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Trade creation, political sensitivity and product exclusions: the political economy of agriculture protection in China's FTAs*

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One of the main features of Free Trade Agreements (FTAs) is that certain products are excluded from tariff concessions. But why do some products receive more protection than others in FTAs? In this paper, we use disaggregated agricultural product data and a political economy analytical framework to examine the determinants of product exclusions from tariff reductions in China's FTAs. Taking into account the political costs of the incumbent government, our results show that products associated with trade creation and politically sensitive products are more likely to be excluded from tariff concessions in FTAs. Furthermore, we show that the Chinese government tends to use its negotiating power to achieve various objectives by seeking more economic benefits from large trading partners and making more concessions to small ones.

Key words: free trade agreements, market access, sensitive products, tariff concession.

1. Introduction

Since the beginning of the 21st century, multilateral trade negotiations under the rules of the World Trade Organization (WTO) have reached a temporary impasse. Regional Trade Agreements (RTAs), on the other hand, have become increasingly common and almost all countries are part of at least one of these preferential agreements. According to the WTO, 302 RTAs were in force as of 31 December 2019 and more than 200 were under negotiation. In

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order to better adapt to the rapidly changing global economic environment and to facilitate domestic economic structural change, China has accelerated and promoted the negotiation of preferential agreements. By 31 December 2019, China had signed 17 Free Trade Agreements (FTAs) with 25 countries/regions.

Access to agricultural markets is the most important and difficult issue in FTA negotiations. In view of the global wave of FTAs, policy-makers are increasingly concerned about how to facilitate negotiations and effectively protect sensitive domestic industries. One of the main trade protection measures in FTAs is the exclusion of certain products from tariff concessions. Indeed, this is often required before many FTAs can come into existence. So why do some products receive more protection than others in FTAs and why are they excluded from trade agreements? A better understanding of this would not only provide the basis for better policy-making, but also ensure the protection of sensitive domestic industries.

Endogenous trade policy theory looks at the determinants of trade policy-making and emphasises the role of interest group lobbying. The most prominent contributors in this area are Grossman and Helpman (1995, hereinafter GH95). They discuss the conditions for forming FTAs in a political–economic model with perfect competition and suggest that traded products associated with trade creation and trade diversion are likely to be excluded from FTAs due to pressure from import-competing interests or average voters. Bilateral trade barriers would fall dramatically after FTAs enter into force, as the organised import-competing industry that experiences trade creation would lobby the incumbent government to protect the domestic market. In the meantime, due to inefficient trade diversion, the average voter can also put pressure on the incumbent government for protection. However, due to their different characteristics, trade creation and trade diversion are unequally weighted in policy-making. In a relatively small community with a concentrated production, it is easier for import-competing producers to overcome the problem of 'collective action' (Olson, 1965). By working towards common policy goals, organised import-competing producers are more active in promoting policies that maximise their common welfare (GH95). On the contrary, with a relatively large community it would be more difficult for consumers to overcome the problem of 'collective action'. Moreover, consumers tend to ignore rising food prices, especially among high-income groups. It could therefore be expected that industries that experience trade creation would receive more protection than those that experience trade diversion, making it therefore politically viable to establish an FTA.

In addition, non-traded products, especially products that are politically sensitive, are also more likely to be excluded from FTAs. This is especially true for Chinese agricultural products. As the stylised facts of non-traded products in Appendix S1 show, 42.82 per cent of products are non-traded and 8.78 per cent of non-traded products are excluded from China's FTAs.

The main reasons are that China has long-standing human and land resource constraints and food supply is likely to be unable to keep up with demand in the long run due to consumption upgrading and that China experienced famines. Therefore, food security has been the focus of successive governments and the basis for political stability (Arezki and Brückner, 2011; Demarest, 2015). The government has ensured food security and maintained stable market supply by introducing policies such as the reserve programme for grain and sugar, the minimum purchase price programme (MPPP) for rice and wheat, and the temporary storage programme (TSP) for corn, soybeans, cotton and sugar. Food security, social stability and economic growth are also important considerations for local officials if they wish to be promoted. For these reasons, politically sensitive products such as grain, cotton, edible oil and sugar, whether they are traded or not, are likely to receive more protection as China opens up to the world.

Among the political economy theories describing trade policy-making, the 'Protection for Sale' (hereinafter PFS) model by Grossman and Helpman (1994) provides a micro-foundation for the contributions of interest groups that influence political decision-making on trade policy. GH95 continue to extend this framework to international negotiations to establish FTAs between two countries. Extensive theoretical literature also focuses on the extension of the PFS model (e.g. Gawande *et al.* 2006). However, this literature focuses on traded products but ignores non-traded products. Acharya (2015) looks at non-traded products and suggests that non-traded products influence trade policy as demand for non-traded products is substituted or complemented by demand for traded products, but without any empirical support.

To the best of our knowledge, empirical studies of the GH95 hypothesis are still limited. Olarreage and Soloaga (1998) use industry-level data to analyse the deviation from internal and common external tariffs in the Mercosur Agreement. Their results show that deviation from the common external tariff and from free trade within an FTA can be explained by sector or industry lobbying. Based on the GH95 framework and the econometric specification of the PFS model, Gawande *et al.* (2005) identify which industries are most likely to be excluded from the Mercosur agreement. Their results show that Argentina and Brazil's interests in import competition largely determine the likelihood that industries will be excluded from tariff concessions and import licences. It is noteworthy that these two papers are based on industry-level data that may ignore differences between products and lead to a bias estimation. Damuri (2012) uses rich disaggregated data, including 15 agreements in the six-digit range of the Harmonised System (HS), to analyse the determinants of product exclusions, showing that most-favoured-nation (MFN) tariffs, imports, revealed comparative advantage (RCA) and the balance of trade are the main determinants of exclusions from FTAs. It also shows that the agricultural sector is more sensitive than other sectors. However, the GH95 hypothesis is not directly examined and the

results may not be robust, as the unobserved sectoral trends may be related to the pace of trade liberalisation (Mai and Stoyanov, 2015). More recently, Blanga-Gubbay *et al.* (2020) examine lobbying for FTAs with heterogeneous companies and show that productive and large companies are more inclined to lobby for and support the ratification of FTAs.

The aim of this paper is to examine and expand the GH95 hypothesis using China's disaggregated agricultural data, taking into account both traded and non-traded products. Our paper differs from the existing literature in the following points. First, in most papers, researchers use data from democratic countries to investigate the PFS model (Grossman and Helpman, 1994; Goldberg and Maggi, 1999; Gawande and Bandyopadhyay, 2000; McCalman, 2004; Gawande and Hoekman, 2006). A few scholars explain the endogenous trade protection of dictatorship countries, with the exception of Mitra *et al.* (2002) who look at data that span both the dictatorial and democratic regimes in Turkey. In this paper, we focus on China's opening up to the world. As the world's second largest economy and third largest economy in terms of global agricultural trade, China's FTA strategies will play an important role in shaping international (agricultural) trade. Using data from China could contribute to a better understanding of how FTAs are established in authoritarian countries. Furthermore, as discussed above, the PFS model and associated empirical tests focus on traded goods, but both theory and stylised facts show that non-traded goods are correlated with traded goods (Acharya, 2015). For this reason, in the free trade process, interest groups from non-traded goods may also influence trade policy. Accordingly, we further extend the GH95 hypothesis by showing that politically sensitive products that are not traded at all could be excluded from FTAs, which could provide empirical support for the theory of Acharya (2015).

This paper consists of six sections. In Section 2, we present the theoretical framework and hypotheses. Section 3 describes the stylised facts of product exclusions from China's FTAs. The econometric specification and data set are presented in Section 4, and the empirical results are displayed in Section 5. Finally, conclusions are drawn in Section 6.

2. Theoretical framework and hypotheses

Based on the analytical framework of the PFS model, GH95 consider a specific-factor model with a two-stage bargaining game in forming FTAs. At the first stage, political competition among domestic interests determines the government's policy preferences, and the incumbent government considers political contributions from lobby groups and the impact on social welfare when responding to political pressure. At the second stage, an international equilibrium is determined by the bargaining powers and threat points of each government. The outcomes of these two stages are not independent, but interactive, resembling a sequential game. An FTA is viable only if it is favoured by both governments.

GH95 provide insights into how an FTA comes into existence, recognising that the net gain from potential losers and gainers due to trade creation and trade diversion is the force behind deciding to form an FTA. They focus on two cases of protection, *enhanced protection* and *reduced protection*. In the case of *enhanced protection*, importers import more from their trade partners while still importing from the rest of the world (ROW). Here, importing countries suffer from the loss of tariff revenue and trade diversion from the ROW to the FTA partners. Domestic prices, however, do not change and total imports remain unchanged. Hence, producers and consumers in this case would not oppose the FTA, unless the potential loss of aggregate welfare from trade diversion is too high. In exporting countries, the industries would gain producer surplus from preferential access due to high-tariff protection in importing countries. Hence, the industries would lobby in favour of the FTA. In the case of *reduced protection*, importers import only from FTA partners and stop importing from the ROW. Domestic prices in importing countries fall and total imports increase. In this case, producers in importing countries have to face falling prices and lower protection. However, the average voter would gain consumer surplus due to falling domestic prices, but their welfare may be harmed by inefficient trade diversion. The aggregate welfare effect of importing countries depends on the relative forces of trade creation and trade diversion. Hence, import-competing producers would oppose the FTA and the average voter would support the FTA. In exporting countries, exporters would gain little or nothing from the agreement and producers would neither support nor oppose the FTA.

Overall, industries would experience trade creation, the welfare of import-competing producers would be harmed, and consumers would benefit from falling prices. However, consumers would have to face potential welfare loss caused by trade diversion. As discussed above, the political costs induced by trade creation and trade diversion are different. It is easier for organised import-competing producers to lobby the incumbent government for protection, but it is harder for consumers to overcome the problem of 'collective action'. Hence, organised import-competing industries that experience trade creation are more likely to be excluded from agreement.

Political contributions are legal in democratic countries. The incumbent government chooses policies that maximise social welfare and political contributions from lobby groups to support its re-election. However, invisible contributions or political connections from interest groups can also influence policy-making in authoritarian countries. Incumbent governments must take domestic political pressure into account if they wish to stabilise their regimes and maintain their powers, as is the case in China (Du and Girma, 2010; Steinberg and Shih, 2012). As Kono (2015) indicates, all governments care about financial contributions and aggregate welfare. As such, the PFS model is just as applicable to autocracies as it is to democracies.

Based on the relatively small group, concentrated production and fundamental position of agriculture in China, we assume that industries in

the agricultural sector are organised. With this in mind, we present the following hypotheses:

H1: Trade creation products are more likely to be excluded from China's FTAs.

As we indicate above, GH95 only focus on traded goods. However, based on stylised facts in China's FTAs (Appendix S1), non-traded products may be excluded as well, especially for politically sensitive products. The International Centre for Trade and Sustainable Development (ICTSD) (2006) mentions the exclusion of sensitive products from tariff reductions in trade liberalisation. Food security is a vital base for political stability (Arezki and Brückner, 2011; Demarest, 2015). The main objective of China's agricultural policies, such as 'No. 1 Central Document', MPPP, TSP and 'The National Food Safety Program for Medium and Long-Term', is to emphasise food security. The central government also requires local governors to guarantee 95 per cent grain self-sufficiency in their jurisdictions (Jiang, 2010a). Grain self-sufficiency, social stability and economic growth are essential elements if officials wish to be promoted. As important components of food security, highly politically sensitive products, such as staple foods receive more protection in all aspects, regardless of whether or not they are traded. This could also explain Ederington and Minier's (2008) argument that unorganised industries also receive positive protection, which is inconsistent with GH95's prediction. Thus, we propose a second hypothesis:

H2: Politically sensitive products are more likely to be excluded from China's FTAs.

3. The exceptional arrangements of agricultural products in China's FTAS

3.1 Entire exclusions from tariff concessions for agricultural and non-agricultural products

Of the 12 FTAs we look at in this paper, China has set up exclusions from tariff concessions for 9 of them (the China-ASEAN FTA, the China-Singapore FTA and the China-Georgia FTA are the exceptions). Among these FTAs, the average proportion of entirely excluded products (MFN tariffs continue to apply) is only 6.58 per cent. This is in compliance with Article XXIV (8) of the WTO/General Agreement on Tariffs and Trade (GATT), which states that the establishment of FTAs must meet the requirement that duties and other restrictive regulations of commerce are eliminated on substantially all the trade.

As Figure 1a shows, the average proportion of agricultural products that are entirely excluded from tariff concessions (1.87 per cent) is smaller than

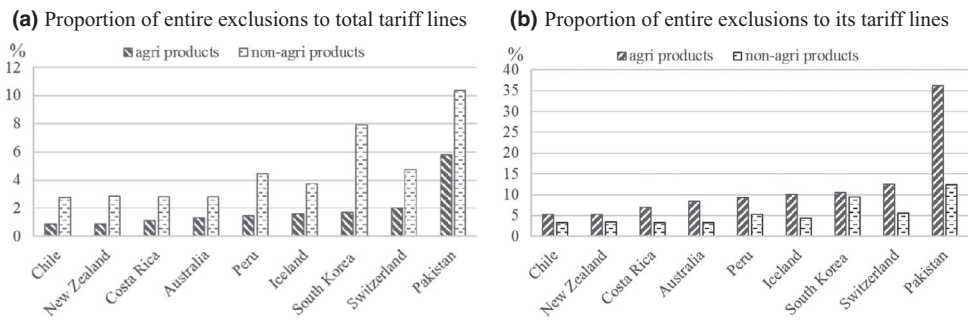

Figure 1 Proportion of entire exclusions from tariff concessions in China's FTAs. (a) Proportion of entire exclusions to total tariff lines. (b) Proportion of entire exclusions to its tariff lines.
Notes: The data are extracted from the legal text of each FTA. The tariff lines of agricultural and non-agricultural products in HS six-digit are 839 and 4385. There are no entire exclusions in tariff lines in FTAs between China and ASEAN, Singapore and Georgia.

that of non-agricultural products (4.71 per cent). Among these FTAs, the China–Pakistan FTA has the highest proportion of agricultural products with entire exclusions. The China–South Korea FTA and the China–Pakistan FTA have much higher proportions of non-agricultural products than other FTAs. Moreover, the difference between the proportion of agricultural and non-agricultural products is greatest between the China–South Korea FTA and the China–Pakistan FTA.

However, due to big differences between total tariff lines of agricultural and non-agricultural products, the above results may underestimate the importance of agricultural products. For that, in terms of the proportion of their respective products, as Figure 1b shows, the average proportion of agricultural products that are entirely excluded from tariff concessions is 11.67 per cent, which is much higher than that of non-agricultural products (5.61 per cent). Except for the China–South Korea FTA, the China–Chile FTA and the China–New Zealand FTA, the proportion of agricultural products is much higher than non-agricultural products among other FTAs. In addition, the proportion of agricultural products in the China–Pakistan FTA reaches 36.23 per cent. These characteristics indicate that agricultural products are more sensitive than non-agricultural products.

3.2 Staging categories of tariff concessions for agricultural products

When it comes to categories of average tariff concessions, we can summarise the following. First, as Figure 2 shows, it is not common that tariffs are immediately reduced to 0 (25.85 per cent) after agreements enter into force. This reflects the fact that most of China's agricultural products are at a comparative disadvantage and need a certain transition period or other protection measures to cope with negative impacts arising from imports after

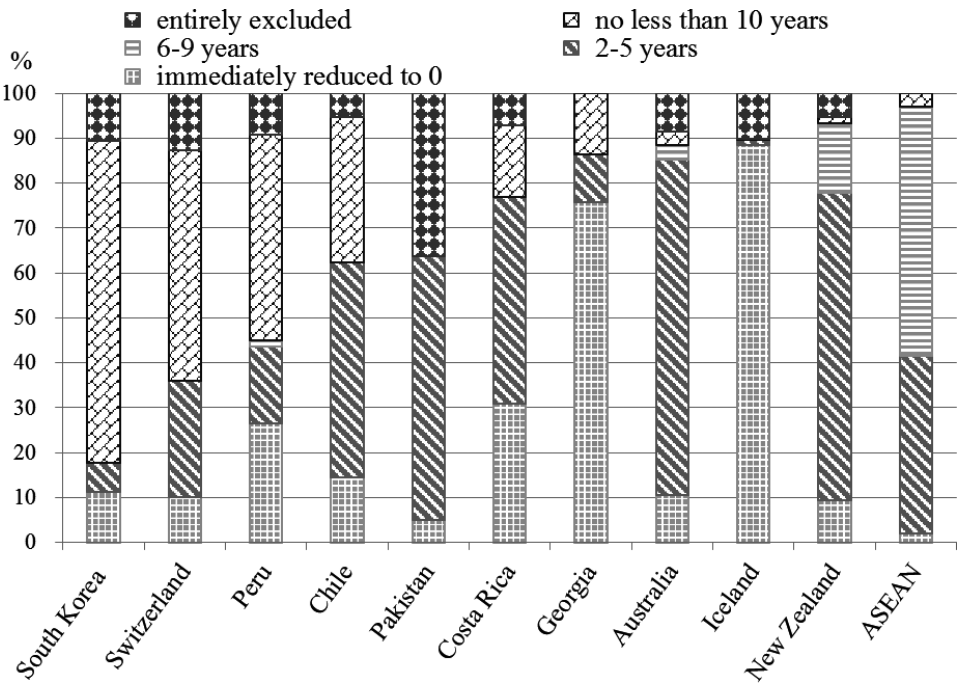

Figure 2 Proportion of tariff concessions on agricultural products in China's FTAs.
Note: The proportion is calculated as the selected items to total tariff lines in HS six-digit.

the FTAs come into force. Second, among the 11 FTAs[1] the most common transition period for tariff concessions is 2–5 years (36.03 per cent), while the least common is 6–9 years (6.87 per cent). This means that most agricultural products are protected by short- to medium-term transition periods for tariff concessions in China's FTAs. Third, for sensitive agricultural products, it is twice as likely that the transition period for tariff concessions will take no <10 years as it is that they will be entirely excluded (21.70 and 9.55 per cent, respectively). This indicates that sensitive agricultural products are more protected from tariff concessions by medium- or long-term transition periods. Under FTA negotiations, it is easier to reach consensus on a relatively long transition period than entire exclusions from tariff concessions, and a sufficiently long transition period can also provide reasonable adjustment time for domestic import-competing industries.

According to the range of individual tariff reductions (Figure 2), we can divide China's FTAs into three levels. At the first level are the FTAs with the largest tariff concessions, including FTAs between China and Iceland, Georgia, Australia, New Zealand and ASEAN. Although the proportion of tariffs immediately reduced to 0 is not large in some FTAs (such as the

[1] Since staging categories of tariff concessions in the China–Singapore FTA is the same as the China–ASEAN FTA, we include it in the China–ASEAN FTA.

China–ASEAN FTA (1.91 per cent) and the China–New Zealand FTA (9.42 per cent)), the proportion of entire exclusions from tariff concessions among these FTAs is within 10 per cent. Even when adding the proportion of tariff concessions with transitional periods of no <10 years, the proportion is not more than 15 per cent (the largest one being 13.71 per cent in the China–Georgia FTA). At the second level are FTAs with relatively large tariff concessions, including FTAs between China and Costa Rica, Chile and Pakistan. The proportion of transition periods of no <10 years and entire exclusions in these FTAs are between 20 and 40 per cent, and the proportions of transition periods in 6–9 years are 0 per cent. It should be noted that the proportion of entire exclusions from tariff concessions in the China–Pakistan FTA is the largest among all FTAs, reaching 36.23 per cent. At the third level are FTAs with relatively small tariff concessions, including China's FTAs with Peru, Switzerland and South Korea. The proportion of transition periods of no <10 years and entire exclusions is more than 50 per cent in these FTAs. Moreover, the proportion in the China–South Korea FTA has the most stringent protection among all FTAs at 82.36 per cent.

In general, it is difficult to clearly summarise China's FTA protection strategy by looking at tariff concessions across FTAs, considering comparative advantage, trade flows and export potential for trade partners. Further investigation at product level may be required.

3.3 Strict tariff exclusions across FTAs and HS Chapters

Based on evidence at product level across FTAs, we can distinguish the following features (Figure 3).[2] First, China sets very strict tariff protection measures for domestic products with weak comparative advantage over the same products from its FTA partners. For example, the RCA of milk, cream and milk products (HS0401 and HS0402) in New Zealand is as high as 40.25, which is much greater than China's 0.06[3]. Large imports of such products could have disastrous effects on China's dairy industry.

Second, regardless of the RCA, export potentials and possible negative impacts from FTA partners, China protects highly politically sensitive products such as staple foods, cotton, edible oil and sugar by using long transition periods or excluding them from tariff reductions. For example, Iceland and Switzerland essentially do not cultivate rice (HS1006), and these countries have no comparative advantage at all. Subject to the rules of origin of the FTA, it is unlikely that rice will be exported to China, but the Chinese government nonetheless places strict tariff exclusions on them.

[2] This includes transition periods for tariff reductions of over 10 years, entire exclusions, being treated as tariff rate quotas (TRQs) and special safeguards (SSGs).

[3] RCA is the average value of three years before the negotiation of each FTA, and the data source is UNCTAD STAT.

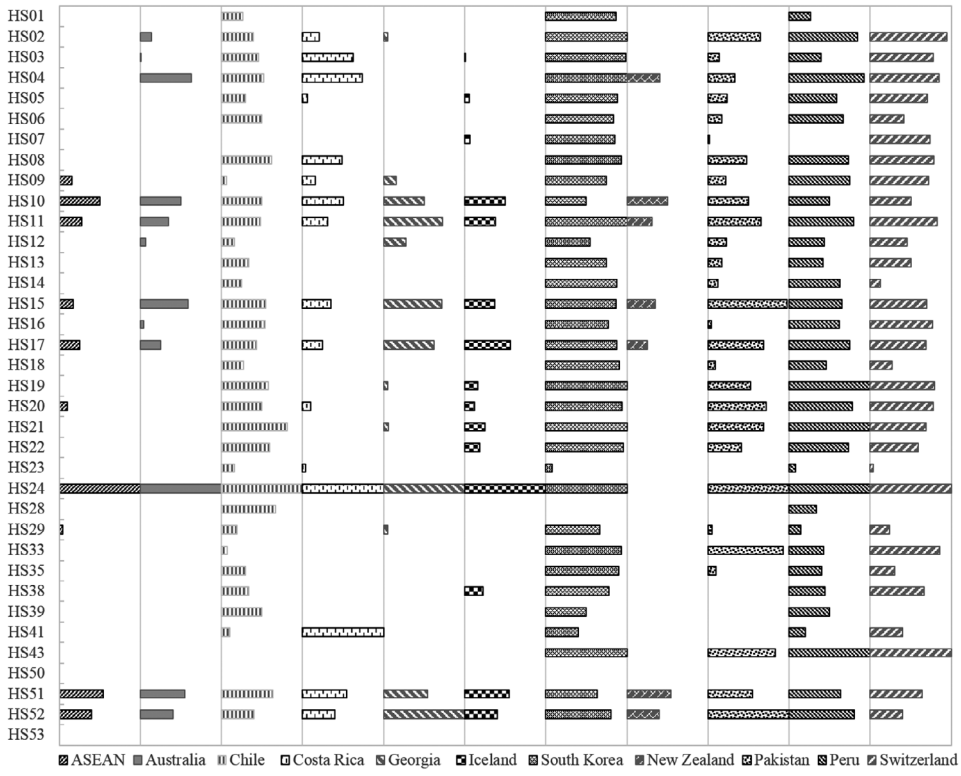

Figure 3 Proportion of strict tariff exclusions to each chapter in China's FTAs.
Note: Strict tariff exclusions include transition periods for tariff reductions of over 10 years, entire exclusions, being treated as tariff rate quotas (TRQs) and special safeguards (SSGs). The proportion is calculated as the selected items to total tariff lines in the chapter. Each vertical bar corresponds to an FTA, and the interval of the vertical bar is 100 per cent.

Third, China also sets stricter tariff protection measures for products that are not sensitive and have similar comparative advantage over the same products of its FTA partners. For example, the RCA of unmanufactured tobacco (HS2401) in Peru was only 0.26, which is only slightly lower than China's 0.49 in 2008, and China did not import the product from Peru before the FTA came into force. Similarly, in Pakistan the RCA of unmanufactured tobacco is 0.84, which is only slightly higher than China's 0.51 in 2005 and China also did not import the product before the FTA. China imposed strict tariff exclusions on these products. This could be explained using the above-stated hypothesis that organised industries may put pressure on or lobby the incumbent government to protect them in FTAs by using political links or political contributions.

So why do some products receive more protection in FTAs? Is there a pattern among these exclusions? To shed light on these questions, we concentrate on finding empirical evidence in the following sections.

4. Econometric specification and data

4.1 Econometric specification

We specify the equation for each product in estimation as follows:

$$exclusion_{jp} = \alpha_0 + \delta PS_p + \gamma TC_{jp} + \boldsymbol{\theta}'\mathbf{x}_{jp} + I_{p(HS2)} + I_j + \varepsilon_{jp} \quad (1)$$

where $exclusion_{jp} = 1$ if product p is tariff excluded in FTA j and $exclusion_{jp} = 0$ if product p is tariff included. PS_p is the binary variable representing whether product p is politically sensitive for China. TC_{jp} denotes the trade creation effect of product p after FTA j comes into force. $\mathbf{x}_{jp}$ is a vector of control variables. $I_{p(HS2)}$ and I_j are HS section (two-digit) and country dummies to address the heterogeneity across agreements and HS sections, respectively. ε_{jp} is the classically distributed error term.

To examine interaction effects between trade creation and political sensitivity on tariff exclusions, we incorporate the interaction term into equation (1), such that:

$$exclusion_{jp} = \alpha_0 + \delta PS_p + \gamma TC_{jp} + \eta PS_p \times TC_{jp} + \boldsymbol{\theta}'\mathbf{x}_{jp} + I_{p(HS2)} + I_j + \varepsilon_{jp} \quad (2)$$

where η is the interaction term of trade creation and political sensitivity. If the main effects of trade creation and political sensitivity are positive and significant, and the interaction effect is significantly negative, then there is a substitute relationship between trade creation and political sensitivity on import protection. On the contrary, if the interaction term is positive then they are complementary. We centre the TC_{jp} variable of the interaction term when it is a continuous variable.

The dependent variable in this paper is for a 0-1 categorical variable, which can usually be estimated using a probit or logit model. However, there are several shortcomings to nonlinear form. First, an incidental parameter problem arises when including fixed effects in a probit or logit model. Second, the marginal effects are difficult to calculate when there are interaction terms or higher order terms in the equations. In addition, as Angrist and Pischke (2009, p. 107) point out, the difference between the results of linear and nonlinear models can be small when calculating marginal effects. For these reasons, we apply a linear probability model (LPM) to estimate equations (1) and (2). The robust standard errors are used to address the heteroskedasticity.

4.1.1 Dependent variable and key variables

Tariff exclusions ($exclusion_{jp}$): According to Article XXIV WTO/GATT, RTAs must eliminate tariffs on 'substantially all trade' within a 'reasonable length of time' which should not be more than 10 years, apart from in exceptional cases. In line with Shearer *et al*. (2009), we define strict exclusions

as tariff reductions with transition periods of no less than 10 years or products that are entirely excluded (MFN tariffs continue to apply) or are subject to tariff rate quotas (TRQs) or special safeguards (SSGs), where $exclusion_{jp}$ equals 1, otherwise it equals 0.

Political sensitivity (PS_p): As we discuss above, food security is the primary objective of China's agricultural policies. According to the 'rice bags' programme, the grain and sugar reserve programme, MPPP and TSP, we treat cereals (wheat HS1001, maize HS1005 and rice HS1006), edible oil and oil seed (soya beans HS1201, soya-bean oil HS1507, sunflower-seed oil HS1512 and rape oil HS1514), sugar (HS1701-HS1703) and cotton (HS5201-HS5203) as politically sensitive products, and call them nationally strategic products (NS_p). We define the politically sensitive dummy as 1 if the product is a nationally strategic product, otherwise it equals 0. There are 684 tariff lines at HS six-digit level in our sample.

Trade creation (TC_{jp}): We follow the method of Baldwin and Murray (1977) to calculate the trade creation effect, which is $\ln(trade\_creation_{AB}) = \ln(M_{ABO} \times \xi_d \times (\Delta t/(1+t_0)))$, where M_{ABO} is the original import amount of country A from country B before forming an FTA and ξ_d is the elasticity of import demand of country A, while Δt is the tariff difference before and after forming the FTA. It is worthy of note that the elasticity of import demand is a critical variable. We take the elasticity values from Chen *et al.*'s (2014) estimation. Following Hong's (2013) method of handling the elasticity, we take the elasticity values ranking from 2 to 8 for sensitivity analysis.

4.1.2 The control variables

The decision to form an FTA is quite different from the decision to create a unilateral policy, as there are always at least two stages in FTA negotiation. In general, the first stage shows the outcome of negotiations among government preferences, domestic interests and social welfare. In the second stage, the politics, economics and bargaining power of trading partners must be taken into account when facing an international bargaining situation. Based on Bohara *et al.* (2004) and Damuri (2012), we consider bargaining power, comparative advantage, intra-industry trade and the proportion of imports from FTA partners and other variables as the control variables.

Negotiating power (*gdp_ratio*): Negotiation is very important before forming an FTA. Generally, the country that possesses more negotiating power tries to seek more interests in the negotiation. As Jiang (2010b) mentions, however, to achieve special diplomatic objectives, the Chinese government chooses to use its negotiating power limitedly, sometimes at the expense of economic benefits. There are several explanations for this. First, when China joined the WTO in 2001, there were cries of the 'China threat' from neighbouring countries. In order to quell these fears, the Chinese government made a large concession on agriculture in the China–ASEAN FTA, although some scholars worried that a large amount of imported

tropical products would be detrimental to farmers in South China (Yang and Chen, 2010). Second, even though the rules of the WTO state that China should automatically gain market economy status (MES) within 15 years of joining, it is up to every other country to admit its status or not. Thus, the Chinese government would be expected to give large concessions to FTA partners in order to gain their support, even though they only conduct limited trading with these countries. This is the case for the China–Iceland FTA and the China–Switzerland FTA. Third, China has insisted upon its 'big country morality' for a long time, which means that the Chinese government tends to give more and take less in FTAs, especially when negotiating with smaller trading partners (Jiang, 2010b). We use the ratio of China's GDP to that of its FTA partner at one year before negotiation to control for the effects of the negotiating power (Ludema and Mayda, 2013).

Comparative advantage (*RCA*): If the products have more comparative advantage over its trading partner, it is more likely for the government to adopt an opening policy, otherwise to protect them. We define $RCA_{jp} = ((export_{jp}/\sum_{p} export_{jp})/(export_{wp}/\sum_{p} export_{wp}))$, as proposed by Balassa (1965), where $export_{jp}$ and $export_{wp}$ are exports of product p of country j and of the world w, respectively.

Intra-industry trade (*gl_index*): It is widely held that intra-industry trade is politically easier to liberalise than inter-industry trade, since intra-industry trade entails low adjustment costs and less political pressure for protectionism (Marvel and Ray, 1987; Cadot *et al.,* 2004). Also, as Marvel and Ray (1987) mention, it is difficult for import-competing sectors to seek protection under intra-industry trade, because they have to take into account both the import-related interests of consumers and the export-related interests of producers. Recently, Manger (2014) argues that intra-industry trade is less likely to be excluded from tariff reductions in Japan and South Korea's preferential trade agreements (PTAs), because the PTAs help firms specialise their production. However, Gilligan (1997) argues that intra-industry trade would reduce the problem of 'collective action', thus increasing the demand for protection. Kono (2009) and Kim (2010) also find that intra-industry trade can lead to higher protection where electoral institutions privilege narrow protectionist interests and in the case of discriminatory public procurement. To sum up, the effect of intra-industry trade on protection is uncertain. Here, we measure intra-industry trade using the Grubel–Lloyd index, which is defined as $1 - absolute((\text{exp}ort - import)/(export + import))$.

Import ratio (*import_ratio*): Finger and Harrsion (1996) prove that high import penetration induces high protection. However, according to the model in GH95, Grossman and Helpman hold an opposite presumption that high import penetration leads to low protection. In order to illustrate the connection between import penetration and protection, it is of interest to construct an index for import penetration using either production or consumption data. However, as Ludema and Mayda (2013) mention, it is

difficult to match production or consumption data to the HS six-digit trade data. In this paper, we use the proportion of import from FTA partners as an alternative variable to control for the impact of import on domestic industries. We define the import ratio as the ratio of import from trade partners to total import of China*10000.

Labour-intensive products (*labour_intensive_product*): It is generally believed that trade liberalisation can induce domestic unemployment if it is implemented too fast. China's trade policies in the first decade of the 21st century were relatively conservative, as its political objectives at the time were to build a 'harmonious society' and to pursue 'scientific development'. To achieve this, the government tried to protect labour-intensive products. However, after 2010, China entered into the Lewis Turning Point, as wages increased significantly (Cai, 2008). The Chinese government may therefore choose not to protect labour-intensive products any more. At the same time, the government may also prefer to open land-intensive sectors since cultivated lands are limited in China. Based on these observations, we control for this preference of the Chinese government in FTAs.

Intermediate products (*intermediate_product*): Ray (1991) mentions that consumer goods are more protected than intermediate goods. Gawande and Bandyopadhyay (2000), Cadot *et al.* (2004) and Gawande *et al.* (2012) find empirical evidences of different forms of protection in the upstream and downstream of supply chains. We control for the effects of intermediate products on protection.

FTA signing time (*time_sign*): As China has signed 17 FTAs and the signing time span is large, ranging from 2004 to 2019, any FTA that has not yet been signed may be affected by the ones that have been signed. Therefore, we introduce a time variable to control for the time effect.

4.2 Data

As of 31 December 2019, China had signed 14 FTAs and 3 Economic and Partnership Arrangements, covering more than 25 countries (regions). Since the agreements between mainland China and Hong Kong, Macau and Taiwan are more political than economic, and the China–Mauritius FTA and the China–Maldives FTA have only recently been signed but not yet entered into force, we include 12 FTAs in our sample, namely, the China–ASEAN FTA, China–Chile FTA, China–Pakistan FTA, China–New Zealand FTA, China–Singapore FTA, China–Peru FTA, China–Costa Rica FTA, China–-Iceland FTA, China–Switzerland FTA, China–Australia FTA, China–South Korea FTA and China–Georgia FTA. The data for the empirical analysis are organised according to the six-digit HS in 2002.

Because of the wide time span for signing these FTAs (from 2004 to 2019), there are four versions of HS, namely, HS2002, HS2007, HS2012 and HS2017. In order to integrate the data set, we first combine the original HS eight-digit level data into HS six-digit level. The basic rule is that if a HS

eight-digit product has a longer transition time or higher protection level, the corresponding product in HS six-digit is settled as the longer or higher one. Second, we use the conversion and correlation tables from the United Nations to transform different versions into HS2002.

In this paper, we use the definition of agricultural products from the Ministry of Agriculture and Rural Affairs of China (MOARA), including the products from HS01 to HS24, and several products in HS2801, HS2905, HS3301, HS3501-HS3505, HS3809, HS3823, HS3913, HS4101-4103, HS4301, HS5001-HS5003, HS5101-HS5103, HS5201-HS5203 and HS5301-HS5305. The total tariff lines in each FTA are 839, and the total samples are 15,102. The original treated data of HS eight-digit products are obtained from the legal text of each FTA, which are retrieved from the WTO RTA database. The trade, tariffs and GDP data are obtained from the World Bank WITS database.

To address the potential reverse causality, a common practice in applied economics is to use the lag of the endogenous independent variable[4]. In this paper, all independent variables are taken one year before the negotiation of each FTA[5], and we do so not only to identify causality but, more importantly, because there is theoretical support for doing so: we do not expect interest groups or political factors to affect trade policy-making instantly. Feasibility studies are conducted before the negotiation of each FTA, and most FTAs go through several rounds and years of negotiation. Before the final versions of FTAs, preliminary decisions are made on what protection strategies to use for which products. These decisions are based on historical comparative advantage, import demand, tariff level and political sensitivity. Therefore, the use of the lag of the independent variables can reveal to some extent the characteristics of such policy-making.

Table 1 provides summary statistics of our data set.

5. Results and discussions

5.1 Main results

Table 2 shows the results of the determinants of tariff exclusion on products after controlling for country and HS section dummies by using OLS. Column (1) shows the results of using Baldwin and Murray's (1977) method to measure trade creation[6]. Column (2) shows the results of using the national strategic products dummy as a proxy for politically sensitive products.

[4] Note that, as Reed (2015) and Bellemare *et al.* (2017) argue, this practice may result in inconsistent estimates and misleading inference.

[5] We also estimate two years' lag for all independent variables, and the results are essentially the same. The results are shown in Appendix S5.

[6] In line with Hong (2013), we calculate the trade creation effect by setting the import demand elasticity to 2 and 8. The results are generally consistent with the baseline results, as detailed in Appendix S2.

Table 1 Definition and statistics for variables in the regression

Variables	Obs.	Mean	SD	Min.	Max.	Definition
strict exclusions	15102	0.219	0.414	0	1	Including the transition time of tariff reduction over 10 years or entire exclusions or being treated as TRQs or SSGs. Dummy variable, Products excluded = 1, otherwise = 0
weak exclusions	15102	0.461	0.498	0	1	Including the transition time of tariff reduction over 6 years or entire exclusions or being treated as TRQs or SSGs. Dummy variable, Products excluded = 1, otherwise = 0
NS	15102	0.045	0.208	0	1	Measuring the politically sensitive. Dummy variable equals 1 if the product is a nationally strategic product, otherwise it equals 0
PS	15102	0.327	0.469	0	1	Measuring the politically sensitive. Dummy variable equals 1 if the tariff is greater than average before FTA negotiation, otherwise it equals 0
lnTCBC	15102	0.214	1.409	−8.702	12.420	Measuring the trade creation effect in line with Baldwin *et al.* (1977). The import demand elasticity is obtained from Chen *et al.*'s (2014)
lnTCB2	15102	0.311	1.518	−8.006	13.110	Measuring the trade creation effect in line with Baldwin *et al.* (1977). The import demand elasticity is 2 for robustness check
lnTCB8	15102	0.503	1.811	−6.620	14.496	Measuring the trade creation effect in line with Baldwin *et al.* (1977). The import demand elasticity is 8 for robustness check
TC	15102	0.121	0.326	0	1	Measuring the trade creation effect. Dummy variable equals 1 if the import growth rate from FTA partners is larger than the average import growth rate of China, otherwise it equals 0. The import growth rate is calculated as 5 years average import before and after the FTA came into force
gdp_ratio	15102	94.741	159.699	3.152	634.937	Measuring the negotiation power, as China's GDP/trade partners' GDP
rca_c	15102	0.006	0.084	0	7.639	The product comparative advantage of China.
gl_index	15102	0.764	0.398	1.19E-06	1	Measuring the intra-industry trade level. Calculating the Grubel–Lloyd index as 1-absolute ((export-import) / (import + export))
import_ratio	15102	0.010	0.252	0	21.966	The proportion of import from the trade partner by each product to total import of China*10000
time_sign	15102	4.333	3.317	1	10	Ordinal variable, the earlier the FTA is signed, the smaller the value of this variable.
labour_intensive_product	15102	0.924	0.265	0	1	Dummy variable equals 1 if the product is labour intensive, otherwise it equals 0
intermediate_product	15102	0.223	0.416	0	1	Dummy variable equals 1 if the product is an intermediate product, otherwise it equals 0

Source: Based on authors' calculation.

Column (3) presents the results for both products in trade creation and politically sensitive products. Column (4) presents the results of the interaction effects of trade creation and political sensitivity.

As shown in Table 2, the coefficients of the trade creation and political sensitivity variables are always positive and significant, indicating that trade creation and politically sensitive products are more likely to be excluded from China's FTAs. The trade creation and political sensitivity coefficients in column (4) are 0.012 and 0.586, respectively. The trade creation coefficient shows that one per cent increase in trade creation increases the probability of tariff exclusion by 1.2 percentage points. The political sensitivity coefficient indicates that the probability of tariff exclusion is 58.6 percentage points higher for politically sensitive products than for non-politically sensitive products. The political sensitivity coefficient is much larger than the trade creation coefficient, indicating that political aspects are more important than economic ones in determining tariff exclusions in China's FTAs. The interaction term of trade creation and political sensitivity is positive and

Table 2 Basic results for tariff exclusions

Variables	(1) Tariff exclusions	(2) Tariff exclusions	(3) Tariff exclusions	(4) Tariff exclusions
lnTCBC	0.012***		0.013***	0.012***
	(0.002)		(0.002)	(0.002)
NS		0.581***	0.584***	0.586***
		(0.025)	(0.025)	(0.024)
lnTCBC × *NS*				0.021** (0.009)
gdp_ratio	0.007***	0.007***	0.007***	0.007***
	(0.000)	(0.000)	(0.000)	(0.000)
rca_c	0.108***	0.062***	0.060***	0.061***
	(0.022)	(0.017)	(0.016)	(0.016)
gl_index	−0.021***	−0.036***	−0.026***	−0.027***
	(0.007)	(0.007)	(0.007)	(0.007)
import_ratio	0.032***	0.048***	0.033***	0.034***
	(0.009)	(0.010)	(0.008)	(0.008)
time_sign	0.391***	0.393***	0.392***	0.392***
	(0.014)	(0.014)	(0.014)	(0.014)
labour_intensive_product	−0.156***	−0.155***	−0.158***	−0.158***
	(0.049)	(0.049)	(0.049)	(0.049)
intermediate_product	−0.039***	−0.031***	−0.030***	−0.030***
	(0.009)	(0.008)	(0.008)	(0.008)
cons	−1.967***	−1.966***	−1.966***	−1.964***
	(0.092)	(0.090)	(0.090)	(0.090)
HS section dummies	YES	YES	YES	YES
Country dummies	YES	YES	YES	YES
N	15,102	15,102	15,102	15,102
adj. R^2	0.427	0.460	0.462	0.462

Note: *$p < 0.10$; **$p < 0.05$; ***$p < 0.01$. All regressions include a constant. Dependent variable is strict tariff exclusions (products are excluded = 1, otherwise = 0). Independent variables are obtained one year before the negotiation of each FTA. Robust standard errors are in parentheses.

significant at 5 per cent in column (4), indicating that products that experience trade creation receive more protection if they are politically sensitive.

Products experiencing trade creation are more likely to be excluded from China's FTAs, which is in line with GH95's hypothesis and Olarreage and Soloaga's (1998) finding. Although the Chinese government does not face re-election pressure, it still has to respond to pressure from different interests. China is a typical 'fragmented authoritarian' regime, and interest groups have multiple access points to lobby decision-makers, leading to the participation of multiple bureaucracies in policy-making processes (Lieberthal and Oksenberg, 1988; Steinberg and Shih, 2012). Recently, Gilli *et al.* (2018) provide evidence that the logrolling of bureaucratic interest groups has impacts on China's policy-making. As the representative of farmers' interests, MOARA, the local government, and the National Development and Reforms Commission prefer to protect the agricultural sector (Jiang, 2010b). Thus, they put pressure on policy-makers to provide more protection to the import-competing industries in the agricultural sector in FTAs.

Politically sensitive products also receive more protection regardless of whether they experience trade creation or trade diversion, which is in line with the practices of China. From 2004 to 2019, in 'No. 1 Central Documents', the Chinese government emphasised food security several times and explicitly pointed out in 2014 that the food security goal is to ensure basic self-sufficiency of grain foods and absolute safety of staple foods. In 1996, 'The White Paper of China's Food Problems' officially set the 'red line' of 95 per cent self-sufficiency; in 2008, 'The National Food Safety Program for Medium and Long-Term' explicitly emphasised it again. To stabilise grain prices and ensure food security, the Chinese government has also established the grain and sugar reserve programme, MPPP and TSP for rice, wheat, maize, soybean, rapeseed, cotton and sugar. These nationally strategic products are highly sensitive to the Chinese government, and most of them are also protected with TRQs and other Non-Tariff Barriers (NTBs).

Based on the results in column (4) of Table 2, all control variables play a significant role in determining tariff exclusions in FTAs. Among them, GDP ratio, RCA, import ratio and FTA signing time are all significantly positive, while G-L index, labour-intensive product and intermediate product are significantly negative, which are all within expectation.

The coefficient of GDP ratio, which represents the negotiating power, is significantly positive. This result suggests that the more negotiating power the Chinese government has, the more likely China is to seek tariff exclusions in an FTA. It also suggests that the Chinese government shows national interests during the process of FTA policy-making. The import ratio and FTA signing time coefficients are significantly positive as expected, indicating that the larger import and the later the FTA is signed, the more protection they would achieve. The RCA coefficient is positive, which is inconsistent with expectations. This is probably due to the fact that there are very few

agricultural products with comparative advantage, as these have been in a trade deficit since 2004. To this end, in order to protect the limited products with comparative advantage, China will continue to protect these products as it opens up to the world.

In line with the literature, the coefficient of the G-L index is significantly negative, indicating that the higher the level of intra-industry trade, the less likely it is to be protected in an FTA. The labour-intensive product coefficient is significantly negative as expected, indicating that labour-intensive products receive less protection in trade policies. The intermediate product coefficient is significantly negative, indicating that the Chinese government is less likely to protect intermediate products, which is in line with the fact that China is a country that relies heavily on processing trade.

5.2 Robustness checks

We have concluded that products experiencing trade creation and political sensitivity are more likely to be excluded from China's FTAs. In this section, we use six robustness checks to test this conclusion.

5.2.1 Construction of the dependent variable

In our above regressions, the dependent variable, which we call strict exclusion, is whether there is a transition time of over 10 years for tariff reductions on products or whether they are entirely excluded or treated as TRQs or SSGs. For a robustness check, to construct this variable, we regard products that have a transition time of over 6 years or are entirely excluded or treated as TRQs or SSGs as weak exclusions.

The results in Table 3 show that the trade creation and political sensitivity coefficients are still positive and significant in all columns, in line with the above-mentioned regression results. Compared with Table 2, the trade creation coefficient in Table 3 is slightly larger, while the political sensitivity coefficient is smaller. More interestingly, the interaction term of trade creation and political sensitivity in column (4) of Table 3 is significant and negative, which is completely opposite to the result in Table 2. Comparing the composition of strict and weak exclusions, the result suggests that products with tariff reduction transition periods of 6-10 years that both experience trade creation and are politically sensitive do not receive more protection, but rather weaker protection.

5.2.2 Construction of independent variables

Our second set of robustness checks involves proxy variables of trade creation and political sensitivity. We use the dummy variable to represent trade creation. According to Bohara *et al*. (2004) on the method of trade diversion, we define the trade creation dummy (*TC*) as 1 if the average import growth rate from FTA partners over the five years following the FTA coming into force is larger than that of China, otherwise as 0. The import growth rate is

Table 3 Robustness results for weak tariff exclusions

Variables	(1) Weak exclusions	(2) Weak exclusions	(3) Weak exclusions	(4) Weak exclusions
lnTCBC	0.017*** (0.002)		0.017*** (0.002)	0.018*** (0.002)
NS		0.317*** (0.020)	0.320*** (0.020)	0.317*** (0.020)
lnTCBC × *NS*				−0.024*** (0.006)
gdp_ratio	−0.000 (0.000)	−0.000 (0.000)	−0.000 (0.000)	−0.000 (0.000)
rca_c	0.009 (0.018)	−0.014 (0.019)	−0.017 (0.019)	−0.018 (0.019)
gl_index	−0.028*** (0.009)	−0.044*** (0.009)	−0.031*** (0.009)	−0.030*** (0.009)
import_ratio	0.012 (0.012)	0.032** (0.014)	0.012 (0.010)	0.012 (0.010)
time_sign	−0.009 (0.016)	−0.008 (0.016)	−0.009 (0.016)	−0.009 (0.016)
labour_intensive_product	−0.028 (0.038)	−0.024 (0.038)	−0.029 (0.038)	−0.029 (0.038)
intermediate_product	−0.025** (0.010)	−0.021** (0.010)	−0.020** (0.010)	−0.020** (0.010)
cons	0.297*** (0.096)	0.298*** (0.096)	0.298*** (0.096)	0.296*** (0.096)
HS section dummies	YES	YES	YES	YES
Country dummies	YES	YES	YES	YES
N	15,102	15,102	15,102	15,102
adj. R^2	0.406	0.411	0.413	0.413

Note: $^*p < 0.10$; $^{**}p < 0.05$; $^{***}p < 0.01$. Dependent variable is tariff exclusions (products are excluded = 1, otherwise = 0). Independent variables are obtained one year before the negotiation of each FTA. Robust standard errors are in parentheses.

calculated as $(\sum_{i}^{5} import_{t+i} - \sum_{i}^{5} import_{t-i}) / \sum_{i}^{5} import_{t-i}$, where t is the entry-into-force time of each FTA.[6]

For political sensitivity, we use the MFN tariff (one year before FTA negotiation) as another proxy variable. After China joined the WTO in 2001, the average tariff on agricultural products was only a quarter of the global average. If the tariff of a product is still high before FTA negotiation, then it can be assumed that this product is highly sensitive. Here, we define the politically sensitive dummy (*PS*) as 1 if the tariff on the product p is larger than the average value of agricultural products at 1 year before FTA negotiation, otherwise as 0.

We re-estimate the equation (2) by controlling for the country and HS section dummies. Table 4 shows the robustness results, where the trade creation and political sensitivity coefficients are still significantly positive in different combinations of trade creation and political sensitivity. Thus, the robustness checks further support our results as outlined above. The interaction term of trade creation and political sensitivity is only significant and negative in column (3) and column (6) of Table 4, which indicates the weak evidence for a substitute relationship between trade creation and

Table 4 Robustness results for tariff exclusions by using other independent variables

Variables	(1) Strict exclusions	(2) Weak exclusions	(3) Strict exclusions	(4) Weak exclusions	(5) Strict exclusions	(6) Weak exclusions
TC	0.020*** (0.008)	0.041*** (0.010)	0.027*** (0.008)	0.044*** (0.011)		
lnTCBC					0.013*** (0.002)	0.020*** (0.003)
NS	0.583*** (0.025)	0.322*** (0.021)				
PS			0.131*** (0.007)	0.089*** (0.009)	0.126*** (0.007)	0.087*** (0.008)
TC × *NS*	−0.005 (0.056)	−0.044 (0.032)				
TC × *PS*			−0.042*** (0.016)	−0.019 (0.018)		
lnTCBC × *PS*					−0.001 (0.004)	−0.011** (0.004)
gdp_ratio	0.007*** (0.000)	−0.000 (0.000)	0.007*** (0.000)	−0.000 (0.000)	0.007*** (0.000)	−0.000 (0.000)
rca_c	0.063*** (0.017)	−0.012 (0.019)	0.101*** (0.021)	0.007 (0.018)	0.097*** (0.020)	0.003 (0.018)
gl_index	−0.032*** (0.007)	−0.036*** (0.009)	−0.026*** (0.007)	−0.032*** (0.009)	−0.019*** (0.007)	−0.026*** (0.009)
import_ratio	0.048*** (0.010)	0.031** (0.014)	0.045*** (0.011)	0.030** (0.015)	0.031*** (0.008)	0.010 (0.012)
time_sign	0.393*** (0.014)	−0.007 (0.016)	0.391*** (0.014)	−0.009 (0.015)	0.390*** (0.014)	−0.010 (0.015)
labour_intensive_product	−0.158*** (0.049)	−0.030 (0.038)	−0.244*** (0.046)	−0.091** (0.037)	−0.243*** (0.046)	−0.088** (0.037)
intermediate_product	−0.031*** (0.008)	−0.020** (0.010)	−0.055*** (0.009)	−0.035*** (0.010)	−0.054*** (0.009)	−0.036*** (0.010)
cons	−1.969*** (0.090)	0.292*** (0.096)	−1.880*** (0.089)	0.353*** (0.095)	−1.880*** (0.089)	0.357*** (0.095)
HS section dummies	YES	YES	YES	YES	YES	YES
Country dummies	YES	YES	YES	YES	YES	YES
N	15,102	15,102	15,102	15,102	15,102	15,102
adj. R^2	0.460	0.412	0.440	0.409	0.441	0.411

Note: *$p < 0.10$; **$p < 0.05$; ***$p < 0.01$. Dependent variable is tariff exclusions (products are excluded = 1, otherwise = 0). Independent variables are obtained one year before the negotiation of each FTA. Robust standard errors are in parentheses.

political sensitivity. This is in line with the results of weak tariff exclusions in column (4) of Table 3.

5.2.3 Excluded 0 MFN tariff products in the sample

In our analysis so far, we have included products whose MFN tariff is 0 before FTA negotiation. As we know, the major purpose of FTA negotiations is to work out tariff reductions. Thus, for those products with a 0 MFN tariff, it would not be necessary to bargain further. Hence, our third set of robustness checks is to estimate the subsample that excludes products whose MFN tariff is 0 at one year before negotiation.

The results from column (1) to column (8) of Table 5 show, after excluding zero-tariff products, that the trade creation and political sensitivity coefficients are still significantly positive at the 1 per cent level. The interaction term is negative and significant in column (2), column (4) and column (7), indicating the substitute relationship between trade creation and political sensitivity, which is in line with our regressions. Furthermore, the interaction term is positive and significant in column (1), which is in line with the findings of column (4) of Table 2.

5.2.4 Estimated by probit model

Since the dependent variable is a binary variable, we use a probit model to estimate the impact of trade creation and political sensitivity on tariff exclusions. It should be noted that introducing individual fixed effects into a probit or logit model will lead to an incidental parameter problem. In this paper, we do not control for fixed effects at the individual level, but introduce dummy variables at the country and HS two-digit level, and there are at least 36 observations in each dummy. Thus, the incidental parameter problem is not serious.

Table 6 shows the marginal effects of trade creation and political sensitivity on tariff exclusions. The variables of trade creation and political sensitivity are still significantly positive, which is consistent with the previous estimates using LPM. Moreover, the difference of coefficients is very small between the probit model and LPM, which further shows the robustness of the previous results.

5.2.5 Small or big trading partners

In order to demonstrate its determination to open up to the world, keep pace with the rapid establishment of RTAs and reduce growing trade frictions, the Chinese government uses a range of different trade policies and negotiation strategies according to the size of its trade partners. Hence, the fifth set of robustness checks is to divide the full sample into big trading partners and small trading partners. If the total trade value is lower than the average value between China and its partners, we treat it as a small trading partner, otherwise it is a big trading partner.

Table 5 Robustness results for tariff exclusions of excluded 0 MFN tariff

Variables	(1) Strict exclusions	(2) Weak exclusions	(3) Strict exclusions	(4) Weak exclusions	(5) Strict exclusions	(6) Weak exclusions	(7) Strict exclusions	(8) Weak exclusions
lnTCBC	0.012*** (0.002)	0.018*** (0.002)	0.013*** (0.002)	0.020*** (0.003)				
TC					0.020*** (0.008)	0.043*** (0.010)	0.028*** (0.009)	0.046*** (0.011)
NS	0.584*** (0.025)	0.315*** (0.021)			0.581*** (0.025)	0.320*** (0.021)		
PS			0.123*** (0.007)	0.082*** (0.008)			0.128*** (0.007)	0.085*** (0.009)
lnTCBC × *NS*	0.021** (0.009)	−0.023*** (0.006)						
lnTCBC × *PS*			−0.001 (0.004)	−0.010** (0.005)				
TC × *NS*					−0.003 (0.056)	−0.041 (0.032)		
TC × *PS*							−0.042*** (0.016)	−0.019 (0.018)
gdp_ratio	0.007*** (0.000)	0.000 (0.000)	0.007*** (0.000)	0.000 (0.000)	0.007*** (0.000)	0.000 (0.000)	0.007*** (0.000)	0.000 (0.000)
rca_c	0.059*** (0.016)	−0.019 (0.020)	0.096*** (0.020)	0.002 (0.018)	0.062*** (0.017)	−0.013 (0.019)	0.100*** (0.021)	0.006 (0.018)
gl_index	−0.027*** (0.007)	−0.032*** (0.009)	−0.019*** (0.007)	−0.028*** (0.009)	−0.033*** (0.007)	−0.037*** (0.009)	−0.026*** (0.007)	−0.034*** (0.009)
import_ratio	0.034*** (0.008)	0.012 (0.010)	0.031*** (0.009)	0.010 (0.012)	0.048*** (0.010)	0.031** (0.014)	0.045*** (0.011)	0.029** (0.014)
time_sign	0.399*** (0.014)	0.002 (0.016)	0.397*** (0.014)	0.000 (0.015)	0.400*** (0.014)	0.004 (0.016)	0.398*** (0.014)	0.002 (0.016)
labour_intensive_product	−0.158*** (0.049)	−0.029 (0.038)	−0.241*** (0.046)	−0.084** (0.038)	−0.158*** (0.049)	−0.030 (0.038)	−0.242*** (0.046)	−0.088** (0.037)
intermediate_product	−0.031*** (0.008)	−0.021** (0.010)	−0.055*** (0.009)	−0.036*** (0.010)	−0.031*** (0.008)	−0.021** (0.010)	−0.055*** (0.009)	−0.036*** (0.010)
cons	−1.997*** (0.091)	0.242** (0.097)	−1.915*** (0.090)	0.300*** (0.096)	−2.002*** (0.091)	0.237** (0.097)	−1.916*** (0.090)	0.296*** (0.096)
HS section dummies	YES	YES	YES	YES	YES	YES	YES	YES
Country dummies	YES	YES	YES	YES	YES	YES	YES	YES
N	14,832	14,832	14,832	14,832	14,832	14,832	14,832	14,832
adj. R^2	0.466	0.415	0.445	0.412	0.464	0.413	0.444	0.410

Note: *$p < 0.10$; **$p < 0.05$; ***$p < 0.01$. Dependent variable is tariff exclusions (products are excluded = 1, otherwise = 0). Independent variables are obtained one year before the negotiation of each FTA. Robust standard errors are in parentheses.

Table 6 Robustness results of using a probit model

Variables	(1) Strict exclusions	(2) Weak exclusions	(3) Strict exclusions	(4) Weak exclusions	(5) Strict exclusions	(6) Weak exclusions	(7) Strict exclusions	(8) Weak exclusions
lnTCBC	0.014***	0.018***					0.014***	0.018***
	(0.002)	(0.003)					(0.002)	(0.003)
TC			0.021***	0.037***	0.018**	0.037***		
			(0.008)	(0.010)	(0.008)	(0.010)		
NS	0.545***	0.392***	0.546***	0.394***				
	(0.028)	(0.023)	(0.028)	(0.022)				
PS					0.104***	0.095***	0.104***	0.095***
					(0.006)	(0.008)	(0.006)	(0.008)
lnTCBC × *NS*	0.017*	−0.024***						
	(0.009)	(0.006)						
lnTCBC × *PS*							−0.001	−0.005
							(0.004)	(0.006)
TC × *NS*			0.022	−0.009				
			(0.040)	(0.034)				
TC × *PS*					−0.045***	−0.002		
					(0.016)	(0.020)		
Control variables	YES	YES	YES	YES	YES	YES	YES	YES
HS section dummies	YES	YES	YES	YES	YES	YES	YES	YES
Country dummies	YES	YES	YES	YES	YES	YES	YES	YES
Log pseudolikelihood	−4129.263	−6519.533	−4157.189	−6540.056	−4308.01	−6585.083	−4286.819	−6564.896
chi2	4098.291	4015.504	4147.077	3999.507	4127.481	4109.04	4078.387	4167.053
pseudo R^2	0.474	0.374	0.471	0.372	0.451	0.368	0.454	0.370
N	14,760	15,102	14,760	15,102	14,760	15,102	14,760	15,102

Note: *$p < 0.10$; **$p < 0.05$; ***$p < 0.01$. All regressions include a constant. The table displays average marginal effects from probit models. Dependent variable is tariff exclusions (products are excluded = 1, otherwise = 0). Independent variables are obtained one year before the negotiation of each FTA. Delta-method standard errors are in parentheses.

The results in columns (1) to (8) of Table 7 still fit in with the conclusions, where the coefficients of trade creation variables and politically sensitive variables are always positive and significant. The interaction term in columns (3), (4) and (7) is still negative and significant, and positive in column (1), which is in line with the above findings.

Of note, however, is that the GDP ratio, which represents negotiating power in FTAs, appears to show great disparity between large and small trading partners. This can be seen by comparing columns (1) and (2), and columns (5) and (6). Here, the GDP ratio coefficient is positive and significant, although for big trading partners it is substantially larger than for small trading partners. These results indicate that for some diplomatic objectives, such as to obtain support in automatically gaining market economy status in 2016, the Chinese government made great concessions or enforce fewer exclusions when trading with smaller countries like Switzerland, Iceland and some ASEAN countries (Jiang, 2010b). However, for big trading partners, the Chinese government would consider the negative impacts that would arise after FTAs come into force and thus use its negotiating power to seek more exclusions. In general, for small trading partners, China is a politically motivated government; for big trading partners, China is a welfare-maximising government.

Appendix S3 shows that the coefficients of trade creation and political sensitivity variables are always positive and highly significant, and the magnitude of the GDP ratio coefficient is still significantly different across various trading partners in strict exclusions.

5.2.6 Traded or non-traded products

As we discuss above, because the demand for non-traded products is substituted or complemented by the demand for traded products, non-traded products can also have an effect on trade policies (Acharya, 2015). As the evidence shows from stylised facts of non-traded, exclusive and sensitive products (Appendix S1), respectively, 1.34 and 4.67 per cent of nationally strategic non-traded products and tariff-sensitive non-traded products are strictly excluded from FTAs (1.56 and 6.44 per cent are weakly excluded, respectively). Hence, we expect that if non-traded products are politically sensitive, they would also be excluded from FTAs. The last set of robustness checks is to estimate the subsample by dividing the full sample into traded products and non-traded products. If a product was always of zero trade value from 2002 to 2018, we treat it as a non-traded product, otherwise it is a traded product.

Columns (1) to (4) in Table 8 show the results of traded products, and columns (5) to (8) show those of non-traded products. As expected, the trade creation and political sensitivity coefficients are always positive and significant for traded products. For non-traded products, the politically sensitive coefficients are significantly positive as well, which is in line with our hypotheses. Appendix S4 shows that the results of our estimations continue

Table 7 Robustness results for tariff exclusions by different trading partners

Variables	(1) Strict exclusions Big trading partners	(2) Strict exclusions Small trading partners	(3) Weak exclusions Big trading partners	(4) Weak exclusions Small trading partners	(5) Strict exclusions Big trading partners	(6) Strict exclusions Small trading partners	(7) Weak exclusions Big trading partners	(8) Weak exclusions Small trading partners
lnTCBC	0.010*** (0.002)	0.017*** (0.005)	0.015*** (0.003)	0.026*** (0.008)	0.013*** (0.003)	0.016*** (0.006)	0.019*** (0.003)	0.022** (0.009)
NS	0.536*** (0.031)	0.680*** (0.036)	0.235*** (0.025)	0.469*** (0.032)				
PS					0.169*** (0.009)	0.043*** (0.011)	0.110*** (0.010)	0.043*** (0.014)
lnTCBC × *NS*	0.029*** (0.010)	−0.005 (0.030)	−0.011** (0.006)	−0.077*** (0.028)				
lnTCBC × *PS*					−0.007 (0.005)	0.014 (0.011)	−0.015*** (0.005)	0.008 (0.016)
gdp_ratio	0.038*** (0.001)	0.000*** (0.000)	−0.001 (0.002)	0.001*** (0.000)	0.038*** (0.001)	0.000** (0.000)	−0.001 (0.002)	0.001*** (0.000)
rca_c	0.072*** (0.017)	−0.066 (0.694)	−0.001 (0.019)	−1.153 (1.596)	0.101*** (0.021)	0.163 (0.731)	0.011 (0.018)	−0.969 (1.600)
gl_index	−0.035*** (0.008)	−0.003 (0.014)	−0.033*** (0.010)	−0.001 (0.021)	−0.027*** (0.008)	0.010 (0.014)	−0.029*** (0.010)	0.007 (0.022)
import_ratio	0.035*** (0.007)	0.253*** (0.080)	0.013 (0.010)	0.252** (0.115)	0.033*** (0.008)	0.251*** (0.088)	0.011 (0.012)	0.275** (0.119)
time_sign	−0.080*** (0.005)	0.008*** (0.002)	0.002 (0.006)	−0.054*** (0.002)	−0.084*** (0.005)	0.007*** (0.002)	−0.000 (0.006)	−0.055*** (0.002)
labour_intensive_product	−0.151*** (0.056)	−0.170* (0.092)	−0.052 (0.035)	0.015 (0.087)	−0.270*** (0.051)	−0.196** (0.090)	−0.129*** (0.034)	−0.011 (0.086)
intermediate_product	−0.023** (0.011)	−0.048*** (0.012)	−0.015 (0.013)	−0.032** (0.015)	−0.051*** (0.011)	−0.063*** (0.013)	−0.032** (0.013)	−0.044*** (0.016)
cons	−0.119** (0.060)	0.084 (0.094)	0.244*** (0.042)	0.082 (0.094)	0.004 (0.055)	0.106 (0.093)	0.324*** (0.042)	0.108 (0.093)
HS section dummies	YES	YES	YES	YES	YES	YES	YES	YES
Country dummies	YES	YES	YES	YES	YES	YES	YES	YES
N	10,068	5,034	10,068	5,034	10,068	5,034	10,068	5,034
adj. R^2	0.477	0.359	0.385	0.417	0.474	0.280	0.389	0.399

Note: *$p < 0.10$; **$p < 0.05$; ***$p < 0.01$. Dependent variable is tariff exclusions (products are excluded = 1, otherwise = 0). Independent variables are obtained one year before the negotiation of each FTA. Robust standard errors are in parentheses. Chi2 is used to compare the differences of *gdp_ratio* coefficients between big trading partners and small trading partners, by SUR test.

Table 8 Robustness results for tariff exclusions by traded or non-traded products

Variables	(1) Strict exclusions Traded product	(2) Weak exclusions Traded product	(3) Strict exclusions Traded product	(4) Weak exclusions Traded product	(5) Strict exclusions Non-traded product	(6) Weak exclusions Non-traded product	(7) Strict exclusions Non-traded product	(8) Weak exclusions Non-traded product
lnTCBC	0.012*** (0.002)	0.017*** (0.002)	0.012*** (0.002)	0.019*** (0.003)				
NS	0.537*** (0.034)	0.261*** (0.028)			0.632*** (0.035)	0.399*** (0.030)		
PS			0.109*** (0.009)	0.084*** (0.011)			0.149*** (0.011)	0.096*** (0.013)
lnTCBC × *NS*	0.025*** (0.009)	−0.022*** (0.006)						
lnTCBC × *PS*			0.001 (0.004)	−0.010** (0.004)				
gdp_ratio	0.008*** (0.000)	0.000 (0.000)	0.008*** (0.000)	0.000 (0.000)	0.005*** (0.000)	0.000 (0.001)	0.005*** (0.000)	0.000 (0.001)
rca_c	0.065*** (0.017)	−0.013 (0.019)	0.095*** (0.020)	0.001 (0.019)				
gl_index	−0.021*** (0.008)	−0.027*** (0.010)	−0.015** (0.008)	−0.024** (0.010)				
import_ratio	0.033*** (0.008)	0.013 (0.011)	0.033*** (0.009)	0.012 (0.012)				
time_sign	0.472*** (0.021)	0.013 (0.022)	0.464*** (0.020)	0.007 (0.022)	0.321*** (0.019)	−0.000 (0.025)	0.316*** (0.019)	−0.003 (0.025)
labour_intensive_product	−0.244*** (0.064)	−0.046 (0.044)	−0.309*** (0.060)	−0.095** (0.044)	−0.059 (0.077)	−0.045 (0.071)	−0.173** (0.072)	−0.119* (0.069)
intermediate_product	−0.043*** (0.011)	−0.025* (0.013)	−0.053*** (0.011)	−0.033** (0.013)	−0.019 (0.013)	−0.007 (0.015)	−0.069*** (0.013)	−0.039** (0.015)
cons	−2.281*** (0.130)	0.207 (0.131)	−2.185*** (0.127)	0.280** (0.130)	−1.694*** (0.135)	0.188 (0.168)	−1.549*** (0.132)	0.281* (0.167)
HS section dummies	YES	YES	YES	YES	YES	YES	YES	YES
Country dummies	YES	YES	YES	YES	YES	YES	YES	YES
N	8,635	8,635	8,635	8,635	6,467	6,467	6,467	6,467
adj. R^2	0.503	0.433	0.486	0.433	0.429	0.389	0.406	0.383

Note: *$p < 0.10$; **$p < 0.05$; ***$p < 0.01$. Dependent variable is tariff exclusions (products are excluded = 1, otherwise = 0). Independent variables are obtained one year before the negotiation of each FTA. Robust standard errors are in parentheses.

to hold even if we involve other proxies of trade creation and political sensitivity.

6. Conclusions

In this paper, we explore reasons why certain products are excluded from FTAs. Based on the theory of GH95, we assume that products associated with trade creation are more likely to be excluded from FTAs. We furthermore develop the hypothesis that politically sensitive products, especially non-traded products, are more likely to be excluded from FTAs as well. We use FTA data from China's highly disaggregated agricultural sector to examine these hypotheses.

The main findings of our paper lie in the following three aspects. First, from the stylised facts of product exclusions from China's FTAs, we summarised the characters as follows: (i) we find that agricultural products are more sensitive and likely to be excluded from FTAs than non-agricultural products, (ii) the staging categories of tariff concessions of agricultural products are quite different across FTA partners, (iii) and at the product level, regardless of FTA partner, agricultural products are more likely to be excluded from tariff concessions in FTAs if they lack comparative advantage or are politically sensitive.

Second, our empirical results show that agricultural products associated with trade creation or political sensitivity are more likely to be excluded from FTAs, regardless of whether the products are traded or not. The results are robust under checks using other proxy variables, different estimation method and subsamples. Moreover, there is little evidence that products associated with trade creation receive more protection when these products are politically sensitive.

Third, we illustrate that product exclusions are significantly determined by negotiating power in China's FTAs. Overall, the Chinese government seeks to obtain more benefits from its trading partners. For big trading partners, the Chinese government uses its negotiating power to seek economic objectives. For small trading partners, however, to achieve objectives of diplomacy or show 'big country morality', the Chinese government uses its negotiating power to seek more political than economic objectives.

Market access in the agricultural sector has always been a key issue in multilateral and bilateral negotiations. Policy-makers seek to use the protection measures of tariffs and other NTBs efficiently. Based on our findings, many politically sensitive and non-traded products are excluded from China's FTAs despite the fact that these products are unlikely to be imported from trading partners. This is, for example, the case for rice, which is unlikely to be imported from Iceland due to limitations related to temperature, humidity and the rules of origin in FTAs. Consequently, we suggest that policy-makers liberalise these politically sensitive products to

some extent, so that they can make room for other traded products to be negotiated that need more protection.

Data availability statement

The data that support the findings of this study are available from Jianxing Lyu upon reasonable request.

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Supporting Information

Additional Supporting Information may be found in the online version of this article:

Appendix S1. Stylised facts of non-traded, exclusive and sensitive products.

Appendix S2. Robustness results of using different import demand elasticity to calculate trade creation effects.

Appendix S3. Robustness results for tariff exclusions by trading partners.

Appendix S4. Robustness results for tariff exclusions by traded or non-traded products.

Appendix S5. Robustness results for tariff exclusions by lag two years for all independent variables.

Appendix S6. List of HS sections.

Appendix S7. List of countries.