

Title: Determinants of State Long-Term  
Debt: Political Market Framework

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# Purpose of Research

- Empirically examines the determinants of state long term debt in terms of political market framework
- No Research Had Been Conducted to Examine the determinants of state long term debt by applying political market framework
- Limited research has been conducted to analyze the institutional factors including political and fiscal of affecting state long term indebtedness.

# Research Question

- *What are determinants that affect the long term debt management in terms of political market framework?*

# State Long Term Debt

## **Definition**

- Loans and Financial Obligations Lasting over One Year in State Governments

## **Primary Purpose and Types**

- Finance Capital Projects or Public Facilities-Economic Development
- General Obligations Bonds
- Revenue Bonds
- Lease Financing
- Special Obligation Bonds(Tax Increment Debt)

# Political Market Framework

- Incorporates the property rights and interest group models to explain the policy change (Feiock, 2006).
- Emphasizes the equilibrium policy outcomes under different institutional arrangements derived from the interaction of policy supply and demand (Feiock et al., 2014).
- Highlights the role of political institutions as the essential mediator of political and economic forces (Feiock, 2005, 2006; Lubell et al., 2005, 2007, 2009).
- Political Institutions-Integrate the structure of interest organization and the economics of a specific policy arena to determine the outcome of political contracting (Feiock, 2006, 2014; Lubell et al., 2005, 2007, 2009). Different types of political institution will prefer different types of interests which can enhance or reduce the ability of interests to affect policy outcomes (Feiock, 2006, 2014)
- Capital market, political market-transaction cost within long-term government bonds markets, and it increases the risk within capital market (Perry& Robertson, 1998). It eventually limits the amount of long term debt that public authorities can issue.

# Determinants and Hypothesis

## Property rights and Interest Group Factors

### Population Density

- *Hypothesis 1:* State with higher population density will have positive relationship with degree of state long-term debt

### Population Over 65

- *Hypothesis 2:* State with more population of older than 65 will have negative relationship with other degree of state long-term debt

### Population Between 18 and 65

- Testing Independent Effect of Population on State Long Term Debt

### Income

- *Hypothesis 3:* State with higher level of income will have positive relationship with the level of state long-term debt
- *Hypothesis 3-1:* State with higher level of income will have negative relationship with the level of state long-term debt

### Opinion Liberalism

- *Hypothesis 4:* State with more opinion liberalism will have positive relationship with the level of state long-term debt

# Institutional Factors

## Political and Institutional Factors

### Electoral Competition

- *Hypothesis 5: There will be a positive interaction effect of election and interparty competition (Electoral Competition) on state long-term debt*

### Composition of Government

- *Hypothesis 6: States with democratic governor and republican legislature will have a negative relationship with state long-term debt than other forms of government*

### Split Legislature

- *Hypothesis 7: State with split legislature will incur more state debt than unified legislature.*
- *Hypothesis 7-1: State with split legislature will incur less state debt than unified legislature*

### Political Turnover

- *Hypothesis 8: Political turnover will incur more state long term debt.*

# Interaction with Interest Group Factors

- *Hypothesis 9* (Interactive): Higher socioeconomic interests and opinion liberalism will have a greater positive influence on level of state long-term debt will be moderated by the composition of state government

Republican Governor and Republican Legislature(Base Category)

Democratic Governor and Republican Legislature

Republican Governor and Democratic Legislature

Democratic Governor and Democratic Legislature



# Fiscal Institutional Factors

## Balanced Budget Rules

- *Hypothesis 10*: States with stricter Balanced Budget Rules will have negative relationship with level of state long term debt

## Legislative Term Limits

- *Hypothesis 11*: States with legislative term limits will have positive relationship with level of state long term debt

## Tax and Expenditure Limit(TEL)

- *Hypothesis 12*: States with TELs will have positive relationship with level of state long term debt

## Constitutional Debt Limit

- *Hypothesis 13*: States with Constitutional Deb Limits will have positive relationship with level of state long term debt
- *Hypothesis 13-1*: States with Constitutional Deb Limits will have negative relationship with level of state long term debt.

## Tax Reform Act of 1986

- *Hypothesis 14*: The TRA will have negative relationship with level of state long term debt.

## Fiscal Centralization

- *Hypothesis 15*: Fiscal Centralization will have positive relationship with state long-term debt indebtedness

# Direct Democracy

- *Hypothesis 16*: States with voter referendum requirements will have negative relationship with level of state long term debt

## **Interaction with Interest Group Factors**

- *Hypothesis 17 (Interactive)*: Higher socioeconomic status and liberalism will have greater influence on level of state long term debt and will be moderated by the voter referendum requirement.

# Fiscal and Socioeconomic Factors

## **Fiscal Factors**

- Lagged Debt Per Capita
- Interest Rate
- Per Capita Intergovernmental Grants

## **Socioeconomic Factors**

- Unemployment Rate
- Per Capita State GDP
- White
- Black

# Method of Analysis

- Random Effects Analysis for Panel Data
- Unit of Analysis: States
- Samples: From 1980 to 2014
- Data Sources: U.S. Census Bureau, NCSL(National Conference of State Legislatures, Bureau of Labor Statistics, Bureau of Economic Analysis, Book of States

**Dependent Variable****Long-Term Debt Per Capita****Independent Variables****Property Rights and Interest Group Factors****Population 65**

Percentage of population over 65

**Population 1865**

Percentage of population from 18 to 65

**Population Density**

Population Density from 1980 to 2014

**Income**

Real Per Capita Income

**Opinion Liberalism**

Citizen Ideology Index

**Political and Institutional Factors****Political Turnover**

Coded as 1 for the changes in either both chambers or government party and 0 other wise.

**Election**

Coded as 1 for the Year before a Gubernatorial Election and 0 for all other Years

**Interparty Competition**

HVD index

**Composition of Government**

Coded as 1 if Both Governor and State Legislatures are Controlled by the by Republican Party(Base Category)  
 Coded as 2 if Governor is Democratic and State Legislatures are Controlled by Republican Party  
 Coded as 3 if Governor is Republican and State Legislatures are Controlled by Democratic Party  
 Coded as 4 if Both Governor and State Legislatures are Controlled by the by Democratic Party

**Split Legislature**

Coded as 1 if Chambers of State Legislature are Controlled by the by Different Parties

**Fiscal Institution Factors****Balanced Budget Rules**

ACIR Index

**Legislative Term Limits**

Coded as 1 for Each Year Since Term Limits Impacted the State Legislature

**Tax and Expenditure Limit**

Tel Index

**Constitutional Debt Limit**

Constitutional State Debt Limit as a Portion of Expenditure

**Tax Reform Act**

Coded as 1 for after Effective Date of TRA Years Before the Effective Date of TRA=0

**Fiscal Centralization**

Ratio of State Revenue to State and Local Revenues

**Direct Democracy****Voter Referendum**

Coded as 1 if State Implement Voter Referendum otherwise =0

**Fiscal Factors****Lagged Debt**

Lagged Debt Per Capita

**Interest Rate**

Bond Buyer's Index 20

**Intergovernmental Grants**

Per Capita Intergovernmental Grants

**Socio Economic Variables****Unemployment Rate**

Unemployment Rate

**State GDP**

Real Gross State Product Per Capita

**White**

Percentage of Population Self-identified as White

**Black**

Percentage of Population Self-identified as Black

Variable	Obs	Mean	Std.Dev	Min	Max
State	1750	25.5	14.43499	1	50
Year	1750	1997	10.10239	1980	2014
Per Capita Long Term Debt	1450	2109.095	1864.496	34.59	13036.21
Population Density	1700	175.5956	241.3371	0.7	1210.1
Population from 18 to 65	1650	61.72795	1.92999	54.64772	66.46432
Population Over 65	1650	12.47868	2.07371	2.868852	18.54977
White	1700	84.03171	11.96315	25.65984	99.33955
Black	1700	9.951518	9.361155	0.222064	47.91081
Interest Rate(Bond Buyer index 20)	1750	6.267714	2.064934	3.73	11.64
Political Turnover	1750	0.171429	0.3769908	0	1
Legislative Term Limits	1750	0.122286	0.3277091	0	1
Balanced Budget Rules	1750	8.105143	2.598616	0	10
Tax and Expenditure Limits(TEs)	1732	7.724596	7.770303	0	30
Constitutional Debt Limits	1750	0.66	0.4738442	0	1
Fiscal Centralization	1550	0.675054	0.0748172	0.300459	0.894201
Per Capita Real Income	1700	37103.73	7627.328	20579.69	63958.4
Per Capita State GDP	1700	30826.12	13968.32	8514.067	83552.97
Unemployment Rate	1750	6.0412	2.114628	2.3	17.4
Citizen Ideology Index	1700	49.42999	15.42765	8.449893	95.97168
Tax and Expenditure Limits(TEs)	1750	0.828571	0.3769908	0	1
Intergovernmental Grants	1650	1026.408	673.9813	164.0941	4693.079
Voter Referendum	1750	0.42	0.4936996	0	1
Split Legislature	1715	0.216327	0.4118595	0	1
Interparty Competition	1591	40.01301	11.58611	5.696007	66.20799
Election Years	1740	0.266667	0.4423438	0	1
Electoral Competition	1582	10.69075	18.52401	0	65.74828
Rep.Governor and Rep. Legislature	1750	0.178286	0.3828625	0	1
Dem.Governor and Rep. Legislature	1750	0.254857	0.6670955	0	2
Rep. Governor and Dem.Legislature	1750	0.584571	1.188612	0	3
Dem. Governor and Dem. Legislature	1750	1.067429	1.769774	0	4
Percapita Real Income*Dem.Governor and Rep. Legislature	1700	9532.617	25100.94	0	108868.8
Percapita Real Income*Rep. Governor and Dem. Legislature	1700	22058.37	46363.45	0	191875.2
Percapita Real Income*Dem. Governor and Dem. Legislature	1700	38547.75	66855.68	0	250527.7
Citizen Ideology Index*Dem.Governor and Rep. Legislature	1700	11.16799	30.26607	0	158.2437
Citizen Ideology Index*Rep.Governor and Dem. Legislature	1700	31.15731	67.20482	0	279.7444
Citizen Ideology Index*Dem.Governor and Dem. Legislature	1700	56.46011	100.6378	0	383.8867
Per Capita Real Income*Voter Refendum	1700	15758.48	19123.11	0	58184.25
Citizen Ideology Index *Voter Refendum	1700	20.26043	25.77957	0	91.90404
Lagged Debt Per Capita	1450	2109.095	1864.496	34.59	13036.2

Dependent Variable: Long Term Debt Per Capita			
Effect Types and Independent Variables	Coefficient	Standard Error	
<b>Property Rights and Interest Group Factors:</b>			
Population over 65	1.305		11.502
Population between 18 and 65	-29.039**		12.741
Population Density	0.145		0.161
Per Capita Real Income	0.009		0.009
Opinion Liberalism	0.760		3.050
<b>Political and Institutional Factors:</b>			
Political Turnover	-23.224		54.521
Interparty Competition	-5.404**		2.704
Election Years	-126.534		129.209
Electoral Competition	2.836		3.388
<i>Composition of Government</i>			
Dem. Governor and Rep. Legislature	-267.805		221.870
Rep. Governor and Dem. Legislature	5.761		76.562
Dem. Governor and Dem. Legislature	-131.534*		70.359
Split Legislature	1.534		35.547
<b>Interaction with Interest Group Factors:</b>			
Income*Dem. Governor and Rep. Legislature	0.005		0.007
Income*Rep. Governor and Dem. Legislature	0.000		0.002
Income*Dem. Governor and Dem. Legislature	0.004*		0.002
Opinion Liberalism*Dem. Governor and Rep. Legislature	2.479		4.068
Opinion Liberalism*Rep. Governor and Dem. Legislature	-0.8800856		1.19159
Opinion Liberalism*Dem. Governor and Dem. Legislature	-0.5427509		0.7944864
<b>Fiscal Institution Factors:</b>			
Balanced Budget Rules	-17.68719*		9.964908
Legislative Term Limits	-7.741		55.469
Tax and Expenditure Limit	0.380		2.015
Constitutional Debt Limit	-83.476*		50.419
1986 Tax Reform Act	263.657***		65.443
Fiscal Centralization	1788.643***		650.696
<b>Direct Democracy:</b>			
Voter Referendum	-313.142		266.381
<b>Interaction with Interest Group Factors:</b>			
Income*Voter Referendum	0.001		0.005
Opinion Liberalism*Voter Referendum	4.445		3.703
<b>Fiscal Factors:</b>			
Lagged Debt Per Capita	0.836***		0.022
Interest Rate (Bond Buyer's 20 Index)	132.138***		29.800
Per Capita Intergovernmental Grants	0.013		0.077
<b>Socio Economic Factors:</b>			
Unemployment Rate	30.447**		13.612
Per Capita State GDP	0.018***		0.005
White	-2.079		1.535
Black	-6.335*		3.308

Note: \*  $p < .1$ ; \*\*  $p < .05$ ; \*\*\*  $p < .001$ , Robust Standard Error Adjusted.

# Key Findings

1. Interparty Competition reduce the overall state long term debt.
2. Democratic Governor and Democratic Legislature is responsive to citizen demands(Interaction)- Incur More Debt
3. Fiscal Institutions affect the Level of State Long Term Debt-  
Balanced Budget Rules-Reduce  
Constitutional Debt Limits-Reduce  
1986 Tax Reform Act-Increase  
Fiscal Centralization - Increase



# Discussion

- Political Market Framework Provides Useful Framework for Explaining the level of state long-term debt(Moderating role of Unified Democratic Government Structure-Responsive to Citizen Demands)-First Reveal
- Institutional Factors are Crucial-Incorporate Political and Fiscal