

The State of the Modern Legislative Process in the United States Congress—A Case Study of the CHIPS Act of 2022 and the Inflation Reduction Act of 2022

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Abstract

This research report examines the procedures and processes that the United States Congress adheres to for passing legislation, taking the CHIPS Act of 2022 and the Inflation Reduction Act of 2022 as case studies for analysis. A review of the history behind both these pieces of legislation was conducted to amass the necessary context for the legislative process and explore the procedures encountered in progressing from bill to law. This report then identifies the key political actors—politicians and interest groups (as a stand-in for constituents) alike—to outline where power resides in the legislative process and how important decisions get made. A conclusion was then drawn about which stakeholders received what from these two pieces of legislation and what the modern process of creating legislation appears to follow.

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1 Introduction

1.1 Personal Motivation

One of the unquestionable truths of the early 21st century is that the economy of the United States of America is critical to the global economy. A quick macroeconomic analysis shows that for the entire 21st century so far, the U.S. has led the world in terms of GDP, with 30.3% of the global GDP attributed to the US in 2000, 22.6% in 2010, and 23.9% in 2021 (The World Bank, 2021). For reference of how sizeable a lead this is, the countries just trailing the U.S. in these years were Japan in 2000 with 14.7% of the global GDP attributed to them, China in 2010 with 9.14%, and China in 2021 with 18.4% (The World Bank, 2021). Such economic power also corresponds to an equally vast market for trade and powerful centers for commerce. Therefore, the laws in the U.S. have an incredible international influence and are important to any field that deals with the global economy.

This report on congressional procedures in the U.S. Congress (referred to simply as Congress for the rest of the report) was written by an undergraduate student whose main study is mechanical engineering. From the perspective of an aspiring engineer, the analytical and design work can only effectively be performed when considering the industry's regulations and economy for that engineering discipline. Understanding the political framework that creates the regulatory environment in the jurisdiction in which most well-known engineering firms reside provides some unique insights for a holistic future career in engineering.

The CHIPS Act of 2022 and the Inflation Reduction Act of 2022 were chosen as case studies for this report because of the relevant industries they targeted, the enormous number of influential provisions introduced by these two pieces of legislation, and the deep potential both

have for highlighting the law-making process of Congress. The passage of these pieces of legislation was significant because of the polarized congressional environment in which it was forged, indicative of a legislative process that remains functional despite the appearance and prediction of gridlock.

1.2 Political Divisiveness

A defining characteristic of early 21st-century politics in the U.S. is the elevated polarization among legislators compared to earlier decades. This rings true anecdotally through the observable uptick of political protests and violence from 2016 onward for residents of the U.S., but this can also be observed empirically through various empirical measures. One method of quantitatively assessing how polarized Congress has become is by mapping their ideological scores using the DW-NOMINATE measure based on roll-call votes (Smith, 2021b). Figure 1.2.1 illustrates the evolution of the ideology for both parties from 1969 to 2021 with box-and-whisker plots. The trend of partisan polarization began in the 1970s and '80s with the southern realignment (Smith, 2021a), but a significant milestone was passed in the 112th Congress as no member of the Republican party was more liberal than the most conservative Democrat past this Congress (Smith, 2021b). In addition to the fact that the ideologies of the members of either party no longer overlapped, the spread of ideology for both parties has shrunk as well, indicating more cohesive parties. This can be attributed to the nationalization of parties from the 1990s, a significant factor in the polarization of the parties.

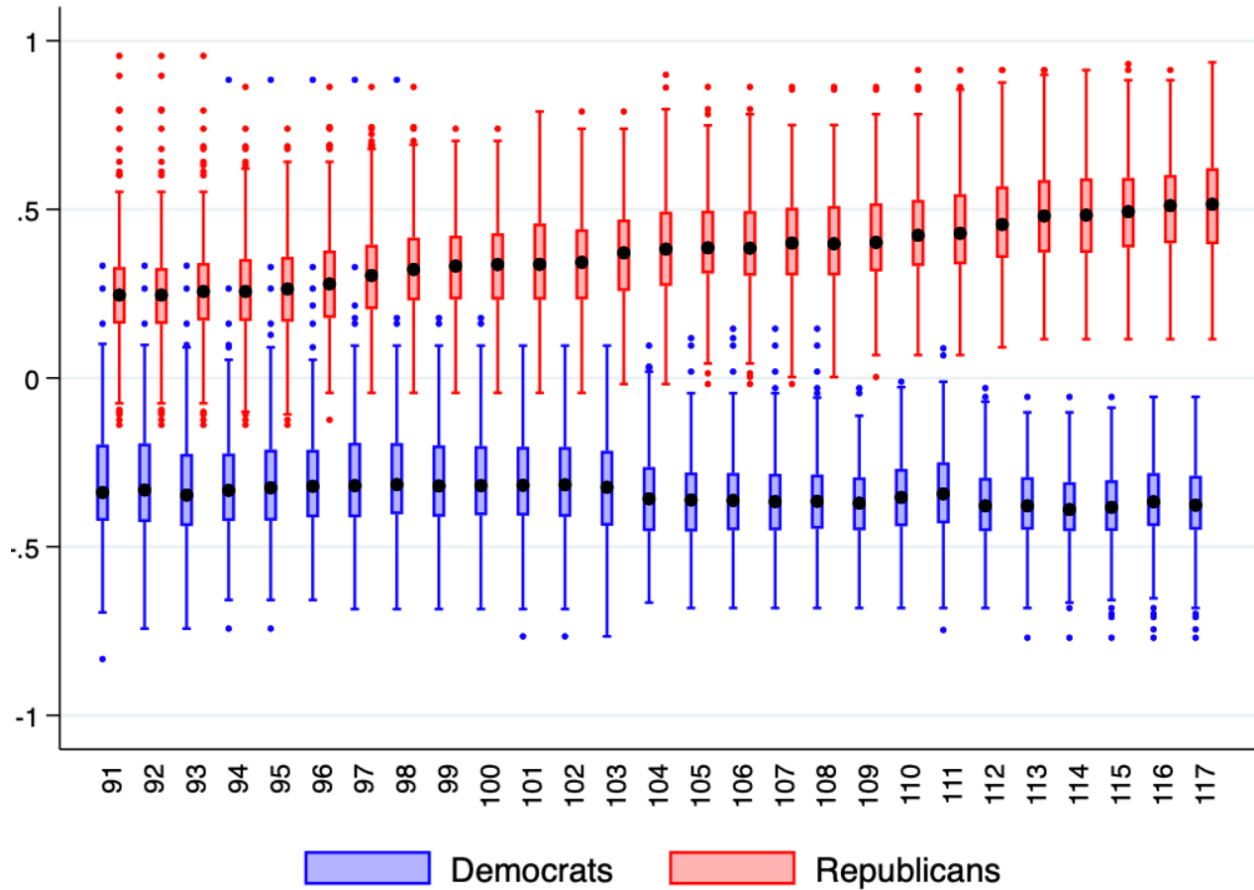


Figure 1.2.1. Ideological scores for Democrats and Republicans from 1969 to 2021.

The intenseness of the conflict between the two parties could be associated with an increase in negative partisanship tactics (Smith, 2021a), but another significant development is that of the decreasing majority share in Congress (Smith, 2021b). Figure 1.2.2 illustrates how the size of the majority for either party has reduced to the point where there is no clear certainty as to which party will maintain majority status. Even when a party does obtain a majority, the majority is generally slim enough that there are still concerns from the most moderate members of each party objecting to the party agenda. The majority party still ends up taking control over the schedule and proceedings of their respective chambers, but the minority party is significant enough that certain threats and tactics can be used to slow or block pieces of legislation that they deem undesirable. In the case of the Senate, a filibuster-proof majority has yet to be achieved

since 1977, and recent trends predict it is highly unlikely for one to appear in the foreseeable future.

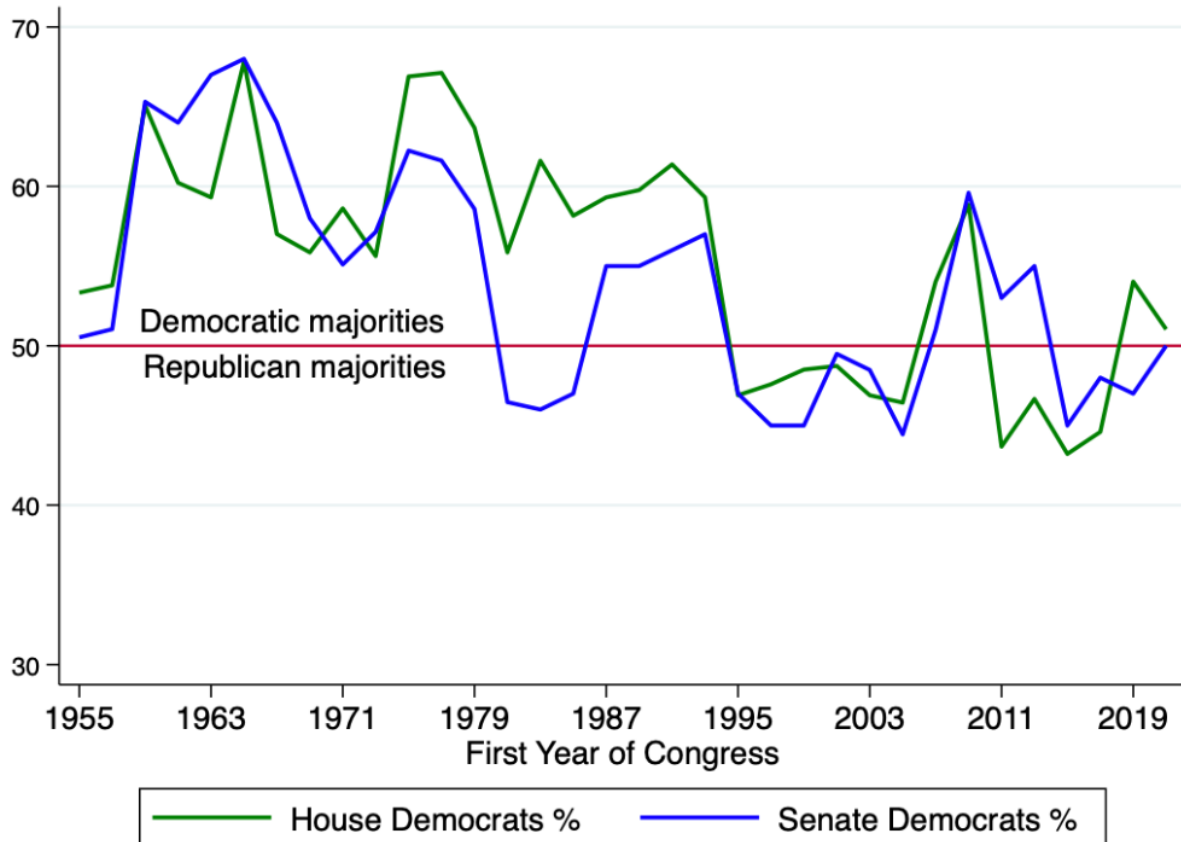


Figure 1.2.2. Seats held by Democrats in both chambers of Congress in terms of percentage from 1955 to 2021.

The level of polarization and division observed in modern politics did not happen overnight, as several trends have led to this period of divisiveness. It is no longer trivial for the majority party to pass their desired legislation, but as this report will explore, significant legislation still manages to proceed and become enacted.

1.3 Summary of Provisions

The CHIPS Act of 2022 (referred to simply as CHIPS Act for the rest of the report) was not a federal statute on its own but rather the first division of the CHIPS and Science Act of 2022, although the actual statute does not have a short name. For this report, the provisions of focus

will be from the CHIPS Act only, but the fact that this was only one of three divisions of the CHIPS and Science Act of 2022 meaningfully supports the observation that the modern legislative process allowed for productive congressional work to continue in a divisive political environment.

At the core of the CHIPS Act is a \$50 billion appropriation with the intent of increasing semiconductor production domestically (USAFacts, 2022). \$39 billion of this is in the form of tax benefits and other incentives for American companies to build new chip manufacturing plants in the U.S., while the remaining \$11 billion is allocated to programs for research and development supporting the advanced manufacturing supply chain associated with the semiconductor industry (USAFacts, 2022). The portion of this act that will receive focus is Section 103 concerning semiconductor incentives. A general summary of this section is provided in Table 1.3.1.

Table 1.3.1. A summary of provisions in Section 103 of the CHIPS Act of 2022.

Subsection(s)	Summary
(a)	Broadens the semiconductor incentives in the National Defense Authorization Act for FY2021 to include nonprofits with private and public entities, production with other identified processes, and materials/equipment used in manufacturing semiconductors along with semiconductors themselves. Clarifies other definitions.
(b)(2)(B)(iii) & (b)(2)(C)	Adds that entities that wish to receive financial assistance to add in their application: 1) type of technology used, 2) customers they plan to sell to, 3) workforce needs and strategy to meet them, 4) plan to identify and mitigate supply chain risks, and 5) policies against counterfeiting.
(b)(2)(F)	Gives priority for financial assistance to entities that manufacture semiconductors that fill domestic supply chain gaps and provide for national security or other critical infrastructure/manufacturing in the U.S.

(b)(5)	Defines legacy semiconductor as that using 28 nm technology or older.
(c)(5)	Construction projects that receive financial assistance must pay laborers and mechanics a certain wage (determined by the Secretary of Commerce) and have certain labor standards (determined by the Secretary of Labor).

A brief overview of the important provisions identified in Table 1.3.1 reveals several stakeholders were served under this act. Section 103 (a) increases the scope of the semiconductor incentives, serving semiconductor manufacturers. Most of section 103 (b) serves the federal government’s interest of securing a domestic robust domestic supply chain for semiconductors and drawing more intellectual and manufacturing assets away from adversarial nations. Section 103 (c)(5) likely serves labor unions and workers.

For the Inflation Reduction Act of 2022 (referred to simply as IRA for the rest of the report), the provisions take effect from 2022 to 2031, with a net deficit reduction of \$238 billion (Committee for a Responsible Federal Budget, 2022). About \$391 billion of the spending in this act goes toward energy and climate and another \$108 billion go towards health care, totaling about \$499 billion in spending (CRFB, 2022). Funds for this act come in the form of \$281 billion from healthcare savings and \$457 billion from other revenue sources, resulting in total funds of \$738 billion (CRFB, 2022). A more detailed breakdown of high-level provisions and their estimated financial impact is provided in Table 1.3.2. This act introduces an incredible number of provisions, a testament to the functionality of the legislative process in Congress, but this report will highlight the specific provisions listed in Table 1.3.3.

Table 1.3.2. A high-level breakdown of the financial impact of the policies in the Inflation Reduction Act of 2022.

Policy	Cost (-)/Savings
<u>Energy and Climate</u>	<u>-\$391 billion</u>
Clean Electricity Tax Credits	-\$161 billion
Air Pollution, Hazardous Materials, Transportation and Infrastructure	-\$40 billion
Individual Clean Energy Incentives	-\$37 billion
Clean Manufacturing Tax Credits	-\$37 billion
Clean Fuel and Vehicle Tax Credits	-\$36 billion
Conservation, Rural Development, Forestry	-\$35 billion
Building Efficiency, Electrification, Transmission, Industrial, DOE Grants and Loans	-\$27 billion
Other Energy and Climate Spending	-\$18 billion
<u>Health Care</u>	<u>-\$108 billion</u>
Extension of Expanded ACA Subsidies (three years)	-\$64 billion
Part D Re-Design, LIS Subsidies, Vaccine Coverage, Insulin	-\$44 billion
<u>Health Savings</u>	<u>\$281 billion</u>
Repeal Trump-Era Drug Rebate Rule	\$122 billion
Negotiation of Certain Drug Prices	\$96 billion
Drug Price Inflation Cap	\$63 billion
<u>Revenue</u>	<u>\$457 billion</u>
15% Corporate Minimum Tax	\$222 billion
IRS Tax Enforcement Funding (Net Return)	\$101 billion
1% Excise Tax on Stock Buybacks	\$74 billion
2-Year Extension of the Limitation on Excess Business Losses	\$53 billion
Methane Fee, Superfund Fee, Other Revenue	\$7 billion

Table 1.3.3. A summary of the provisions of focus for this report in the Inflation Reduction Act of 2022.

Section	Summary
10101 – Corporate Alternative Minimum Tax	This provision levies a 15% tax on the adjusted financial statement income of companies that make an income of over \$1 billion over a three-year average.
13203 – Sustainable Aviation Fuel Credit	This provision includes financial incentives for the sale or mixture of sustainable aviation fuel through 2024.
13401 – Clean Vehicle Credit	This provision changes the incentive structure for EVs, removing per-manufacturer limits, encouraging moving the supply chain to the US, and extending the overall incentive by several years.
50261 – Offshore Oil and Gas Royalty Rate	This provision increased royalty rates from at least 12.5% to between 16 2/3% and 18.75% for fossil fuel extraction.
50265 – Ensuring Energy Security	This provision gives oil and gas leases on federal land or offshore land priority over wind and solar development by requiring a lease sale for a year before giving priority to solar and wind.

The provisions identified in Table 1.3.3 demonstrates the wide variety of stakeholders affected by this act. Section 10101 applies to all sectors of industry, but only to extraordinarily large companies. Section 13203 impacts the aviation industry and section 13401 affects the automotive industry. Sections 50261 and 50265 broadly apply to the energy sector, with differing effects delivered to the fossil fuel, wind, and solar industries.

2 History and Context

2.1 The CHIPS Act of 2022

This act would likely not have been passed had the international political and economic environment been different in the years leading up to its passage. The COVID-19 pandemic can overwhelmingly be attributed as a trigger for many catastrophes, and the global chip shortage is no exception. Restrictions aimed to mitigate the spread of the pandemic caused acute disruptions to the supply chain of nearly every industry, yet the demand for integrated circuits soared as developed economies moved online and people under lockdown sought virtual entertainment. The pop in demand and dip in supply led to a widespread shortage of semiconductor chips, exorbitant prices, and severely hampered production capabilities in many other industries.

In addition to the global pandemic, a trade war between China and the U.S. has led to restrictions on U.S. companies from importing chips from Chinese companies, increasing demand pressure on other companies that were already producing at full capacity. Political tensions between Ukraine and Russia have also led to a strained supply of critical materials for semiconductor production including noble gasses and rare earth metals. These events culminated in a shortage of a component that is crucial to the modern economy and military, making way for legislators of the 117th Congress to pass the CHIPS Act.

The CHIPS and Science Act of 2022 was first introduced by Representative Tim Ryan (D-OH 13th) on July 1st, 2021 (Supreme Court Security Funding Act of 2022, 2022). This was reported on by the House Committee on Appropriations, as the original bill was merely an appropriations bill for the Legislative Branch for the upcoming fiscal year (Supreme Court Security Funding Act of 2022, 2022). The bill was debated and passed on July 28th, then received by the Senate on July 29th and referred to the Senate Committee on Appropriations (Supreme

Court Security Funding Act of 2022, 2022). The Senate did not take up this bill until June 22nd of the following year but did so and passed it on the same day with an amendment (Supreme Court Security Funding Act of 2022, 2022). This amendment was proposed by Senator Sheldon Whitehouse (D-RI), sponsored by Senator Bill Hagerty (R-TN), and cosponsored by Senator Mark Warner (D-VA) (Supreme Court Security Funding Act of 2022, 2022).

This amendment—S.A. 5120—was the beginning of the CHIPS and Science Act 2022 in its current form. Division C of the CHIPS and Science Act of 2022 is titled “Supplemental Appropriations to Address Threats to the Supreme Court of the United States,” and much of it stems from this amendment. In addition, the amendment now allows this act to be cited as the “Supreme Court Security Funding Act of 2022.” The House agreed to these amendments on Jun 24th while sending their own amendment to the Senate for approval, which in essence added a small section to the IRS tax code including COVID-19 vaccines as taxable vaccines (Supreme Court Security Funding Act of 2022, 2022). The Senate received this amendment on July 11th, then proceeded to debate on this from July 19th to July 27th (Supreme Court Security Funding Act of 2022, 2022). During this debate, the Senate crafted what would end up becoming the entire CHIPS and Science Act of 2022 in a massive amendment—S.A. 5135—sponsored by Senator Chuck Schumer (D-NY) (Supreme Court Security Funding Act of 2022, 2022). The House approved the amendment on July 28th and presented the bill to the President on August 2nd, who then signed the bill into law on August 9th (Supreme Court Security Funding Act of 2022, 2022). A summary of the significant legislative actions for this act is laid out in Table 2.1.1.

Table 2.1.1. A summary of legislative actions for H.R. 4346—CHIPS and Science Act of 2022.

Date	Sponsor	Action
July 1 st , 2021	Rep. Ryan	The House Committee on Appropriations reported on H.R. 4346.
July 28 th , 2021		H.R. 4346 was passed in the House: 215 – 207.
June 22 nd , 2022		The Senate Committee on Appropriations discharged H.R. 4346 by Unanimous Consent.
June 22 nd , 2022	Sen. Hagerty, Sen. Warner	H.R. 4346 was passed with amendment S.A. 5120: 64 – 33.
June 24 th , 2022	Rep. McGovern	House agreed on the Senate amendment, with an amendment from H.Res. 1204.
July 19 th , 2022	Sen. Schumer	Senate began consideration of H.R. 4346. S.A. 5135, S.A. 5136, S.A. 5137, and S.A. 5138 were introduced.
July 26 th , 2022		S.A. 5137 and S.A. 5138 fell.
July 27 th , 2022		S.A. 5136 fell. H.R. 4346 was passed with amendment S.A. 5135: 64 – 33.
July 28 th , 2022		House agreed to Senate amendments on H.R. 4346: 243 – 187 – 1.
August 2 nd , 2022		H.R. 4346 was presented to the President.
August 9 th , 2022		H.R. 4346 was signed into law by the President.

2.2 The Inflation Reduction Act of 2022

A different set of unique circumstances gave rise to the IRA compared to the CHIPS Act, although many were related events. As designated in the name, inflation became a serious problem in the early 2020s. Part of this stems from the disruption to supply chains from the COVID-19 pandemic, with lacking supply chasing climbing demand leading to price spikes. It likely didn't help that the stimulus measures meant to keep the economy running while under pandemic restrictions expanded the money supply. The ongoing trade war, while not entirely new as it had been set in motion several years before, likely still kept prices for certain commodities high, and the political tension between Russia and Ukraine drove up prices for the resources that both nations exported. All of these events coalesced into a formidable force driving inflation to record levels in the U.S., but also across the globe.

The IRA was first introduced by Representative John Yarmuth (D-KY 3rd) on September 27th, 2021, and was reported on by the House Committee on Budget (Inflation Reduction Act of 2022, 2022). House Resolution 774, sponsored by Representative James McGovern (D-MA 2nd), was introduced and passed on November 6th, establishing the rules for consideration of H.R. 5376, which importantly, closed off the bill from amendments and limited general debate to two hours (Inflation Reduction Act of 2022, 2022). Consideration of the bill began on November 18th and concluded with passage on the 19th. In the form presented to the Senate, the bill was referred to as the Build Back Better Act and included funding and provisions for everything from infrastructure improvement, climate, free universal services, taxes on fossil fuel facilities and corporations in general, and expansion of Medicare coverage to include hearing care (Inflation Reduction Act of 2022, 2022). This bill was laid before the Senate by motion on August 6th,

2022, and consideration began with Senator Schumer’s S.A. 5194 text substitution amendment (Inflation Reduction Act of 2022, 2022).

This amendment—S.A. 5194—was where the final form of the legislative text for the IRA was from. As H.R. 5376 currently stood, it had many provisions which ended up being the base upon which S.A. 5194 was built, but there were plenty of provisions that did not make it into the final bill. Indeed, throughout the 6th and 7th of August, many amendments were introduced, but ultimately most of them failed to make it into the final legislation, with a majority being split 50-50 (Inflation Reduction Act of 2022, 2022). The one other amendment to S.A. 5194 that did not fail was S.A. 5472 by Senator John Thune (R-SD), which brought up the tax liability threshold with the intent to protect smaller businesses (Inflation Reduction Act of 2022, 2022). H.R. 5376 was passed on August 7th, split along partisan lines, with the Vice President as the tie-breaking vote (Inflation Reduction Act of 2022, 2022). The House approved the amendment on August 12th and presented the bill to the President on August 15th, who then signed the bill into law on August 16th (Inflation Reduction Act of 2022, 2022). A summary of the significant legislative actions for this act is laid out in Table 2.2.1.

Table 2.2.1. A summary of legislative actions for H.R. 5376—Inflation Reduction Act of 2022.

Date	Sponsor	Action
September 27 th , 2021	Rep. Yarmuth	The House Committee on Budget reported on H.R. 5376.
November 6 th , 2021	Rep. McGovern	H.Res. 774 was passed in the House: 221 – 213. Closed H.R. 5376 to amendments and gave 2 hours of general debate.
November 18 th , 2021		House began consideration of H.R. 5376.
November 19 th ,		H.R. 5376 was passed in the House: 220 – 213.

2021		
August 6 th , 2022	Sen. Schumer	H.R. 5376 was laid before Senate by motion: 51 – 50. S.A. 5194 was introduced.
August 7 th , 2022	Sen. Thune	S.A. 5472 was introduced and agreed to: 57 – 43. H.R. 5376 was passed with amendment S.A. 5194: 51 – 50.
August 12 th , 2022	Rep. McGovern	House agreed on Senate amendment, under rules from H.Res. 1316: 220 – 207.
August 15 th , 2022		H.R. 5376 was presented to the President.
August 16 th , 2022		H.R. 5376 was signed into law by the President.

3 Important Political Actors

3.1 Politicians

While everyone in the House and the Senate contributed (constructively or otherwise) to the passage of the CHIPS Act and the IRA, a handful of members were more influential than others. Several of these members of Congress were sponsors or cosponsors of the two pieces of legislation, their legislation, and relative resolutions that allows for their passage. Other members were notable for the negotiations that they compelled to allow for the successful passage or the leadership roles they took in facilitating discussions for these acts.

As noted in Table 2.1.1, Representative Ryan was the sponsor for H.R. 4346. Representative Ryan's overall role in the final CHIPS Act was not incredibly significant because much of the legislative text was written in the Senate, but he was an important political actor because he created the legislative vehicle which allowed for the provisions in the CHIPS Act to pass. Senator Hagerty and Senator Warner were the sponsor and cosponsors for S.A. 5120, the amendment to H.R. 4346 that wrote in the majority of Division C for the CHIPS and Science Act of 2022. While not the focus of this report, these two senators were instrumental in bringing about a bipartisan appropriation and spending bill that laid the foundation for the rest of the legislation, including the CHIPS Act.

For H.R. 5376, Representative Yarmuth was the sponsor. Notably, Representative Yarmuth is also the chair of the House Budget Committee, which implies that he played a key role in not only creating and championing the legislation but also ensuring that it can pass the House.

For both H.R. 4346 and H.R. 5376, Representative McGovern was fundamental to their passage due to his powerful position as the chair of the House Rules Committee. He introduced

resolutions that set the rules for debate of both these pieces of legislation, which, especially for H.R. 5376, gave the Democrats an advantage in strategy for the passage of their legislation. While the original legislative text for H.R. 4346 was a relatively uncontroversial appropriations bill, leading to generous rules for debate, H.R. 5376 was fairly partisan, and the rules of debate were restrictive, alongside the rule that no amendments were allowed (Supreme Court Security Funding Act of 2022, 2022).

On the Senate side, Senator Schumer was key to the writing and negotiation of both bills, a responsibility fittingly held by the Senate Majority Leader. In both pieces of legislation, he introduced key amendments that would substitute the legislative text from the House bills, ultimately being responsible for the bulk of what is written into law today. For H.R. 5376, he was involved in negotiating with Senator Joe Manchin (D-WV) on the provisions to ensure the passage of the bill. Senator Manchin had opposed the then Build Back Better Act, and because the bill was partisan, this would effectively kill the bill. Senator Schumer's negotiation efforts ultimately resulted in a compromise that led to the passage of the IRA.

Two other figures were also important to the development of H.R. 5376. The Senate Minority Leader, Senator Mitch McConnell (R-KY), briefly threatened to bring down H.R. 4346 in response to the progress made on H.R. 5376, but the threat ultimately was not followed through. With his status as the leader of the minority party in the Senate, his threats yield legitimate power and are not to be taken lightly, so negotiations, or at the very minimum, hesitation took place before continuing with both bills. Senator Thune was also important in that his amendment was one of the only amendments that passed the Senate and made it into the legislative text of the final bill for H.R. 5376. His amendment ensured that the corporate tax minimum would only apply to extraordinarily large companies and would not affect middle-

income families or smaller businesses, serving his constituents well as the Senator from South Dakota.

It is also important to recognize the committees that these pieces of legislation went through, as well as their chair who oversaw hearings and allowed for their passage. For H.R. 4346, the bill was reported on by the House Committee on Appropriations, chaired by Representative Rosa DeLauro (CT-3rd). This bill was then received by the Senate Committee on Appropriations, chaired by Senator Patrick Leahy (D-VT). For H.R. 5376, the House Committee on Budget reported on the bill, chaired by Representative Yarmuth. The bill was then received by the Senate Committee on Banking, Housing, and Urban Affairs, chaired by Senator Sherrod Brown (D-OH).

Lastly, it would only be fair to mention that the Senate Parliamentarian, Elizabeth MacDonough, played a critical role in the shaping of both bills, especially H.R. 5376. She allowed the bill to pass via reconciliation, which gave the Democrats a chance to pass the bill without worrying about filibusters. She is a non-elected, nonpartisan presiding officer, but her decisions can be critical to the success of the legislation, as demonstrated by the IRA.

3.2 Interest Groups

Politicians in a functioning democracy cannot pass legislation without support from their constituents and without risking reelection. Likewise, genuine politicians consider the opinions of their constituents before crafting and refining legislation to ensure their bills truly are a net positive for the public. Interest groups, too, are important players to consider when making public policy as these groups could advocate for an otherwise insignificant minority, and may possess subject matter expertise in certain areas of policy (although likely biased). Collecting an accurate sample of constituents is difficult as this requires extensive and quality polling for

useful, generalizable data. While not entirely representative of the U.S. population, observing statements from important interest groups can provide more accurate insights into the attitude each subset of constituents has towards the two bills.

An important set of stakeholders to consider for the CHIPS Act are semiconductor manufacturers. Intel, an American semiconductor company, had issued statements in support of the legislation, which comes as no surprise as Intel would qualify for much of the subsidies and benefits included in the legislation (Funding the Chips for America Act, 2021). This was a similar story for other American semiconductor companies such as Nvidia and Qualcomm, who were the primary stakeholders that the legislation aimed to entice operations back into the U.S. Foreign semiconductor companies such as Samsung and TSMC, on the other hand, didn't necessarily lobby against the act but rather for inclusion of their company with the incentives (Brown, 2022). American businesses in general overwhelmingly supported the CHIPS Act as well because it placed American enterprises at an advantage compared to their competitors, as stated by the Business Roundtable in a statement regarding the legislation (Business roundtable urges passage, 2022).

The business community in America had a different view on the IRA, however. Section 10101, as described in Table 1.3.1, levies a considerable tax on corporations making huge incomes, so it was no surprise that Business Roundtable would oppose this legislation. They highlighted that although they supported provisions such as sections 13203, 13401, and 50265, they overall opposed the act because of section 10101, which they claimed would slow down innovation and investment at the wrong time (Business roundtable opposes, 2022).

The aviation community, in general, seemed to support H.R. 5376 and pointed to section 13203 for its efforts to help them switch to sustainable aviation fuels, as noted in a press release

by General Aviation Manufacturers Association (GAMA) (Gama statement on environmental, 2022). On the other hand, foreign manufacturers such as Airbus are concerned about the effects this would have on investment in other regions of the world (Reuter, 2022). Similarly, US auto companies like Ford and GM applauded the EV tax incentives from section 13401, but foreign manufacturers like Hyundai and Kia, and many other Japanese, European, and South Korean companies were concerned about how this may affect the competitiveness of their products (Shepardson, 2022).

From energy companies, the response was split across different lines as there was nothing that significantly benefitted an American company compared to foreign-based energy companies. For companies that have a high portfolio in fossil fuels or are primarily focused on fossil fuel extraction, this act represents a threat due to the increase in royalties noted in section 50261, although they mention appreciation from certain benefits such as those from section 50265 (API statement on the IRA, 2022). On the other hand, those companies that have a strong portfolio and strategy with renewable energy spoke favorably about the IRA (bp United States, 2022).

Amongst advocacy groups, two groups stood out in terms of their response. For environmentally-conscious citizens, the IRA includes many provisions that aim to address climate change, although a few provisions such as section 50265 draw concern (LCV statement on signing, 2022). Overall, groups like LCV support this as a net positive for their interest in preserving the environment. The other notable advocacy group is the Council of Citizens Against Government Waste (CCAGW), an organization that tracks government spending and highlights areas that they feel are wasteful, such as pork-barreling and massive spending. To them, H.R. 5376 includes many additional taxes which they oppose and fund programs or organizations that they deem to be wasteful, so they urged senators to vote against the act (Maus, 2022).

A summary of how different stakeholders received the passage of the CHIPS Act and the IRA can be found in Tables 3.2.1 and 3.2.2 respectively.

Table 3.2.1. A summary of relevant constituents for H.R. 4346—CHIPS and Science Act of 2022.

Constituent Type	Examples	For/Against
American Semiconductor Manufacturer	Intel, Nvidia, Qualcomm	For
Foreign Semiconductor Manufacturer	Samsung, TSMC	Against (unless included)
General American Businesses	Business Roundtable	For

Table 3.2.2. A summary of relevant constituents for H.R. 5376—Inflation Reduction Act of 2022.

Constituent Type	Examples	For/Against
American Auto Manufacturers	GM, Ford, Tesla	For
American Aviation Manufacturers	GAMA	For
Energy Companies (High Fossil Fuel Portfolio)	API	Against
Energy Companies (High Renewable Portfolio)	BP	For
Environmentally Conscious Citizens	LCV	For
Foreign Auto Manufacturers	Hyundai, Kia	Against
Foreign Aviation Manufacturers	Airbus	Against
General American Businesses	Business Roundtable	Against
Government Watchdogs	CCAGW	Against

4 Demonstration of Congressional Process

4.1 Who Got What?

At the end of the day, any piece of legislation produced in a democracy is the product of countless compromises. Every constituent may have wished for something different, but collectively, everyone likely received something they lobbied for. For the CHIPS Act and the IRA, this was no different.

The CHIPS Act, for the most part, affected two types of constituents: domestic semiconductor manufacturers and foreign semiconductor manufacturers. Section 103 of the act delineates numerous benefits to entice producing in the U.S., providing a distinct advantage to domestic manufacturers over foreign manufacturers. This comes as no surprise given that foreign constituents typically are given far less weight compared to domestic constituents. It is important to note that while domestic semiconductor manufacturers lobbied to support the bill, the creation of the bill was, for the most part, driven by Congress. This indicates that once Congress sets its sights on a bill to protect domestic industry, there is a strong likelihood that it will pass. What the CHIPS Act does not demonstrate, however, is Congress catering to every whim of domestic industry.

The IRA was full of compromises, with every constituent receiving provisions they supported as well as those they opposed. For the environmentally conscious, they received provisions like sections 13401 and 50261, incentivizing electric vehicles and increasing royalty rates on fossil fuel extraction. Domestic automakers and aviation manufacturers received sections 13203 and 13401, subsidies that help their transition to cleaner fuel sources. For the general population, the corporate tax increase in section 10101 helps offset the tax burden that would otherwise need to be endured by the populace. Fossil fuel companies received priority for

land rights before renewable projects in section 50265. These compromises arise due to the various industries that reside in the different congresspeople's home districts and states. In addition, the priorities of Democrats and Republicans differ, and even with the party, perspectives on policies such as sustainability, energy, and manufacturing also vary on a spectrum. If it were not for Senator Manchin's differences in views, the House bill with far more provisions might have passed through the Senate. The variety that each district, state, and legislator bring to the table offers multiple opportunities for moderation. The Senate, furthermore, offers more power to individual senators than the House does to individual representatives, providing a voice for the minority and giving the best chance for wishes by obscure groups to be included in the legislation.

4.2 Why and How Were Decisions Made?

Sometimes, legislation comes about due to external factors forcing the hand of Congress, such as natural events, economic situations, or international conflict and tensions. Other times, members of Congress seize a window of opportunity to make progress toward their agenda. Usually, the combination of these factors creates the circumstances necessary to pass a piece of legislation. Whatever the situation, however, it is ultimately the machinery of Congress that takes circumstance and initiative, following a process more than 200 years in the making, to convert it into public policy.

For the CHIPS Act, external factors played an overwhelming part in seeding the successful passage of the act. With support from a good handful of the minority party and provisions that heavily favored specific companies in a particular industry, it would seem unlikely that this would have happened in the absence of some external pressure on Congress to act. The process that this act went through to become law demonstrated how legislation act as

containers for provisions, and what procedures are followed for relatively uncontroversial yet important bills. H.R. 4346 originated as a simple appropriation bill, but the legislative text was later rewritten by the Senate to form the CHIPS and Science Act of 2022. The IRA, by comparison, was more motivated by the internal drive of the majority party to hold to certain promises of their agenda. Rising inflation and climatic damage are relevant factors, but the fact that the vote for this legislation was split along party lines and enacted sweeping legislation across broad sectors points to more partisan motives. On top of the vote results, the house rules for the debate on H.R. 5376 were much more restrictive compared to H.R. 4346, indicating rule manipulation for technical advantage at the cost of social and political credibility to push through a piece of legislation.

The path that these two influential acts took had several common areas. Notably, both were initiated from the House, as indicated by the “H.R.” code. Bills may originate from the Senate, but these were legislation that included appropriations, which may only originate in the House. Furthermore, each piece of legislation was introduced from a committee, demonstrating the importance that committees hold to the process of law-making.

While the initial version of the bills may have originated from the House, for both the CHIPS Act and the IRA, the Senate wrote most of the final legislative text, and in the case of the IRA, it was also where important negotiations happened to modify the bill into something passable, if just barely. The negotiations between Senators Manchin and Schumer highlight how important the Senate is in the legislative process. The original House version of the Build Back Better Act would have been over \$3.5 trillion in spending, but this was ultimately reduced to over \$700 billion after multiple compromises. Once amendments were raised by the Senate, the House passed the Senate version with little modification in both cases. As these two pieces of

legislation have shown, whatever the reasons for pushing a bill across the line, the Senate usually gets the last words for the bill, and generally conducts much of the negotiating on key provisions to ensure the bill's passage.

The culmination of the case study for the CHIPS Act and the IRA is a framework that crucial, if sometimes controversial, bills follow in their path toward enactment. To look for the hope of including provisions, turn toward bills that make it out of House committees. These bills provide the legislative vehicles necessary for provisions to appear and codify into law. Sometimes, however, pressing issues can be passed through the Senate providing a substitutive amendment to introduce provisions quickly, but this is not something trivial and must have strong bipartisan support. The Senate would be where to watch for what the final legislative text of the bill ends up being. Due to the lack of rules for amendments, these amendments can transform a House bill relatively quickly, to the point where it might no longer resemble its original form. Should a constituent or an interest group wish to have their voices heard, their best chance would likely be to lobby Senators for their consideration of specific provisions.

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