The Political Economy of American Trade and Exchange Rate Bill Voting: From the Perspective of RMB Appreciation

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Abstract: Under the theoretical framework of international trade political economy, this paper examines whether interest groups can dominate the voting of the US Exchange Rate Manipulation Act in 2015 from the perspective of RMB appreciation. Taking 100 senators as samples, this paper makes model estimation by using Full Information Maximum Likelihood Method (FIML), and quantitatively investigates the deep-seated driving factors behind the voting results of the US Exchange Rate Manipulation Act. The empirical results show that the influence of political donations from different interest groups on the voting behavior of parliamentarians is different. The political donations from American labor organization significantly affect the voting behavior of parliamentarians, but business groups and ideological organizations do not play a significant role in the voting results. In addition, senators' personal characteristics affect the political donation of the bill to a certain extent, but do not affect the voting results. In the future, China needs to continuously pay attention to the latest progress of US exchange rate policy, correctly evaluate its impact on China's economy, and maintain communication and coordination with important US interest groups to reduce the negative impact on related industries in China.

Keywords: RMB Appreciation; Trade Protection; Bills Voting; Political Donation; Interest Group

1. Introduction

China and the United States are the largest developing and developed countries in the world. Sino-US relations comprise bilateral relations with the deepest mutual integration, widest areas of cooperation, and greatest common interests worldwide. The total economic output of China and the United States exceeds one-third of the world's economic output, and the contribution rate to the world economic growth exceeds 50%. Therefore, the economic and trade relations between the two countries are of great significance to their stability and development and to the world economy. However, most US governments have tried to turn the Ren Min Bi (RMB) exchange rate issue into a political issue and become a tool to contain China's strategy. In particular, since the Trump administration came to power, having declared an "America First" agenda, the United States has adopted more extreme unilateralism and trade protectionism, blaming the RMB's undervaluation for the trade imbalance between China and the United States. Then-president Trump made a vehement remark that half the US trade deficit came from China, which cost the United States millions of jobs, and that China illegally exported subsidies and manipulated the exchange rate. In August 2019, the US Treasury re-identified China as a "currency manipulator." This marked the first time since 1994 that the United States had identified China as a currency manipulator. Although the US government lifted the label of "currency manipulator" five months later, the US continued to promote the appreciation of the RMB in disguised forms through various policies. After Biden took office, he accused China of unfair trade practices, including exchange rate manipulation and anti-competitive dumping, in his trade strategy with China, which was published in July 2020. In fact, as early as the Obama administration, the 2015 Trade Facilitation and Promotion Act (H.R.644) vote initiated by the US Congress had already defined the criteria for identifying "currency manipulators", which eventually became law, laying a legal basis and foundation for the future practice of the United States to sanction

other countries' international trade through exchange rate and trade policies.

On 11 December 2016, the US Congress announced the passage of the Trade Facilitation and Promotion Act of 2015 (H.R.644). The main aim of the Act is to strengthen the ability of US Customs and Border Protection in terms of enforcing US trade laws and regulations, simplifying and promoting legal trade, and prohibiting illegal trade. After several rounds of revision and 10 rounds of voting, the bill finally passed the House of Representatives with 256 votes in favor and 158 votes against, followed by the Senate with 75 votes in favor and 20 votes against, and was declared as law by the White House.

After the Comprehensive Trade and Competition Act of 1988 of the United States defined the concept of "exchange rate manipulation," the Trade Facilitation and Promotion Act of 2015 defined the standards of the new exchange rate manipulators: the bilateral trade surplus with the United States exceeds 200 billion dollars; the current account surplus accounts for over 3% of its gross domestic product (GDP); and, for at least 8 of the past 12 months, it has continuously intervened in the local currency exchange rate in one direction, and the amount of foreign currency purchased accounts for over 2% of its GDP. The US Treasury Department evaluates the exchange rate policies of its 12 large trading partners every six months according to these three criteria. Generally, if a trading partner meets all the three criteria, it is considered exchange rate manipulation; if two criteria are met, it is placed on the watch list. Once the list is posted, at least two reports are kept; if only one criterion is met, the trading partner is theoretically removed from the watch list. However, if the bilateral trade imbalance with the United States is extremely large, the trading partner will remain on the watch list (such as China). In May 2019, the United States revised the standards of exchange rate manipulators as follows: the current account GDP surplus of this economy exceeds 2%; for at least 6 months, the economy has intervened in the local currency exchange rate in one direction, and the amount of foreign currency bought accounted for over 2% of the

GDP; and countries that trade over $40 billion in goods with the United States are assessed (see Table 1.1). The revision of the standard is predominately aimed at China, forcing the RMB to appreciate faster. The United States can take countermeasures against "currency manipulators." Once a country is recognized as a "currency manipulator," the United States will hold consultations with that country to correct its currency imbalance within a one-year time frame. If the exchange rate imbalance is not corrected after one year, the United States can take further sanctions, including banning the country obtaining financing from overseas private investment companies, banning country participating in the US government bidding process, requiring the International Monetary Fund (IMF) to strengthen the supervision of its exchange rate policy, and entailing the consideration of including exchange rate manipulation in trade agreements or negotiations with country. In May 1992, December 1992, May 1993, November 1993, July 1994, and May 2019, the United States identified China as a "currency manipulator" six times.

[Insert Table 1.1 here].

Although the Trade Facilitation and Promotion Act of 2015 (also known as the Exchange Rate Manipulation Act) does not directly point to China, it is evident that the United States uses domestic legislation to force the RMB appreciation. This reflects the unilateralism and protectionism of the United States and is the source of the Sino-US trade war. From the reform of China's exchange rate system in 2005 to the vote of the bill at the end of 2015, the RMB has appreciated by 19.6% against the US dollar; from 2005 to 2015, American exports to China increased by 178%. Some American lawmakers, ignoring these basic facts concerning China and the United States, put forward and eventually implemented the bill, which hindered the healthy and stable development of Sino-US economic and trade relations.

The US is a representative democracy, and its exchange rate and trade policies are

formed by Congress legislation. Members of Congress voted on the exchange rate and trade bill, making the passed bill a national law. The voting process of the US RMB exchange rate bill reflects the policy preferences of the government and various interest groups in the United States, and expresses domestic political relations. So, is the US Exchange Rate Manipulation Act dominated by interest groups? What factors affect the voting behavior of different interest groups with respect to this bill? Under the theoretical framework of international trade and political economy, the present study examines the influence of interest groups on the voting results of the US Exchange Rate Manipulation Act and discusses the influence of diverse interest groups on the voting process of the bill. This enables an in-depth analysis of the decision-making mechanism and influencing factors of the US exchange rate and trade policies, providing theoretical support and a practical basis for resolving the trade friction and bilateral conflicts between China and the United States.

2. Literature review

2.1. Political economy of exchange rate policy

The first literature stream studies the factors that influence voting on an exchange rate bill. Frieden (2016) examined the voting related to the United States' exchange rate system in the 1960s and 1970s. The aforementioned author suggested that farmers who produce traded crops and manufacturers who face import competition—who are most likely to benefit from a weak dollar—would strongly support a political vote to move away from the gold standard or to a devalued silver standard. Concurrently, Freiden's research shows that the exchange rate affects import and export price first, then the labor market, and, finally, the exchange rate policy preference transmission path. Wang et al. (2014) investigated the factors influencing the voting results of *the Currency Exchange Rate Supervision Reform Act of 2011* under the framework of the trade policy political economy. These authors concluded that the political

donations provided by the American labor organization to senators significantly influenced the senators' voting behavior and directly contributed to the passing of the bill, while the commercial groups that formerly supported trade with China did not play a significant role.

The second stream of literature studies the influence of political factors on the RMB exchange rate fluctuation. Most scholars have studied the influence of American political factors on the RMB exchange rate fluctuation and reached a similar conclusion: from a political economy perspective, the appreciation of the RMB results from the comprehensive effect of domestic and foreign political and economic factors (Lin 2015; Li and Wang 2009). Interest groups, political parties, political cycles, and the game between the President and Congress are the main factors that affect the appreciation of the RMB exchange rate. The political pressure of the United States has a significant impact on the volatility of the RMB (Liu and Pauwel 2012), and the response of different sectors to the appreciation of the RMB also varies (Liu and Zhou 2011).

The third literature stream is the distributive effect of the exchange rate policy. A group of researchers, represented by Frieden, believe that owing to the incompleteness of exchange rate transmission, exchange rate policy will produce an asymmetric "distribution effect" on the welfare of different stakeholders, and different stakeholders have different exchange rate preferences. Therefore, these stakeholders will not passively accept the established policy arrangements. As with other social interest groups, they will try to influence the government's exchange rate policy decision-making process through political donations or lobbying, making the final policy balance tend to their side (Frieden 1994). Trade producers, particularly import competition sectors, and producers of simple and manufactured goods prefer to devalue their local currencies to increase the relative prices of their products, while producers of non-trade goods and services have the opposite preference (Frieden 2016). Steinberg and Walter (2013) expanded Frieden's (1994) research, arguing that even if they

were in the same interest group, their influence on different stakeholders within this interest group would differ because of the differences in product standardization, dependence on imported inputs, and balance sheet structure. Numerous investigations have empirically tested Frieden's (1994) exchange rate preference theory and distribution effect. In general, most studies support Frieden's conclusion (Faia et al. 2008; Walter 2008).

2.2. Empirical analysis of the influencing factors of legislators' legislative behavior

The political economy of trade mainly explains and describes the political intention, process, mechanism, and result of intervening in policy making through formal or informal models. The representative models used in theoretical research include tariff formation (Findlay and Wellisz 1982), political support (Hillman 1982), direct democracy (Mayer 1984), and election competition models (Magee and Young 1987). The protection for sale model (Grossman and Helpman 1994) is the most striking and mature theoretical model in the field of political economy and trade policy. The model describes a two-stage non-cooperative game between interest groups composed of proprietary elements and the government. The interest groups first reach Nash equilibrium on political donations; subsequently, the government reaches the optimal tariff or subsidy price equilibrium on the premise of given political donations and finally forms a trade policy. The conclusion is that the decisive factor of a country's tariff (or subsidy) structure depends on the elasticity of different industries' import demand, the ratio of domestic output to import, and whether the country can effectively form interest groups.

The protection for sale model theoretically analyzes the formation process of international trade policy under representative democracy and its influence on voting. Many scholars have empirical analyzed the factors that influence the voting results of trade bills. (Goldberg and Maggi 1999; Gawande and Bandyopadhyay 2000; McCalman 2004). Some researchers consider the political donations of interest groups an important explanatory

variable to examine such voting results and analyze the influence of donations from diverse interest groups on the bills' voting (Baldwin 1985; Kahane 1996; Holian et al. 1997).

Political donations and voting results may lead to endogenous problems caused by two-way causality. Consequently, Baldwin and Magee (2000) (referred to as B–M model) used the method of maximum likelihood estimation to empirically test three trade bills: North American Free Trade Agreement (NAFTA), General Agreement On Tariffs and Trade (GATT), and Most-Favored-Nation Treatment (MFN). The B–M model test not only solves the endogenous problem of political donation but also proves the important theoretical hypothesis of the political economy of trade policy, reveals the influencing factors behind the voting behavior of members of Congress, and verifies the important influence of diverse interest group games on the legislative results of the United States Congress. Numerous scholars have used the B–M method to study the influence of donations from diverse interest groups on voting results (Kara and Benjamin 2006; Wang et al. 2014). The aforementioned empirical tests support the aforementioned conclusion of the protection for sale model.

The main contributions of this study are as follows. First, we study the influence of interest groups on the US Exchange Rate Manipulation Act of 2015 using the theoretical framework of international trade and political economy and perform an in-depth analysis of the role of different influencing factors in promoting the appreciation of RMB. Second, while examining the factors that influence members of parliament voting by interest groups, we add the state-level import and export data of the US on China and investigate China's trade shock on the voting results of the US Exchange Rate Manipulation Act in 2015.

3. Influence factors of the voting results of the Exchange Rate Manipulation Act

3.1. Theoretical framework

The US Exchange Rate Manipulation Act of 2015 is an important act related to

exchange rate and trade policies. Therefore, based on existing research and the characteristics of the act, we analyze the factors influencing the voting behavior of legislators under the theoretical framework of trade policy political economy.

Three voting results are possible for each bill, namely, yes, no and abstaining. These results can reflect congressional attitudes toward free trade. Congress's goal is to maximize the probability of re-election; whether the members of Congress vote for or against the trade bill depends not only on the situation of their constituencies and voters but also on the political donations of different interest groups. Congress members must weigh the influence of the two interests and decide to maximize the interests, thus affecting the voting results. From an economic viewpoint, the decline of import tariffs in a country reduces the price of imported competitive products. This reduces the real income of domestic producers and workers in import competitive industries and increases the real income of producers and workers in export-oriented industries.

According to the specific factor model, free trade will affect the actual income of specific industries or different production sectors. Therefore, when analyzing the factors that influence voting on trade-related bills, it is necessary to consider the constituency where legislators are located and the industry characteristics of the voters they represent. This includes the production of the manufacturing agriculture, mining, construction, wholesale, transportation, information, and finance industries and their proportion to the states' total GDP. The sharp rise in unemployment rates is an important reason behind the identification of China as a "currency manipulator" by the United States. In 2010, the United States' unemployment rate was 9.7%, the highest in 27 years since 1983. From 2009 to 2012, the United States' unemployment rate was considerably higher than the world's average. Therefore, the higher the unemployment rate in a constituency is, the more inclined the members of Congress who represent the interests of that constituency are to opposing the free

trade bill. International trade, particularly the trade relationship between China and the United States, also affects the voting on the Exchange Rate Manipulation Act. The United States fought a trade war with China, forcing the RMB to appreciate, prompting China to increase its imports from the United States and reduce its exports to the United States. The US blamed China's import trade shock for domestic problems, such as rising unemployment rates and declining workers' income (Autor et al. 2013; Daron et al. 2016; David et al. 2013; Dippel 2016). Therefore, foreign trade, especially the trade relationship with China, is an important factor that affects the voting on the US Exchange Rate Manipulation Act.

The previously mentioned factors will intuitively impact legislators' voting behavior, and their background and personal characteristics will also affect the voting results. First, the scoring of interest groups may affect legislators' voting behavior. Voting results will profoundly affect the evaluation of legislators by different interest groups. The different interest groups will score members according to their voting behavior. The higher the score is, the more inclined legislators are to vote for their interest groups. Second, a legislator's party affiliation and committee may influence voting behavior. The more the committee members deal with legislation affecting interest groups and the more authority they have, the more political contributions interest groups make to the committee. Labor groups, for example, are likely to support committees related to labor issues. The voting result of the act can reflect lawmakers' political preference, the class they support, their political stance toward China, and their attitude toward the US exchange rate policy. Therefore, we add variables relating to legislators' individual characteristics into the model.

Political donations from different interest groups will significantly impact the voting behavior of legislators. Interest groups not only provide legislators with campaign funds but also provide them with relevant campaign information under the condition of asymmetric information to exchange members' support in the bill voting. Diverse groups represented by

diverse organizations have different tendencies and attitudes toward the Act. Three main types of organizations exist: the first is the labor organization. Labor organizations represent the rights and interests of unskilled workers. The RMB appreciation will reduce China's exports to the United States and protect the interests of its manufacturing industry and workers. Therefore, labor organizations will support the Exchange Rate Manipulation Act, and their donations will increase the probability of the Act being passed. The second category is commercial interest groups. The attitude of commercial interest groups on the Exchange Rate Manipulation Act is more complicated. Commercial interest groups benefit from the division of labor in the global value chain and China's trade; therefore, they donate money to lobby Congress members to oppose the passage of the Exchange Rate Manipulation Act. However, commercial interest groups have many stakeholders and diverse organizational forms. Even within commercial interest groups, substantial differences and disputes exist, and the US exchange rate policy has not been unanimously agreed upon by the American business community. Finally, the third category involves ideological organizations. Numerous ideological organizations have extensive opinions on overseas labor treatment, environmental protection standards, international trade, and other issues, and they may support the passage of the Exchange Rate Manipulation Act. Therefore, we take donations from commercial groups, labor organizations, and ideological organizations as important explanatory variables.

3.2.Econometric model

Based on Baldwin (2000) and Wang etal. (2014), we take each senator as a sample, and the voting results of each senator on bills are taken as the explanatory variables. Subsequently, we set the affirmative vote to 1 and the negative vote to 0. The senate has 100 members in total; two senators abstained on the vote: Sullivan of Alaska and Cassidy of Louisiana. After we remove these two samples, the total samples are 98.

According to the theoretical framework, three types of explanatory variables are mainly

selected: political donations from interest groups, variables reflecting the social and economic situation of the states represented by legislators, and variables reflecting the individual characteristics of legislators. The legislators' voting results will affect the amount of political donations from interest groups, and the variables of political donations are endogenous (Chappell 1982; Wang et al. 2014). Therefore, we follow Baldwin and Magee (2000) and use the full information maximum likelihood (FIML) method to estimate the senators' voting results and the political donations of the three interest groups. The estimation equation is as follows:

$$\begin{aligned}\text{Outcome}=\text{F}(&A'X + A_L(\text{labor contribution}) + A_B(\text{business contribution})\\ &+\text{A}_\text{I}(\text{Ideology contribution}))+\varepsilon_1\end{aligned} \tag{1}$$

$$\text{Labor contributions} = \begin{cases} D'W, & D'W - \sigma_l\varepsilon_l \geq 0 \\ 0, & D'W - \sigma_l\varepsilon_l < 0 \end{cases} \tag{2}$$

$$\text{Business contributions} = \begin{cases} \text{E}'\text{Y}, & D'\text{Y} - \sigma_b\varepsilon_b \geq 0 \\ 0, & D'\text{Y} - \sigma_b\varepsilon_b < 0 \end{cases} \tag{3}$$

$$\text{Ideology contributions} = F'Z + \varepsilon_i \tag{4}$$

Equation (1) is the voting equation, which is the basic equation expected to be estimated. The result of the equation reflects the influence of political donations from diverse political groups on the voting results of the Act. Equations (2), (3), and (4) are three equations concerning political donations from the following: labor organizations, business groups, and ideological organizations. The estimated results show the factors influencing the political donations of interest groups.

Variable Outcome is the voting result of senators on the Exchange Rate Manipulation Act in equation (1). Labor contributions comprise the political contribution of senators from labor organizations. Business contributions are the political donations of senators from business groups. Ideology contributions comprise the political donations of senators from

ideological organizations. F is the cumulative standard normal distribution, and X comprises the personal characteristics of legislators and the socioeconomic characteristics of every state within the United States. Furthermore, W, Y, and Z are vectors of political donations provided for senators by the three interest groups. A_L, A_B, and A_I are the coefficients of the three political donations variables; A', D', E', and F' are coefficient matrices; ε_1, ε_l, ε_b, and ε_i are the residual terms of each equation, and σ_l and σ_b are the proportional coefficients of each equation.

3.3. Data description

We empirically examine the influence of political donations from interest groups on the voting of the US Exchange Rate Manipulation Act during the 114th Congress of the United States in 2015–2016. Table 3.1 shows the data description of the econometric model.

(1) Political donations from interest groups

The first type of variable is the political donations of interest groups or the amount of political donations provided by the three interest groups for each senator during the 114th Congress election in 2015–2016. On average, each senator received approximately $1.87 million in political donations from business groups, $137,700 from labor organizations, and $424,300 from ideological organizations. Data concerning these political donations were retrieved from the OpenSecrets website.

(2) Social and economic characteristics of American states

The second type of variable is the socioeconomic characteristics of the states where legislators are in the United States. The election and re-election of the members of Congress are produced by the votes of voters in various states, and the members of Congress represent the interests of voters within their states. The higher the unemployment rate is, the greater the proportion of unskilled labor is, the lower the income level is, and the greater the imports

shock from China is, leading to more senators supporting the passing of the Act. Thus, we selected several variables, such as the United States' unemployment rate[①], the proportion of various industries in the GDP[②], the proportion of US exports to China, and US imports from China in the total output of the state[③], to examine the influence of the social and economic characteristics of American states on the voting results. These data were retrieved in 2016.

(3) Personal characteristics of legislators

The third type of variable is the personal characteristics of legislators. This includes the office term of legislators, which party they belong to, and whether they are members of important committees. These data were retrieved from the OpenSecrets website.

In addition, to reflect the interest consistency between interest groups and legislators, we add the scoring data of interest groups to legislators. This includes the American Chamber of Commerce (COC), which represents business groups, and the American Federation of Labor and Congress of Industrial Organizations (AFL-CIO), which represents labor organizations, members of the Finance (Finance com), Banking, Appropriation, and Budget Committees, and members of the Foreign Affairs Committee. We can find the attitude and political inclination of legislators toward voting act from the scores given by interest groups. The scoring data were retrieved from the Vote Smart website.

[Insert Table 3.1 here].

4. Empirical results

4.1. The benchmark

We used the FIML to estimate the three donations and voting equations jointly. Column

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① Sources: https://www.kff.org/other/state-indicator/unemployment-rate/.

② Sources: US Census Bureau (https://www.census.gov/).

③ Sources:The US-China Business Council (https://www.uschina.org/).

(a) in Table 4.1 presents the benchmark results. Table 4.1 is divided into two parts: the estimation results of the donation equation and the estimation results of the voting equation.

[Insert Table 4.1 here].

(1) Estimated results of the donation equations

In the donation equation for commercial groups, only the estimation coefficient of Finance is significant. If a senator is a member of the Finance Committee, they will receive more donations of $171,000 from commercial groups than those who are not members of the Finance Committee. This shows that for business groups, membership of the Finance Committee is essential. Business groups believe that members of the Finance Committee will bring them more political help. The estimation results of other variables were not significant, which indicates that the amount of political donations provided by commercial groups to senators may not be affected by those variables, such as senators' term of office, the score of the American Chamber of Commerce, and whether members belong to the Democratic Party.

In the donation equation for labor organizations, the coefficients of terms and AFL-CIO are both significant, and the terms variable is significantly negative, indicating that legislators' tenure of office can reflect the characteristics of labor interest groups' participation in political life and provide increased political donations to legislators who have a short tenure and are new to Congress (Li and Wang 2009).

The AFL-CIO variable is significantly positive, which shows that the higher the AFL-CIO score is in this term, the easier it is to receive increased political donations from the labor organization. The other variables of labor organization donation in the equation are not significant, which shows that at least during the term of office discussed in this study, the relationship between the committee in which members participate and the political donations of the labor organization is unclear.

In the donation equation for ideological organizations, there is no significant estimation

coefficient of any variable. Compared to the previous two interest groups, ideological organizations pay less attention to economic interests. The results show that the relationship between political donations from ideological organizations, members' term of office, and members of relevant committees, is unclear.

(2) Estimation result of the voting equations

The estimation coefficient of labor contribution is, as expected, significantly and positively correlated, which shows that the amount of donations made by the labor organization has a significant impact on the voting of legislators. For every $1,000 increase in political donations made by the labor organization for each senator, the probability of the act passing will increase by 2.26%. The estimated results of business groups and ideological organization's political contribution are not significant in the two voting equations, showing that business groups and ideological organizations did not significantly influence the voting results of the act.

This differs from the conclusion of Destler (2006) that industrial and commercial interest groups play an important role in promoting America's trade policy toward China. This may be because the relative strength of various interest groups in the US has changed in policy making during the escalating Sino-US trade friction or, alternatively, because commercial interest groups are more inclined to define China as an "exchange rate manipulator" to gain increased export opportunities. It may also be related to differences within interest groups. For example, the traditional commercial interest groups, represented by fossil energy enterprises, are firmly opposed to the attitude toward the clean energy policy implementation in the United States. Meanwhile, the emerging commercial interest groups, environmental protection organizations, solar installation enterprises, retailers, and industry associations, represented by clean energy enterprises, are strongly supportive of the clean energy policy.

The analysis of the political donation structure provides additional information. Table 4.2 shows the amount of political donations received by senators from various interest groups by party and voting results. There is a minimal difference between the Democratic and Republican Parties in political donations from business groups and ideological organizations. On average, Democrats received donations of $1.706 million from commercial groups and $406,000 from ideological organizations, while Republicans received donations of $2.071 million from commercial groups and $456,000 from ideological organizations. The donations received by the Democratic Party from these two interest groups were 82.4% and 89.2%, respectively, of those received by the Republican Party. However, a substantial difference exists in the donations made by labor organizations among members of different political parties. The Democratic Party members received an average donation of $270,000 from labor organizations, whereas the Republican Party members received an average donation of $30,000 from the same. In other words, the former receives nearly nine times as much as the latter. This shows that labor organizations are more willing to donate money to the Democratic Party, which is highly partisan. However, the political donations provided by commercial groups and ideological organizations do not show obvious partisanship.

From the perspective of the political donations structure from labor and ideological organizations, whether for the Democratic or Republican Party, the political donations provided to members who support the Act are greater than those to members who oppose it. However, from the perspective of the political donations structure of ideological organizations, this structural feature is also reflected. According to the theoretical framework, the ideological organization should be the interest group supporting the passage of act, and its political donation characteristics also showed this. However, it did not have a significant impact on the voting results. This may be because ideological organizations are not extremely close to legislators or because these donations are not mainly used to influence American

trade policy but to exert pressure on the passing of other public policies.

All the variables describing the personal characteristics of legislators had no significant impact on the voting results, which shows that passing the Act has less to do with the legislators' personal characteristics and more to do with the influence of interest groups and other variables related to constituencies.

[Insert Table 4.2 here].

4.2. Robustness check

(1) Adjustment of the partial variables

Column (b) in Table 4.1 adjusts some variables in column (a). When estimating the voting equation, some variables were removed, and only the key variables closely related to passing the Act were retained. The estimated result of the equation is consistent with the results of the benchmark regression, and the estimated coefficient of labor organization donation remains significantly positive at the level of 1%. The variable of agricultural level (rural) in this state is also significantly positive. However, other variables, such as whether members are Democrats, trade, education, unemployment rate, and average income, are not significant. This shows that, when voting, senators are more concerned about donations from labor groups and the agricultural level in this state, whereas the other two donations and other economic indicators in this state have no significant impact on the results.

In column (c) of Table 4.1, all other variables concerning the characteristics of the economic sectors in the constituency, except the agriculture industry are omitted, and only the party, unemployment rate, proportion of agriculture, and proportion of the manufacturing industry are kept to exclude the influence of other variables on the variables related to social characteristics. The results in column (c) remain similar to those in column (a). Only the coefficients of the rural and labor contribution variables are significantly positive in the voting equation, which verifies the robustness of the estimation results.

(2) Addition of industrial divisions

In column (d) of Table 4.1, the industries in the state are subdivided. We added the total output proportion of each industry in the state and removed the relevant variables representing legislators' personal characteristics and social characteristics of the state. The advantage of this test is that it covers the economic situation of almost all industries within the state in detail. Apart from manufacturing and agriculture, other industries may also be impacted by the trade between the United States and other countries. By adding the proportion of these sectors to the total output of the state, we acquire the preference of different sectors toward the US trade policy. The observations are limited: the samples are 98, which already contain many explanatory variables. If more explanatory variables are added, the degree of freedom may be further reduced. Although other variables were omitted and only the economic characteristics were kept, this does not mean the results are more reliable than that of column (a). The purpose of adjusting variables is mainly to verify whether the estimation results of the explanatory variables are robust.

The results in column (d) are consistent with those in column (a), and adding other sectors' variables has no significant impact on the voting results. Labor contribution and rural remain significantly positive, which proves that the proportion of industry output value in the state has not had a significant impact on the voting result of the act, and the estimated result is robust.

Notably, the coefficient of the variable US exports to China as a proportion of state GDP (Export to China) is negative. The coefficient of the variable import to the US from China is positive, but the two variables are not significant. This shows that during the 114th Congress in 2015–2016, although a trade conflict existed between China and the United States, the Sino-US trade war had not yet started. Therefore, legislators did not think too much about the impact of the China shock on related industries within the United States. However, following

the escalation of the Sino-US trade war, the members of Congress may give more consideration to the influence of the Chinese market when voting, which will be observed in the future.

5. Conclusion

Under the theoretical framework of international trade political economy, we examined the influence of interest groups on the voting results of the Exchange Rate Manipulation Act (HR.644) passed by the US Senate in 2015. Taking 100 senators as the research sample, our study used the FIML method to estimate and analyze the model and quantitatively investigated the deep-seated driving factors behind the voting results of the Act.

The empirical results show that the influence of political donations from diverse interest groups on the voting behavior of legislators differs. The political donations from the American labor organization significantly affect the voting behavior of legislators. However, business interest groups and ideological organizations do not play a significant role in the voting results. In addition, legislators' personal characteristics affect the political donations to the Act to a certain extent but do not affect the voting results. The economic and social characteristics of constituencies have no significant impact on the results. The voting results show that compared with the welfare level of the entire society, legislators give a higher weight to political donations.

The United States passed the Exchange Rate Manipulation Act, forcing the RMB to appreciate. The partisanship behind its vote is still considerably obvious, and it serves as a notable early warning for China: when the political donations of labor organizations are further increased or the political donations of commercial organizations are further reduced, the voting results may change. The results are extremely robust, and the symbol and significance of the estimation results have not changed significantly after considering the social and economic characteristics or the personal characteristics of legislators.

In the future, China needs to maintain communication and coordination with important interest groups within the United States, strengthen its concern and lobbying for American industrial and commercial groups, and make them a positive driving force for Sino-US relations. Moreover, China should actively strive for economic and trade cooperation with the United States, make use of the advantages of the status of the two countries as major powers, and create a new situation of mutual benefit and win-win development to ease the trade friction between China and the United States.

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Tables:

Table 1.1 Criteria for Determining "Currency Manipulator"

And the legal basis of time	Before revision (before May 2019)	After revision (May 2019)
1988 -2015 Comprehensive Trade and Competition Law	Have a large current account surplus	
	There is a large bilateral trade surplus with the United States.	
2016-present Trade Facilitation and Promotion Act of 2015	The bilateral trade surplus between the economy and the United States is more than 20 billion dollars.	—
	The economy's current account surplus accounts for more than 3% of GDP.	The economy's current account surplus accounts for more than 2% of GDP.
	For at least eight months, the economy continued to intervene in the local currency exchange rate in one direction, and the amount of foreign currency purchased accounted for more than 2% of GDP.	For at least six months, the economy intervened in the local currency exchange rate in one direction, and the amount of foreign currency bought accounted for more than 2% of GDP.
	Evaluation scope: The 12 largest trading partners in total trade in goods with the United States.	Evaluation scope: The total trade in goods with the US exceeds us $40 billion.

Table 3.1 Descriptive statistics of table variables

Variables	Description	means	Expected result
Outcome-HR.644	Voting result of the exchange rate Manipulation act (0 for objection, 1 for agreement)	0.796	
Donation by interest groups			
Business contribution	Political funds provided by commercial groups for senators (thousands of dollars)	1870.02	-
Labor contribution	Political funds provided by Labor Organization for senators (thousands of dollars)	137.715	+
Ideological contribution	Political funds provided by ideological organizations for senators (thousands of dollars)	424.34	+
Personal characteristics of legislators			
Term	Term office of legislators	11.85	N/A
Democracy	Whether a legislator is Democrats Members (yes is 1, no is 0)	0.45	+

COC rating	American Chamber of Commerce scores	0.72	-
AFLCIO rating	The AFL scores.	0.52	+
ACU rating	American conservative league score	0.50	+
LCV rating	American League of Conservative Voters scored	0.45	+
Finance	Whether a legislator is a member of the Finance Committee (yes is 1, no is 0)	0.26	N/A
Foreign affair	Whether a legislator is a member of the Foreign Affairs Committee (yes is 1, no is 0)	0.21	N/A
Budget	Whether a legislator is the Budget Committee (yes is 1, no is 0)	0.26	N/A
Appropriation	Whether a legislator is a member of the Appropriation Committee (yes is 1, no is 0)	0.26	N/A
Banking	Whether a legislator is a member of the Banking, Housing or Urban Committee? (yes is 1, no is 0)	0.24	N/A
Constituency characteristics of legislators			
No high school rates	25 and older who did not graduate from high school	0.115	+
No college rates	28 and older who did not graduate from college	0.705	-
Unemployment rate	unemployment rate of states	0.047	+
Rural rate	Proportion of rural population to total state population	0.259	+
Agricultural rate	Proportion of agriculture to state GDP	0.015	-
Manufacture rate	Proportion of manufacturing to state GDP	0.115	+
Trade rate	Proportion of trade to state GDP	0.120	+
Goods export to China	Proportion of exports to China to state GDP	0.008	?
Goods import to US	Proportion of imports from China to state GDP	0.017	?
Median income	Median household income in the state (thousands of dollars)	58.947	-
Mining rate	Proportion of mining industry to state GDP	0.023	?
Construction rate	Proportion of construction industry to state GDP	0.045	?
Transportation rate	Proportion of Traffic industry to state GDP	0.035	?
Information rate	Proportion of knowledge industry to state GDP	0.035	+
Finance rate	Proportion of financial industry to state GDP	0.200	?
Professional and business service rate	Proportion of professional and commercial services industry to state GDP	0.102	?
Educational service rate	Proportion of service industry to state GDP	0.017	?

Table 4.1 Empirical Results

	(a)	(b)	(c)	(d)
Donation equation of commercial groups				

constant	96.8420	107.0211	98.6537	113.2177
Democracy	-31.4180	-40.3224	-36.0249	-35.2790
Terms	2.1372	2.1420	2.3083	1.7634
COC	37.3234	33.5106	38.5472	31.7431
Banking	-11.9590	-11.2652	-12.8957	-12.5494
Budget	-10.7051	-20.2202	-16.3100	-16.3860
Appropriation	58.5965	53.9644	54.1670	56.5242
Finance	171.4139***	166.6353***	164.8130***	168.9853***
Foreign	1.4160	0.0493	2.5518	-10.9790
Labor organization donation equation				
constant	-0.8680	-0.4367	-0.4981	-0.9834
Terms	-0.2433*	-0.2490**	-0.2450*	-0.2391*
AFLCIO	32.2315***	31.8555***	31.9196***	32.4877***
Banking	1.7330	1.6787	1.2237	2.3316
Budget	-0.0574	-0.4063	-0.1466	-0.4382
Appropriation	1.9260	1.5412	1.5178	1.9533
Finance	1.0118	0.8955	0.8394	1.2425
Foreign	-1.5102	-1.6052	-1.3982	-1.5210
Ideological organization donation equation				
constant	32.5605	33.4456	34.1752	29.9036
Democracy	-4.7529	-4.7415	-5.3759	-2.6109
Terms	-0.3883	-0.4554	-0.4803	0.0138
Banking	3.3562	-0.2631	-0.0462	6.8469
Budget	9.0242	9.8007	9.1599	10.3451
Appropriation	27.3960	27.4714	27.4335	22.3632
Finance	22.7680	22.6309	22.8970	16.7775
Foreign	-0.1336	1.0984	0.7338	-1.6597
Voting equation				
constant	1.0254	0.5016	0.4253	0.5278
Business contribution	0.0020	0.0017	0.0020	0.0024
Labor contribution	0.0226*	0.0156**	0.0243**	0.0159*
Ideological contribution	-0.0051	-0.0030	-0.0040	-0.0083
Democracy	-0.2141		-0.2055	
No high school rate	0.5086	-0.4695		
No college rate	-1.5488	-1.3020		
Unemployment rate	6.4841	6.8045	1.3147	
Middle income	0.0027	0.0037		

Rural rate	1.2792*	1.1952*	1.0022**	1.0664*
Agricultural rate	4.8611			
Manufacturing rate	-0.3813		-0.7492	0.1345
Trade rate	-3.5475		-2.6181	-2.3358
Export to China	-4.1922			
Import to US	2.7675			
Mining rate				-6.91E-06
Construction rate				-3.85E-08
Information rate				4.14E-07
Educational service				-1.56E-05
Finance				2.10E-06
Transportation rate				4.13E-06
Professional&business service rate				5.34E-06

Note: * indicates that the estimated coefficient is significant at the level of 10%; * * means that the estimated coefficient is significant at the level of 5%; * * * means that the estimated coefficient is significant at the level of 1%.

Table 4.2 Average political donations of various interest groups in voting on the Exchange Rate Manipulation Act (H.R. 644) (unit: 10,000 USD)

Party (voting result) / Source of donation	Democratic party			Republican Party		
	all	agree with	opposition	all	agree with	opposition
Commercial group	170.6231	168.5709	199.3546	207.1364	222.7548	174.0623
labour organization	27.01551	27.74674	16.77833	3.014245	3.859861	1.223529
Ideological Organization	40.64709	41.41023	29.9632	45.56001	49.78407	36.61494