE(Preferences)		(2.01)		(0.36)
Centralization Preference Measures				
Strength of Liquor Interests	-0.340	-0.421	---	---
	(-1.70)	(-2.14)		
State/Local Spending	-0.900	-1.238	0.101	0.203
	(-1.70)	(-2.28)	(0.24)	(0.35)
Number Governments per capita	0.231	0.167	---	---
	(0.62)	(0.46)		
Poole-Rosenthal score	-0.108	-0.107	---	---
	(-0.19)	(-0.18)		
Motor vehicles per capita	0.477	-0.226	---	---
	(0.59)	(-0.30)		
Number of Observations	226	226	78	78
LogL	-128.26	-125.13	-34.58	-32.63

Notes:

"Preferences" refers to the distribution within each state of the estimated preferences discussed in Section IVB. The values are constructed so that more positive values indicate a greater propensity to favor legalizing liquor sales.

Columns (1)-(2): Dependent variable: State allows local option ("decentralized"). Absolute values of the mean and median are included to control for overall preference intensity (regardless of whether it is in favor or against legalizing liquor sales). Sample: 48 contiguous states (pooled data for 1935, 1940, 1950, 1960, 1970).

Columns (3)-(4): Dependent variable: State allows package sale of liquor. Actual mean and median values are included to control for overall preferences. Sample: Centralized states (pooled data for 1935, 1940, 1950, 1960, 1970).

All columns: Huber/robust/sandwich t-statistics in parentheses below the parameter estimates.

Table 3 A Test of State-Level Policy Reversion (H_0: p=1)

(a) 1935 vs. 1915 reversion

Transition matrix

1915 policy	1935 Policy: Cen, Wet	Decen	Cen, Dry	N
Cen, Wet	0	0	0	0
Decen	11	27	0	38
Cen, Dry	1	3	7	11
N	12	30	7	

Statistical test of reversion

		p	Z	N	Critical t	Conclusion
Cen, Wet	Cen, Wet	---	---	0	---	---
Decen	Decen	0.711	3.935	38	1.686	reject
Cen, Dry	Cen, Dry	0.636	2.507	11	1.796	reject

(b) 1935 vs. 1905 reversion

Transition matrix

1905 policy	1935 Policy: Cen, Wet	Decen	Cen, Dry	N
Cen, Wet	7	5	0	12
Decen	5	24	4	33
Cen, Dry	0	1	2	3
N	12	30	6	

Statistical test of reversion

		p	Z	N	Critical t	Conclusion
Cen, Wet	Cen, Wet	0.583	2.928	12	1.782	reject
Decen	Decen	0.727	3.518	33	1.695	reject
Cen, Dry	Cen, Dry	0.667	1.225	3	2.354	cannot reject

Source for 1915 and 1905 data: Paulin (1932)

Notes:

The sample in 1915 includes all contiguous states plus the District of Columbia. The sample n 1905 is identical except Oklahoma is omitted (it had two policies prevailing in different parts of the state).

"Cen, Wet" means liquor sales are permitted throughout the state. "Cen, Dry" means liquor sales are prohibited throughout the state. "Decen" means there is a local option provision in the state.

See Table 1 for definitions of the remaining terms.

IV. Conclusion

In this paper we explore historical liquor policies of states following the end of Prohibition. States which have greater preference heterogeneity are more likely to grant local governments decision-making power regarding liquor regulation. This link between preference heterogeneity and decentralization is at the core of the economic theory of federalism but has not been tested before. While the analysis here is primarily a case study, we do not rely on any particular institutions which would preclude abstracting to other policy issues. The richness of the data suggests additional historical research is likely to yield other tests of general economic propositions.

References

Gebhardt, John C. (1932). "The Movement Against Prohibition," *Annals of the American Academy of Political and Social Science* 163, 172-180.

General Social Survey (1999). *GSS 1972-1996 Cumulative Datafile*. Survey Documentation & Analysis Archive. `csa.berkeley.edu:7502/`.

Miron, Jeffrey A. and Jeffrey Zwiebel (1991). "Alcohol Consumption During Prohibition," *American Economic Review: Papers and Proceedings* 81, 242-247.

Oates, Wallace E. (1972). *Fiscal Federalism*. New York: Harcourt, Brace and Jovanovich.

Paulin, Charles O. (1932). *Atlas of the Historical Geography of the United States*. Washington, D.C.: Carnegie Institution of Washington.

Poole, Keith and Howard Rosenthal (1997). *Congress: A Political-Economic History of Roll Call Voting*. New York: Oxford University Press.

Sechrist, Robert (1985). *Prohibition Movement in the United States, 1801-1920*. ICPSR computer file 8343. `www.icpsr.umich.edu`.

Strumpf, Koleman S. and Felix Oberholzer-Gee (1999). "Endogenous Policy Decentralization: Testing the Central Tenet of Economic Federalism," unpublished working paper.

Data Appendix

Sources for county/municipality liquor status for local option states prior to 1940
Alabama: James Benson Sellers (1943). The Prohibition Movement in Alabama, 1702 to 1943. Chapel Hill: University of North Carolina Press, 278. *Arkansas:* Biennial Report of the Arkansas Department of Revenue (1935-42, 1946). *Connecticut:* Connecticut: State Register and Manual (1936, 1937, 1939, 1941). *Florida:* Biennial Report of the [Florida] Malt and Vinous Beverage Department (1935/1936). *Georgia*: *Distillller's Bulletin*, The Distilled Spirits Institute, New York/Washington D.C. (April-August 1938, 1 February 1939); Georgia Department of Archives and History (1937). Georgia's Official Register. Atlanta; Statistical Report of the Department of Revenue of the State of Georgia (1939-1940). *Illinois:* unpublished municipality-level map published by the Illinois Liquor Control Commission (1947). *Kansas:* Robert Smith Bader (1986). Prohibition in Kansas: A History. Lawrence: University Press of Kansas, 269-270. *Kentucky:* Kentucky Department of Revenue Annual Report (1935/1936-1941); Glenn Morrow and Orba Traylor (1942). State Liquor Monopoly or Private Licensing? Legislative Council of Kentucky; Kentucky Brewers Association Local Option Status Counties: January 1 1947 (1948). *Louisiana:* Constitutional amendment regarding liquor in November 1934. *Maine:* unpublished vote tabulations in the Maine State Archive (various years). *Maryland:* Maryland Manual (1933), pp. 302-313. *Massachusetts:* Massachusetts Alcoholic Beverages Control Commission, Analysis of Result of Wet and Dry Vote (various years). *Michigan:* No dry governments over the sample period. *Minnesota: Distillller's Bulletin*, The Distilled Spirits Institute, New York/Washington D.C. (15 November 1937, 1 May 1940). *Montana:* No dry governments over the sample period. *New Hampshire:* New Hampshire Manual of the General Court (1935-1941). *New Mexico:* Division of Liquor Control of the State of New Mexico, Bureau of Revenue's Biennial Report (1936-1944). *New York:* unpublished vote tabulations by the New York Division of Alcoholic Beverage Control: Local Option Results (various years). *North Carolina:* Daniel Jay Whitener (1945). Prohibition in North Carolina, 1715-1945. Chapel Hill: University of North Carolina Press, 232-233. *Ohio:* Ohio Election Statistics: The General Election 1934 (1934). Berea: Mobler Printing; Ohio Election Statistics: The General Election (various years). Cleveland: Consolidated Press and Printing. *Rhode Island:* Laura Lindley, State Local Option Elections in 1938 (1939); U.S. Wet and Dry Survey by States at the Beginning of 1941 (1941). Board of Temperance of the Methodist Church. *Tennessee:* Tennessee Alcoholic Beverage Commission, Annual Report (1937-1938). *Texas:* unpublished vote tabulations by the Texas Liquor Control Board (various years); 1936 map prepared by Texas Brewers' Institute. *Vermont:* Vermont Liquor Control Board, Annual Report (1935); Report of Vote on Liquor Control Questions at Town Meetings (1969), Vermont Department of Liquor Control; *Distillller's Bulletin*, The Distilled Spirits Institute, New York/Washington D.C. (15 April 1939, 15 April 1940). *Virginia:* Annual Report of the Virginia Alcoholic Beverage Control Board, 1948 to 1949 (1949). Richmond. *Washington:* Washington State Liquor Board: Report of Operations (1934-1939/1940). *West Virginia:* Charles Lively (1935-1940). West Virginia Blue Book. Charleston, WV, volumes 19-24. *Wisconsin:* unpublished reports by the Wisconsin Department of Revenue, Available Statistics Wet/Dry Status (various years).

For the period of 1934 to 1939, incomplete or no local option data is available for Colorado, Minnesota, Nebraska, New Jersey, and Oregon. For these states, initial status is inferred from the vote tabulations published by the Distilled Spirits Institute.

We also compared our data for all states with information given by the following sources: unpublished 1948 map by the Distilled Spirits Council; 1970 Annual Review of the Distilled Spirits Industry (lists state-wide totals of the number of people living in dry areas for 1934 to 1970). We were also able to compare the aggregate number of wet governments for each state during 1935-1940 with the totals listed in the Anti-Saloon League archives: Laura Lindley, State Local Option Elections in 1938 (1939) and U.S. Wet and Dry Survey by States at the Beginning of 1941 (1941), Board of Temperance of the Methodist Church. Our totals are consistent with all these sources. Finally, the semi-weekly *Distiller's Bulletin*, The Distilled Spirits Institute, New York/Washington D.C. (1937-1940) mentioned several election outcomes during the 1930s all of which are consistent with our totals.

County-Level Demographic Variables

We use the list of county border changes and mergers listed in Horan and Hargis (1995) to maintain continuity over the sample period. We exclude counties in Alaska and Hawaii from the sample as they did not become states until 1959. For years between the observations stated below, linear interpolation is used to obtain values. We uncovered some errors in the data which we corrected by consulting hard-copy versions of the statistics. Many of these errors are listed in Strumpf (1997). A full list of these discrepancies is available upon request.

Religious denominational families

Sources: Bureau of the Census (1992a) contains data for 1936 and 1952 while Newman and Halvorson (1978) contains data for 1952 and 1971. For 1952 we combine data from the two sources. Because the particular groups included in the files change over time (due largely to schisms and mergers), the data was aggregated into 14 denominational families based on their attitudes towards liquor listed in Gründler (1961). The particulars of the classification scheme are available upon request.

Population, % Urban Population, Population Density, Land Area, % Male, % Black, % Population 21years old, % Unemployed

Sources: These data come from the decennial census. We use the values contained in Bureau of the Census (1992c), (1992d) and ICPSR (1992).

% Married

Sources: These data come from the decennial census (see above). Following the Census, we normalize marriages by the number of people who are at least 14 years old (except for 1950 where the Census normalizes by the number of people who are at least 15 years old). Marriage data for 1960 and 1970 are unavailable in tape form so we used values from the hardcopies, Bureau of the Census (1964, 1973). No marriage data is available for 1940.

Median Income
Sources: These data come from the decennial census (see above). These values are deflated to constant 1970 dollars using the consumer price index (Bureau of Labor Statistics, 1998). Income data was not collected at the county-level until 1950.

% High school, % College
Sources: These data come from the decennial census (see above). Following the Census, we normalize the number of people with at least a high school degree and the number with at least a college education by the number of people who are at least 25 years old. College education data for 1960 are unavailable in tape form so we used values from the hardcopies (Bureau of the Census, 1964). No education data is available for 1930.

Median Home Value
Sources: These data come from the decennial census (see above). These values are deflated to constant 1970 dollars using the consumer price index (Bureau of Labor Statistics, 1998).

% Renter
Sources: These data come from the decennial census (see above). This variable is defined as the percentage of homes which are not owner occupied. Housing data for 1930 is unavailable in tape form. Instead we use values for the variable "families" listed in the hardcopies, Bureau of the Census (1933). The prefatory remarks of the 1930 Census reads: "Since a home is defined as the living quarters occupied by a family, the number of homes is always the same as the number of families."

Neighboring counties
Source: Bureau of the Census (1992b). The probit estimates implicitly include the policy of neighboring counties to control for strategic interaction and spatial correlation. This is accomplished by generating a "neighbor weighting" matrix which has as many rows and columns as there are decentralized counties. The weighting matrix has elements that are 1 for land contiguous and decentralized counties and 0 otherwise. Each row is then normalized by the number of non-zero elements.

State-Level Variables
Indicators of local option availability
Sources: This data for 1940-1970 is based on records in Distilled Spirits Institute (1940-1970b) while the data for 1934-1939 is based on Childs (1947) and Harrison and Laine (1936).

Preference for policy centralization 1: Strength of liquor interests
Sources: Liquor consumption data come from Distilled Spirits Institute (1940-1970a) while the number of liquor establishments comes from the Internal Revenue Services (various years). Justification: This variable measures the potential for interest group contributions. Presumably such monies would be directed to state representatives only if they are determining liquor legality, i.e. there is no local option. Definition: The level of liquor consumption divided by the percentage of

urbanized population (see Strumpf and Oberholzer-Gee, 1999 for a discussion of this variable).

Preference for policy centralization 2: The ratio of state to local spending
Sources: Bureau of the Census (1934), (1948), (1954), (1957, 1962, 1967, 1972). Justification: A higher ratio indicates that the state has a relatively centralized fiscal structure and may indicate a preference in favor of centralization.

Preference for policy centralization 3: Number of governments per capita
Sources: Bureau of the Census (1934), (various years). Justification: To the extent that the number of governments is endogenous, a higher number may indicate a preference against centralized provision of services.

Preference for policy centralization 4: Mean senator Poole–Rosenthal scores
Sources: Poole and Rosenthal (1998). Justification: Poole-Rosenthal scores can be interpreted as a measure of political conservatism. One oft-stated tenet is that conservatives tend to oppose centralized provision of services.

Preference for policy centralization 5: Number of motor vehicles registered per capita
Sources: Bureau of the Census (various years). Justification: When there are more cars, the potential number of drunk drivers is increased. Because drunk drivers often cross county borders, there is a potential externality when local option is available: counties do not take into account their potential to export drunk drivers to neighboring counties. Centralized provision of liquor policy should presumably take this externality into account.

Data References
All records with an ICPSR (Inter-University Consortium for Political and Social Research) study number may be found on the web at `www.icpsr.umich.edu`.

Bureau of the Census (1933). *Fifteenth Census of Population. Volume 6. Families*. Washington, D.C.

Bureau of the Census (1934). *Financial Statistics of State and Local Governments: 1932*. Washington, D.C.

Bureau of the Census (1948). *Revised Summary of State and Local Government Finances in 1942*. Washington, D.C.

Bureau of the Census (1954). *State and Local Government Revenue in 1953*. Washington, D.C.

Bureau of the Census (1964*). Census of Population, 1960. Volume 1: Characteristics of the Population*. Washington, D.C.

Bureau of the Census (1973*). 1970 Census of Population. Volume 1: Characteristics of the Population*. Washington, D.C.

Bureau of the Census (1957, 1962, 1967, 1972). *Census of Governments: Compendium of Government Finances*. Washington, D.C.

Bureau of the Census (various years). *Statistical Abstract of the United States*. Tables: Governmental Units, by Type of Government, by States and Other Areas (from the 1942, 1952, 1957, 1962, 1967, 1972 Censuses of Governments); Motor Vehicle Registrations (1961, 1971). Washington D.C.

Bureau of the Census (1992a). *Censuses of Religious Bodies, 1906-1936 and NCC 1952*. ICPSR computer file 8.

Bureau of the Census (1992b). *Contiguous County File, 1991*. ICPSR computer file 9835.

Bureau of the Census (1992c). *County and City Data Books: 1952, 1956, 1962, 1967*. ICPSR computer file 12.

Bureau of the Census (1992d). *County and City Data Book: 1972*. ICPSR computer file 61.

Bureau of Labor Statistics (1998). *Consumer Price Index-All Urban Consumers*. www.bls.gov. Series ID: CUUR0000SA0.

Childs, Randolph (1947). *Making Repeal Work*. Philadelphia: Pennsylvania Alcoholic Beverage Study, Inc.

Distilled Spirits Institute (1940-1970a). *Annual Statistical Review of the Distilled Spirits Industry. Research and Statistical Division*. Washington, D.C.: Distilled Spirits Institute.

Distilled Spirits Institute (1940-1970b). *Public Revenues from Alcoholic Beverages. Research and Statistical Division*. Washington, D.C.: Distilled Spirits Institute.

Gründler, Johannes (1961). *Lexikon der christlichen Kirchen und Sekten unter Berücksichtigung der Missionsgesellschaften.* Wien: Herder.

Harrison, Leonard V. and Elizabeth Laine (1936). *After Repeal: A Study of Liquor Control Administration*. New York: Harper & Brothers Publishers.

Horan, Patrick and Peggy Hargis (1995). *County Longitudinal Template, 1840-1990*. ICPSR computer file 6576.

ICPSR (1992). Historical, Demographic, Economic, and Social Data: the United States, 1790-1970. ICPSR computer file 3.

Internal Revenue Services (various years*). Statistics Relating to the Alcohol and Tobacco Industries (Alcohol and Tobacco Tax Division).* Washington, D.C.

Newman, William and Peter Halvorson (1978). *Data Archive of American Religious Denominations, 1952-1971*. Unpublished data tape at the Social Science Data Center of the University of Connecticut.

Poole, Keith and Howard Rosenthal (1998*). NOMINATE Data Available for Downloading*. k7moa.gsia.cmu.edu/dwnl.htm.

Strumpf, Koleman (1997*). Corrections to ICPSR data, 1930-1970. Economic History Services fileserver archives*. www.eh.net/Archives/eh.res/jun-97/0003.html.

Endnotes

[1]The prohibition states were Alabama, Georgia, Kansas, Mississippi, Oklahoma, Tennessee, and North Dakota.

[2]One such redistribution involves the allocation of liquor tax revenues. In the case discussed in the paragraph, the minority representatives could agree to divide liquor tax revenue equally among all local governments rather than demanding that tax revenues remain in the locality where they are raised.

[3]A natural question to ask is why the legislature would ever select a non-decentralized policy, since local option allows the best matching of policies with preferences. In our formal model we assume there is some ex ante advantage of "centralized" policy which is due to collection of rents by state representatives or to efficiency gains from a uniform policy. Decentralization then becomes costly because these gains from centralization are foregone.

[4]We also allow for strategic interaction between localities (the policy of one locality may influence the policies of its neighbors) as well as spatially correlated unobserved characteristics which influence local preferences.

[5]There is a further test which can be conducted. If a state does not permit local option, the theory predicts that it will permit (prohibit) liquor sales throughout the state if the mean locality prefers (opposes) legalization. This can also tested by estimating a probit which relates the legalization decision of non-local option states to the estimated mean local preference.

[6]In some states local option power is granted to sub-county governments such as municipalities and even precincts. We must continue to use counties as the basic unit of analysis because of restrictions on the availability of information for several of the characteristics used to explain preferences. We modify the probit so that roughly speaking the dependent variable is the proportion of governments granted local option within a county that legalize the sale of liquor. Full details of our approach is provided in Strumpf and Oberholzer-Gee (1999).

[7]An implicit assumption is that local preferences are determined by some aggregate summary of the preferences of all residents. For example, under certain assumptions the majority rule outcome is determined by the median preference individual. Alternatively, under the Tiebout hypothesis localities are composed of homogeneous individuals who all share the same preferences over public policies. In this latter case, local preferences are the same as the preferences of any of the identical residents.

[8]These relationships were generated using the cross-tabulation feature on the General Social Survey (1999) web page. The GSS variables analyzed are "drink" (an indicator whether the respondent ever drinks alcoholic beverages), "relig" (general religious preference), "denom" (specific religious denomination), "sex" (gender), "race" (race), "age" (age), "marital" (marital status), "educ" (highest year of school completed), "degree" (highest educational degree) and "income" (total family income). There is no information in the GSS regarding a respondent's home-ownership status.

[9]We are unable to estimate a parameter for Mormons. This is because nearly all Mormons reside in Arizona, Utah or Wyoming and these states are never decentralized (and thus omitted from the sample here). Any Mormon parameter would be based on values in a handful of counties and is therefore likely to be biased.

[10]Among GSS respondents in the top family income category ($25,000 or more) 79.7% drink (N = 5,732) while among respondents with income less than $5,000 52.8% drink ($N$ = 1,497).

[11]While it would be interesting to see whether local characteristics change in the year immediately following a policy change, this cannot be investigated with the current data. This is because most of the variables are observed at a decennial frequency.