The Relationship Between Education, Experience, and Political Efficiency
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I. Introduction

The purpose of this paper is to discover whether the labor productivity of U.S. Representatives is related to their education and experience. Historically, it's somewhat rare for representatives to reach the House without holding previous political office, but the new representatives in the 116th Congress represent a significant break from the past (Chinoy and Ma 2019). More than 40 percent of those elected in November 2018 are political novices who have never worked in government. Although the newest House is known as one of the most diverse in terms of gender and race, over 70 percent of Representatives were lawyers in private practice, businesspeople (including employees in insurance, banking, finance and real estate) or medical professionals (Chinoy and Ma 2019). With predominantly successful white-collar professionals filling Congress, the House proves to be significantly more educated and affluent than the people it represents. The question is whether these Representatives are going to be successful in passing laws during their time in Congress. This research is important for future elections and how the public views candidates and their potential performance in office.

Economists generally assume that an increase in human capital, such as education or experience, leads to an increase in productivity. Veum (1999) explains that training is thought to make workers more productive and that training can be transferred across different jobs. This research determines if the theory holds true in the political realm, where an influx of untraditional politicians are winning elections. A graduate degree, and specifically a law degree, are used in this paper to measure the effect of education on political success. To proxy for relevant experience, military experience, private practice experience and previously held State House or Senate positions are included as variables. Common careers that transition into politics, such as business experience, are also considered. This research does not consider the effectiveness or qualitative aspects of legislation, as it purely defines productivity in a quantitative sense.

Most industries measure productivity using salary, but politics is one of the few where productivity can be better quantified by legislation. Past research defines legislative success in two ways: enacted legislation (political productivity) and sponsored legislation (entrepreneurial activity). A bill is considered enacted if one of the following is true: a) it is enacted itself, b) it has a companion bill in the other chamber (as identified by Congress) which was enacted, or c) if at least half of its provisions were incorporated into bills that were enacted. Sponsored legislation is comprised of House Bills (H.R.) and House Joint Resolutions (H.J.Res) that a congressperson sponsors or co-sponsors.

My initial hypothesis is that there is a positive relationship between relevant education and experience and enacting or sponsoring legislation. I test this hypothesis by running a regression with enacted legislation and sponsored legislation as the dependent variables and education and pre-Congressional experience as the dependent variables. I expect to find that a graduate degree, and specifically a law degree will increase enacted and sponsored legislation in the House of Representatives. For experience, I expect that a pre-Congressional career in law or politics, such as working in private practice or the State Legislature will result in a more successful

performance in Congress. I also expect that serving in the military will lead to greater productivity in the House.

The results show that graduate education and a formal law degree are not positively correlated to political efficiency. In a regression of enacted legislation on graduate education, controlling for gender, years in office, political party, and pre-Congressional experience, the coefficient is -1.34. This means that on average a Representative with a graduate degree enacts 1.34 fewer pieces of legislation than a Representative without a graduate degree. A law degree and Ivy League education prove to be insignificant. These results lead me to reject my initial hypothesis that more education will result in greater legislative success.

The results for relevant pre-Congressional experience are mixed. On average, Representatives with military experience enact 1.29 more bills than Representatives without military experience and private practice experience results in 1.35 more passed bills. If a Representative served in the State Legislature enacted legislation increases by 1.50 bills but each additional year in the State Legislature decreases enacted legislation by 0.25 bills. These results suggest that short-term experience in the State Legislature can lead to success in the U.S. House, but the longer a Representative serves at the State-level, the less efficient they are.

 Entrepreneurial activity within the House (quantified by sponsored legislation) is another variable used to examine political efficiency. The results were similar to enacted legislation. Graduate education and law education are insignificant to sponsoring legislation in the U.S. House of Representatives. These results reaffirm that legislative success is not related to education and I reject my initial hypothesis that education is positively related to political efficiency.

Military experience is significant and if a Representative has military experience, sponsored legislation increases by 25.36 bills. Private practice experience is also significant, and private practice experience increases sponsored legislation by 15.36 bills. On average, if a Representative served in the State House or Senate, sponsored legislation increases by 15.21 bills; however, there is still a negative relationship between legislative success and total years spent in the State Legislature. For every 1-year increase in years served in the State Legislature, sponsored legislation decreases by 3.6 bills. These results support the results of my initial model, proving that relevant pre-Congressional experience increases political efficiency. To check for robustness, I also looked at enacted legislation per year and sponsored legislation per year. My models proved to be robust.

This research concludes that graduate education and a law degree are negatively correlated or insignificant to a Representative's political efficiency. Pre-Congressional military experience, private practice experience and short-term State Legislature experience increases productivity in the U.S. House of Representatives. Given these results, the American electorate should focus less on education during election season and a candidate's pre-Congressional experience is a better indicator of future legislative success in the House of Representatives.

II. Background

The graphs below visualize the characteristics of the 93rd (1973-1975) through 115th (2015-2017) Congress. The blue bars indicate years with a Democratic majority in the House and the red bars indicate Republican majority. The grey bar indicates the average across all 23 Congresses.

A. Demographics

Below is each Congress broken down by political party. With the exception of the 110th (2007-2009) and 111th (2009-2011) Congress, Republicans have held control of the House since the 104th Congress. Over the 23 past Congresses, Democrats have occupied 50.60% of total House seats. The 116th Congress is 54% Democrat, giving them control of the House from 2019-2021.

Political Party
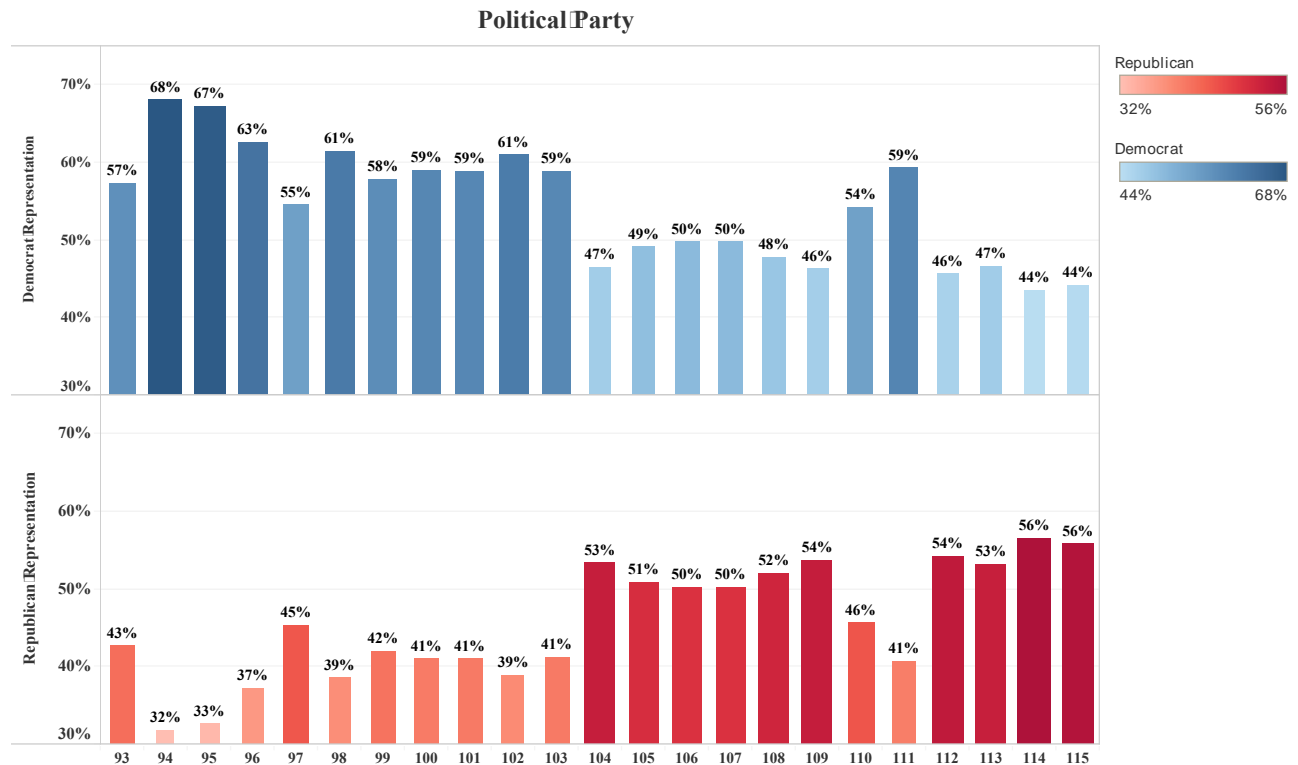
Males overwhelmingly represent the U.S. House, but women have slowly started to win votes and have represented at least 20% of the House since the 104th (1995-1997) Congress. From 1973 to 2018, female representation increases by 15.76%. In 2019, 85 women were sworn into office, making the 116th Congress the most gender-diverse House to date.
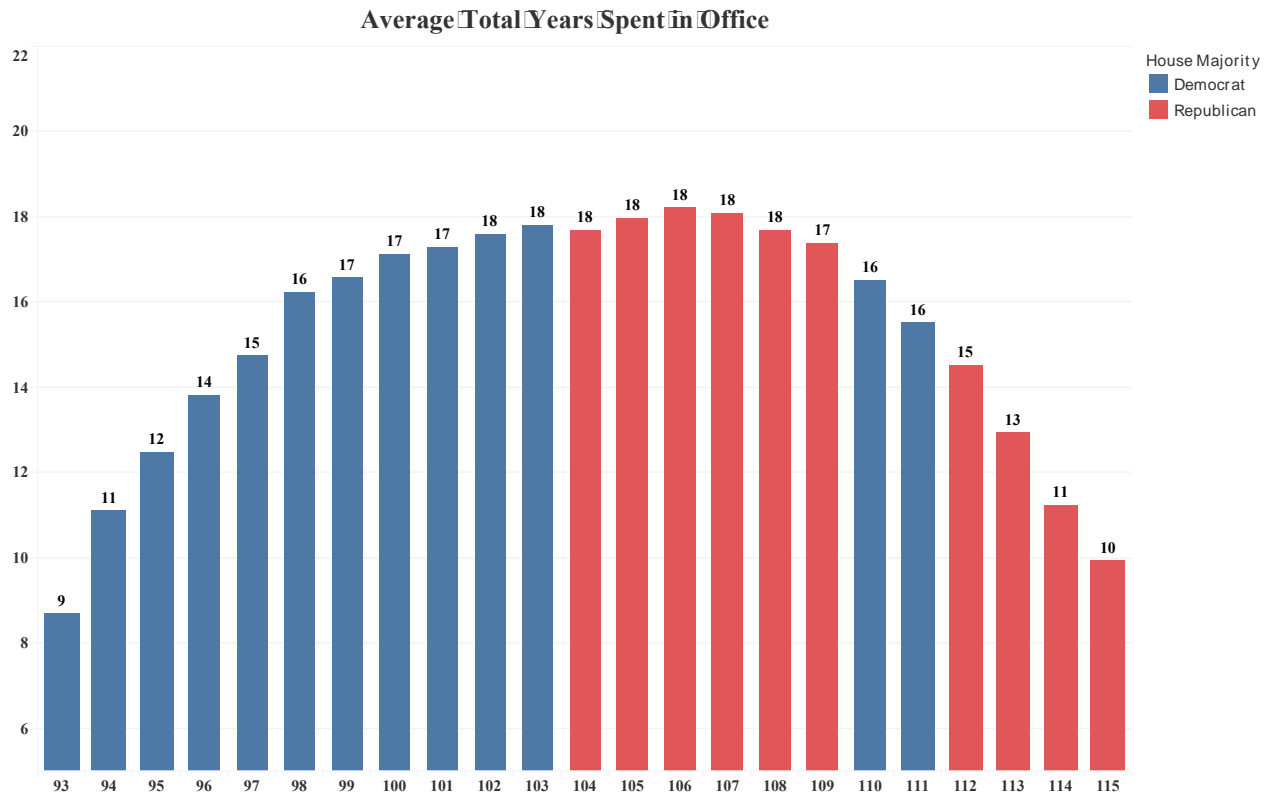
Male Representation
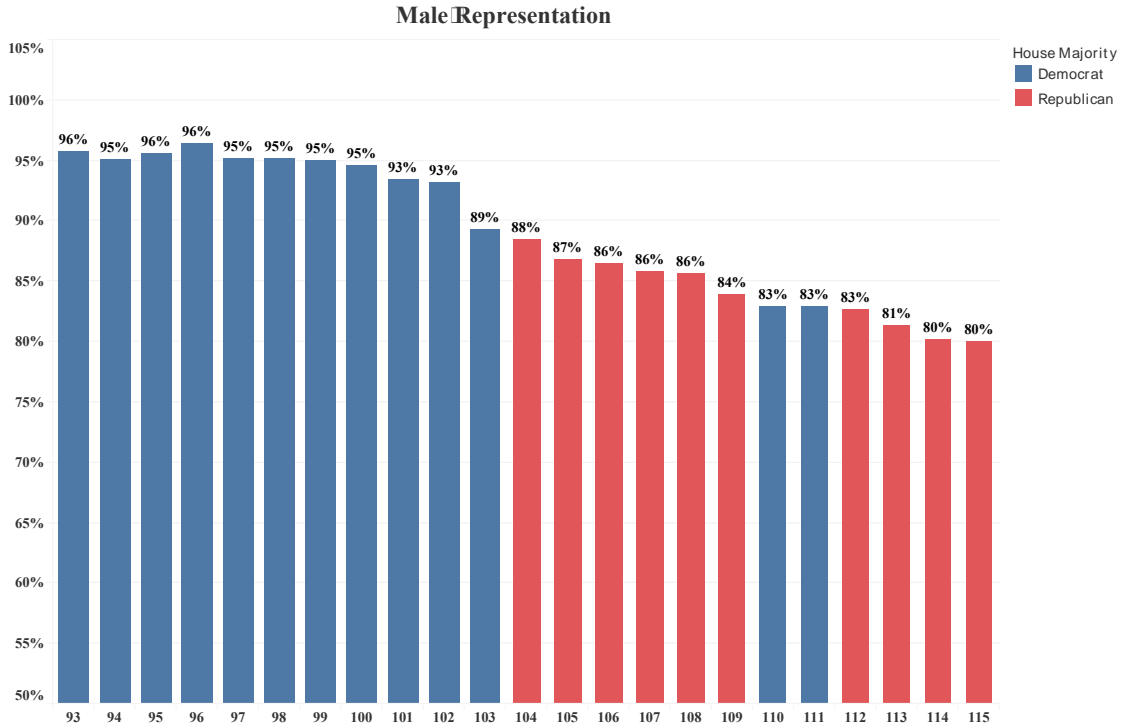
The average age of Representatives upon entering office dipped to mid-forties but has slowly been rising since the 107th (2001-2003) Congress. By the 114th (2015-2017) Congress, the average age of Representatives rose back up to 49, the highest it's been since the 94th (1975-1979) Congress. This shows that Americans are starting to vote for older candidates.

Average Age Upon Entering Office
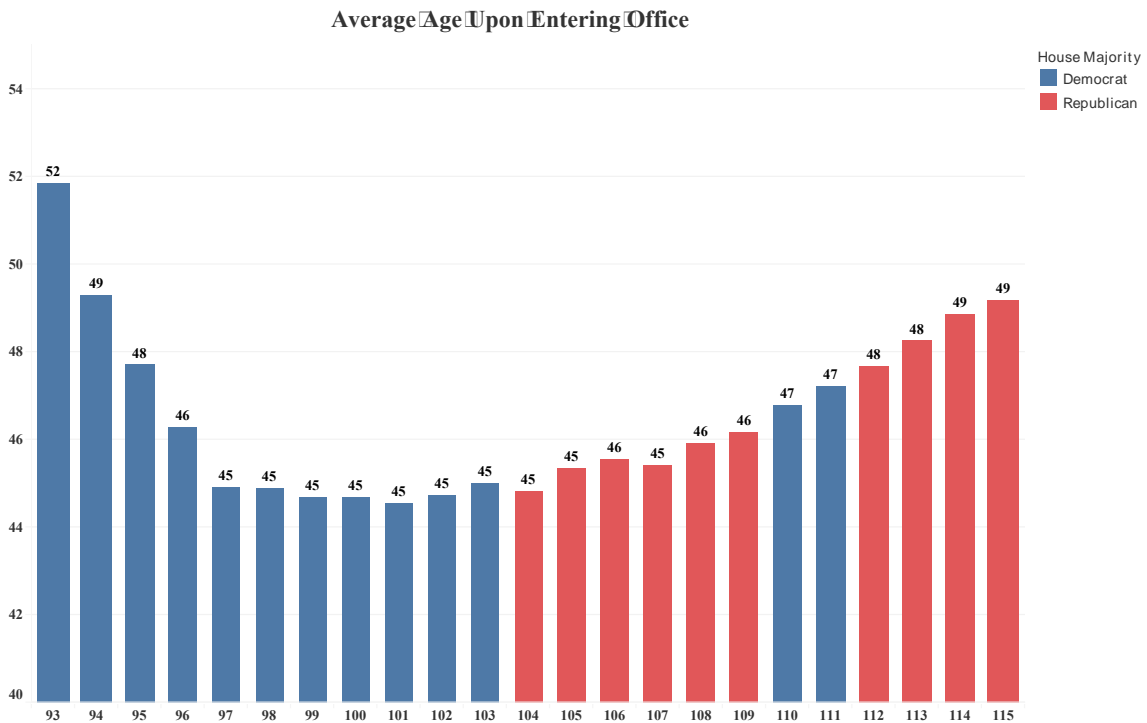
The average total years that Representatives serve in office is at the lowest it's been since the 94th (1975-1979) Congress. Combining this observation with the average age upon entering office, there seems to be an indirect relationship between average age upon entering office and the average total years spent in office. Since the 106th Congress (1999-2001) the total years that Representatives serve in office has been on a steady decline. From the 93rd (1973-1975) to the 115th (2019-2021) Congress, the average total time spent in office is 9.32 years, which is approximately 5 terms.

Average Total Years Spent in Office

House Majority
- Democrat
- Republican

B. Education

In the 116th Congress, about 5% of representatives do not have a bachelor's degree, compared to about two-thirds of Americans 25 and older. About half of the current House members have graduated from public universities, usually in their home states, but more than 10% of representatives have bachelor's degrees from elite, private colleges. Nearly 70% of representatives attended graduate school, but only about 10% of Americans 25 and older can say the same (Chinoy and Ma 2019). It may be assumed that a college education is a necessary qualification for office, but research on legislators in the United States and Brazil show that lawmakers with more formal education are not more productive, more popular or less likely to be corrupt (Carnes and Lupu 2015). However, there has been a steady increase in graduate education from the 93rd (1973-1975) to the 115th (2019-2021) Congress. Since the 102nd (1991-1993) Congress, over half of the U.S. Representatives have had a graduate degree, with the most recent Congress having over 65%.

Graduate Education
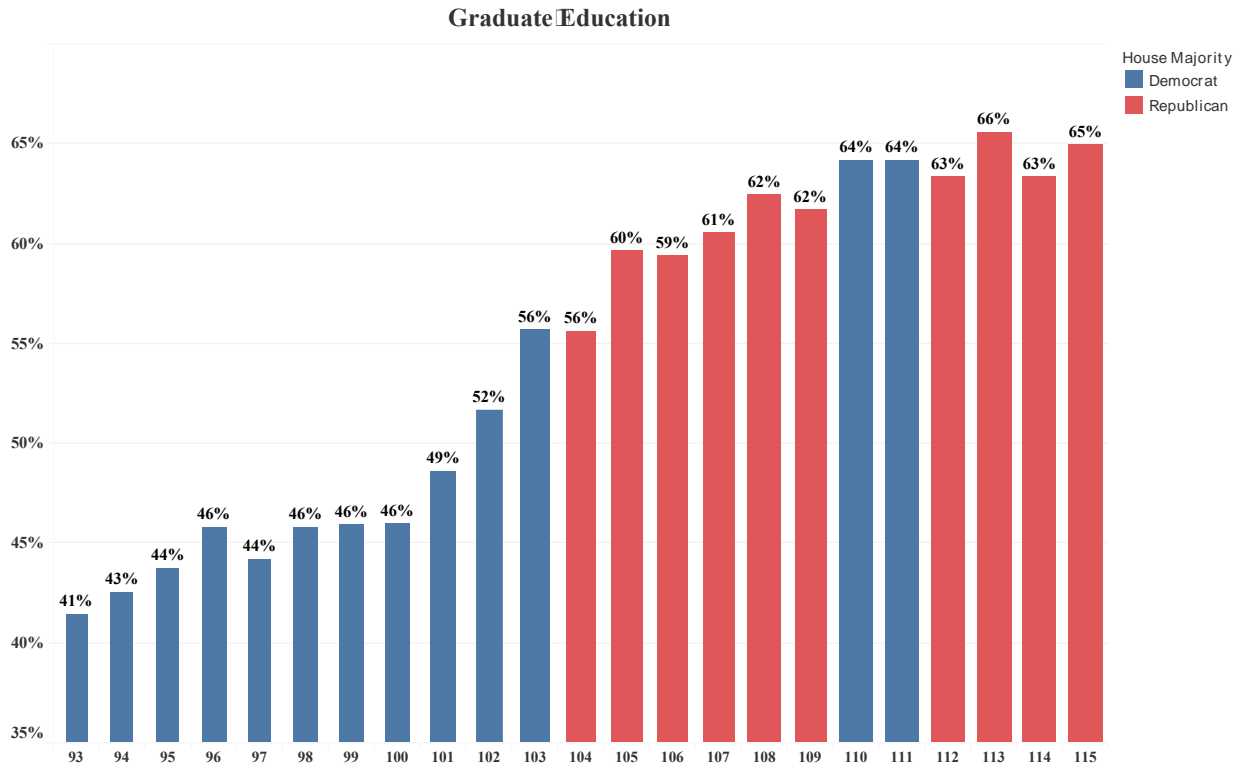
Specifically looking at law degrees, over one-third of Congress have had formal law education since the 105th (1997-1999) Congress and that number continues to increase. This is comparable to the overall average of 33% of all Representatives across the last 23 years attaining a formal law degree.

In the past, an Ivy League education was more prevalent, but since the 96th (1979-1981) Congress, only a little more than 10% of Representatives went to an Ivy League school for either their undergraduate degree or graduate degree.

## Graduate Law Education
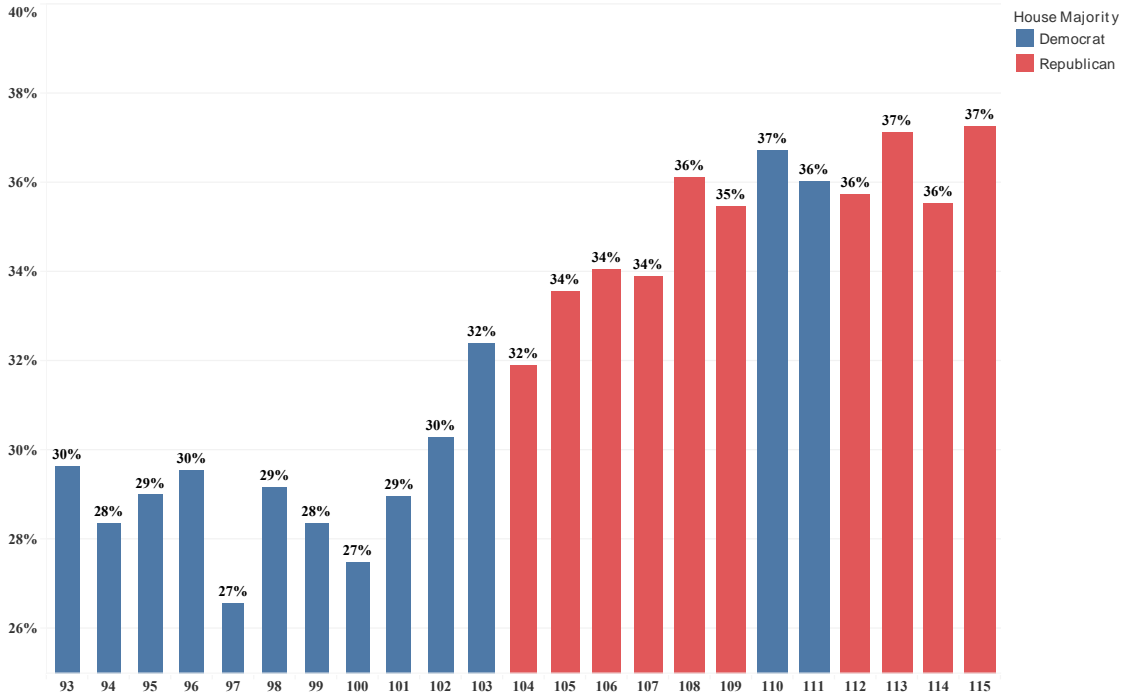

Ivy League Education
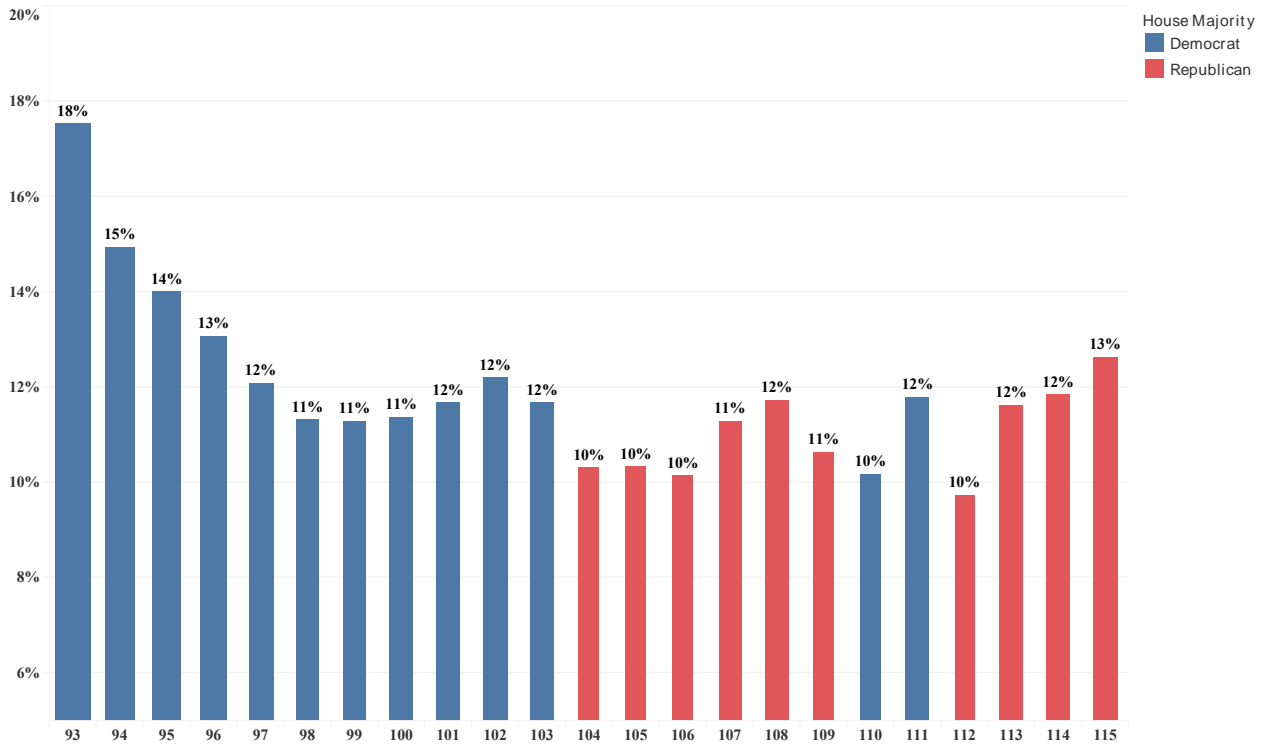
C. Pre-Congressional Experience

According to a 2014 Gallup poll, Americans think the country would be better governed with more people from business and management (McCarthy 2014). Nearly 40% of the 116th House (2019-2021) and more than half of Republicans cite some form of business experience. It's a common argument among members with business backgrounds that their experience will enable them to run government more like a business, asserting they would have more success in efficiently passing laws. Since members with business experience are more likely to vote pro-business legislation, they often get more contributions from corporations throughout their campaigning (Witkow & Friedman 2008). Over one-third of the last four Congresses (2011-2019) have pre-Congressional business experience. Compared to older Congresses, there has been a significant spike in the last decade.

Pre-Congressional Business Experience
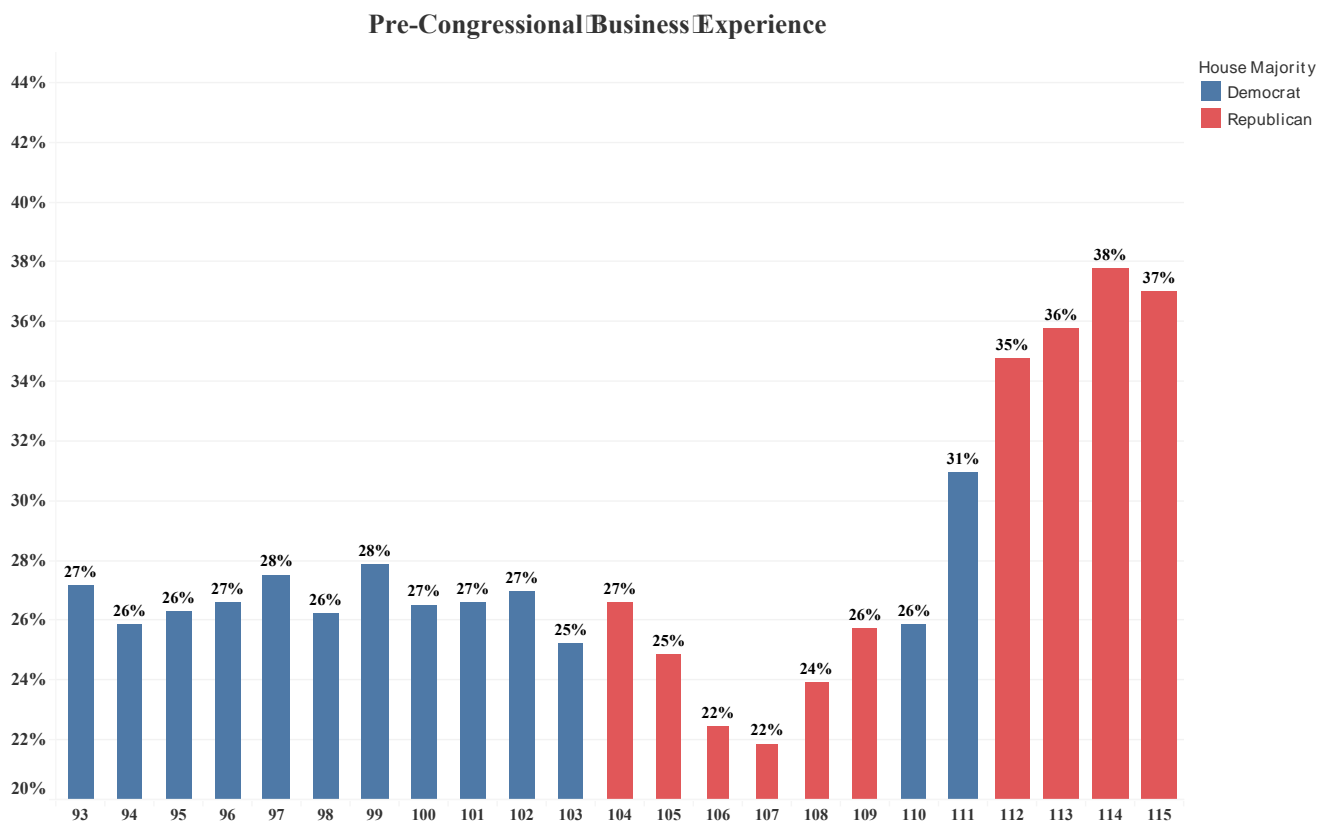
Nearly 20% of 116th Congressional members served or current serve in the armed forces and 70 percent of veterans in the House are Republicans. Compared to the early 1970s there is a substantial decline in representation from the military, when over 70% of Congress had military experience. Different from past elections, in 2018, Democratic women made their military experience a focus of their campaigns (Chinoy and Ma 2019). Pre-Congressional military

experience has dropped nearly every year since the 93rd (1973-1975) Congress, with less than 20% of the last three Congresses ever serving in the military. There has been over a 50% decrease since the 93rd (1973-1975) Congress.

Pre-Congressional Military Experience
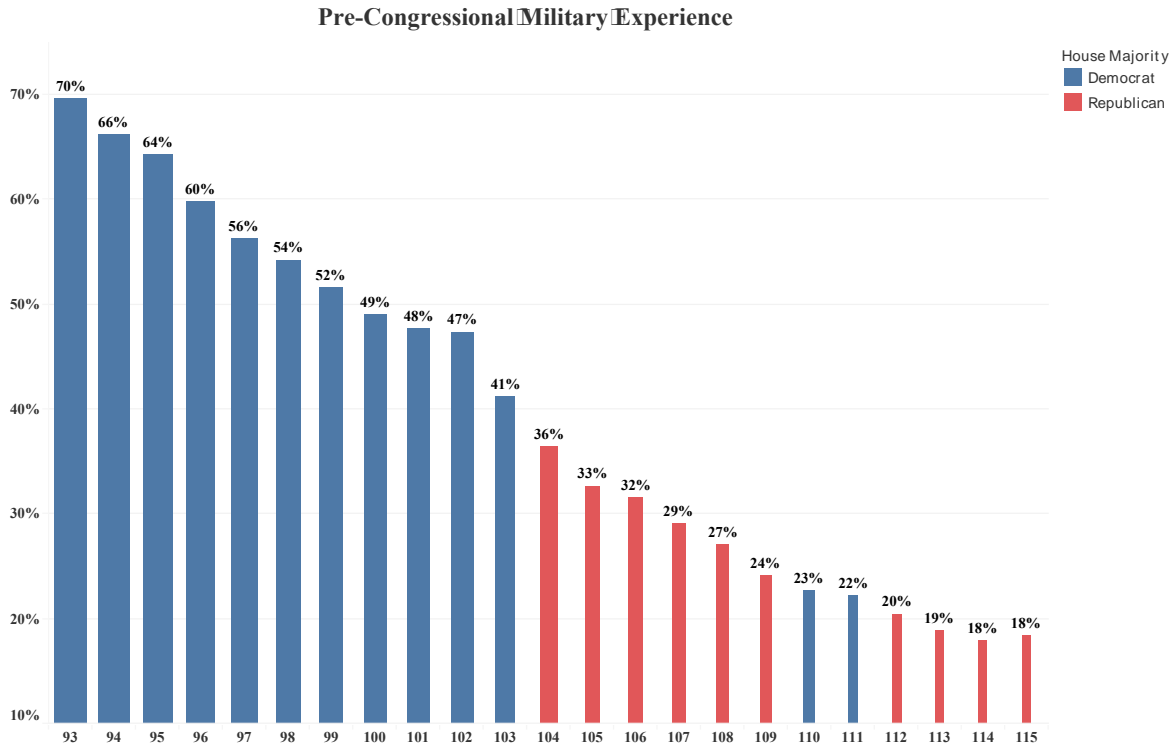
Among both parties, lawyers are staggeringly overrepresented as they constitute less than 1% of the voting-age population but more than one-third of the House. Compared to our international counterparts, the U.S. Congress has over 20% more members with law degrees than the United Kingdom's Parliament and countries such as Sweden, France, and Denmark have only 10% of their legislature filled with lawyers (Bonica and Sen 2017). A possible cause for this representation could be that lawyers have previous experience passing laws and their successful campaigns could be due to their professional networks and affluent professionals. Private practice experience prior to being elected has hovered around 30% over the past decade, which is lower than the Congresses prior to the 103rd (1993-1999).

Pre-Congressional Private Practice Experience
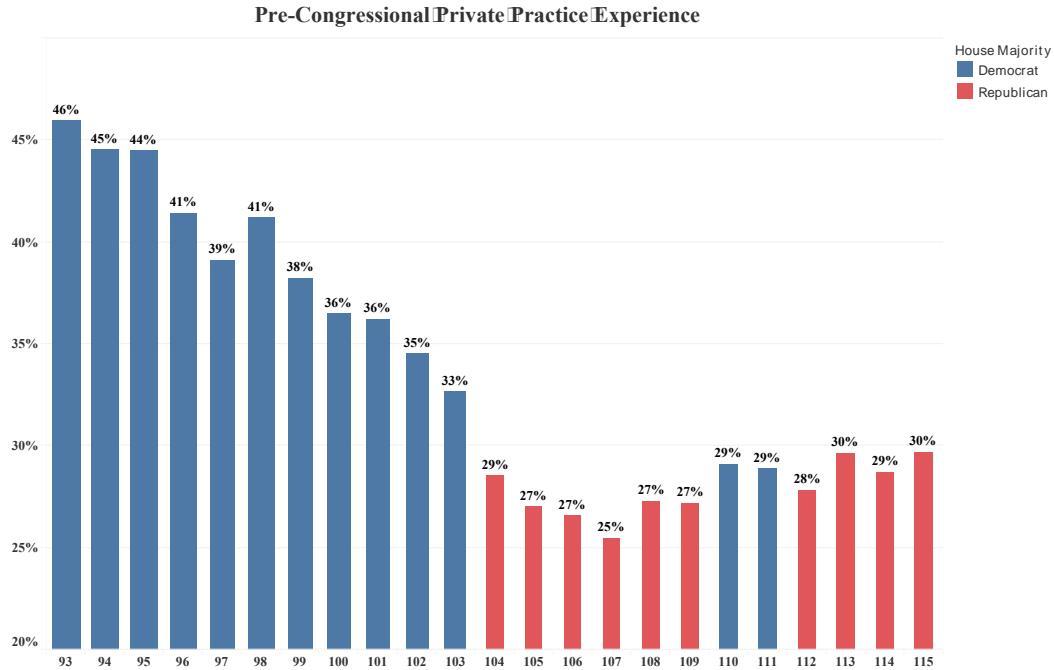
Of the past 10 Congresses (1999-2019), around 40% of U.S. Representatives have had prior experience in the State House or Senate. This is much larger than the 35% average across all 23 Congresses. Research shows that legislators with political experience introduce and pass more bills, making this trend a favorable one (Francis 2014).

Pre-Congressional State Legislature Experience
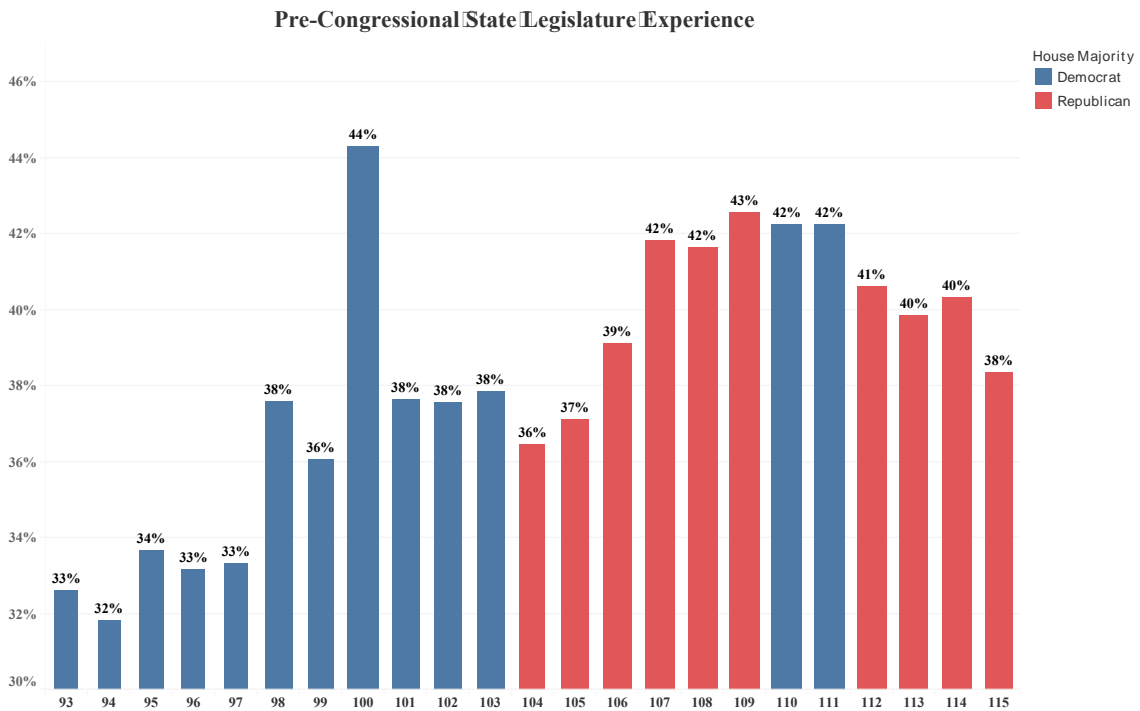
Over the past 23 Congresses (1973-2019) the average years a Representative spent in the State Legislature prior to the U.S. House of Representatives was 9.32 years. This is consistent with the average number of years Representatives serve in the U.S. House.

Average Years in State Legislature
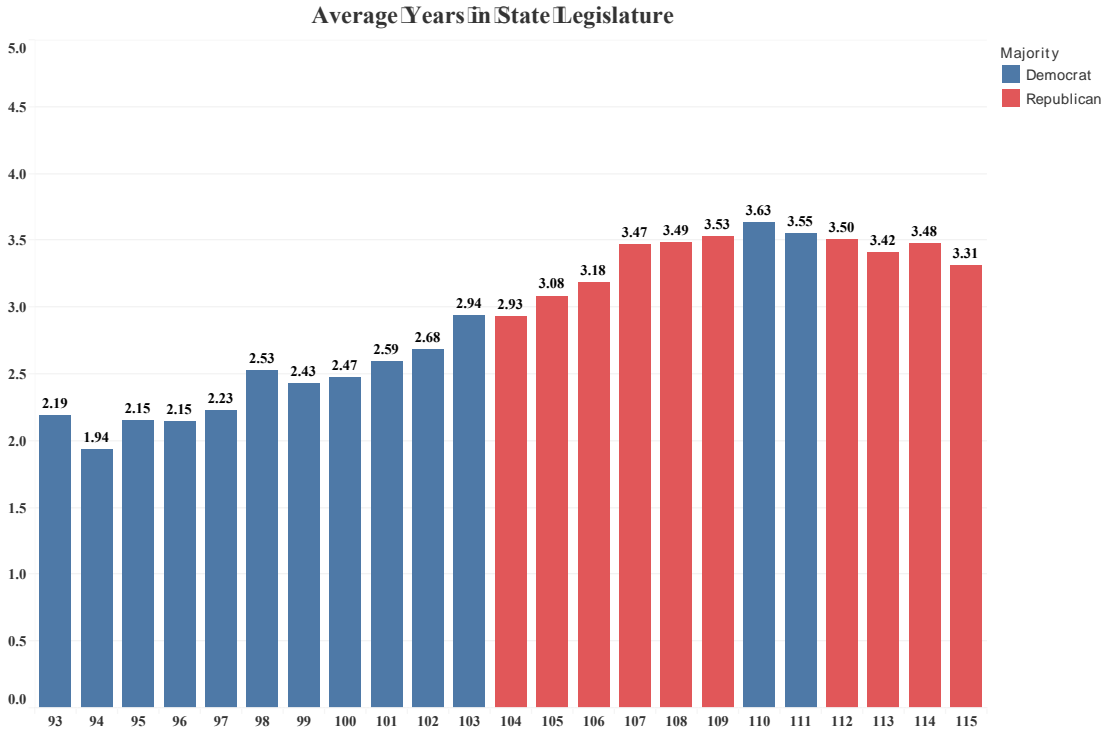
D. Legislation

Since the 100th (1987-1989) Congress, the amount of enacted legislation from the U.S. House has rapidly declined. There were nearly 5,000 bills enacted by Representatives in the 100th (1987-1989) Congress and only 2,100 in the most recent Congress. On average, from 1973-2019, U.S. Representatives pass 261 total bills per year.

Enacted Legislation
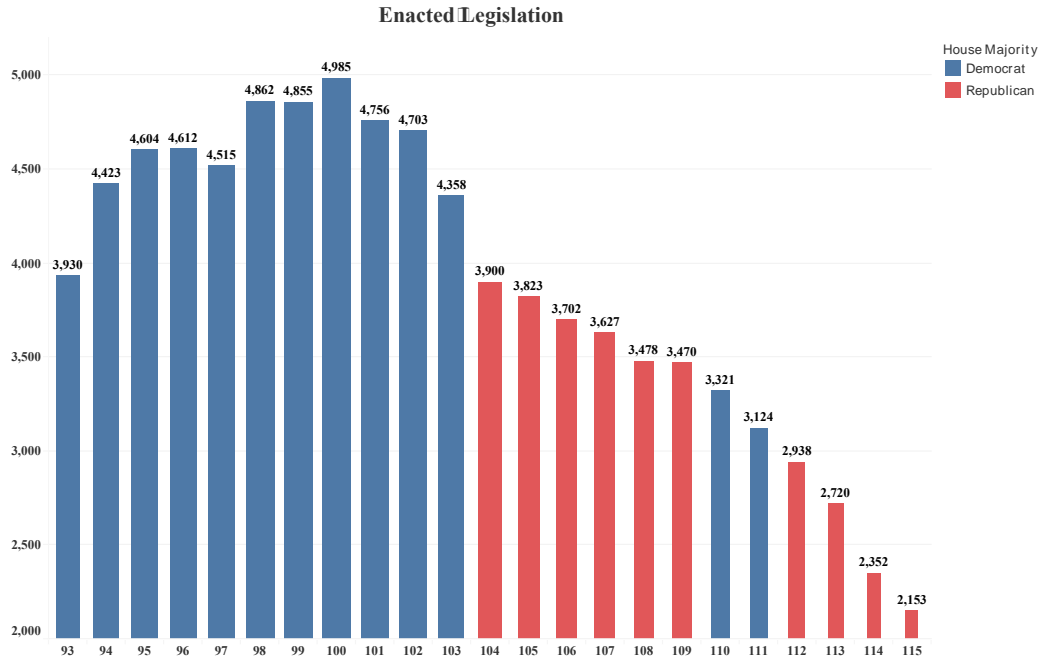
Over the past 23 (1973-2019) Congresses, sponsored legislation has declined at a similar rate as enacted legislation. On average, each House sponsors 64,000 pieces of legislation; however, the most recent Congress (2017-2019) only sponsored 36,000 which is about a 60% decrease from the overall average.

Sponsored Legislation
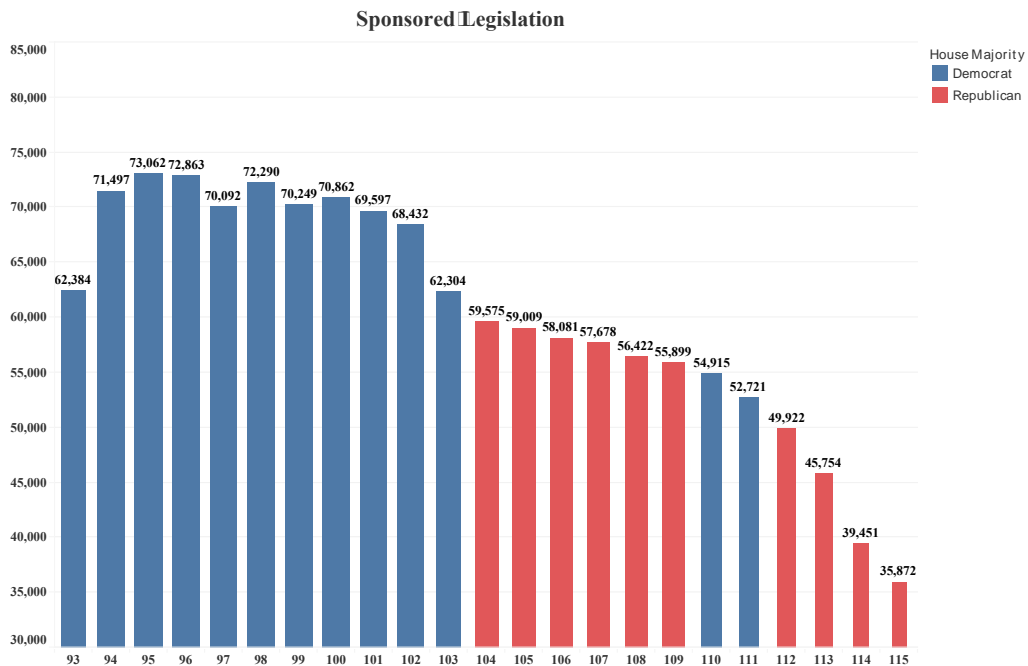
The ratio of enacted legislation to sponsored legislation shows how many bills a Representative enacts versus how many bills they attempted to enact. This ratio has been below the average since the 106th (1999-2001) Congress but has been slightly increasing since the 112th (2011-2013).

Enacted Per Sponsored Legislation
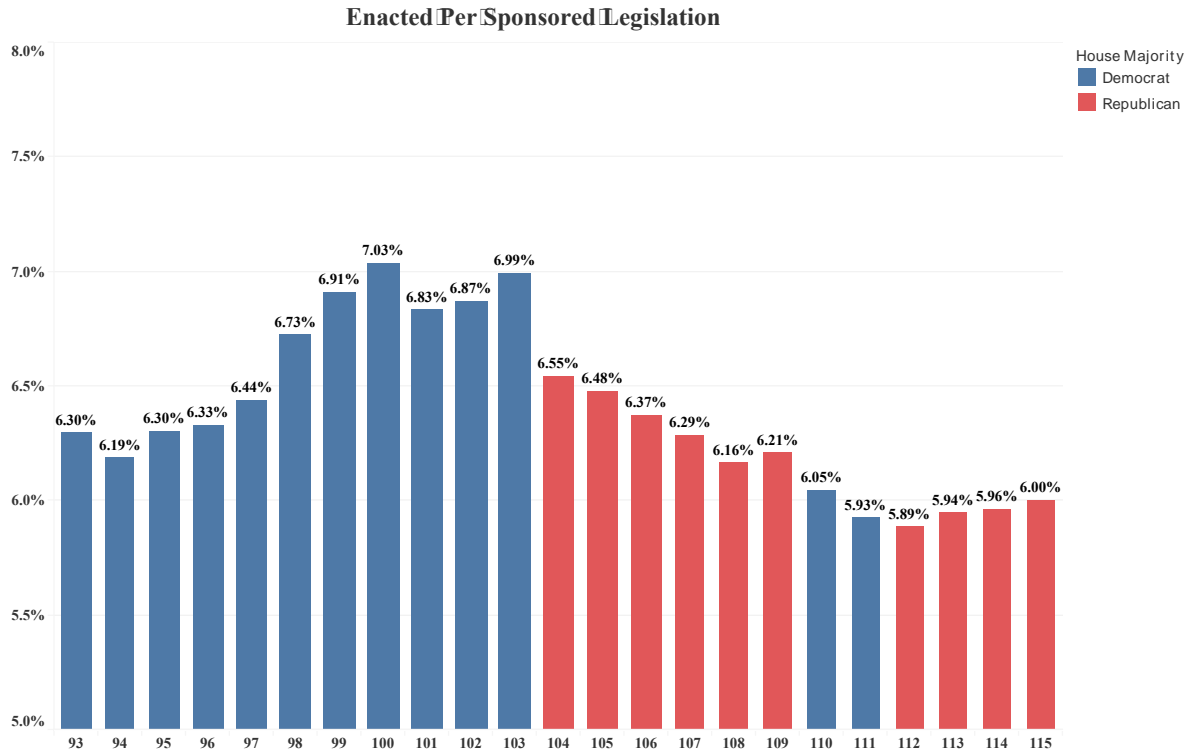
Given the progression of demographics, education, experience, and efficiency in the U.S. House of Representatives from 1973-2015, it's important to determine the implications of these changes in coming years.

III. Literature Review

Previous research on the human capital theory and political efficiency relates to this research. Ballout (2007) conducted research on the relationship between person-environment fit and career success. The author explains the human capital theory which states that individuals who invest the most in education, training, and experience are expected to show a higher level of work performance. Additionally, the author states that an individual's career progression and success is contingent upon the quantity and quality of human assets that one brings to the labor market. The skills and experiences that individuals bring to their work are related to their compensation—the typical measure of career success. Overall, Ballout (2007) provides evidence to support the positive linkage between human capital variables and career success. This research seeks to answer whether that this is also true in the political labor market. According to the

theoretical basis of the human capital theory, the more practical experience and education that a politician has in law should translate to greater career success in terms of enacted legislation.

Dearden, Reed and Van Reenen (2006) examine the impact of private sector training on productivity. Using a panel of British industries from 1983 to 1996 and a variety of estimation techniques, the authors found that work-related training is associated with significantly higher productivity. An analysis of the data finds that a 1% increase in training is associated with a 0.6% increase in value added per hour and a 0.3% increase in hourly wages (the standard statistic used for productivity). Dearden, Reed and Van Reenen's findings are related to this research, as I seek to determine how "political training" (such as a law degree, experience in private practice, etc.) affects a politician's success while in office.

Cox and Terry (2008) explain that "the best-known measures of legislative success are: (1) members' "entrepreneurial activity," as measured by how many bills they sponsor and co-sponsor; (2) members' "batting averages," defined as the proportion of the bills they sponsor that are passed; and (3) members' "productivity," defined as the number of bills each legislator is able to pass." In this study, the authors use two productivity measures, counting the number of each member's bills that are reported from committee (*Bills Reported*) and passed (*Bills Passed*) in a given Congress (Cox and Terry 2008). Like this research, I use two measures of legislative success to analyze key determinants of political efficiency in the House. I use "entrepreneurial activity" measured by sponsored bills and "productivity" measured by enacted legislation.

Cox and Terry (2008) explore how a Congressmember's productivity increases when they become a committee chair, or their party attains a majority. Contrary to previous studies that find greater seniority and committee leadership posts boosting productivity in neither party, the authors find them boosting productivity in both. Like this paper, I look at the relationship between certain characteristics and political productivity; however, my research includes pre-Congressional experience and education versus Congressional experiences specifically. Two of my variables capture prior experience in the State Legislature and its effect on legislative success. Like these findings, I predict and find that it has a positive, significant relationship with political efficiency. I also expand my research from the 93rd Congress to the 115th, accounting for 10 more Congresses than this research has.

Anderson, Box-Steffensmeier, and Sinclair-Chapman (2003) research how individual member behavior and institution variables affect legislative success in the U.S. House of Representatives. Specifically, this research analyzes the conditions under which elected Representatives in the 103rd Congress find success in committees, on the floor, and at the enactment stage of the legislative process. The authors quantify legislative effectiveness as a count of the number of bills a member moves through the legislative process rather than the proportion of bills enacted. They find that a member's activity level encourages legislative success, but gains are limited when members speak or sponsor too frequently. This relates to my paper as I look at how education and pre-Congressional careers of Representatives relate to both enacted legislation and sponsored legislation in the House over a Representative's entire career. Like this paper, I choose not to include "batting average" or the proportion of enacted to sponsored legislation.

Frantzich (1979) uses a sample of House members to conclude that the most effective Representatives are senior, electorally safe members of the majority party. He also finds that

House members benefit from a "shotgun approach" to bill sponsorship—sponsoring many bills on a broad array of issues. Relating this to my research, I also look at the effectiveness of Representatives and what characteristics are most favorably associated with enacting legislation.

Carnes and Lupu (2015) analyze cross-national data on random leadership transitions, data on close elections in the U.S. Congress and randomly audited municipalities in Brazil to determine whether people with formal education makes better political leaders. Across a wide range of outcomes, the authors consistently find that "college-educated leaders perform about the same as or worse than leaders with less formal education. Politicians with college degrees do not tend to govern over more prosperous nations, do not pass more bills, do not tend to do better at the polls, and are no less likely to be corrupt. These results have important implications for how citizens evaluate candidates, how scholars measure leader quality, and how we think about the role of education in policy making" (Carnes and Lupu 2015). These findings contradict my initial hypothesis that more educated Representatives are more efficient in the U.S. House but support my results that show graduate education has a negative relationship with enacted legislation.

IV. Theory

In this research, the output of efficiency is quantified by enacted and sponsored legislation. Representatives with graduate education or law education can be considered "skilled" laborers and those without are considered "unskilled". Relevant pre-Congressional experience is also included in the function. According to the human capital theory, the return to human capital (government or political efficiency) should increase as education (graduate or law education) and training (relevant pre-congressional experience) increases. I assume that human capital production is a function of education, demographics, and experience and is provided below in equation (1):

$$Political\ Efficiency = f(D,\ S,\ U,\ E,\ \varepsilon)$$

Where:

Y = political efficiency of the U.S. House of Representatives (enacted and sponsored legislation)

D = demographics (age, gender, and political party)

S = skilled workers (politicians with graduate or law education)

U = unskilled workers (politicians without graduate or law education)

E = relevant pre-congressional experience (military, state legislature or private practice)

ε = error term

Human capital is the sum of education and relevant pre-congressional experience in the production function. This production function model asserts that enacted and sponsored legislation depend on the level of human capital a Representative has. I predict that political efficiency will be positively associated with relevant experience and education. I predict that

relevant experience and higher education, such as a graduate degree or a degree in law, would serve as "training", increasing production (enacted and sponsored legislation).

A law degree should result in more legislation passed, since specific law-related education is directly related to a career in politics. Additionally, Congressional representatives that have been in office longer should be more productive given their tenure. I predict that Representatives that start at an older age are expected to pass more bills during their tenure because they are typically more respected. The human capital theory also asserts that having previous experience in the State Legislature would lead to a more productive politician given the related skills and experience.

V. Data

The cross-sectional dataset is created with data found on govtrack.us. Similar to other research conducted on this subject, I am using the historical list of Congress to pull various pieces of career and biographical information on United States Representatives. I only include Congressional Representatives from 1973-2018 because there is only complete legislation information back to 1973, making anything prior to 1973 inexact. The variable term1start reflects the first year of each U.S. Representatives first term in office. Term1end stands for the last year of each Representatives first term in office. The variable term1time is created by subtracting term1start from term1end to find the total number of years that a Representative spent in office during their first term. This process is repeated for variables term2start, term2end, and term2time for a Representative's second term, given the Representative had a break during their time in office. A variable for total years in office (*totalyears*) is created to by adding term1time and term2time to capture a Representatives total tenure. If total tenure *(totalyears)* was less than a full term, I took them out of the dataset so that Representatives who did not serve a full term did not impact the results. There are 1,504 observations included in this data.

For this research, enacted legislation and sponsored legislation are the dependent variables. According to the database, a bill is considered enacted if one of the following is true: a) it is enacted itself, b) it has a companion bill in the other chamber (as identified by Congress) which was enacted, or c) if at least about half of its provisions were incorporated into bills that were enacted (as determined by an automated text analysis, applicable beginning with bills in the 110 Congress). Sponsored legislation is comprised of House Bills (H.R.) and House Joint Resolutions (H.J.Res). To check for robustness, I also use sponsored legislation per year and enacted legislation per year as dependent variables. A variable for enacted per year (*enactedperyear*) and sponsored per year (*sponsoredperyear)* are created by dividing enacted and sponsored legislation by total years in office (*totalyears*), accounting for the average amount of enacted or sponsored legislation of each representative.

Within each Congressional Representative's entry, there is a "bioguide" provided from the Biographical Directory of the United States Congress. It gives background information such as previous education, careers, and accomplishments. For this research, there are variables created for formal law education, graduate degrees (if any), and if they attended an ivy league school for either undergraduate or graduate school. A dummy variable is created for graduate education (*educationgrad)* to account for graduate degrees. If a Representative had a graduate degree, then (*educationgrad*) is coded as 1. The first graduate degree *(degreegrad1)* and second graduate

degree *(degreegrad2)* variables show the specific graduate degree(s) acquired by each representative. Dummy variables are created for an undergraduate law degree (*undergradlaw)*, masters law degree (*masterslaw)*, and doctors law degree (*doctoratelaw)* to account for formal law education. If the highest law degree a Representative attained is an LLB, (*undergradlaw*) is coded as 1. If the highest law degree a Representative attained is an LLM, (*masterslaw)* is coded as 1. If the highest law degree a Representative attained was a JD or an LLD, (*doctoratelaw)* is coded as 1. For older Representatives that attended Law School during the early 1900s, a specific degree is not stated. For these occurrences, I code their law degree as a 1 for (*doctoratelaw)*. I also create a variable for total graduate law education (*gradlaw)* that adds both a doctorate in law and a master's in law. A graduate degree in Law, such as an LLM or a JD, should result in more legislation passed, since specific law-related education is directly related to a career in politics.

Representatives that completed a doctorate in the field of medicine are coded as 1 under a dummy variable for doctorate medicine (*doctoratemedicine)*. An all-encompassing dummy variable for Doctorate degrees (*doctoratedegree)* is also created. If a Representative has any type of Doctorate degree, then (*doctoratedegree)* is coded as a 1. A dummy variable is created for Master's degrees in business and (*mastersbusiness)* is coded as 1 if a Representative acquired an MBA or other degree in the field of business. A dummy variable *(ivy)* is coded as 1 if a Representative has ever attended an Ivy League School during their years in formal education. I predict that an Ivy League education will result in either connections or knowledge that results in a more productive time in Congress.

Military experience, private practice experience, business experience, and number of years spent in the State House of Representatives and Senate are found to proxy for relevant experience. If a Representative was enlisted in any branch of the military for any amount of time, military is coded as 1. If a Representative worked in private practice for any amount of time, private practice *(privatepractice)* is coded as 1. If a Representative owned a business, participated in sales, real estate or the insurance industry, served on an executive board for a business, or held any other business-related position, business is coded as 1. I predict that previous experience in private practice should result in more legislation passed during time in office, given the relationship to law that each career has. In addition, I think that military experience will result in a more productive Representative, as time in the military often instills leadership qualities in those that serve.

A dummy variable called (*statehouse*) is coded as 1 if a Representative previously held office in their State House of Representatives. A variable is created to capture the first year spent in the State Legislature *(statehousestart)*. Unlike the start of U.S. House terms *(term1start)*, which accounts for the year a U.S. Representative starts in U.S. Congress, this year can be pre-1973, since it stands for experience prior to a Representatives time in U.S. office. This is possible because I am not collecting data on legislation that a Representative pass during their time in a State position. Another variable is created to capture the year a Representative left the State House *(Statehouseend)*. A variable is created by subtracting the ending year *(statehouseend)* in the State House by the first year spent in state house *(statehousestart)* to collect the total number of years a U.S. Representative serves in their State House of Representatives *(Statehousetime)*. The same process is done to collect information on a Representative's previous experience in their State Senate. A dummy variable for experience in the State Senate *(statesenate)* is created along with the starting year in the State Senate *(statesenatestart)*, the ending year in the State

Senate *(statesenateend)*, and the total time spent in the State Senate *(statesenatetime)*, to capture State Senate information. A variable is created to account for the total number of years a Representative spent in their State Congress *(totalstateyears)* by adding the total time spent in the State House *(statehousetime)* and total time spent in the State Senate *(statesenatetime)*. I predict that the more time a U.S. Representative serves in their State Congress, the more productive a Representative should be.

In addition, birth and death dates, gender, state, and political party of the candidate are collected. I create a dummy variable for male representatives, where *(male)* is coded as 1 for males and 0 for females. I predict that biases against women and additional obstacles in the workplace will result in a less legislation passed by females. I also create a dummy variable for representatives affiliated with the Democratic party where *(Democrat)* is coded as 1 and Republicans are coded as 0. I extracted year from each representative's birth date and created the variable *(birthyear)*. Then, a variable is created that captures the age of each Congressional representative when they entered the U.S. Congress *(officestartage)*. I predict that Representatives that start at an older age are expected to pass more bills during their tenure because they are typically more respected. To do so I subtract the birth year *(birthyear)* from the first year spent in office *(term1start)*. As stated previously, the earliest a Representative can enter the U.S. Congress in this dataset is 1973, making the age of Congressional entry higher for those who may have started pre-1973. Given that the legislation variables only fully reflect post-1973 data, this should not be an issue.

VI. Model

The empirical models are provided in equations (2) and (3):

ENACTED LEGISLATION = α + γ(MALE) + ρ(TOTAL YEARS SERVED IN HOUSE) + δ(GRADUATE EDUCATION) + θ(LAW EDUCATION) + π(IVY LEAGUE EDUCATION) + τ(MILITARY EXPERIENCE) + φ(PRIVATE PRACTICE EXPERIENCE) + ψ(BUSINESS EXPERIENCE) + o(STATE LEGISLATURE EXPERIENCE) + σ(TOTAL YEARS IN STATE OFFICE) + ϑ(DEMOCRAT) + μ(AGE UPON ENTERING OFFICE) + ε (2)

SPONSORED LEGISLATION = α + γ(MALE) + ρ(TOTAL YEARS SERVED IN HOUSE) + δ(GRADUATE EDUCATION) + θ(LAW EDUCATION) + π(IVY LEAGUE EDUCATION) + τ(MILITARY EXPERIENCE) + φ(PRIVATE PRACTICE EXPERIENCE) + ψ(BUSINESS EXPERIENCE) + o(STATE LEGISLATURE EXPERIENCE) + σ(TOTAL YEARS IN STATE OFFICE) + ϑ(DEMOCRAT) + μ(AGE UPON ENTERING OFFICE) + ε (3)

I use an ordinary least-squares (OLS) regression to estimate the parameters of the linear regression models above. In the models, enacted legislation and sponsored legislation are used as the dependent variable to quantify political success. The independent variables used were gender, total years a U.S. Representative spent in office, graduate education, graduate law education, ivy league education, military experience, private practice experience, business experience, State

Legislature experience, total years spent in State Legislature, political party, and their age upon first entering office.

VII.   Results

The table below shows the regression results for both models and robustness checks:

Table 1: Results

Variables	(1) Enacted Legislation	(2) Sponsored Legislation	(3) Enacted Legislation Per Year	(4) Sponsored Per Year
Male	1.609**	-4.019	0.117	0.139
	(0.709)	(8.028)	(0.0779)	(0.854)
Total Years Spent in Office	0.673***	8.764***	0.000571	-0.152***
	(0.0294)	(0.333)	(0.00324)	(0.0355)
Graduate Education	-1.338**	-8.796	-0.173***	-1.075
	(0.578)	(6.542)	(0.0635)	(0.696)
Graduate Law Education	0.174	-3.079	0.0136	-1.318
	(0.760)	(8.603)	(0.0835)	(0.915)
Ivy League Education	-0.496	23.65***	-0.0244	2.387***
	(0.652)	(7.390)	(0.0717)	(0.786)
Military Experience	1.290***	25.36***	0.0870*	2.590***
	(0.476)	(5.394)	(0.0523)	(0.574)
Private Practice Experience	1.348**	15.36**	0.149**	2.885***
	(0.624)	(7.068)	(0.0686)	(0.752)
Business Experience	0.323	4.230	0.00439	0.490
	(0.511)	(5.786)	(0.0561)	(0.616)
State Legislature Experience	1.498**	15.21*	0.0191	0.394
	(0.706)	(8.000)	(0.0776)	(0.851)
Total Years Spent in State Legislature	-0.251***	-3.597***	-0.0202**	-0.284***
	(0.0722)	(0.818)	(0.00794)	(0.0870)
Democrat	1.420***	20.27***	0.220***	2.911***
	(0.442)	(5.006)	(0.0486)	(0.533)
Age Upon Entering Office	0.153***	1.249***	0.0201***	0.125***
	(0.0249)	(0.282)	(0.00274)	(0.0300)
Constant	-10.59***	-64.99***	-0.521***	3.976**
	(1.545)	(17.50)	(0.170)	(1.862)
Observations	1,504	1,504	1,504	1,504
R-squared	0.291	0.352	0.075	0.104

Standard errors in parentheses
*** $p<0.01$, ** $p<0.05$, * $p<0.1$

The results show that total years spent in office is extremely significant with a t-stat of 22.85. For every 1-year increase in total years spent in office, enacted legislation increases by 0.673 bills. This makes sense because Representatives who serve more years in office have a longer time to enact legislation. The starting age of a Representative upon entering office is also significant with a t-stat of 6.15. For every 1-year increase in starting age, enacted legislation increases by 0.153 bills. This could be explained by older representatives having more respect within the

House given previous accolades or tenure. If a Representative is a Democrat, enacted legislation increases by 1.42 bills. A possible explanation is that Republicans more frequently play "defense" in Congress and emphasize de-regulation or less legislation. In addition, if a representative is male, enacted legislation increases by 1.609 bills. The historical gender make-up in Congress and biases against women could have also contributed to this outcome.

Graduate education is significant with a t-score of -2.33. If a Representative has a graduate degree, then enacted legislation decreases by 1.338 bills. Getting a law degree is insignificant with a t-stat of 0.23. These regressions show that graduate and law education does not result in a more productive Representative. A possible explanation is that formal education could lead to Representatives getting lost in minute details of legislation. An ivy league education is also insignificant with a t-stat of -0.76. This proves that education is not positively correlated with a Representative's ability to pass bills. These results do not support my initial hypothesis or the human capital theory that more education increases productivity.

Military experience is significant and shows that if a Representative has pre-Congressional military experience, enacted legislation increases by 1.29 bills. It's likely that leadership qualities associated with military service transition smoothly into politics, increases productivity. Private practice experience is also significant, and if a Representative with pre-Congressional private practice experience, enacted legislation increases by 1.348 bills. Working in private practice gives Representatives relevant experience with the law and the law-passing process, building a favorable skillset for Congress. Pre-Congressional business experience is insignificant with a t-stat of 0.63. In recent elections, there has been a call for more businesspeople to enter politics to increase the efficiency of Congress, but these results do not support that assertion. If a Representative served in the State House or Senate, enacted legislation increases by 1.498 bills; however, for every 1-year increase in years served in the State House or Senate, enacted legislation decreases by 0.251 bills. This could be explained by Representative complacency at the state-level. If a Representative serves too much time at the state-level the relationship with constituents could potentially ease the pressure to pass bills. These results support my initial hypothesis that relevant experience would result in political efficiency, but I was surprised to discover that more years in the State Legislature is negatively related to enacted legislation.

I also use sponsored legislation as a dependent variable and regress on the same dependent variables. On average, democrats sponsor 20.27 more bills than Republican Representatives and gender is insignificant to sponsoring legislation. For every 1-year increase in the age of a Representative upon entering office, sponsored legislation increases by 1.249 bills. Graduate education and law education are insignificant in sponsoring legislation within the House. These results reaffirm that legislative success is not related to education. Unlike my initial model, going to an ivy league school for undergraduate or graduate education is highly significant to sponsoring legislation. The differing results suggest that either the education, skillset, or connections related to an ivy league education lead to more "entrepreneurial activity" in the House but are not related to political efficiency, or enacting bills.

Military experience is significant showing that if a Representative has pre-Congressional military experience, sponsored legislation increases by 25.36. Private practice experience stays significant, and a Representative with pre-Congressional private practice experience sponsors 15.36 more bills on average. Business experience continued to be insignificant in both enacting

and sponsoring legislation. If a Representative served in the State House or Senate, sponsored legislation increases by 15.21 bills; however, there is still a negative relationship between legislative success and total years spent in the State Legislature. For every 1-year increase in years served in the State House or Senate, sponsored legislation decreases by 3.597 bills.

VIII.   Robustness Tests

As an extra robustness check, I used enacted legislation per year and sponsored legislation per year as my dependent variables and re-estimated my model using equations (4) and (5):

ENACTED LEGISLATION PER YEAR = α + γ(MALE) + ρ(TOTAL YEARS SERVED IN HOUSE) + δ(GRADUATE EDUCATION) + θ(LAW EDUCATION) + π(IVY LEAGUE EDUCATION) + τ(MILITARY EXPERIENCE) + φ(PRIVATE PRACTICE EXPERIENCE) + ψ(BUSINESS EXPERIENCE) + o(STATE LEGISLATURE EXPERIENCE) + σ(TOTAL YEARS IN STATE OFFICE) + ϑ(DEMOCRAT) + μ(AGE UPON ENTERING OFFICE) + ε (4)

SPONSORED LEGISLATION PER YEAR = α + γ(MALE) + ρ(TOTAL YEARS SERVED IN HOUSE) + δ(GRADUATE EDUCATION) + θ(LAW EDUCATION) + π(IVY LEAGUE EDUCATION) + τ(MILITARY EXPERIENCE) + φ(PRIVATE PRACTICE EXPERIENCE) + ψ(BUSINESS EXPERIENCE) + o(STATE LEGISLATURE EXPERIENCE) + σ(TOTAL YEARS IN STATE OFFICE) + ϑ(DEMOCRAT) + μ(AGE UPON ENTERING OFFICE) + ε (5)

Results for equations (4) and (5) are provided in Table 1, columns (3) and (4). For the first robustness check I use enacted legislation per year as the dependent variable. Besides gender, total years in office, and experience in the State Legislature, the same independent variables are significant when regressing enacted legislation per year. The starting age of a Representative upon entering office is significant and for every 1-year increase in starting age, enacted legislation per year increases by 0.0201 bills. On average, if a Representative has a graduate degree, then enacted legislation per year decreases by 0.173 bills. Getting a graduate law degree is still insignificant.

Military experience is still significant showing that if a Representative has pre-Congressional military experience, enacted legislation per year increases by 0.087 bills. Private practice experience is also significant and pre-Congressional private practice experience increases enacted legislation per year by 0.149 bills. Pre-Congressional business experience is still insignificant. Contrary to my initial results, having State Legislature experience is not significant to enacting legislation per year; however, for every 1-year increase in years served in the State House or Senate, enacted legislation decreases by 0.02 bills.

For the second robustness check I used sponsored legislation per year as the dependent variable. Both graduate and law education were insignificant supporting the initial results. Ivy league education increases sponsored legislation per year by 2.387 bills. Military experience and private

practice experience increase sponsored legislation per year by 2.59 and 2.885 bills, respectively. State Legislature experience is insignificant but total years spent in the State Legislature decreases sponsored legislation per year by 0.284 bills. These results prove that my initial models are robust.

IX. Conclusion

The purpose of this paper is to explore the relationship between education, experience and political efficiency of the U.S. House of Representatives. Enacted legislation (political productivity) and sponsored legislation (entrepreneurial activity) are measures used to quantify legislative success within the U.S. House. This research concludes that there is a negative relationship between political efficiency and Graduate education and a positive relationship between political efficiency and certain pre-Congressional careers. Graduate education and a Law degree result in less enacted legislation and are insignificant to a Representative's ability to enact legislation, respectively. These results lead me to reject my initial hypothesis that graduate, and law education had a significant, positive relationship with enacting and sponsoring legislation. In congruence with my other hypothesis, Pre-Congressional military, private practice experience and short-term State Legislature experience increases productivity in the U.S. House of Representatives.

The relationship between sponsored legislation, education and pre-Congressional experience is similar to enacted legislation. Graduate education and Law education are both insignificant to sponsoring bills. Pre-Congressional military, private practice and State Legislature experience increase sponsored legislation in the U.S. House. After checking my models for robustness using enacted and sponsored legislation per year, my results prove to be robust. These results show the American electorate should focus less on educational background during election season and a candidate's pre-Congressional experience is a better indicator of future performance in Congress.

Further research could be conducted by controlling for whether the congressperson is part of the majority party in the House. Similar controls could be added for the political party affiliation of the president during each Congressional time period. This would add additional robustness to the models and results. Conducting research like this paper for the Senate and Congress as a whole would also add to the findings. Taking the qualitative nature of legislation into consideration would also be interesting. For instance, looking at the type of legislation that a Representative is attempting to pass or how much the bill would cost to enact could add another important layer to this research.

X. References

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XI. Appendix

Appendix A: Summary Statistics

VARIABLES	(1) N	(2) Mean	(3) Sd	(4) Min	(5) Max
Male	1,504	0.882	0.323	0	1
Total Years in Office	1,504	11.15	7.551	3	45
Enacted Legislation	1,504	6.501	9.848	0	111
Sponsored Legislation	1,504	107.9	116.7	0	1,247
Enacted Per Sponsored Legislation	1,504	0.0645	0.067	0	1
Enacted Per Sponsored Per Year	1,504	0.00846	0.0129	0	0.19
Enacted Legislation Per Year	1,504	0.6	0.948	0	16.33
Sponsored Legislation Per Year	1,504	10.59	10.55	0	137.2
Undergraduate Law Education	1,504	0.0778	0.268	0	1
Graduate Education	1,504	0.543	0.498	0	1
Doctorate Degree	1,504	0.39	0.488	0	1
Doctorate Degree in Medicine	1,504	0.0226	0.149	0	1
Master's Degree in Business	1,504	0.0412	0.199	0	1
Graduate Law Education	1,504	0.328	0.47	0	1
Ivy League Education	1,504	0.128	0.335	0	1
Military Experience	1,504	0.384	0.487	0	1
Private Practice Experience	1,504	0.337	0.473	0	1
Business Experience	1,504	0.305	0.46	0	1
State House Experience	1,504	0.253	0.435	0	1
State Senate Experience	1,504	0.2	0.4	0	1
Total State Legislation Experience	1,504	0.374	0.484	0	1
Total Years in State Legislature	1,504	2.861	4.774	0	28
Democrat	1,504	0.525	0.5	0	1
Age Upon Entering Office	1504	47.42	9.272	26	73