

Supplementary Materials To

Eroding Public Services: Modelling the Rise of the American Legislative Exchange Council in the United States Legislatures

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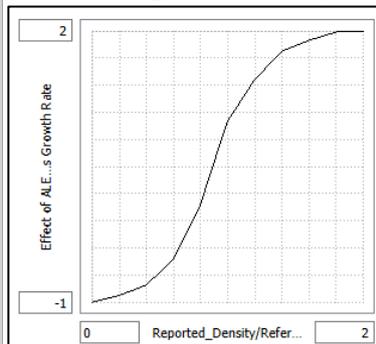
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Model Documentation ALEC Growth Model

Effect_of_ALEC_Members_on_Corporate_Donors_Growth_Rate
 GRAPH(Reported_Density/Reference_Fractional_Size)

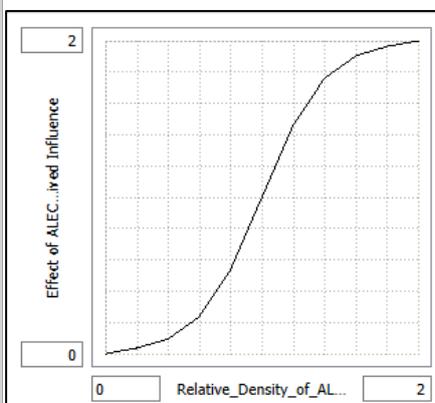


Dmnl

This takes the input of the ALEC fractional size and normalizes it to a fraction so that it can give a corresponding effect on the indicated growth fraction corporate members. Since ALECs most important service is offering access to the political process, the more politicians that are a member means more access. Therefore, this effect represents the corporate interest seeing the vast access ALEC can offer and thus, increasing the demand for membership. When the relative ALEC fractional size is one the corresponding effect on the growth rate is also equal to 1 which means there is no effect due to ALECs size on the corporate growth rate. When the relative ALEC fractional size is larger than one meaning ALEC is larger than its initial value then the effect on the corporate growth member will also increase to a maximum of 2 which means the largest possible effect is doubling the corporate growth rate. When the relative ALEC fractional size becomes smaller than the fractional size then effect will decrease as well to a minimum of -1. This means that if the relative ALEC size is very small it will reduce the growth rate of corporate members. The graphical shape was decided based on assumptions and research on how many corporate members have existed in ALEC history. Due to ALEC's secretive nature it is currently impossible to state whether this information is accurate, but the research seems to believe that this is as close to accurate.

Hertel-Fernandez, A. (2019) State capture: how conservative activists, big businesses, and wealthy donors reshaped the American states and the nation. New York, NY: Oxford University Press.

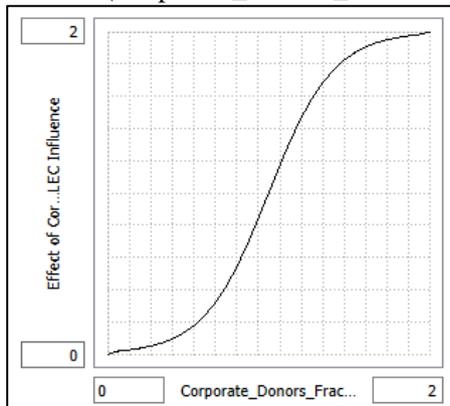
Effect_of_ALEC_size_on_Perceived_Influence
 GRAPH(Relative_Density_of_ALEC)



Dmnl

This represents the effect that the amount of ALEC members in a state legislator has on ALECs influence. The main reason ALEC has been so successful is due to them offering a unparalleled access to the political process. This is due to the large amount of state politicians that are members. Hence, this variable represents that mechanisms effect on ALECs influence. It receives its input from the ALEC fractional Size. The graphical input was chosen based on the need to make the indicated influence maximum be 1. When ALEC fractional is equal to 1 the effect is also equal to one since we assume in the model's normal state that the normal influence is 0.5 which means there can be no current effects. When the Fractional size starts to increase so does the effect to a maximum of 2. This means that the largest possible effect is doubling the normal influence. When the fractional size starts to decrease so does the effect to a maximum of 0. This means that if there are no members left this effect is removed from the effect on influence.

Effect_of_Corporate_Donors_on_ALEC_Influence
 GRAPH(Corporate_Donors_Fractional_Size)



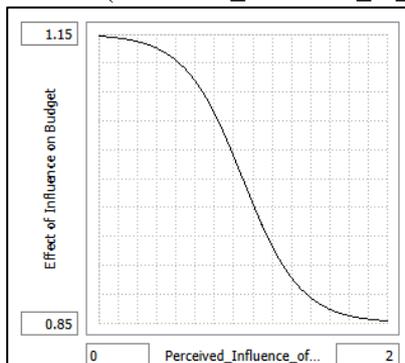
Dmnl

This is the effect that corporate donors have on the influence of ALEC. It takes input from the relative size of corporate members/donors. The graphical function was chosen based on the need for the indicated influence on at a maximum be equal to 1.

When the corporate donor fractional size is equal to 1 (initial value = current value) the effect is also equal to 1 which nullifies the effect on the indicated influence. If the relative corporate donors start to increase past 1 the effect does so as well to a maximum of 2 which in turn would attempt to double the indicated influence.

If the corporate donor fractional size decreases below one the corresponding effect value would also decrease towards a maximum of 0. In that case the effect would be removed and would have no influence on ALECs indicated influence.

Effect_of_Influence_on_Budget
 GRAPH(Perceived_Influence_of_ALEC/Normal_Influence)



dmnl

This takes the input from the perceived influence of ALEC, compares it to its normal value and then gives corresponding increase/decrease in the average budget. So it takes the normalized comparison and reduces the average budget by that corresponding amount.

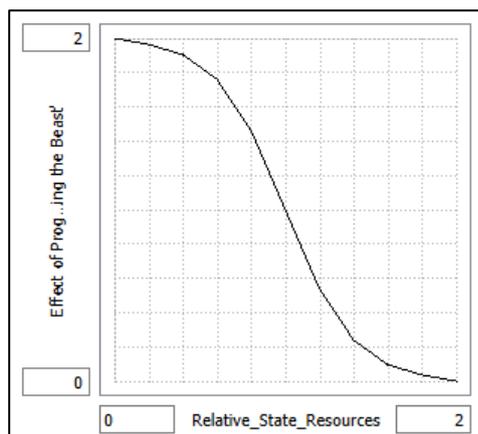
When the perceived influence of ALEC is equal to the normal influence (0.5) the normalized fraction is 1. This gives the corresponding value of fractional reduction of 1 which means there is no change in the average budget.

If the perceived influence becomes larger to a maximum of 1, which makes the normalized fraction 2, the corresponding reduction is 0.85. This means that the average budget will only be 85% of the initial budget.

If the perceived influence becomes smaller than the normal influence the average budget will increase to a maximum of 1.15 which means the budget can increase to a maximum of 15% larger.

This converter is very much simplified from the actual process. There is a plethora of factors that alter the budget but since we are only interested in ALECs effect on the budget this was made. Additionally, the chosen reductions are not accurate as a 15% change in budget is near impossible to pass in today's political climate. It was chosen to do as so to rather demonstrate how the process works.

Effect_of_Progress_on_ALECs_Goal_of_'Starving_the_Beast'
GRAPH(Relative_State_Resources)



Dmnl

This is the effect of ALEC being able to 'starve the beast' on their influence. Starving the beast is a political term that represents cutting funding to an organization based on claims of malfunctioning. However, those cuts in funding only lead to more demand for cutting due to worse claims of being unable to perform their duty eventually, 'starving the beast'. The graphical function was chosen based on the need to make sure that indicated influence does not arise past 1.

The input for the effect is the relative state resources which compares the current level of state resources on the initial value of state resources. Hence, it gives a fractional number that demonstrates the increase/decrease as percentage of change.

When the relative state resources are equal to 1 then the effect is also equal to 1 which means it does not alter the normal influence.

However, if the relative state resources start to increase meaning there are more resources than there

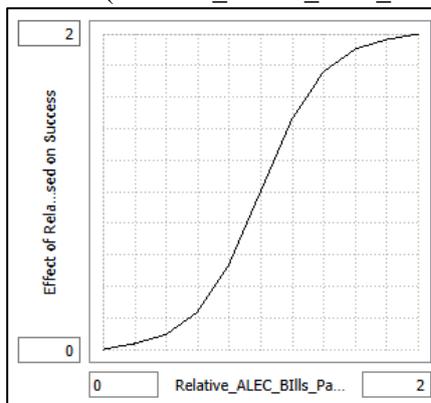
were at the initialized times, the effect starts to decrease towards a maximum of 0. This is meant to represent the conservative/libertarian donors seeing that ALEC is failing in their ideological goal and therefore lose influence,

If the relative state resources start to decrease below 1 the effect increases the indicated influence towards a maximum of 2. this is to show ALEC successfully starving the beast that is the public sphere and thus, becoming more influence due to a larger reputation.

Collingwood, L. et al. (2019). Sustained Organizational Influence: American Legislative Exchange Council and the Diffusion of Anti-Policy. *Policy studies journal*. [Online] 47 (3), 735–773.

Hertel-Fernandez, A. (2019) *State capture: how conservative activists, big businesses, and wealthy donors reshaped the American states and the nation*. New York, NY: Oxford University Press.

Effect_of_Relative_Bills_Passed_on_Success
GRAPH(Relative_ALEC_Bills_Passed)



Dmnl

This effect variable converts the relative ALEC bills passed into an effect on how successful ALEC as an organization is perceived to be. When ALEC is passing 3% of the bills, i.e., the same as their desired the effect of ALEC's success is 1.

Hence, the number of the normal success is equal to the perceived. However, if ALEC starts to pass more bills than 3% meaning the relative bills increase past 1 the effect will increase since the effect will be larger to a maximum of 2.

If less than 3% of bills are being passed every year meaning the relative ALEC bills passed is less than 1 than the corresponding effect will also be less than 1 which in turn will reduce the indicated perceived success to a minimum of 0. If this is the case, we would be multiplying the indicated success with 0 which would mean the indicated success would be 0.

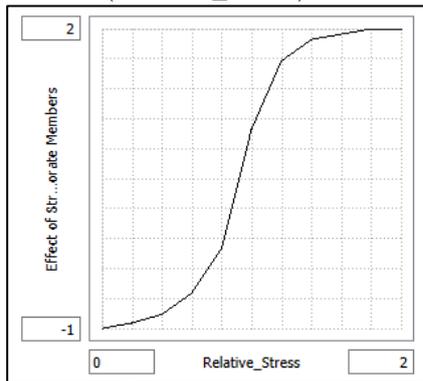
This comes from the fact that if ALEC is not passing any of their model bills (which is the aim of the organization) then they cannot be perceived as successful. This, however, is an assumption since very little is known publicly about ALEC. It could be that they base their success on other metrics such as number of members, wealth etc. However, since previous literature has consistently focused on the model bills and that is the most undemocratic aspect, this was chosen to be the effect of success.

Hertel-Fernandez, A. (2016). Explaining Durable Business Coalitions in U.S. Politics: Conservatives and Corporate Interests across America's Statehouses. *Studies in American political development*. [Online] 30 (1), 1–18.

Hertel-Fernandez, A., (2014). Who Passes Business's" Model Bills"? Policy Capacity and Corporate Influence in US State Politics. *Perspectives on Politics*, pp.582-602.

Jilani, Z., (2012). Leaked Documents Show How Corporations Have Veto Power Over ALEC Bills That Affect Our Lives Every Day | Republic Report. [online] Republic Report. Available at: <<https://www.republicreport.org/2012/leaked-documents-show-how-corporations-have-veto-power-over-alec-bills-that-affect-our-lives-every-day/>> [Accessed 15 May 2021].

Effect_of_Stress_on_Corporate_Members
 GRAPH(Relative_Stress)



Dmnl

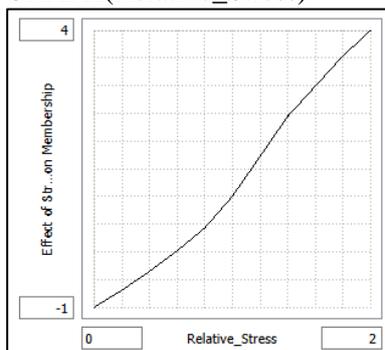
This takes the input of the relative stress and gives a corresponding graphical value. Since the corporate members of ALEC do not feel the stress that policymakers experience this rather represents the corporate members who share a libertarian ideology seeing the success of ALEC.

When the perceived stress on political actors is equal to the normal stress (0.5) the relative stress is equal to 1. When the relative stress is equal to 1, the corresponding effect is 1 as well. This means that when the system is in its normal values there is no effect on corporate members since we are only multiplying with 1.

When relative stress increases to a maximum of 2, the effect on corporate member also increases to a maximum of 2 which means the largest effect possible is doubling the growth rate.

When the relative stress is less than 1 than the effect decreases to a maximum of 0. which means the less stress the policymakers feel the smaller the growth rate is since they are not seeing ALEC be successful in their mission.

Effect_of_Stress_on_Membership
 GRAPH(Relative_Stress)



dmnl

This is the effect of being overworked and not having enough resources on the growth rate of membership in ALEC. It represents the desire to join the organization because of the lack of resources that is available to the state politicians. It takes the input of relative stress and gives a corresponding value based on the graphical function. The graphical function was chosen due to literature stating that the main drive-in joining ALEC is the lack of resources therefore, this should be strongest effect in joining the organization. Additionally, the maximum and minimum were chosen from testing to see how the model would react. 4 and -1 were chosen as they do not drive the model into 'unrealistic' behaviour but still give a strong boost to the growth rate.

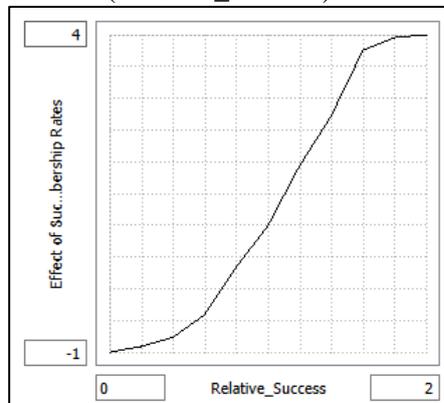
When relative stress is 1 the corresponding effect is also one which means that when the structure is 'normal' this has no effect on the growth rate. When the stress starts to increase so does the effect to a maximum value of 4. This means that when stress is as high as it can be the growth rate becomes 4 times the size due to high desire to join ALEC. When stress decreases past its normal the effect also decreases to a maximum of -1. This means that when the stress of being a policymaker is low there is a very low desire to join ALEC, and some may even consider leaving.

Hertel-Fernandez, A. (2019) State capture: how conservative activists, big businesses, and wealthy donors reshaped the American states and the nation. New York, NY: Oxford University Press.

Jilani, Z., (2012). Leaked Documents Show How Corporations Have Veto Power Over ALEC Bills That Affect Our Lives Every Day | Republic Report. [online] Republic Report. Available at: <<https://www.republicreport.org/2012/leaked-documents-show-how-corporations-have-veto-power-over-alec-bills-that-affect-our-lives-every-day/>> [Accessed 15 May 2021].

Collingwood, L. et al. (2019). Sustained Organizational Influence: American Legislative Exchange Council and the Diffusion of Anti-Policy. Policy studies journal. [Online] 47 (3), 735–773.

Effect_of_Success_on_Membership_Rates
GRAPH(Relative_Success)



Dmnl

This effect variable takes input from the relative success and makes it a table graphical function that converts that relative success to the effect it has on the membership growth.

When the relative success is 1 meaning the perceived success is equal to the normal success the corresponding value given from the effect is 1. This means that the effect is nullified since it only multiplies itself together by 1.

When the relative success is 2 (twice as large as the normal) the corresponding effect is also two. So, when success is larger the effect on membership growth rate is multiplied with something larger than 1 and thus, becomes larger. When ALEC is not as successfully as they normally are the effect

<p>gives a variable less than 1 which reduces the overall membership rate, so less people want to join the organization.</p>
<p>Quarterly_Updates 3</p> <p>Months</p> <p>This represents the time it takes to report the quarterly updates to the corporate members. Since ALEC is run as a business it is assumed that they handle their board meetings and conventions like business which would mean they would report their numbers in quarters. Hence, this adjustment time is set to 3 months.</p>
<p>Reference_Fractional_Size 1</p> <p>Dmnl</p> <p>This is here so that we can normalize the effect of ALEC members on corporate growth fraction. Hence the reference value is set to 0 so that once the normalized ALEC size is sent through the delay converter this compares that size to the input.</p>
<p>Relative_Weight_of_Members 0.4</p> <p>Dmnl</p> <p>This is the relative weight of members. Since there are three effects, the weight of each effect has to add up to 1. This takes the percentage of the remaining 'weight' and divide it between the weight of members and donors.</p>
<p>Reported_Density SMTH3(Relative_Density_of_ALEC, Quarterly_Updates, Relative_Density_of_ALEC)</p> <p>Dmnl</p> <p>This is set as a delay converter so that the density of ALEC is delayed in reporting this to the corporate members. It represents the act of quarterly updates on the organizations handling to its donors.</p> <p>Hence, the SMTH3 function with a delay of 3 months. DELAY CONVERTER</p>
<p>Weight_of_Corporate_Donors (1-Weight_of_Resources)*(1-Relative_Weight_of_Members)</p> <p>Dmnl</p> <p>This is the weight of the effect of corporate donors on influence. It is initialized at 35%.</p>
<p>Weight_of_Goal (1-Weight_of_Size)</p> <p>dmnl</p>

This is the weight that is applied to the effect of 'Stress' on the Corporate Membership Growth Fraction. Stress in this case represents the success of ALEC being able to spread the conservative ideals to the private sphere.

Weight_of_Members
 $(1 - \text{Weight_of_Resources}) * \text{Relative_Weight_of_Members}$

Dmnl

This is the given weight of the effect of members on influence. It is initialized at 35%.

Weight_of_Resources
 0.15 {0.2}

Dmnl

This is the weight of effect of resources on the influence. It is initialized at 30%.

Weight_of_Size
 0.8

Dmnl

This is the weight of the effect of ALEC's size on the corporate membership growth fraction. Since being able to have ALEC members in most state legislatures is key to being able to assert influence in all states. The weight of this effect is stronger than the effect of the goal. Since, if there are very few members it is less possible to make sure the model bills created are enacted into law.

ALEC Influence

Additive_Effect_on_Influence
 $((\text{Effect_of_Progress_on_ALECs_Goal_of_}'\text{Starving_the_Beast}' * \text{Weight_of_Resources}) + (\text{Effect_of_Corporate_Donors_on_ALEC_Influence} * \text{Weight_of_Corporate_Donors}) + (\text{Effect_of_ALEC_size_on_Perceived_Influence} * \text{Weight_of_Members}))$

Dmnl

This variable is the additive effects on Influence which means it takes the total effects and adds them together with their weights to find the combined effect on influence. That means that if this is less than one it will reduce the normal influence in the next converter. It is an additive effect since realistically all three effects should be able to increase ALECs influence without the need for the other.

Indicated_Influence
 $(\text{Normal_Influence} * \text{Additive_Effect_on_Influence})$

Influence

This is the 'actual' influence levels, but not the one we use to measure since ALEC's influence does not increase and decrease instantaneously. Hence, this takes the normal influence and multiplies the total additive effects onto it to find the current influence level based on its influences.

Net_Change_in_Influence
 $((\text{Indicated_Influence} - \text{Perceived_Influence_of_ALEC}) / \text{Perception_of_ALEC_Updating_Time})$

Influence/Months

This goal-gap formation is the net flow that changes the perceived influence of ALEC. If the indicated Influence is larger than the perceived influence, then this equation will close 63% of the gap for every adjustment time. So, if its larger the perceived influence will increase towards the indicated. If the indicated is smaller than the perceived, then this equation will become negative and decrease the perceived influence towards the indicated.

Normal_Influence
0.5

Influence

This converter has the normal level of influence of ALEC when there is no added effect variables to it. It is set to 0.5 as it means that anything below counts as less influential and anything above counts as more influential. Hence, the relative threshold for either is equal since the effect variables does not have to force the stock to become 0.9 until it counts as influential.

Perceived_Influence_of_ALEC(t)

$$\text{Perceived_Influence_of_ALEC}(t - dt) + (\text{Net_Change_in_Influence}) * dt$$
 INIT Perceived_Influence_of_ALEC = Indicated_Influence

Influence

This is the perceived influence of ALEC. It represents the the actual influence that they can assert in the political process. It takes into account the size of the organisation, amount of members, and how much they are 'starving the beast'.

The normal value of their influence is 0.5 which means anything above counts as increasingly influential and any value below counts as less influential.

It constantly tries to match the indicated influence through the net change in influence's goal-gap formation.

Perception_of_ALEC_Updating_Time
2

Months

This is the adjustment time for the Net Change in ALEC influence. It is the time it takes for the organization and/or external actors to realize the influence that ALEC has in the political system.

It is set to 2 months due to the assumption that word-of-mouth discussions would be a convincing method of spreading ALECs ideas.

ALEC Membership

ALEC_Members(t)

$$\text{ALEC_Members}(t - dt) + (\text{Net_Change_in_Members}) * dt$$
 INIT ALEC_Members = INIT_ALEC_Members

People

This stock represents the total membership of ALEC in the state legislatures of the United States. It changes through the net flow which takes politicians from the non-ALEC member stock and transfers them into the member stock. the stock was initialized with 400 members as based on studying the leaked documents that is an estimate of their size in 2000.

(ALEC) American Legislative Exchange Council (2008). ALEC corporate brochure. Washington: ALEC. [online] Available at https://www.prwatch.org/files/ALEC_Corporate_Brochure.pdf [Accessed 19 May 2021].

(ALEC) American Legislative Exchange Council (2001). 2001 Annual Report. Washington: ALEC.

(ALEC) American Legislative Exchange Council (1998) 1998 ALEC Business Plan. Washington: ALEC [online]. Available at: <https://www.documentcloud.org/documents/6281514-1998-ALEC-Business-Plan> [Accessed 9 May 2021]

(ALEC) American Legislative Exchange Council (1992) Winning the Debate in the States, ALEC 1992 Annual Report. Washington: ALEC. [online] Available at <https://www.documentcloud.org/documents/805549-1992-alec-annual-report> [Accessed 19 May 2021]

Density_of_ALEC_Members

$ALEC_Members / (ALEC_Members + "Non-ALEC_Members")$

Dmnl

This is the density of ALEC members; it takes the total possible members and compares it to the current ALEC members to find how many currently (as a percentage) are members.

Growth_Rate_Membership_of_ALEC

$Normal_Membership_Growth_Fraction * Total_Additive_Effect_on_Membership$

Per Month

This variable is the true growth rate membership of ALEC. It takes the normal membership growth fraction and multiplies it with the effects from the 'stressors'. If the additive effect is larger than 1 then the growth rate fraction will become that many percentage larger. If the effect are smaller than 1 then the growth fraction will decrease below 2%.

Net_Change_in_Members

$MIN((ALEC_Members * Growth_Rate_Membership_of_ALEC), ("Non-ALEC_Members" / Time_to_Change))$

People/Months

This is the net flow between ALEC members and non-ALEC members. If positive non-ALEC members flow into the member stock and if the net flow is negative the members quit ALEC and transfer back into the non-ALEC member stock.

The equation is a MIN function, so it always takes the smaller of the two equations. The reinforcing loop is the ALEC members multiplied with the growth fraction so that the more members the more people will join the organization.

This equation will dominate the flow until it becomes larger than the Non-ALEC members divided by residence time becomes the smaller of the two.

This is so that the equation does not drain the stock immediately and so that there is a limit to growth.

Additionally, when the growth rate membership of ALEC becomes negative due to the effect variables the reinforcing loop will also be negative and since it will guaranteed be smaller than the balancing loop it will dominate and remove members,

"Non-ALEC_Members"(t)
 "Non-ALEC_Members"(t - dt) + (- Net_Change_in_Members) * dt
 INIT "Non-ALEC_Members" = INIT_politicians

People

This is non-ALEC members, meaning all other state politicians present in the United States. Based on legislative seats in the US there are 18750 seats. Meaning that the total politicians that can be elected is the same. Hence, this represents that total minus the 400 members of ALEC.

The main reason to include this stock is to have a limit to amount of ALEC members. Since, if the growth rate was allowed to continue it would grow exponentially under extreme conditions.

Additionally, you do not have to be a state politician to be a member of ALEC, plenty of bureaucrats, governors, etc are as well but due to scope and time limitations this was simplified.

Normal_Membership_Growth_Fraction
 0.02

Dmnl/Months

This is the normal Membership Growth Fraction. So, if there were no effect variables this would be the constant growth for ALEC.

The 2% figure is assumption and estimate based on the literature. It was chosen as it is a relatively small figure but can still increase the Membership substantially if left alone.

The 'true' membership numbers and list are kept secret by ALEC and therefore, every list that can be found is based on estimate and research. Hence, no data will ever be conclusive on ALEC's handlings. This 2% was based on the research of Hertel-Fernandez who is the leading academic expert in aid with the ALEC Exposed which is a journalist group that aims to uncover dark money in politics.

ALECEXPOSED (2021). ALEC Exposed. [online] Available at:
 <https://www.alecexposed.org/wiki/ALEC_Exposed> [Accessed 15 May 2021].

Hertel-Fernandez, A. (2016). Explaining Durable Business Coalitions in U.S. Politics: Conservatives and Corporate Interests across America's Statehouses. *Studies in American political development*. [Online] 30 (1), 1–18.

Reference_Density
 0.0222841225627

Dmnl

This is the reference ALEC members for which the comparison on how successful they are is made. It takes the estimated 400 members in the 2000s and compares how the develop afterwards. Since we are comparing the density instead of actual members it is set to 0.02% instead.

Anderson, G. L. & Donchik, L. M. (2016) Privatizing Schooling and Policy Making: The American Legislative Exchange Council and New Political and Discursive Strategies of Education Governance. *Educational policy* (Los Altos, Calif.). [Online] 30 (2), 322–364.

<p>Relative_Density_of_ALEC Density_of_ALEC_Members/Reference_Density</p> <p>Dmnl</p> <p>This is the Relative Density of ALEC members; it takes the current level of membership and compares it to the level of membership in 2000. This means that as long as the organization keeps growing these increases past 1 making it larger than original.</p>
<p>Time_to_Change 2</p> <p>Months</p> <p>This represents the delay it can take to convince someone to join the organization. It is the residency time to make sure that the equation does not completely drain immediately.</p>
<p>Total_Additive_Effect_on_Membership (Effect_of_Stress_on_Membership*Weight_of_Stress)+(Effect_of_Success_on_Membership_Rates*Weight_of_Success)</p> <p>Dmnl</p> <p>This is the total additive effects on membership. It is mainly done as to not hide structure. this converter takes the input of the two effects, multiply them together, and then place them together with their weight so that in the growth rate converter we only have to multiply this with the normal growth rate rather than a much larger formula.</p>
<p>Weight_of_Stress 0.6</p> <p>Dmnl</p> <p>This is the weigh that of the effect of stress has on the membership growth fraction.</p>
<p>Weight_of_Success (1-Weight_of_Stress)</p> <p>Dmnl</p> <p>This is the weigh that of the effect of success has on the membership growth fraction.</p>
<p>Corporate Donors</p>
<p>ALEC_Corporate_Members(t) ALEC_Corporate_Members(t - dt) + (Net_Change_in_Corporate_Members) * dt INIT ALEC_Corporate_Members = INIT_Corporate_Members</p> <p>Organisation</p> <p>This is the stock of corporate members; it counts the total amount of corporate donors/members at any given time. It represents the corporate members of ALEC which is their main source of funding as the corporate membership can be worth anywhere from 2000 USD to millions.</p> <p>The stock increases/decreases through the net change in Corporate Members which either takes the fractional increase (reinforcing) or the possible donors divided by residency time. Since this</p>

information is not disclosed the initialized value is assumed to be 10 as it covers the main key donors such as NRA and Koch Brothers. Additionally, since corporate membership changes quite often it was made to be quite low to again represent the main donors.

(ALEC) American Legislative Exchange Council (2008). ALEC corporate brochure. Washington: ALEC. [online] Available at https://www.prwatch.org/files/ALEC_Corporate_Brochure.pdf [Accessed 19 May 2021].

(ALEC) American Legislative Exchange Council (2001). 2001 Annual Report. Washington: ALEC.
 (ALEC) American Legislative Exchange Council (1998) 1998 ALEC Business Plan. Washington: ALEC [online]. Available at: <https://www.documentcloud.org/documents/6281514-1998-ALEC-Business-Plan> [Accessed 9 May 2021]

Corporate_Donors_Fractional_Size

ALEC_Corporate_Members/Initial_ALEC_Corporate_Members

Dmnl

This is the relative corporate donor size. In other words, a fractional number that increases when the stock of ALEC corporate members increases as well. The numerator is the current corporate members while the denominator is the initial. Hence, this variable is comparing the size of the current donors to the initial value as a measure of success.

Growth_Rate_Corporate_Members

0.05

Dmnl/Months

This is the normal growth fraction of Corporate Members. It represents the 'demand' for ALECs services from corporate interest. It is set to 5% since based on research it is clear that ALECS unparalleled ability to influence all 50 states is in high demand but since 10% and above would be high unrealistic since there cannot be that many corporations trying to join it was lowered to 5%, This was done also so that the effect variables would not make the growth impossibly large.

The prior research was to see how many corporate members (not only current) there has been and therefore, try to estimate how many of those would either re-join based on a 30 year time frame. Hence, the lower growth fraction.

Sourcewatch. (2021a). ALEC Corporations - SourceWatch. [online] Available at: https://www.sourcewatch.org/index.php?title=ALEC_Corporations#Articles_and_Resources [Accessed 15 May 2021].

Sourcewatch. (2021b). ALEC Non-Profits - SourceWatch. [online] Available at: https://www.sourcewatch.org/index.php?title=ALEC_Non-Profits [Accessed 15 May 2021].

Indicated_Growth_Fraction_Corporate_Members

$(\text{Effect_of_ALEC_Members_on_Corporate_Donors_Growth_Rate} * \text{Growth_Rate_Corporate_Members} * \text{Weight_of_Size}) + (\text{Growth_Rate_Corporate_Members} * \text{Effect_of_Stress_on_Corporate_Members} * \text{Weight_of_Goal})$

Dmnl/Months

This is the indicated corporate growth fraction. It takes the normal growth rate fraction of 5% and multiplies it with the addition of the two 'stressors' (stress and ALEC size) and their respective weights). Hence, the larger the effects the larger the growth rate for the corporate memberships are.

It was chosen to make this an additive effect since the size of ALEC may not be as important as the main 'libertarian' goal of cutting government spending is succeeding.

It is an additive effect since neither effect is dependent on the other nor will still apply when the other is 0.

Initial_ALEC_Corporate_Members
10

Organisation

This is the reference ALEC corporate members. Its goal is to be the denominator of the relative corporate member size so that it is possible to compare the current size of the corporate members. It is set to 10 so that the initial value is always compared against the current. Hence, it will reflect the growth that occurs.

Net_Change_in_Corporate_Members
MIN((ALEC_Corporate_Members*Indicated_Growth_Fraction_Corporate_Members),
(Possible_Donors/Time_to_Change))

Organisation/Months

This flow channels possible donors to the corporate members stocks. In other words, it represents the act of becoming a corporate member of ALEC.

It has a min function so that the growth fraction multiplied by the stock of corporate members does not grow exponentially and depletes the possible donors immediately. The other part of the equation is the possible donors over residency time. This is so that once the growth fraction becomes so large that it would drain the possible donors, the equation switches it to the possible donors/resident time so that ALEC corporate members does not eventually drain the whole possible donors in one DT. Hence, when the growth fraction becomes larger than available possible donors, then it switches to the other formula as to not drain the stock too rapidly.

Possible_Donors(t)
Possible_Donors(t - dt) + (- Net_Change_in_Corporate_Members) * dt
INIT Possible_Donors = INIT_Corporate

Organisation

This stock is here to put a maximum possible amount of ALEC corporate members. Its initialized value was chosen based on research through previous corporate members, not only current, which was a bit less than 500. Hence, the initialized value was rounded up to 500 for ease as the true membership count cannot be found.

Sourcewatch. (2021a). ALEC Corporations - SourceWatch. [online] Available at:
<https://www.sourcewatch.org/index.php?title=ALEC_Corporations#Articles_and_Resources>
[Accessed 15 May 2021].

Sourcewatch. (2021b). ALEC Non-Profits - SourceWatch. [online] Available at:
<https://www.sourcewatch.org/index.php?title=ALEC_Non-Profits> [Accessed 15 May 2021].

Companies_Leaving_Due_To_Bad_Press
POLICY_SWITCH*(ALEC_Corporate_Members*Fraction_of_Company_Leaving_due_to_Bad_Press)

Organisation/Months

This flow drains the stock of ALEC corporate donors to represent companies quitting and refusing to work with ALEC in the future. It represents the idea of the companies being pressured through the controversies. The equation is multiplied by the policy switch so it can be turned on and off, and then takes the stock of corporate donors and multiplies it with the fraction of companies leaving due to bad press.

Fraction_Of_Company_Leaving_Due_to_Bad_Press
 STEP(Fraction_of_Company's_Quitting_ALEC, Start_of_BAD_PRESS)

Dmnl/Month

This is a STEP function that starts the bad press for ALEC. It was decided to use a STEP function as to be able to change when the controversies occur to see if when affects the behaviour.

Start_of_Bad_Press
 2012

Years

This is the chosen time for the policy of bad press for ALEC. The year 2012 was chosen as that was the first large controversy in which ALEC was involved in; namely the shooting of Treyvon Martin.

Fraction_Of_Companys_Quitting_ALEC
 0.5

Dmnl/Month

This is the fraction of companies that decide to quit ALEC due to the bad press they received from the Policy.

POLICY_SWITCH
 0

Dmnl

This is the policy switch for the bad press policy in which corporate donors leave ALEC due to controversies.

Initialized Values

INIT_ALEC_Members
 400

People

the stock was initialized with 400 members as based on studying the leaked documents that is an estimate of their size in 2000.

(ALEC) American Legislative Exchange Council (2008). ALEC corporate brochure. Washington: ALEC. [online] Available at https://www.prwatch.org/files/ALEC_Corporate_Brochure.pdf [Accessed 19 May 2021].

(ALEC) American Legislative Exchange Council (2001). 2001 Annual Report. Washington: ALEC.

(ALEC) American Legislative Exchange Council (1998) 1998 ALEC Business Plan. Washington: ALEC [online]. Available at: <https://www.documentcloud.org/documents/6281514-1998-ALEC->

Business-Plan [Accessed 9 May 2021]

(ALEC) American Legislative Exchange Council (1992) Winning the Debate in the States, ALEC 1992 Annual Report. Washington: ALEC. [online] Available at <https://www.documentcloud.org/documents/805549-1992-alec-annual-report> [Accessed 19 May 2021]

INIT_Corporate
500

Organisation

This is the initialized value of the possible donor's stock.

Its initialized value was chosen based on research through previous corporate members, not only current, which was a bit less than 500. Hence, the initialized value was rounded up to 500 for ease as the true membership count cannot be found.

Sourcewatch. (2021a). ALEC Corporations - SourceWatch. [online] Available at: https://www.sourcewatch.org/index.php?title=ALEC_Corporations#Articles_and_Resources [Accessed 15 May 2021].

Sourcewatch. (2021b). ALEC Non-Profits - SourceWatch. [online] Available at: https://www.sourcewatch.org/index.php?title=ALEC_Non-Profits [Accessed 15 May 2021].

INIT_Corporate_Members
10

Organisation

This information is not disclosed the initialized value is assumed to be 10 as it covers the main key donors such as NRA and Koch Brothers. Additionally, since corporate membership changes quite often it was made to be quite low to again represent the main donors such as the NRA.

Sourcewatch. (2021a). ALEC Corporations - SourceWatch. [online] Available at: https://www.sourcewatch.org/index.php?title=ALEC_Corporations#Articles_and_Resources [Accessed 15 May 2021].

Sourcewatch. (2021b). ALEC Non-Profits - SourceWatch. [online] Available at: https://www.sourcewatch.org/index.php?title=ALEC_Non-Profits [Accessed 15 May 2021].

INIT_politicians
18350
People

This is the Initialized value of the non-ALEC members in the ALEC membership structure. It is set to 18350 since there are roughly 18750 legislative seats in total in the US state system. We have subtracted 400 of those seats as that represents the ALEC members already present in the year 2000.

Hertel-Fernandez, A. (2019) State capture: how conservative activists, big businesses, and wealthy donors reshaped the American states and the nation. New York, NY: Oxford University Press.

INIT_State_Resources
8e9

Dollar

This is the initial value for the stock of State Resources. It is set to 8e9 dollars as to equal the average budget.

Perceived Stress

Change_in_Stress_Levels
 $(\text{Indicated_Stress} - \text{Perceived_Stress_on_Political_Actors}) / \text{Time_to_Update_Stress}$

Stress/Months

This is an information goal-gap formation that changes the perceived stress level towards the indicates stress level based on the 12-month adjustment time.

Since the stress level is an information stock this was the decided formula as it would represent the time, it can take to start to feel stressed rather than an instantaneous effect.

If the indicated stress is smaller than the stock, then this formula becomes negative and tries to drag the stock down towards the indicated level.

If the indicated stress is larger than stock than the net flow will be positive and try to close the gap by increasing the stock 63% every adjustment time.

Indicated_Stress
 $\text{Normal_Stress} * \text{Effect_of_Bill_Capacity_on_Stress}$

Stress

This is 'actual' stress level. It takes the normal stress level and multiplies it with the effect of relative resources. This. makes it so that the larger the relative resources the less stressed political actors are since they have necessary resources to perform their job. If the relative resources is smaller than 1 than it starts to increase how stressed the political actors can be as they may not have the time nor personnel to be able to properly research bills, and/or do their job properly.

The largest this converter can grow is 1 since the normal stress is 0.5 and the highest the effect variable will increase is to 2.

Hertel-Fernandez, A. (2019) State capture: how conservative activists, big businesses, and wealthy donors reshaped the American states and the nation . New York, NY: Oxford University Press.

Normal_Stress
 0.5

Stress

This is the normal level of stress for Political Actors in the US, It was decided to make the normal 0.5 as it would give equal weight to below and above. In other words, there is not a larger threshold to become stress than not.

In addition, it would make the visual aspect much easier as any time it goes above 0.5 we assume that the actors are becoming more stressed.

Perceived_Stress_on_Political_Actors(t)
 $\text{Perceived_Stress_on_Political_Actors}(t - dt) + (\text{Change_in_Stress_Levels}) * dt$
 INIT Perceived_Stress_on_Political_Actors = Indicated_Stress

Stress

This is the stress that is felt in the political system. It is a scaled variable from 0 to 1. When the stock is 1 the political actors are as stressed as they can be and at 0 they are not stressed at all. The middle 0.5 is the normal level of stress so any deviations indicate a change in stress levels.

Relative_Stress

$\text{Perceived_Stress_on_Political_Actors}/\text{Normal_Stress}$

Dmnl

This compares the perceived stress to the normal stress to see how much larger or smaller the stock is than the normal. If the relative stress is equal to 1 than we know that the perceived stress is equal to the normal stress. If this converter is larger than one, we know that people are more stressed. If this is smaller than one we know that the actual stress is smaller than normal.

Time_to_Update_Stress

12

Months

This is the adjustment time for the goal-gap formation that adjusts the perceived stress towards the indicated stress. It is set to 12 months since each legislative period is usually measured in years. Hence, it represents reflecting on the year and seeing how stressful or not it was.

Perceptions of ALEC's Success**Change_in_Perception**

$(\text{Indicated_Success}-\text{Perceived_Success_ALEC})/\text{Time_to_Update_Perception_of_Success}$

Success/Months

This is a goal gap formation that adjusts the gap between the indicated success and the perceived success of ALEC over 12 months. During those 12 months 63% of the gap is closed meaning the stock nears the value of the indicated success. This formation is done so that the perceived success of ALEC is always bounded to the indicated which cannot go above 1.

This flow thus, represents the information of how successful ALEC is becoming the 'accepted' information. The indicated success is how successful ALEC is now and this flow, represents that information becoming the norm and thus, the new accepted status.

Indicated_Success

$\text{Effect_of_Relative_Bills_Passed_on_Success}*\text{Normal_Success}$

Success

This is the actual measure of success since, it is an instantaneous effect that combines the effect of how many ALEC bills are passed with their normal success. If they are passing a lot of bills, the effect will be larger than one and thus, the success will be larger than normal. If they are passing less than desired bills than the effect will be less than one meaning that the indicated success will reduce the normal success.

Normal_Success

0.5

Success

This the normal success that ALEC experiences. It is set to 0.5 so that anything below makes ALEC be seen as not successful and anything above to be successful. It may be that 0.8 is a better judgment of success since, it is stated in literature it is easier to fail than be successful. However, I would argue that putting the threshold/normal in the middle (0.5) is a good fit since ALEC has already existed since the late 1980s and therefore, have shown that they are already successful. Hence, putting the threshold in the middle would mean that it would simply judge how successful they are compared to their usual not whether they would perish.

Perceived_Success_ALEC(t)
 $\text{Perceived_Success_ALEC}(t - dt) + (\text{Change_in_Perception}) * dt$
 INIT Perceived_Success_ALEC = Indicated_Success

Success

This stock is the Perceived Success of ALEC which represents how successful the Organization of ALEC is perceived to be (externally and internally). This 'dimensionless' stock represents the perceived success. Hence, if the success stock is 1 than ALEC is as successful as they can be, if the stock is 0 then they are not successful at all.

This information stock changes based on the net flow which is the goal gap formation that tries to close the gap between the indicated success and the perceived success of ALEC.

Relative_Success
 $\text{Perceived_Success_ALEC}/\text{Normal_Success}$

Dmnl

This is the relative success of ALEC compared to the normal. It takes the normal success and compares how far above or below the perceived success of ALEC is. Hence, if the stock is above 0.5 than the relative success is large and thus, more than 1. If the perceived success is smaller than 0.5 the fraction will be less than 1 indicating that they are less successful than they normally are.

Time_to_Update_Perception_of_Success
 12

Months

This is the adjustment time for the goal-gap formation that changes the perceived success of ALEC towards the Indicated Success.

It is set to 12 months to reflect the fact that a legislative session is measured in a year's time. In the United States some of the state legislatures only meet for a week or the whole time. Yet, every measure of politics is done annually hence, the 12-month delay.

Jasper, W. F. (2014) The not-so-smart ALEC: The American Legislative Exchange Council falls short on constitutional, sovereignty issues. *The New American* (Belmont, Mass.). 30 (9), 18–.

Lock, I. and Seele, P., (2016). Deliberative lobbying? Toward a noncontradiction of corporate political activities and corporate social responsibility? *Journal of Management Inquiry*, 25(4), pp.415-430.

Mabry, B.L., (2016). The Influence and Impact of the American Legislative Exchange Council (ALEC) (Doctoral dissertation, The George Washington University).

Starving the Beast

Average_Budget

8e9

dollar/year

This is the average budget of a state legislator in the US. It is set to 8 billion, a number significantly lower than the average state budget (15 billion), as we are only interested in the budget set for policy making. Hence, this budget is set to account for only that aspect. State government budgets include all welfare, institutional, etc but since we are not interested in those policies they were chosen to be ignored.

Hertel-Fernandez, A. (2019) State capture: how conservative activists, big businesses, and wealthy donors reshaped the American states and the nation . New York, NY: Oxford University Press.

(NASBO) National Association of State Budget Officers (2015). Proposed and Enacted Budget Summaries. NASBO; Washington.

Bill_Capacity

MAX (State_Resources/Cost_Per_Bill, 0)

Bill

This converter takes the input from the state resources and divides it by the cost per bill to find the total amount of bills the average state legislature can produce. Since the cost per bill is 80000 the initial value of bill capacity is 100,000.

There is a large assumption in this converter and that is the whole states, budget is spent on creating bills. Hence, the large value of 100,000 compared to the total bills passed in the US in 2020 (45,000). The costs associated with the bills are much smaller since much of the budget of states has to go to programs, institutions etc.

The main function of this converter is to see how many bills the average state can produce based on the level of state resources.

Budget_Per_Month

(Average_Budget*Delayed_Effect)/Budget_Year

Dollar/Months

This represents how much policymakers are allowed to spend on making bills every month. It takes the annual budget with the effect of ALECs influence and divides it per month. This variable determines the inflow of 'income'.

Budget_Year

12

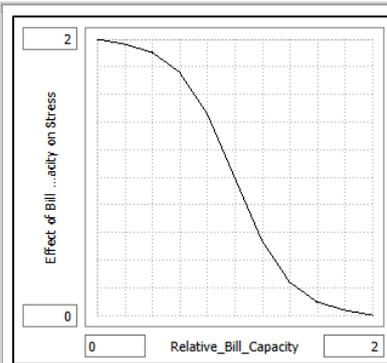
Months/Year

Since in accounting the expensive are measure yearly, the function of this stock is to take 12 months to drain the full yearly costs.

Time_to_Deplete_Budget

12

<p>Months</p> <p>This converter is time it will take to deplete the budget if there was no income. It is set to 12 months as that is the length of the budgetary year. The goal of this converter is to be the adjustment time for the first order control for expenditure for the stock of state resources.</p>
<p>Cost_Per_Bill 80000</p> <p>dollar/bill</p> <p>This represents the total costs per bill. In this model it is an arbitrary number since it is hard to gather the exact cost per bill since each bill may require different personnel, time, or resources.</p> <p>Hence, 80,000 dollars was chosen mainly so that the bill capacity would neither be too larger or too small. In addition, dividing by 80,000 means that the bill capacity is initialized at 100,000 which seems like an easy, whole number to compare to.</p>
<p>Costs 8e9</p> <p>Dollar/Year</p> <p>The cost is set to equal the average budget since it is assumed that the average state does not go into the negative nor spend more than they have cash for. This is a very large assumption since we know this not to be true. The costs change depending on the budget year and are often larger than the budget hence, the debt ceiling and borrowing from other states.</p>
<p>Delay_in_Budget_Effect 6</p> <p>Months</p> <p>This represents the delay it can take to set a budget. In other words, it is the exogenous process not represented in this model.</p>
<p>Delayed_Effect SMTH3(Effect_of_Influence_on_Budget, Delay_in_Budget_Effect, Effect_of_Influence_on_Budget)</p> <p>Dmnl</p> <p>This delay converter takes the effect of the influence on budget and delays it to represent the network slowly adopting the idea of cutting budget for policymakers. The delay time is to represent the time it can take for these changes to take effect.</p> <p>DELAY CONVERTER</p>
<p>Effect_of_Bill_Capacity_on_Stress GRAPH(Relative_Bill_Capacity)</p>



dmnl

This converter takes the normalized value of the relative bill capacity and gives an corresponding value to stress based on how larger or smaller the relative capacity is to its initial value of 1. The graphical function was chosen as the larger the bill capacity the smaller the stress is since there is a large number of resources to aid the policymakers.

When the relative bill capacity is equal to 1 the effect on stress is also equal to 1 which means that there is no effect on normal stress since the system is in its 'normal' state. If the Relative bill capacity increases the effect decreases as well to a maximum of 0. This means that when the relative bill capacity is large the stress actually decreases since there is enough resources for the policymakers to effectively perform their tasks.

If the relative bill capacity decreases the effect on stress increases to a maximum of 2. which means that the less resources the politician can handle the more stressed they are.

Expenditure
Costs/Budget_Year

Dollar/Months

This is the outflow from state resources. It represents the average state legislator spending the budget that was set every year. Hence, it takes the cost (which is the same as the budget) and divides it by the residency time which is 12 months. Its main function is to clear the state resources every year so that it does not overflow.

Income
Budget_Per_Month

Dollar/Months

This is the inflow to the state resources and represents the act of setting the budget for the year. The equation is the average budget multiplied by the fractional reduction based on ALEC influence divided by the budget year (12 months). This makes it so that the budget is only entered into the state resource stock every 12 months.

Initial_Bill_Capacity
100000

Bill

This is the Initial Bill Capacity that is made to reference how far the actual Bill Capacity has decreased. The initial is found by taking the initial state resources and dividing it by the cost per bill.

Relative_Bill_Capacity

Bill_Capacity/Initial_Bill_Capacity

Dmnl

This compares the bill capacity to the initial bill capacity by dividing the current capacity by the initial. Thus, if the bill capacity drops below the initial bill capacity this converter becomes less than one. If the state resources increasing causing an increase in bill capacity this converter becomes larger than one. This is so that in relative terms it is possible to see how much or less the bill capacity has changed.

Relative_State_Resources
State_Resources/INIT_State_Resources

Dmnl

This is fractional comparison between the current level of state resources towards the initial state resources. Its function is to track the changes (increase or decrease) of the stock of state resources. It takes the input from the state resource stock and compares it to its initial value.

State_Resources(t)
State_Resources(t - dt) + (Income - Expenditure) * dt
INIT State_Resources = INIT_State_Resources

Dollar

The state resource stock represents the resources available to politicians so even though the units are in dollars, it rather represents personnel, time, and general resources available. Hence, the simplified budget structure.

The stock increases by the annual budget settings which takes the average budget of 8 billion dollars and inserts it over the adjustment time which is 12 months. It decreases through the annual expenditure which is the annual budget divided by the budget year (12 months). Hence this stock is in equilibrium when there is no reduction of average budget.

The state resources only represent the budget given to the politicians to perform their job.

Hertel-Fernandez, A. (2019) State capture: how conservative activists, big businesses, and wealthy donors reshaped the American states and the nation . New York, NY: Oxford University Press.

State Legislature and Bills

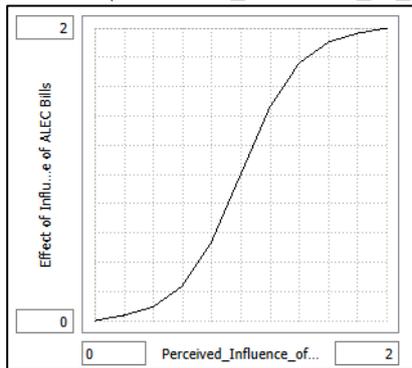
ALEC_bills_Passed_Per_Year
(Total_Bills_Passed_in_the_US_Per_Year*Fraction_of_ALEC_bills)/Months_in_A_Year

bill/Month

This Converter calculates the total amount of ALEC bills passed every Year. It does so by multiplying the total bills passed in the US by the updating fraction of ALEC bills. Hence, when ALEC is doing well, and the influence is large then the fraction of ALEC bills become larger which means total ALEC bills passed per year is a larger share.

Since the data found only takes bills passed yearly since every legislature has different schedules, we divide the Bills passed by 12 to find how many are passed every year. Since it is a converter and they are instantaneous this is done to standardize the number of bills so we can make a fair comparison later on.

Effect_of_Influence_on_Rate_of_ALEC_Bills
 GRAPH(Perceived_Influence_of_ALEC/Normal_Influence)



Dmnl

This represents the fact that the more influence ALEC has the more of their model bills they can get enacted through state legislators. It takes the relative influence (Influence/normal influence) and gives a corresponding effect value based on the graphical input. This graphical input was created based on the research that the highest discovered ALEC model bills in one year was 6% of total bills. Hence, the largest the effect goes is to double the normal fraction which is 3%.

When the perceived influence of ALEC is equal to the normal value (making the fraction 1) the corresponding effect is also 1. This means that in initialized values the effect does not alter the normal fraction of bills Passed.

When the perceived influence increases so does the effect to a maximum of 2. This means that the more influential ALEC is the effect will double the normal fraction.

When the perceived Influence decreases past its normal value the effect also decreases towards a maximum of 0 meaning that when ALEC is not influential at all no model bills will be passing.

Collingwood, L. et al. (2019). Sustained Organizational Influence: American Legislative Exchange Council and the Diffusion of Anti-Policy. Policy studies journal. [Online] 47 (3), 735–773.

Hertel-Fernandez, A. (2019) State capture: how conservative activists, big businesses, and wealthy donors reshaped the American states and the nation . New York, NY: Oxford University Press.

Fraction_of_ALEC_bills
 Effect_of_Influence_on_Rate_of_ALEC_Bills*Normal_Fraction_Total_Bills_Passed

Dmnl

This is the fraction/percentage of ALEC bills that are passed based on the normal fraction multiplied with the effect of influence. The highest this fraction can go is 6% since the normal fraction is 3% and the largest the the effect can go is 2. Hence, the largest possible fraction is 6 and the smallest is 0.

Months_in_A_Year

12

Months

This converts the ALEC bills passed per year into a monthly value.

Normal_Fraction_Total_Bills_Passed
0.03

Dmnl

This is the desired fraction of ALEC bills passed per year. It is based on the most successful ALEC had ever been which was a discovered 6% of bills passed in a legislative year throughout the 50 states. The issue with that all the research is based on leaked documentations so there is no method of confirming these assumptions/parameters. It is set to 3% since that is slightly lower than the highest and therefore, is a more realistic desired goal. In addition, it is half of the total discovered percentage and thus, is a good base level to measure success on.

(ALEC) American Legislative Exchange Council (2015). Annual Meeting Agenda ALEC American Legislative Exchange Council. [online] Available at:
<<https://www.documentcloud.org/documents/3232576-Annual-Meeting-Agenda-ALEC-American-Legislative>> [Accessed 24 May 2021].

Hertel-Fernandez, A. (2019) State capture: how conservative activists, big businesses, and wealthy donors reshaped the American states and the nation . New York, NY: Oxford University Press.

Reference_Bills_Passed_Per_Year
(Normal_Fraction_Total_Bills_Passed*Total_Bills_Passed_in_the_US_Per_Year)/Months_in_A_Year

bill/Months

This represents the desired/reference amount of bills passed per year as a measure of success for ALEC. It takes the average bills passed per year in the US multiplies it with the desired fraction of ALEC bills passed to find the goal for the organization. In other words, the threshold for success is dependent on the desired fraction passed.

Since, the data found only takes bills passed yearly since every legislature has different schedules, we divide the Bills passed by 12 to find how many are passed every year. Since, it is a converter and they are instantaneous this is done to standardize the number of bills so we can make a fair comparison later on.

Relative_ALEC_Bills_Passed
ALEC_bills_Passed_Per_Year/Reference_Bills_Passed_Per_Year

Dmnl

This is the measure for success for ALEC dependent on how many of their model bills are passed. Hence, it takes the actual ALEC bills passed this year and compares it to the desired to see how successful they were. 5% ALEC bills is equal to 1 so if we pass more it becomes larger than one meaning they are more successful. If they pass less than 1 then they are not as successful as they wished to be.

Total_Bills_Passed_in_the_US_Per_Year
45000

Bill

This is the average of total bills passed in the US per year. To make it easier in regard to the model this has been averaged out based on the 2019 average of 45,000 bills. The average has not changed much since the state level in US politics has always been very productive. Additionally, this does not consider 'hot topics' such as gun control etc and only focuses on bills that were enacted. This is

for simplifications purpose

Hertel-Fernandez, A. (2019) State capture: how conservative activists, big businesses, and wealthy donors reshaped the American states and the nation. New York, NY: Oxford University Press.

Total	Count	Including Array Elements
Variables	96	96
Modules	1	
Sectors	9	
Stocks	9	9
Flows	8	8
Converters	79	79
Constants	38	38
Equations	49	49
Graphicals	15	15
Macro Variables	20	

Sensitivity Testing

Integration Error Test

The behaviour of the model remains the same regardless of integration method or DT.

Sensitivity Analysis

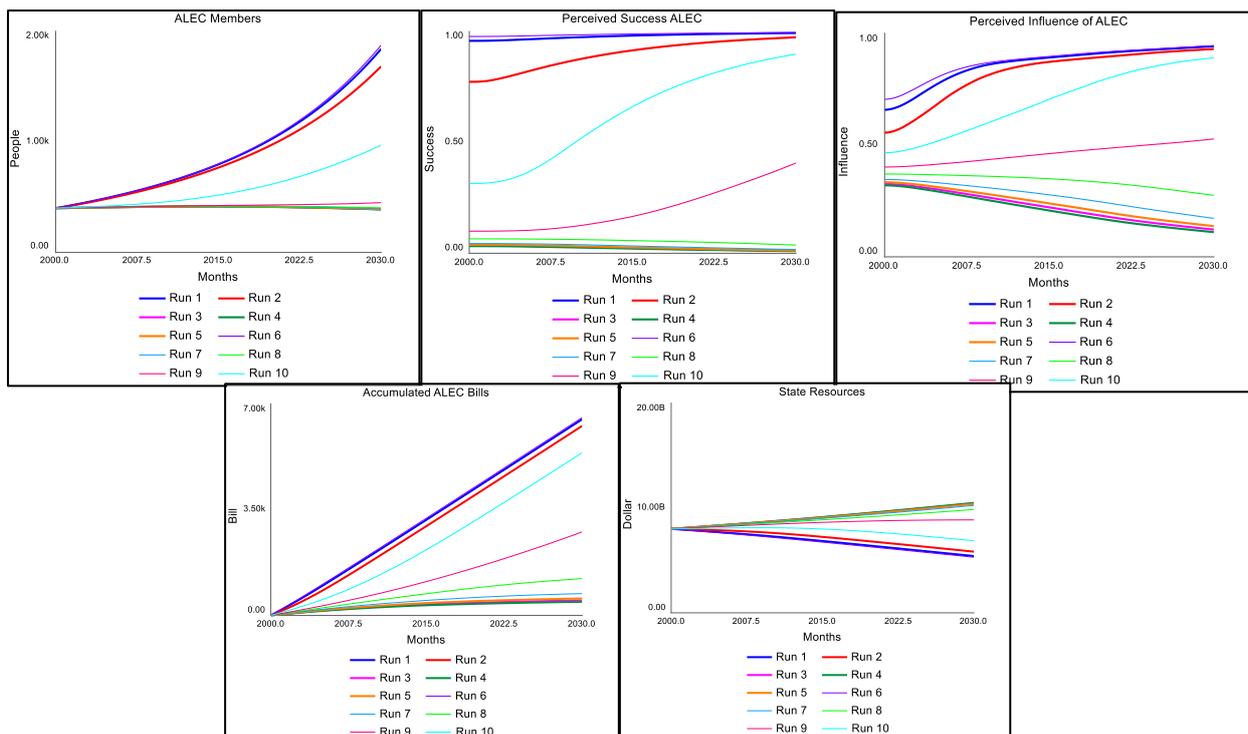
The Sensitivity analysis was performed using the uniform method with Latin hypercube sampling. The used parameters were the baseline scenario as it was the most intuitive scenario to use. The graphical functions were altered using manual distortion. The categories that were decided upon were normal values, Adjustment Times, Other parameters, and graphical functions. This section will go through the most sensitive variables in that order.

Normal/Reference Variables

Reference Density

Initial: 0.02

Range: 0.01-0.05

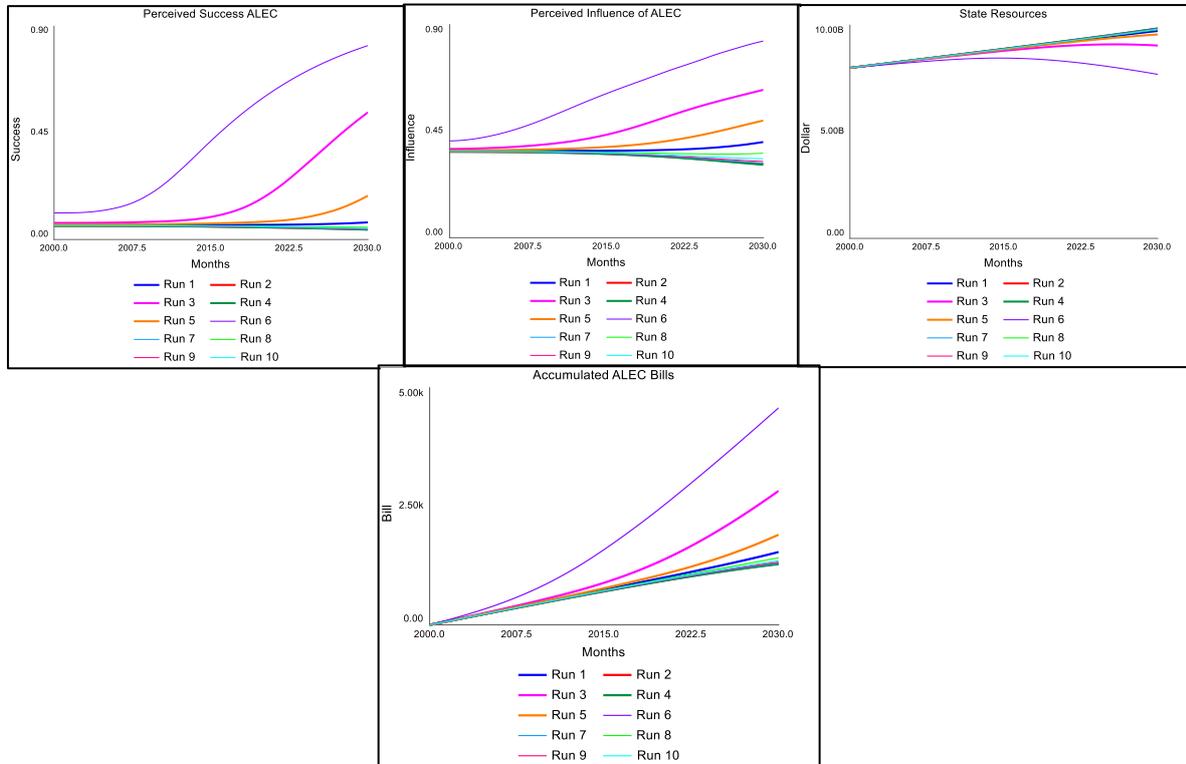


Reference Density is clearly sensitive as the ‘comparison’ value for how many ALEC members counts as a successful amount to increase influence. Hence, any deviation from the 0.02 value causes many polarizing changes in behaviour.

Initial ALEC Corporate Size

Initial: 10

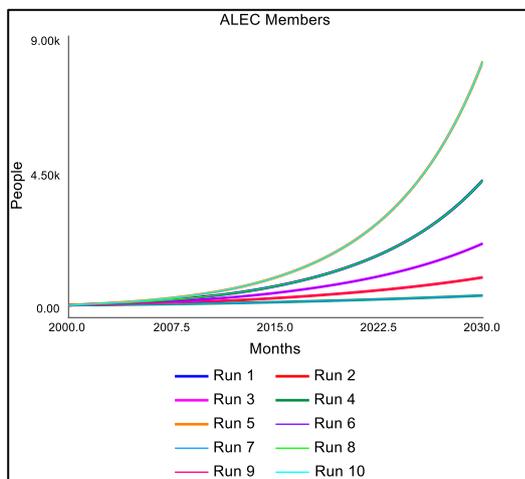
Range: 10-100



Normal ALEC Growth Rate

Initial: 0.02

Range: 0.01 – 0.05



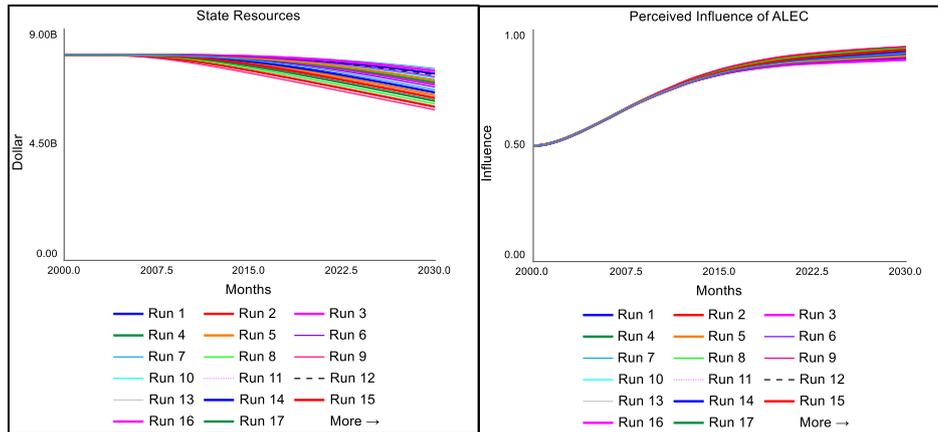
As this is the variable that starts R1 and R2 growing/decreasing when initialized it was evident that this will be a quite sensitive variable. A larger growth rate means that there is a larger initial increase meaning stronger behaviour throughout the system structure.

Adjustment Times

Delay in Budget Effect

Initial: 6 Months

Range: 1 – 24 Months



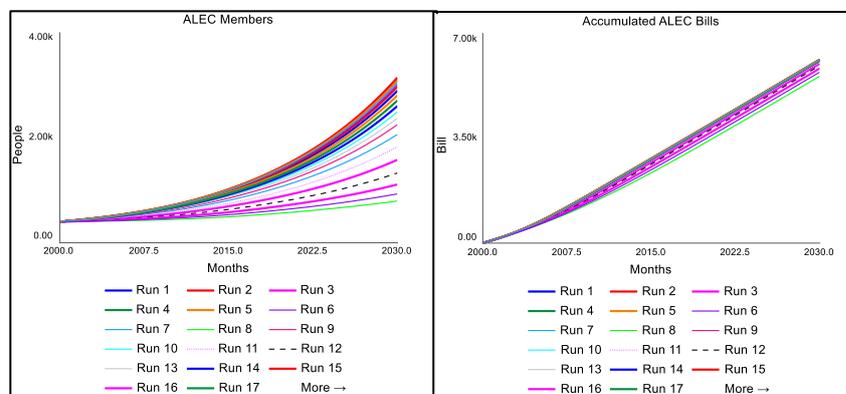
This was the most sensitive variable regarding adjustment times. In normal time it takes 6 months for ALEC’s influence to start decreasing the annual budget. If the reduction takes a longer time to be effective it means loops R3, R4, R5, and R6 will take longer to increase due to the delay in reducing state resources. However, since these loops are not the strongest loops in the system the effect is not significant.

Other Parameters

Initial Bill Capacity

Initial: 100,000

Range: 80,000 – 200,000

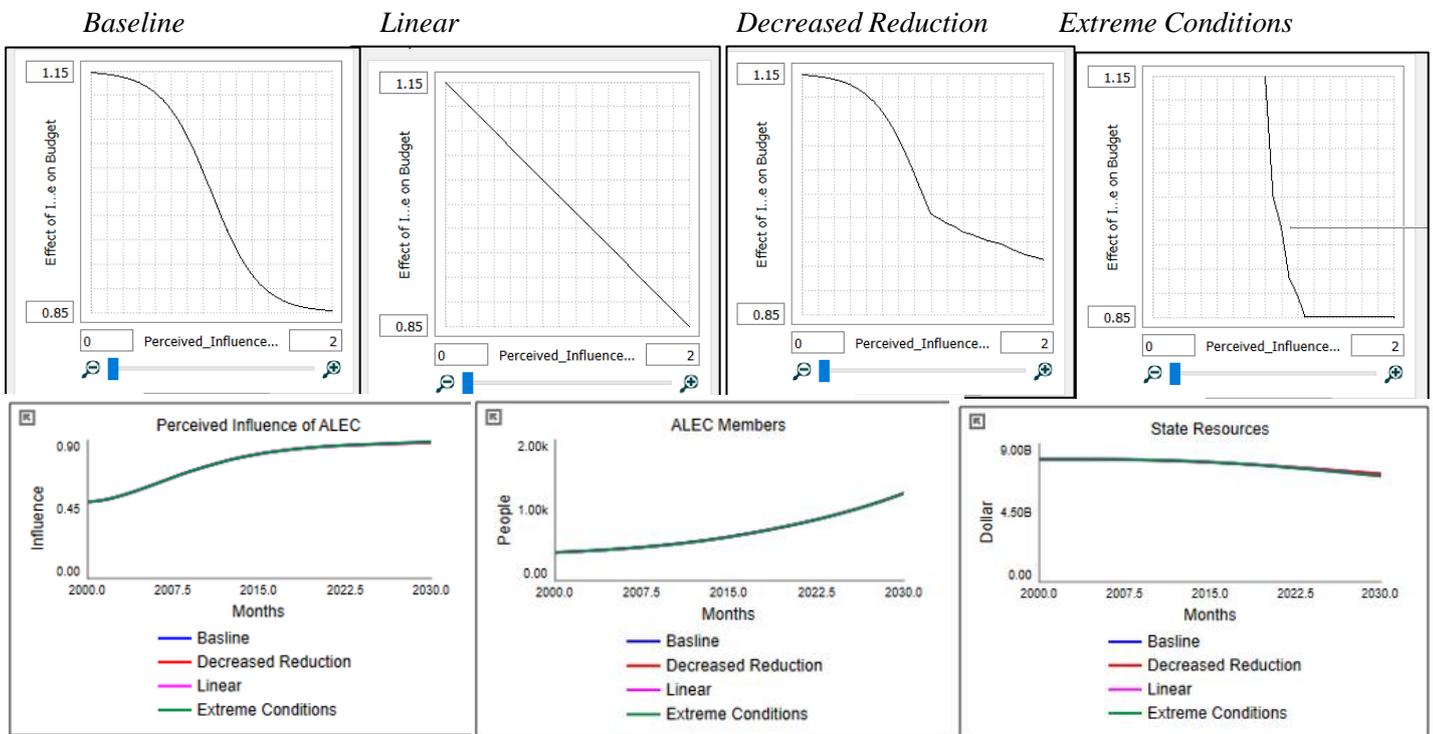


This is the only significantly sensitive ‘other parameter’. It represents the variables in which bill capacity is normalized towards for the effect on stress. If there are fewer state resources than the initial the stress will be larger on the policymakers. Hence, the larger this variable is the larger the stress will be initially on the perceived stress which means the system will start in a ‘stronger’ steady growth.

Graphical Functions

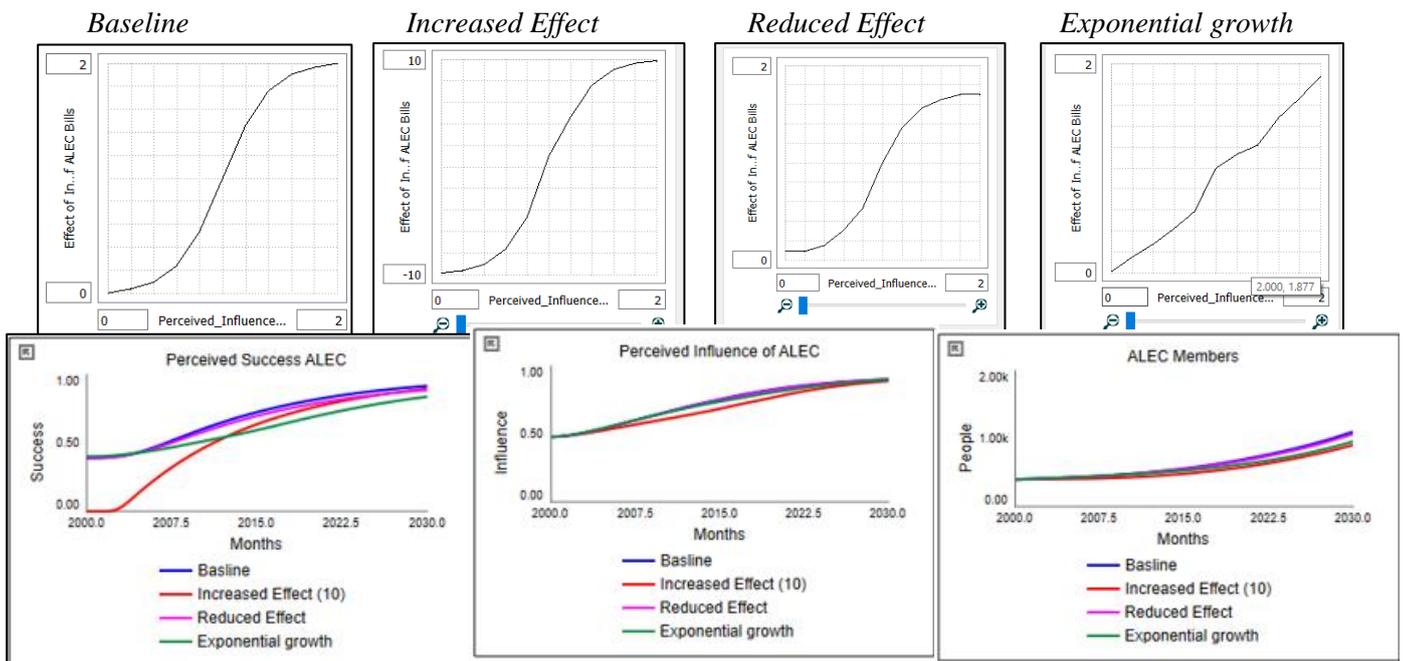
The graphical functions presented are the most sensitive out of the 12 presents in the model. However, none of them are as sensitive as was originally believed. It seems that it is rather the input (reference values) to these table functions that are the sensitive part.

Perceived Influences Effect on Reduction in Budget



It is evident that this graphical function is not sensitive in the slightest and even though there are alterations in the function the behaviour remains the same.

Effect of Influence on Fraction of Bills



This was a surprising find in that even though ALEC can pass more bills than previously it only effects their perceived success. That seems to indicate that external/internal perception of how ALEC is doing on policymakers is not based on how many models bills they are able pass. This lends more credence to the hypothesis of under resourced politicians.

Simulation Details & Scenario Reporting

Due to the simplified nature of this model and the lack of balancing loops there are not many ‘scenarios’ that can be run that produce a different behaviour mode. This chapter will cover the most interesting scenarios that were described in section 3.4.

Simulation Experiment Report

Software: Stella Architect 2.1.3

Integration Method: Euler

DT: 1/128

Time Units: Months but displayed in the time frame 2000-2030

Simulation Start Time: 2000

Simulation End Time: 2030

Equilibrium

The system cannot be in equilibrium as the model starts with the growth rate for ALEC members and corporate donors being positive. The model in equilibrium is the base scenario with steady state growth.

Baseline Scenario

This scenario aims to reproduce the reference mode of behaviour which means the initial value can be found in Appendix B in the model documentation. Since it is the baseline scenario there are no alterations to variables or switches. The following values were used to replicate the behaviour:

ALEC Membership

Non-ALEC Members: 18350

ALEC Members: 400

Normal Growth Rate: 0.02

Reference Density: 0.0213333333333

Corporate Donors:

ALEC Corporate Member: 10

Possible Donors: 500

Growth Rate Corporate Member: 0.05

ALEC Influence

Weight of Resources: 0.15

Relative weight of Members: 0.4

Scenario 2: Ideologically Focused Organization

This scenario alters the weight of the three effect variables applied to influence to see whether the largest weight was applied to depleting the resources. The aim of this scenario is to explore if ALEC mainly focused on their goal instead of the business minded board, and consequently strategic plans which took over ALEC in the 1990s. The only variables that are altered are the following:

Weight of Resources: 0.9

Relative weight of Members: 0.5

Scenario 3: Corporate Donors Quitting ALEC due to Bad Press

This scenario activates an outflow from the stock of corporate donors to see how the structure would react to a sudden drop in donors. This is done to see whether policies that pressure companies to leave ALEC would work. The year 2012 was chosen due to it being the time frame of arguably ALECs biggest controversy.

POLICY SWITCH: 1

Fraction of Companies Leaving ALEC: 0.5

Start of Bad Press: 2012