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The Impact of Trade Preferences on Multilateral Tariff Cuts: Evidence for Japan

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Tobias Ketterer
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The Impact of Trade Preferences on Multilateral Tariff Cuts: Evidence for Japan

Abstract

Opposing theoretical predictions on the effects of trade preferences on multilateral tariff cuts point to the need for empirical analysis to determine whether preferential trade agreements promote or hinder multilateral trade liberalization. This paper examines the impact of Japan's trade preferences on its multi-lateral tariff reductions. Using detailed product level data, we find that Japan's Generalized System of Preferences (GSP) acted as a stumbling block for the country's external tariff liberalization during the Uruguay Round of multi-lateral trade negotiations.

JEL-Code: F130, F140.

Keywords: Japan's Generalized System of Preferences, Japan's Most Favoured Nation tariffs, Uruguay Round.

Tobias Ketterer
Centre for Climate Change Economics & Policy / London School of Economics
Houghton Street
United Kingdom - London WC2A 2AE
t.ketterer@lse.ac.uk

*Daniel M. Bernhofen**
School of International Service
American University
4400 Massachusetts Ave NW
USA – Washington DC 20016
dbernhof@american.edu

Chris Milner
School of Economics
University of Nottingham
Sir Clive Granger Building, University Park
United Kingdom - NG7 2RD Nottingham
chris.milner@nottingham.ac.uk

*corresponding author

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1. Introduction

The dramatic rise of the number of preferential trade agreements (PTAs) during the last two decades has raised a question about the impact of PTAs on multilateral trade liberalization (MTL).[1] Assuming different motivations behind PTAs, recent political economy models have shown that PTAs can act either as a 'building block' or a 'stumbling block' for governments' incentives to reduce multilateral tariffs.[2] The sparce empirical literature, which is characterised by methodological differences as well as differences in underlying policy settings, also shows opposing results.[3] So it is not quite clear whether the different findings are caused by differences in empirical methodologies or by differences in the underlying policy environments.

This paper extends the empirical literature on preferential trade agreements by providing the first empirical investigation of the impact of Japan's trade preferences on the changes of its Most-favoured Nation Tariffs (MFN) during the Uruguay Round. In this paper, and previous work (Ketterer et al., 2014), we argue that the impact of preferences is affected by the type of trading partner or partners that the preferences have been offered to and the associated policy context. Since Japan's preferential trade policy during the Uruguay Round occurred through the Generalized System of Preferences (GSP), we examine the impact of Japan's GSP preferences on Uruguay Round external tariff cuts and find empirical evidence of a stumbling block effect of GSP preferences.

We rationalize our finding of a stumbling block effect by the non-reciprocal nature of the GSP system. In this PTA policy setting, PTAs in which a large and developed trader grants preferential market access to less developed trading partners, in exchange for closer political ties, may result in less aggressive tariff cuts for preferentially traded goods. Valuating the smaller trading partner's closer political cooperation, Japan subsequently faces

[1] While 124 preferential trade agreements had been notified to the WTO from 1948 to 1994, more than 370 were notified between 1995 and 2011 (www.wto.org).
[2] See Freund and Ornelas (2010) of a recent survey of the literature on PTAs.
[3] Limão (2006) and Limão and Karacaovali (2008) analyse bound multilateral tariff changes of preferentially and non-preferentially traded goods during the Uruguay Round, whereas Bohara et al. (2004), Estevadeordal et al. (2008), and Calvo-Pardo et al. (2010) analyse the relationship between preferential and multilateral tariff changes by regressing applied MFN tariff changes on lagged values of preferential tariff changes in panel data settings using OLS and IV estimators. The former two studies find evidence for preferences hindering further multilateral tariff reductions, whereas the latter studies find evidence for the opposite. In addition, using a cross-sectional regression approach Bohara et al. (2004) estimate the influence of Brazil's exports to Argentina on the latter's external tariffs in the presence of Mercosur and find that increasing preferential imports resulted in lower Argentine external tariffs.

an additional constraint on lowering its external tariffs in order to preserve PTA-negotiated preference margins and thus to maintain the preference-receivers' incentives to cooperate. As a result, Japanese policy makers may have been less aggressive in reducing UR bound external tariffs in the presence than in the absence of trade preferences.

In section 2 we sketch out an analytical framework that highlights how differences in policy environments result in different predictions on how a PTA affects multilateral tariff reductions. Our framework integrates the possible 'non-economic policy concession' dimension or motive (Limão and Karacaovali, 2008) with the rent destruction dimension or effect of a PTA (Ornelas, 2005). The theoretical analysis implies that it is an empirical question to decide which forces are at work, with the possibility that potentially opposing forces result in no effect.

Following a short description of Japan's trade policy and Uruguay Round tariff cuts in section 3, section 4 explains our empirical methodology. In order to estimate the impact of GSP preferences on MFN tariff changes, we use tariff changes on non-GSP goods as the counterfactual for tariff changes in the absence of GSP. Since this identification is the same as in Limão (2006), Limão and Karacaovali (2008) and Ketterer et al. (2014), one can explaindifferences in results by differences in policy contexts.

Our empirical results, reported in section 5, apply OLS and IV-GMM estimation techniques to estimate the impacts of Japanese trade preferences on 6-digit HS variation in Uruguay Round tariff changes. Our empirical findings are statistically significant and we find larger MFN tariff concessions, of the order of 1.6 to 1.8 percentage points, for non-GSP goods relative to GSP goods.

2. Analytical Framework

We consider a simple conceptual framework that incorporates two principle mechanisms through which trade preferences can promote or hinder external multi-lateral tariff reductions. We nest the 'non-economic concession' motivation of a PTA (Limão and Karacaovali, 2008) with the rent destruction potential of a PTA (Ornelas, 2005). We highlight how different assumptions result in different predictions and refer to the original papers for the complete theoretical treatments.

Consider a three-economy framework which examines how Home's external tariff formation against the Rest of the World (ROW) is endogenously affected by Home granting preferences to Foreign. Using the standard assumption that each country is a natural importer of a distinct subset of goods and that tariffs are the only instrument of protection, permits us to focus on Home's external import tariff t as the main choice variable for Home's representative import good. In the absence of a preferential trade agreement and any political economy considerations, Home chooses a tariff t that optimizes national welfare W(t), defined as the sum of producers' surplus, consumers' surplus and tariff revenue.

In a political economy environment with lobbying from domestic industry and preference granting to Foreign, the Home government maximizes a political objective function G which is the sum of national welfare W(t), the value of Foreign's cooperation on non-trade issues e^F and the amount of campaign contributions T:

$$G(t,e^F, T)=W(t)+\lambda_1 e^F+ \lambda_2 T, \qquad (1)$$

where and λ_1 and λ_2 are non-negative weights. The political objective function (1) nests the two prototype preferential trade agreements by the parameters λ_1 and λ_2. We can now sketch out the difference between Home's optimal external tariff in the absence and presence of a PTA, denoted by t^p and t^p_{PTA}, respectively, and contingent on the type of preferential trade agreement.

If $\lambda_1>0$ and $\lambda_2=0$; the preferential trade agreements affects the government's objective function only through the channel of Foreign cooperation on non-trade issues e^F. Foreign's provision of e^F is the result of Home granting tariff preferences to Foreign relative to ROW. Since a reduction of Home's external tariff will reduce (or even eliminate) the value of the

preference margin to Foreign, it will reduce Foreign's willingness to provide e^F. This implies that Home's external tariff is higher in the presence than in the absence of a PTA:

$$t^p_{PTA} - t^p > 0, \qquad (2)$$

The prediction (2) is expected to occur in PTAs where Home is large relative to Foreign and the preference granting to Foreign is in exchange of Foreign's cooperation on non-trade issues such as environmental regulations, labour standards, or strategic defence (all summarized in e^F).

In contrast, if $\lambda_2>0$ and $\lambda_1=0$, the preferential trade agreement affects the government's objective function through its impact on domestic campaign contributions by import-competing sectors. If the preferential trade agreement increases foreign competition, it will reduce domestic industry profits and diminish both the incentive and the capacity of Home's import-competing sector to lobby for a higher external tariff. As a result, Home's external tariff is lower in the presence than in the absence of a PTA[4]:

$$t^p_{PTA} - t^p < 0. \qquad (3)$$

While inequality (2) implies that one should observe higher multi-lateral tariff cuts in the absence than in the presence of a PTA, inequality (3) implies just the opposite. So the impact of PTAs on multilateral tariff setting depends on the context of the PTA. Since each prototype PTA suggests a mechanism which operates in an opposite direction, it is quite possible that both mechanisms are at work in real world PTAs. This implies a third prediction of no detectable effect.

[4] See Ornelas (2005) for the complete model leading to this prediction.

3. Japan's Preferential Trade Policy and Uruguay Round Tariff Cuts

3.1 Japanese Trade Preferences

Japan's preferential trade policy is characterized by a strong focus on preferences granted to developing and emerging economies. Until the start of the 21st century Japan's preferential trading schemes were limited to GSP and LGSP preferences which were first established in 1971 and periodically reviewed thereafter. [5] Mainly granting positive and zero-tariff preferential market access on designated products, in particular for industrial and mining products with only a few preferences granted on agricultural goods.[6] From the early 2000s onwards, Japan's preferential trade policy changed remarkably (Urata, 2004). In contrast to its previous reluctance to grant additional trade preferences alongside its GSP systems, Japan started to sign several bilateral economic partnership agreements (EPAs) with the conclusion of 13 bilateral EPAs by the end of 2011.[7]

Analysing Japan's external tariff policy during the Uruguay Round (1986-1994), we focus in our empirical analysis on Japanese preferences granted or in place at the time of the final UR negotiations and thus on preferences granted under the country's GSP or LGSP systems. Despite having been introduced in the GATT's trade policy framework for development reasons, these preferential schemes have also been found to be used to support national policy-makers' "short-term nationalistic political objectives that are not materially

[5] Initiated in 1971, Japan revised its GSP system four times until 2011. The respective starting dates of the four decennial schemes were 1981, 1991 and 2001 (Komuro, 2009).

[6] In addition, Japan's GSP market access was further restricted by ceiling values or ceiling quantities for some products in addition to the usual graduation threshold of 25%. Moreover, in 2003, Japan also introduced a so-called 'Country-Specific Competitiveness-Focused GSP-Exclusion' clause under which country-specific GSP imports could be suspended thereby further assuring limited import competition arising from Japan's GSP trading partners and limiting the scope for domestic rent destruction and protection leakage (cf. Ornelas, 2005) caused by Japan's GSP trading partners.

[7] Japan concluded its first EPA with Singapore in 2002 and further economic partnership agreements (EPAs) with Mexico, Malaysia, the Philippines, Chile and Thailand followed in rapid succession. Until the end of 2011 Japan concluded 13 bilateral EPAs, including trade concessions granted to ASEAN countries and also India. In addition to mutual preferential market access concessions, Japan's EPA policy further includes strong elements of economic and non-economic cooperation such as common regulations on investment rules, competition laws as well as environment- and energy conservation. For more detailed information of EPAs in the East-Asian region see Kawai and Wignaraja (2008). The bilateral Japan-Singapore Economic Partnership Agreement (EPA) entered into force in 2002, the Japan-Mexico and Japan-Malaysia EPAs in 2005 and 2006 respectively, while Japan's EPAs with Chile and Thailand were enforced in 2007, and with the Philippines in 2008. Further agreements were concluded with Indonesia, Brunei, ASEAN, Vietnam (all in 2008) as well as with Switzerland (2009), India and Peru (both 2011). In addition, Annex Figure 1 provides a brief graphical overview of Japan's aggregated preferential and MFN tariff evolution over time. The latter tends to point to a five-year phasing-in period for most of the UR negotiated tariff cuts and a relatively small difference between the applied and bound MFN tariffs thereafter.

related to overall economic development" (Jackson, 1997:160). Employed as diplomatic 'bargaining chips' for the government's non-trade related policy objectives, trade preferences, in particular when not based on mutual market access concessions, may therefore be seen as components of trade- as well as foreign-policy instruments (Komuro, 2009).[8]

3.2 Uruguay Round Tariff Concessions

Multilateral trade negotiations in the Uruguay Round (UR) started in 1986 and lasted until 1994. More than 100 participating countries agreed to legally binding tariff cuts on numerous goods including concessions negotiated in so-called sectoral agreements (e.g. textile, chemicals etc.). In order to achieve an informal tariff reduction aim of one third, participating countries were asked to submit 'line-by-line' reduction proposals as a starting point for further negotiations.[9]

Table 1 provides an illustration of Japan's bound ad-valorem MFN tariff rates before and after the UR as well as the agreed cuts per industry. The sectors with the largest average tariff protection before and after the Uruguay Round were the beverage, processed food and tobacco industries. In addition, several industries showed (rather low) average protection rates of around 4 percentage points before the Round, including the paper, printing, petroleum, machinery and transport equipment industries; most of which are characterized by even lower or duty-free access after the UR negotiations (Table 1, Columns 2 and 3).

The largest average tariff cuts were experienced in the processed food and beverage industries. With sector-level reductions of 7 and 14 percentage points, respectively, the latter

[8] Japan's penchant to use trade preferences as a complement to foreign policy objectives may also be illustrated by the Japanese Council of Ministers statement on the policy objectives of Economic Partnership Agreements (METI, 2005:4) highlighting the latter's role in promoting the "creation of [an] international environment beneficial to our country" and to "strengthen our economic power and [ability to] tackle political and diplomatic challenges".

[9] While during preceding multilateral trade rounds (e.g. Tokyo Round) the application of so-called 'formula approaches' used to be common practise (cf. GATT Article 28 bis), the UR failed to reach a common consensus on mutually acceptable reduction modalities. While the United States favoured an item-by-item approach, other participants were opposed since they feared that the latter approach would allow for continuing high protection in certain sectors (WTO, 2005). The GATT contracting parties finally agreed to reduce their tariffs "with a target amount of overall reductions at least as ambitious as that achieved by the [Swiss-] formula participants in the Tokyo Round" (WTO, 2005), a statement that was generally interpreted as an overall tariff reduction of 33.3% (Hoda, 2001; WTO, 2005).

were clearly above the average cut across all industries of around 4 percentage points (Table 1, Column 3). Analysing Japan's Uruguay Round tariff concessions as a percent of initial (i.e. pre-UR) bound rates, rather than percentage points, identifies the paper, printing, machinery, transport and scientific equipment industries as the sectors with tariff cuts above 95 percent, whereas the tobacco industry was characterized by the lowest average tariff reductions of around 17 percent (Table 1, Column 5). Coefficients of variation also displayed in Table 1, Column (4), further point to the presence of significant variations regarding the magnitude of the product-level MFN tariff cuts within individual industries. Finally, comparing actual with the one third hypothetical reductions (Table 1, Column 4 and 6, respectively), also reveals that the tariff cuts were not uniformly applied across different industries to achieve the informal reduction target.

Table 1: Japan's Bound MFN Tariff Reductions agreed upon during the Uruguay Round per Industry

		(1)	(2)		(3)		(4)			(5)	(6)
			Before Uruguay Round		After Uruguay Round		Uruguay Round Tariff Cuts (Percentage Points)			Uruguay Round Tariff Cuts (Percent)	Hypothetical 1/3reduction target
ISIC code	Sector name	Tariff Lines	Mean	Std. dev.	Mean	Std. dev.	Mean	Std. dev.	Coef. Var.	Mean (% of pre-UR rates)	Mean (percentage points)
311	Food products	87	0.19	0.21	0.12	0.12	-0.07	0.10	1.41	-37.9	-0.13
313	Beverages	4	0.25	0.18	0.11	0.08	-0.14	0.11	0.73	-56.2	-0.17
314	Tobacco	2	0.15	0.07	0.12	0.05	-0.03	0.02	0.64	-17.5	-0.10
321	Textiles	148	0.09	0.05	0.06	0.03	-0.04	0.02	0.66	-40.5	-0.06
322	Wearing apparel except footwear	68	0.11	0.03	0.07	0.03	-0.03	0.01	0.43	-34.9	-0.07
323	Leather products	20	0.09	0.05	0.07	0.07	-0.02	0.02	0.82	-40.6	-0.06
324	Footwear except rubber or plastics	2	0.07	0.04	0.06	0.03	-0.01	0.01	0.54	-20.5	-0.05
331	Wood products except furniture	20	0.07	0.06	0.03	0.02	-0.05	0.05	0.97	-59.9	-0.05
332	Furniture except metal	16	0.05	0.00	0.01	0.02	-0.04	0.01	0.36	-79.2	-0.03
341	Paper and products	86	0.04	0.02	0.00	0.01	-0.04	0.02	0.43	-96.3	-0.03
342	Printing and publishing	11	0.04	0.00	0.00	0.00	-0.04	0.00	0.04	-100.0	-0.03
351	Industrial chemicals	464	0.06	0.02	0.03	0.02	-0.02	0.01	0.68	-40.0	-0.04
352	Other chemicals	137	0.06	0.02	0.01	0.03	-0.04	0.02	0.46	-79.6	-0.04
353	Petroleum refineries	13	0.04	0.02	0.02	0.02	-0.02	0.01	0.33	-63.8	-0.02
354	Miscellaneous petroleum and coal products	3	0.04	0.01	0.01	0.01	-0.03	0.02	0.59	-77.1	-0.03
355	Rubber products	37	0.05	0.01	0.01	0.01	-0.04	0.01	0.33	-84.9	-0.03
356	Plastic products	42	0.07	0.04	0.05	0.04	-0.02	0.01	0.46	-38.0	-0.05
361	Pottery china earthenware	12	0.04	0.00	0.01	0.01	-0.03	0.01	0.37	-77.2	-0.03
362	Glass and products	46	0.05	0.02	0.01	0.02	-0.04	0.01	0.26	-81.7	-0.03
369	Other non-metallic mineral products	51	0.04	0.01	0.01	0.01	-0.03	0.01	0.47	-68.6	-0.03
371	Iron and steel	137	0.05	0.01	0.00	0.01	-0.05	0.01	0.24	-94.3	-0.04
372	Non-ferrous metals	87	0.06	0.03	0.03	0.02	-0.03	0.01	0.37	-58.0	-0.04
381	Fabricated metal products	214	0.05	0.01	0.01	0.01	-0.04	0.01	0.37	-81.0	-0.03
382	Machinery except electrical	344	0.05	0.01	0.00	0.01	-0.05	0.01	0.18	-97.7	-0.03
383	Machinery electric	154	0.04	0.01	0.00	0.01	-0.04	0.01	0.29	-95.7	-0.03
384	Transport equipment	89	0.04	0.01	0.00	0.00	-0.04	0.01	0.25	-100.0	-0.03
385	Professional and scientific equipment	130	0.05	0.01	0.00	0.01	-0.05	0.01	0.19	-97.4	-0.03
390	Other manufactured products	108	0.05	0.02	0.02	0.02	-0.03	0.01	0.38	-68.8	-0.03
	Total	2532	0.07	0.03	0.03	0.03	-0.04	0.02	0.51	-67.4	-0.05

Notes: The sample includes 2532 non-missing observations at the HS 6-digit level. Product lines with pre-UR duty free bound MFN tariffs have been excluded due to the lacking possibility to grant tariff preferences on the latter products. Column (1) reports the total number of goods per ISIC 3-digit industry, whereas Columns (2) to (4) illustrate simple average means and standard deviations of pre- and post-UR bound MFN tariff rates as well as the tariff reductions per industry. The coefficients of variation, in Column (4), have been calculated as the ratio of the std. deviation to the mean reduction. Column (5) reflects the negotiated MFN tariff rate changes in percent rather than percentage points, while Column (6) illustrates the hypothetical post-UR MFN rates if the informal reduction aim for developed countries of one-third had been applied to each industry.

4. Empirical Methodology

4.1 Identification and Econometric Specification

Equations (2) and (3) above make contrasting predictions about external tariffs chosen in the presence and in the absence of a PTA. In light of the unobserved real counterfactual - i.e. the external tariff levels in case the PTA had not been formed, we follow Limão (2006) by using non-preferentially traded goods - i.e. products not imported or not receiving preferential treatment (non-GSP goods) - as the respective control group. In the context of the conceptual context above, equation (2) may therefore also be interpreted as predicting lower external tariffs for non- GSP goods relative to GSP goods (i.e. preferentially imported products). Aiming to estimate the impact of Japan's GSP preferences on bound multilateral tariff adjustments, we use the following estimating equation, which may be applied to GSP as well as to non- GSP goods:[10]

$$\Delta t_i = \Phi I_i + \beta_2 R_i + \beta_3 P_i + \beta_4 \Delta X_h + \mu_i \qquad (4)$$

Focusing on the effect of GSP trade preferences on WTO negotiated bound MFN tariffs, our dependent variable is defined as the difference between the bound external tariffs agreed upon during the Uruguay Round and the ones negotiated before.[11] Using tariff data at the 6-digit HS product level, our analysis is based on a sample of 2532 observations (excluding product lines characterized by pre-UR zero tariff rates),[12] not considering agricultural products because of the heavy incidence of non-tariff measures affecting the latter.

As indicated above our main interest lies in the parameter estimate of the binary GSP good indicator $I_{i,}$ which takes the value one if a GSP-specific preferential tariff was granted for product i and if the latter was also imported.[13] We use GSP-good specifications for Japanese preferences granted under the GSP as well as the LGSP trading schemes.[14]

[10] Note that the employed econometric specification has first been used by Limão (2006) in the context of trade preferences granted by the US.
[11] The latter were largely negotiated during the Tokyo Round.
[12] Note that preferential market access cannot be granted on products with a zero MFN tariff rate.
[13] We use preferential tariffs in place in 1993 or in 1994 and import data of the year 1994. Using preferential tariff data for the years 1994 and 1995 results in qualitatively identical findings (the results are available upon request).
[14] The results for the GSP-good specification and the specification combining both, GSP and LGSP products, are reported in Table 2, while the findings for the LGSP scheme alone are presented in Annex table 3.

Although the conceptual framework laid out in section 2 showed that there is strictly ambiguity about the expected sign on the parameter of the GSP good, the present policy context is one where the non-economic concession motivation for preferences is expected to dominate; with a positive, estimated coefficient indicating a net 'stumbling block' effect. Additionally, we use alternative specifications identifying duty-free imported GSP-goods, and products with notable GSP-import ratios. We expect a potentially stronger impact for preferential tariffs which were already quite low and for which the preservation of preference margins was more difficult.Similarly, the effect of preferential tariffs on external tariff changes may be stronger for products with high GSP import intensities.

Accounting for additional elements affecting multilateral tariff negotiations requires the inclusion of a series of control variables. We follow the literature by capturing political economy considerations through the change of the elasticity-weighted inverse import penetration ratio ΔX_h. We define ΔX_h as $\Delta X_h = \Delta(X_h/M_h)/\varepsilon_h$, where $\Delta(X_h/M_h)$ reflects the change in the respective ratio between the final phase of the Uruguay Round (1992) and the end of the Tokyo Round (1978) and ε_h represents the corresponding ISIC 3-digit import demand elasticity in sector h.

In line with tariff negotiations in a GATT-based context, we also aim to account for potentially reciprocal tariff concessions by including control variable R_i in estimating equation (4). Accounting for the WTO's reciprocity principle, we use the, over all products i, aggregated sum of WTO-member country k's import weighted UR percentage tariff concessions (i.e. $\sum_i w_i^k \Delta t_i^k / t_i^k$). Multiplying the latter expression by Japan's top-5 import suppliers' import share in good i (s_{it}^k) and aggregating the latter product over all countries k, we finally define a proxy measure for Japan's reciprocal tariff concessions (i.e. $R_i = \sum_k s_{it}^k [\sum_i w_i^k \Delta t_i^k / t_i^k]$).[15] Only considering imports stemming from Japan's top-5 trading partners of

[15] Finger et al. (2002) provide data on the aggregated sum of import weighted percentage tariff concessions on product i (i.e. $\sum_i w_i^k \Delta t_i^k / t_i^k$) of country k. w_i^k represents product i's share in total imports from country k and $\Delta t_i^k / t_i^k$ represents k's tariff cuts in product i. Moreover, it is worthwhile noting that reciprocal tariff reductions do not necessarily refer to the same matching set of products. In practise it is more common to reciprocate with tariff reductions on other products which are possibly more important for the partner country. Some authors therefore distinguish between products j and products i, where j denotes products subject to tariff reductions in partner country k, and i products subject to MFN tariff cuts by the Home country. For simplicity, however, we use the product index i for both trading partners.

product i takes into account the GATT's 'principle supplier' rule, which may have resulted in Japan only engaging in direct trade talks with its most important import suppliers.[16]

Reciprocal tariff reductions in combination with the GATT's MFN principle may give rise to an MFN externality effect, with potentially lower tariff cuts in the presence of many smaller trading partners which may benefit from the larger countries' reciprocal concessions without having to offer any reductions by themselves. A large number of smaller 'free-riding' countries may then result in a reduced willingness to offer substantial concessions on the part of the larger economies since the latter cannot expect any meaningful reciprocal tariff reductions in return. Given that information on Japan's direct negotiating partners is not available, we aim to account for the latter effect by introducing a variable reflecting the change in Japan's non top-5 exporters per product line i between 1994 and 1989.[17] Using the latter change as a proxy for a potential MFN externality effect, we define a control variable P_i as an indicator taking the value one if the latter variation in the number of non-top 5 suppliers is larger than the median change and zero otherwise. Finally, given that governments may find it easier to reduce tariffs on products where tariff levels are still quite high, we also control for initial (i.e. pre-UR) bound tariffs by introducing the latter as an additional regressor ($t_{i,t-1}$) in our model.

4.2 Endogeneity Concerns

A potential endogeneity concern in the context of preferences and multilateral tariff cuts is associated with the possibility of reverse causality. Considering the possibility that countries may be more likely to ask for preferential treatment in products for which they expect smaller tariff reductions, anticipated MFN tariff changes may influence whether a good receives a preference or not in the first place. In the context of GSP trade preferences we expect possible reverse causality issues however to be less of an issue.

Nevertheless, in order to control for this we use additional IV-GMM estimation techniques as well as OLS. Using an instrumental variable approach to account for the latter,

[16] Note that information on Japan's direct UR negotiating partners in not available.
[17] It is assumed that if the change of small exporters to the EU per product line i was large enough between 1994 and 1989, the latter may mirror a longer term change between 1978 (end-Tokyo) and 1994 (end-Uruguay). The constructed proxy variable is therefore used as an instrument for the MFN externality effect.

we employ the '94 import dummy (D_i^{j94}) as an instrument since it is directly related to the preference indicator itself ($I_i^j = PR_i^j * D_i^{j94}$) and tends to be unaffected by the UR tariff cuts. World-price changes between 1992 and 1994 are used as a second instrument for the preference good indicator. Influencing the monetary benefit arising from a preference and thus the demand for preferential market access, world price changes between 1992 and 1994 tend to be uncorrelated with the error term since the UR tariff concessions did not enter into force before 1995.[18] Finally, given that NTBs may lead to an increase of domestic prices which are also received by preferential exporters in case of a zero-preferential tariff, countries may be more likely to ask for a preference on goods which they expect to be subject to an NTB in the future. Data for 1993 is used as a proxy for future NTBs.[19]

Potential endogeneity concerns due to reverse causality may also affect some of the introduced control variables. Given that Japan's tariff cuts may influence other countries' (reciprocal) tariff reductions the reciprocity variable may also give rise to reverse causality concerns. Unilateral tariff reductions implemented between 1986 and 1992 are therefore used as an instrument. Most UR-participants reduced their tariffs unilaterally, between 1986 and 1992, despite substantial doubts regarding the successful conclusion of the Uruguay Round (Stewart, 1999). Later, during the final phase of the UR, unilateral liberalization efforts were explicitly taken into account when the final cuts were agreed upon (Finger et al., 2002). Following Limão and Karacaovali (2008), we therefore argue that unilateral tariff reductions may serve as a legitimate instrument for the undertaken reciprocal cuts.[20]

The political economy variable may also represent a source of potential endogeneity, since the latter's components are all influenced by domestic prices and therefore by external tariffs. In order to account for this we employ the difference in industry-level scale economies (i.e. valued added/number of firms) between 1981 and 1992 as an instrument, on

[18] In light of the fact that a country's financial benefit arising from preferential market access also depends on world prices, the latter may also impact a partner country's desire for preferential market access. Increasing world prices may also help to overcome fixed export costs.

[19] A country may even be more inclined to ask for a preference if it already exported a given product. We therefore interact the NTB indicator variable (D^{ntb93}) with the export dummy variable (D_i^{j94}) and introduce the combined component as an additional instrument. Moreover, world price changes at the 6-digit HS product-level are proxied by calculating unit-values using import value and quantity information available at UN-TRAINS.

[20] Finger et al. (2002: 121) note that "according to delegations, the informal practice was more or less to count from applied rates in 1986 to the bound rate agreed at the Uruguay Round. By this practice, countries that had, after 1986, unilaterally reduced their tariffs would be given 'credit' at the round to the extent that they bound these cuts at the round."

the grounds that larger economies of scale may point to higher fixed entry costs and by consequence to a higher inverse import penetration ratio (X_h/M_h). Combining the industry-level scale economies with the product-level, world price change (1992 to 1994) is finally also used as an additional instrument, given that world prices impact on domestic prices and thus on our political economy proxy, and given that they tend to be uncorrelated with the error term.[21]

4.3 Data Sources

We highlight the main features of the data and refer to Annex Tables 1 and 2 for the detailed description and summary statistics of all variables. Our dependent variable is constructed using information on Japan's 6-digit HS Uruguay Round ad-valorem tariff reductions provided by the WTO's tariff concessions database. Japanese preferential tariffs as well as value and quantity information of Japan's import flows, all at the 6-digit HS level, stem from the UN-TRAINS database.[22] NTB data for the year 1993, used as an instrument for the preference indicator variable, was helpfully provided by the Trade Information Department of UNCTAD.[23] We construct our political economy variable by using import and production data from the UNIDO database and import demand elasticities at the ISIC 3-digit industry level from Kee et al. (2009). Sector level data on the number of establishments and valued added, which were both used to construct an instrument for the political economy variable, also come from the UNIDO database.[24] Finally, in order to compose a proxy measure for reciprocal tariff reductions, data from Finger et al. (2002) has been employed. Aggregating import-weighted product level UR tariff concessions into country-averages, the latter authors provide a measure for the UR-participating countries' overall tariff concessions. We use this information to compute a product-level reciprocity measure, by multiplying country-averages from Finger et al. (2002) by 6-digit HS import-shares from Japan's most important suppliers (retrieved from UN-TRAINS).

[21] Note that the UR negotiated tariff reductions took effect from 1995 onwards.
[22] Note that product-level concordance tables from UN-TRAINS were used to take into account the partial re-coding of certain products.
[23] The latter data is publicly not available at UN-TRAINS.
[24] Note that clustering of standard errors at the ISIC 3-digit industry level is used to take into account the different aggregation levels of the political economy variable and its instruments.

5. Estimation Results and Robustness Tests

5.1 Main Findings

Table 2 presents the main regression results using heteroscedasticity-robust OLS and IV-GMM estimation techniques. The results show, in all model specifications, a 'stumbling block' effect, with coefficients that vary between 0.016 and 0.018 and are significant at the 1% level. Providing support for the argument that Japanese trade preferences, in place at the time of the Uruguay Round, hindered further multilateral tariff liberalization, our results point to less aggressive tariff reductions of, on average, 1.6 to 1.8 percentage points for preferentially imported goods than for goods not receiving any preferential treatment or not being imported at all. [25] Our results therefore are in line with Limão's (2006) and Karacaovali and Limão's (2008) findings for the US and the EU of a net 'stumbling block' effect when granting preferential market access to smaller trading partners in exchange for a closer political relationship.

Comparing the estimation results across different GSP-good definitions shows similar findings for all model specifications displayed in Table 2. Reporting a 'stumbling block' effect of 1.8 percentage points for preferences granted under both, the GSP and LGSP trading schemes, the OLS estimations are corroborated by the respective IV-GMM results which show a slightly smaller, yet still highly significant, effect of about 1.7 percentage points (Table 2, Columns 1 and 5). The results for the respective duty-free tariff preferences granted also tend to support these findings by showing the same parameter estimates (Table 2, Column 2 for OLS and Column 6 for IV-GMM).[26] Subdividing Japan's preferential trade concessions in individual trading schemes provides further interesting insights. Preferences granted under Japan's GSP system show significant 'stumbling block' coefficients of 0.018 and 0.017 when estimated with OLS and IV-GMM, respectively, both significant at a 1% threshold (Table 2, Columns 3 and 9). Duty-free GSP preferences show almost identical results, with a slightly smaller effect when using OLS (Table 2, Column 4 and 7). Analysing the impact of LGSP preferences, however, leads to less clear cut findings with positive

[25] Moreover, in light of Japanese overall tariff concessions of around 4.5 percentage points for non-PTA goods, and a 3.8 percentage point overall reduction, the detected stumbling block effect also points to a certain economic importance.

[26] The latter points to the relatively large number of duty-free imported preference goods in our sample.

'stumbling block' effects which are only significant at the usual levels when estimated with OLS (the latter results are reported in Annex Table 3). [27]

Table 3 reports the results when considering more restrictive definitions of GSP-goods, by taking into account the relative importance of GSP-import flows (Columns 1 to 4), and a pre-specified required difference between product-level MFN and preferential tariff rates (i.e. the preferential tariff margin). While external tariff cuts for product lines with significant GSP-import shares may face increasing opposition given their importance for the partner country and the trade-off of preferences for cooperation on non-trade issues, considering a pre-specified difference between the MFN and preferential tariff rates accounts for potential costs when using the preferential tariff rate (and hence the possibility to use the MFN rate despite the presence of a preferential rate). To take these aspects into account Columns (1) to (4) introduce a 5 and 10% GSP-import share in the GSP-good specification, whereas Columns (5) to (8) classifyies GSP-goods, if the difference between the external and preferential tariff is larger than two percentage points. These results provide interesting insights as they confirm the net stumbling block finding. Indeed the stronger stumbling block effect in some specifications suggests a higher resistance to external tariff cuts for preferentially-traded products which may be considered as important for the preference-receiving trading partner.[28]

The results for the remaining variables, displayed in Table 2 and Table 3, point to a rather weak impact of political economy forces on Japan's Uruguay Round tariff commitments; the latter only being significant when estimated with IV-GMM in Table 2 and 3. Showing statistically significant coefficients, which vary between 0.003 and 0.018, our findings only provide partial evidence for lower tariff reductions in politically influential sectors.[29]

[27] The any- and zero-tariff LGSP preference good specifications (Annex Table 3) both show parameter estimates of 0.020, significant at the 1% level, when using the OLS estimator, and parameter estimates of 0.028 with IV-GMM. Moreover, it is also worth noting that the LGSP results are based on a very small set of PTA goods (covering 22 product lines) which implies a certain caution is needed when interpreting the latter results.

[28] Note that the OLS results for the significant import share specifications report slightly smaller coefficients compared to the respective results in table 2 (columns 3 and 7). The magnitude of the coefficients in all other specifications in table 3 is however considerable larger.

[29] Note that the results for LGSP preferences, reported in Annex Table 3, show slightly stronger political economy influences which are significant at the 1% threshold.

Consistent evidence for reciprocity based tariff cuts is not found when analysing the latter's impact on Japan's UR tariff concessions. Negative coefficients for some of the preference specifications are found when using IV-GMM estimation techniques, suggesting smaller Japanese tariff reductions on products imported from UR participating countries which themselves implemented larger product-level tariff reductions. Free-riding strategies on the part of other countries also seem to have played a minor role for Japanese policy makers when establishing their own tariff commitments, as indicated by non-significant coefficients for the MFN externality variable in all model specifications.

Finally, initial tariff rates included in the estimation to control for potentially larger tariff cuts on products with initially high tariffs, show highly significant parameter estimates in all model specifications pointing to an important impact of the level of pre-UR bound tariff rates on the final UR tariff concessions.[30]

Statistical robustness tests presented at the bottom of Table 2 and Table 3 point to generally robust findings.[31] Hansen J-tests of the joint relevance of the instruments point to a high instrument significance in almost all model specifications.[32] Difference-in-Sargan test statistics analysing the exogeneity of the more endogeneity prone instruments also reject, in most specifications, the correlation hypothesis to the error term.[33] Moreover, further statistical endogeneity tests, also displayed at the bottom of Table 2 and Table 3, do not indicate severe endogeneity concerns.

[30] Excluding initial tariff rates or more generally all other control variables leads to qualitatively identical findings. These results are not included here but are available upon request.
[31] First-stage regression results for the IV-GMM estimations are presented in Annex table 4.
[32] The correlation hypothesis of the second stage error term with the instruments is rejected in all specifications, apart from the LGSP specifications in Annex Table 3.
[33] We follow Karacaovali and Limão (2008) in choosing the subset of more endogeneity prone instruments and select the instruments which include either NTB data or an import dummy variable.

Table 2: The Impact of Japanese Trade Preferences on Multilateral Tariff Reductions during the Uruguay Round

	OLS				IV-GMM			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	GSP & LGSP	GSP & LGSP (Duty-Free)	GSP	GSP (Duty-Free)	GSP & LGSP	GSP & LGSP (Duty-Free)	GSP	Duty-Free GSP
$I_i^{j‡}$	0.018***	0.018***	0.018***	0.016***	0.017***	0.017***	0.017***	0.017***
	(0.003)	(0.003)	(0.003)	(0.005)	(0.002)	(0.002)	(0.002)	(0.002)
$R_i^{‡}$	0.002	0.002	0.002	0.001	-0.010	-0.010*	-0.010*	-0.008
	(0.006)	(0.006)	(0.006)	(0.007)	(0.006)	(0.006)	(0.006)	(0.006)
$\Delta X_h‡$	0.003	0.003	0.003	0.003	0.011*	0.011*	0.011*	0.010*
	(0.002)	(0.002)	(0.002)	(0.002)	(0.006)	(0.006)	(0.006)	(0.005)
P_i	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.000
	(0.002)	(0.002)	(0.002)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)
$t_{i,t-1}$	-0.376***	-0.376***	-0.376***	-0.360***	-0.334***	-0.334***	-0.334***	-0.326***
	(0.017)	(0.017)	(0.017)	(0.025)	(0.076)	(0.074)	(0.074)	(0.059)
Constant	-0.021***	-0.021***	-0.021***	-0.020***	-0.022***	-0.022***	-0.022***	-0.022***
	(0.005)	(0.005)	(0.005)	(0.006)	(0.006)	(0.006)	(0.006)	(0.005)
Observations	2532	2532	2532	2532	2532	2532	2532	2532
Number of PTA goods	1237	1226	1226	1124	1237	1226	1226	1124
Hansen's J (p-val.)[a]	-	-	-	-	0.685	0.676	0.676	0.628
C-stat (p-val.)[b]	-	-	-	-	0.660	0.657	0.657	0.630
Endogeneity (p-val.)[c]	-	-	-	-	0.479	0.446	0.446	0.507
Heterosked. (p-val.)[d]	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Notes: *, **, *** denote the 10%, 5%, 1% significance levels, respectively. The estimations reported in Table 2 have been conducted by using heteroskedasticity robust standard errors, clustered at the 3-digit ISIC industry level. Columns (1) to (4) report the OLS estimation results under different Japanese PTA-good specifications. The respective IV-GMM regression results are illustrated in Columns (5) to (8). ΔX_h has been re-scaled by 10,000. The F-tests of instrument exclusion in the first-stage regressions report all rejections either at the 1% or 5% significance level and show first-stage F-statistics which are larger than 10 for I_i^j and R_i. For ΔX_h the F-statistics show values of around 2.3. The first-stage regression results for the main specifications are reported in Annex Table 4. (a) Test of over-identifying restrictions using the Sargan-Hansen method which is based on the null hypothesis that the employed instruments are valid instruments - i.e. that the latter are (jointly) not correlated with the second stage error term. (b) Exogeneity test for a subset of instruments (using Difference-in-Sargan/ C-statistics) defining the null hypothesis as instrument exogeneity. The tested instruments include: Danyexp, Dntball, Dntball*Danyexp, Dntb, (Δp9294)avg*Δscale. (c) Testing regressor endogeneity under the null hypothesis that the selected variables are exogenous (i.e. using OLS provides consistent and efficient results). The potentially endogenous regressors are marked with ‡. (d) Pagan and Hall's heteroskedasticity test for instrumental variable regressions under the null hypothesis of no heteroskedasticity.

Table 3: GSP Trade Preferences and MFN tariff cuts: Significant GSP Import Shares & Sizeable Preference Margins

	Significant GSP Import Share				*Sizeable Preference Margins*			
	OLS		IV-GMM		OLS		IV-GMM	
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
	1994 GSP Import Share (5%)	1994 GSP Import Share (10%)	1994 GSP Import Share (5%)	1994 GSP Import Share (10%)	GSP (Pref. Margin > 2%)	LGSP (Pref. Margin > 2%)	GSP (Pref. Margin > 2%)	LGSP (Pref. Margin > 2%)
I_i	0.016***	0.015***	0.026***	0.035***	0.019***	0.022***	0.023***	0.016
	(0.003)	(0.003)	(0.003)	(0.007)	(0.003)	(0.004)	(0.003)	(0.015)
$R_i^{\ddagger}$	0.005	0.006	-0.003	0.001	-0.001	-0.006	-0.015***	-0.022***
	(0.007)	(0.007)	(0.007)	(0.008)	(0.006)	(0.007)	(0.005)	(0.008)
$\Delta\mathbf{x}\ddagger$	0.003	0.003	0.014**	0.014***	0.002	0.002	0.009**	0.018**
	(0.002)	(0.002)	(0.006)	(0.005)	(0.002)	(0.002)	(0.004)	(0.007)
P_i	-0.002	-0.002	-0.001	-0.0003	-0.0004	-0.003**	0.001	-0.001
	(0.002)	(0.002)	(0.001)	(0.001)	(0.002)	(0.002)	(0.001)	(0.002)
$t_{i,t-1}$	-0.374***	-0.375***	-0.341***	-0.522***	-0.384***	-0.371***	-0.338***	-0.317***
	(0.019)	(0.020)	(0.104)	(0.079)	(0.0124)	(0.024)	(0.049)	(0.066)
constant	-0.016**	-0.014**	-0.018***	-0.007	-0.024***	-0.020***	-0.030***	-0.022***
	(0.006)	(0.007)	(0.007)	(0.007)	(0.004)	(0.006)	(0.004)	(0.005)
Adjusted R^2	0.61	0.59	0.43	0.30	0.71	0.61	0.63	0.34
Observations	2532	2532	2532	2532	1763	1805	1763	1805
Number of FTA goods	963	825	963	825	533	13	533	13
Hansen's J (p-val.)	-	-	0.803	0.840	-	-	0.929	0.127
C-stat (p-val.)	-	-	0.707	0.739	-	-	0.945	0.149
Endogeneity (p-val.)	-	-	0.436	0.341	-	-	0.430	0.178
Heterosked. (p-val.)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Notes. All regressions are based on heteroskedasticity robust standard errors and clustering at the 3-digit ISIC industry level. *, **, *** illustrate the 10%, 5%, 1% significance levels, respectively.

5.2 Robustness Tests

Table 4 displays the regression results when subjecting our main findings to a series of robustness tests. Reporting results for OLS as well as IV-GMM estimation techniques, the table shows the findings for the preference good indicator (I_i) variable with the other control variables suppressed.[34] The baseline results from Table 2 (Columns 1 and 5) are included in Column 1 for comparison, while the remaining columns illustrate the regression results when subjecting the latter baseline findings to various robustness checks.

In order to account for unobserved industry effects we first include an additional indicator variable at the 1-digit level when using the Harmonized System (HS) product classification. The results, reported in column (2), confirm our previous findings by showing highly significant, although slightly smaller, coefficients on the indicator variable of 0.014 and 0.015 when estimated with OLS and IV-GMM, respectively.

In light of the so-called sectoral agreements negotiated during the UR we also test whether the 'stumbling block' effect still holds when accounting for a potential alternative tariff reduction rationale by excluding product lines affected by sectoral negotiations. Column (3) reports the results for the so-called 'zero-for-zero' tariff concessions, while column (4) additionally takes into account the sectoral negotiations on chemicals. With highly significant coefficients of 0.021 and 0.014 (column 3) as well as 0.022 and 0.026 (column 4), we continue to find strong support for the 'stumbling block' effect.

The exclusion of the reciprocity variable and the latter's instruments represent a further robustness test by following the structural model more closely.[35] The results confirm the baseline results in column 1 (Table 4).

Product lines characterized by NTBs which affect all trading partners may point to the presence of common unobserved product characteristics which in turn may have an impact on the depth of the agreed tariff concessions. As suggested by Karacaovali and Limão (2008), we exclude the set of instruments involving the latter NTB variable. The results corroborate

[34] The results for the suppressed variables as well as the first stage regression results for the IV estimations are available upon request.
[35] Note that Karacaovali and Limão's (2008) theoretical model does not include a reciprocity term in its final estimation equation.

the above findings, with a slightly smaller but still highly significant GSP good coefficient of 0.015 (Column 6, Table 5).

Finally, in light of diverging distributions of GSP and non-GSP goods across sectors we additionally analyse whether sector-specific features may drive our 'stumbling block' findings by dropping successively single industries. The results, not reported in Table 4 but available upon request, confirm the main findings by showing highly significant 'stumbling block' results when omitting all sectors individually. We also test whether successively dropping the introduced covariates affects the results for our main variable of interest, and find that the stumbling block effect remains highly significant (Annex table 5).

Table 4: Robustness Analysis

	OLS & IV-GMM					
	(1)	(2)	(3)	(4)	(5)	(6)
Robustness test	GSP & LGSP	"HS Industry Effects"	"Zero-for-Zero" Sectoral Agreements	"Zero-for-Zero" Agreements incl. Chemicals	Excluding Reciprocity	Exclude all NTB instruments
I_i^{OLS}	0.018***	0.014***	0.021***	0.022***	0.018***	-
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	-
I_i^{IV}	0.017***	0.015***	0.014***	0.026***	0.018***	0.015***
	(0.002)	(0.005)	(0.003)	(0.008)	(0.002)	(0.004)
Observations	2532	2532	2061	1479	2532	2532
Number of PTA goods	1237	1237	1022	557	1237	1237

Notes: Column (1) above reports the baseline regression results from Table 2 (columns 1 and 5), while the additional robustness test findings are display in columns (2) to (6). In all regression concordance tables have been used. Columns (3) and (4) report the findings when tariff lines covered by the so-called 'zero-for-zero' concessions and by the sectoral agreement on chemicals were excluded. The information which we used regarding product coverage of the latter two agreements is based on information provided by the WTO's secretariat (WTO, 2005). Additional test have been conducted on the basis of excluding individual industries. The latter results (not reported above in Table 5, but available upon request) confirm the reported 'stumbling block' findings. All regressions use heteroskedasticity robust standard errors clustered at the 3-digit ISIC industry level. *, **, *** illustrate the 10%, 5%, 1% significance levels, respectively.

6. Conclusions

The impact of preferential trade agreements (PTAs) on multilateral trade liberalisation (MTL) is still subject to a controversial debate. In light of an abundant but inconclusive theoretical literature and scarce empirical evidence on the subject matter, we provide new theory-based evidence for an important developed Asian economy – i.e. Japan. By focusing on Japan's external tariff liberalisation agreed upon during the Uruguay Round, we aim to extend the current empirical literature by using an identification strategy which has been suggested by Limão (2006). By analysing negotiated tariff cuts for GSP and non-GSP goods and controlling for a broad range of other factors we find larger tariff reductions for goods not imported under preferential market access (i.e. non-GSP goods), after having controlled for other influences. Our findings show that tariff concessions on non-GSP goods were on average 1.6 to 1.8 percentage points larger than those for preferentially imported goods.

In light of Japan's strong focus on unilateral GSP preferences granted to smaller trading partners before the start of the 21st century, our findings provide support for the argument that this was a PTA policy-setting in which preferential market access was granted in exchange for a closer political cooperation in general, rather than where rent destruction was at stake. This PTA-setting induced a net 'stumbling block' effect on the setting of Japan's multilateral tariffs during the Uruguay Round, with . smaller tariff reductions being implemented on preferentially imported products in order to preserve previously negotiated preference margins and thus in turn to preserve the partner countries' incentives for a continuing commitment towards the non-trade based political objectives they had agreed to with Japan in return for preferences.

Our present findings are in line with previous empirical evidence on the US and the EU which are both characterized by PTAs formed with smaller trading partners including requirements on non-trade related political issues (Limão, 2006; Karacaovali and Limão, 2008).[36] Our present findings are in contrast with Ketterer et al. (2014) for Canada in the context of the Canadian US free trade agreement. We explain the different findings by the difference in the preferential trade policy setting. In the present study we are exploring the effects of preferences given by a large industrial country to small developing trade partners. In the case of

[36] Examples of such agreements for the USA include the US-Andean Trade Preference Act (ATPA) and the Caribbean Basin Initiative (CBI) as well as the former's GSP trading schemes. PTAs formed by the European Union explicitly incorporating non-trade related policy objectives include, among others, the EU's Euro-Mediterranean (MED), African, Caribbean and Pacific (ACP) and GSP preferential trading schemes.

Canada, Ketterer et al. (2014) examine the effect on MFN tariffs of Canadian preferences granted to the USA (namely a large industrial, trading partner) under CUSFTA.

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ANNEX

Annex Table 1: Summary Statistics

Variable	Mean	Std. Dev.	Min	Max
Δt_i	-0.04	0.03	-0.43	0.00
I_i^{any}	0.49	0.50	0	1
I_i^{any0}	0.48	0.50	0	1
I_i^{gsp}	0.48	0.50	0	1
I_i^{gsp0}	0.44	0.50	0	1
I_i^{lgsp}	0.01	0.09	0	1
I_i^{lgsp0}	0.01	0.09	0	1
ΔX_h	-0.69	0.98	-7.74	0.20
R_i	-0.49	0.11	-0.96	0.00
D_{iany}^{94}	0.90	0.30	0	1
D_{igsp}^{94}	0.90	0.30	0	1
D_{ilgsp}^{94}	0.06	0.24	0	1
R_i^{uni}	-0.26	0.11	-0.92	1
D^{ntb}	0.30	0.46	0	1
D^{ntball}	0.30	0.46	0	1
$D^{ntball}*D_i^{94}$	0.26	0.44	0	1
$D^{ntball}*D^{gsp}$	0.26	0.44	0	1
$D^{ntball}*D^{lgsp}$	0.01	0.11	0	1
Δp_{9294}	0.05	0.15	-0.07	0.79
Δscale	4.33e+08	6.00e+08	-5.56e+08	1.12e+10
P_i	0.44	0.50	0	1
$t_{i,t-1}$	0.06	0.05	0.01	0.93

The summary statistics in Annex Table 1 are based on the dataset of 2532 observations.

Annex Table 2: Description of Variables and their Sources when analysing UR bound tariff Changes

Variable	Abbreviation	Exact definition	Source
		Dependent variable	
Bound MFN tariff rate reductions	Δt_i	Reduction in bound 'Most Favoured Nation' (MFN) tariffs negotiated during the Uruguay Round and those in place before the Uruguay Round (i.e. Tokyo Round).	WTO + authors' own calculations
		Explanatory variables	
PTA good variable	I_i^j	Indicator variable taking the value one if a product was granted (duty-free) preferential access PTAs in 1993 or 1994 and was imported by Japan in 1994 (from the respective partner country j).	TRAINS
Reciprocity induced changes in market access	R_i	Import weighted percentage tariff reductions of Japan's principal suppliers between 1986 and 1994 multiplied by good i's export share of each principal supplier to Japan; finally aggregation over all principal suppliers of good i.	Finger et al. (2002) + TRAINS + authors' own calculations
Political economy variable	ΔX_h	Change in the elasticity weighted inverse import penetration ratio at an ISIC 3-digit industry level between 1978 (final phase Tokyo Round) and 1992 (final phase Uruguay Round).[37]	COMTRADE + UNIDO + Kee et al. (2009) + authors' own calculations
MFN externality variable	P_i	Change in the share of small exporters (i.e. non-top 5 exporters/suppliers) of product i between 1989 and 1994. P_i takes the value one if the above mentioned change is larger than the median change and zero otherwise.[38]	TRAINS + authors' own calculations
		Instruments	
Import dummy variable	D_i^{any94}	Dummy variable indicating whether a product was imported by Japan from the respective trading partner j; regardless of its 'PTA-status' (instrumental variable for I_i^j).	TRAINS + authors' own calculations
NTB dummy variable	D_i^{ntb93}	Dummy variable taking the value one if product i was subjected to an NTB in 1993 (instrumental variable for I_i^j).	TRAINS + authors' own calculations
NTB dummy variable	$D_i^{ntball93}$	Indicator variable taking the value one if product i was subjected to an NTB in 1993 which applied to all trading partners (instrumental variable for I_i^j).	TRAINS + authors' own calculations
NTB & Import dummy variable	$D^{ntball93}*D^{any94}$	Combination of import and NTB indicator variables.	TRAINS + authors' own calculations
Scale economies	Δscale	Change in value added/number of firms (establishments) between 1981 and 1992 (instrumental variable for the political economy variable).	UNIDO + authors' own calculations
	Δscale*Δworld price	Interaction of the scale economies instrument with the average world price change per industry between 1992 and 1994 (instrumental variable for the political economy variable).	UNIDO + TRAINS + authors' own calculations
World prices	Δworld price$_i$, (Δworld price)$_i^2$, (Δworld price)$_i^3$	HS 6-digit world prices changes calculated as changes in unit-values between 1992 and 1994 (instrumental variable for I_i^j).	TRAINS + authors' own calculations
Unilateral tariff reductions	R_i^{uni}	Reciprocity measurement as described above but focusing on import-weighed unilateral tariff reductions of UR participants undertaken between 1986 and 1992 only (instrumental variable for R_i).	Finger et al. (2002) + TRAINS + authors' own calculations

[37] The change in the elasticity weighed inverse import penetration ratio ΔX_h is calculated as $x^{92} - x^{78}$.
[38] The change in the MFN externality effect or the change in the share of small (non-top5 exporters) of product-line i to Japan is calculated as $share_{94}$-$share_{89}$.

Annex Table 3: Uruguay Bound Tariffs Concessions and LGSP Preferences

	(1)	(2)	(3)	(4)
	LGSP	Duty-Free LGSP	LGSP	Duty-Free LGSP
$I_i^{j‡}$	0.020***	0.020***	0.028	0.028
	(0.005)	(0.005)	(0.021)	(0.021)
$R_i^{‡}$	-0.006	-0.006	-0.013**	-0.013**
	(0.006)	(0.006)	(0.006)	(0.006)
$\Delta X_h‡$	0.003	0.003	0.018***	0.018***
	(0.002)	(0.002)	(0.001)	(0.005)
P_i	-0.003	-0.003	0.001	0.001
	(0.002)	(0.002)	(0.002)	(0.002)
$t_{i,t-1}$	-0.363***	-0.363***	-0.289***	-0.289***
	(0.034)	(0.034)	(0.069)	(0.069)
Constant	-0.017***	-0.017***	-0.016***	-0.016***
	(0.006)	(0.006)	(0.005)	(0.005)
Observations	2532	2532	2532	2532
Number of PTA goods	22	22	22	22
Hansen's J (p-val.)[a]	-	-	0.087	0.087
C-stat (p-val.)[b]	-	-	0.097	0.097
Endogeneity (p-val.)[c]	-	-	0.620	0.620
Heterosked. (p-val.)[d]	0.000	0.000	0.000	0.000

Notes: *, **, *** denote the 10%, 5%, 1% significance levels, respectively. The OLS regression results are displayed in Columns (1) to (4), while the results based on IV-GMM estimation techniques are reported in Columns (5) to (8). All specifications have been estimated using heteroskedasticity robust standard errors, clustered at the 3-digit ISIC industry level. ΔX_h has been re-scaled by 10,000.

Annex Table 4: 1st Stage IV Results

	GSP & LGSP Preferences			GSP & LGSP duty-free Preferences			GSP Preferences		
	I_i	R	Δx	I_i	R	Δx	I_i	R	Δx
D_i^{94}	0.490***	-0.017**	-0.308**	0.484***	-0.017**	-0.308**			
	(0.109)	(0.006)	(0.144)	(0.108)	(0.006)	(0.144)			
D_i^{gsp}							0.484***	-0.017**	-0.308**
							(0.108)	(0.006)	(0.144)
D_{ntb}^{all}	-0.155	-0.001	0.013	-0.157	-0.006	0.013	-0.157	-0.006	0.013
	(0.123)	(0.001)	(0.268)	(0.123)	(0.008)	(0.268)	(0.123)	(0.008)	(0.268)
$D_{ntb}^{all}*D^{94}$	0.357***	-0.001	0.046	0.362***	-0.007	0.046	0.362***	-0.007	0.046
	(0.113)	(0.001)	(0.156)	(0.113)	(0.008)	(0.156)	(0.113)	(0.008)	(0.156)
Δworldprice	-0.011**	-0.004***	-0.005	-0.010**	-0.004***	-0.005	-0.010**	-0.004***	-0.005
	(0.045)	(0.001)	(3.696)	(0.004)	(0.001)	(0.015)	(0.004)	(0.001)	(0.015)
$\Delta worldprice^2$	0.000	-0.000**	-0.000	0.000	0.000*	0.000	0.000	0.000*	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)	(0.000)	(0.000)	(0.001)
$\Delta worldprice^3$	0.000	0.000	-0.000	0.000	0.000	0.000	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
D_{ntb}^{any}	0.079	0.006	-0.184	0.080	0.006	-0.184	0.080	0.006	-0.184
	(0.089)	(0.004)	(0.210)	(0.088)	(0.004)	(0.210)	(0.088)	(0.004)	(0.210)
Δscale-economies	0.000	-0.001	0.000*	0.000	0.000	0.000*	0.000	0.000	0.000*
	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Δscale-eco.*worldprice	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
R_i^{uni}	-0.029	0.710***	0.090	-0.016	0.710***	0.091	-0.016	0.710***	0.091
	(0.091)	(0.043)	(0.300)	(0.093)	(0.043)	(0.301)	(0.093)	(0.043)	(0.301)
P_i	-0.085	0.002	-0.428	-0.083**	0.002	0.001)	-0.083**	0.002	0.001
	(0.030)	(0.005)	(0.505)	(0.030)	(0.005)	(0.094)	(0.030)	(0.005)	(0.094)
Constant	0.047	-0.293***	-0.522***	-0.045	-0.293***	-0.522***	-0.045	-0.293***	-0.522***
	(0.054)	(0.011)	(0.169)	(0.055)	(0.011)	(0.169)	(0.055)	(0.011)	(0.169)
Observations	2531	2531	2531	2531	2531	2531	2531	2531	2531
FTA-goods	1237	1237	1237	1226	1226	1226	1226	1226	1226
Adj. R^2	0.372	0.513	0.060	0.238	0.490	0.060	0.238	0.513	0.060
Shea's partial R^2	0.231	0.489	0.056	0.233	0.513	0.056	0.233	0.490	0.056
F-test excl. P-val.	0.000	0.000	0.045	0.000	0.000	0.045	0.000	0.000	0.001

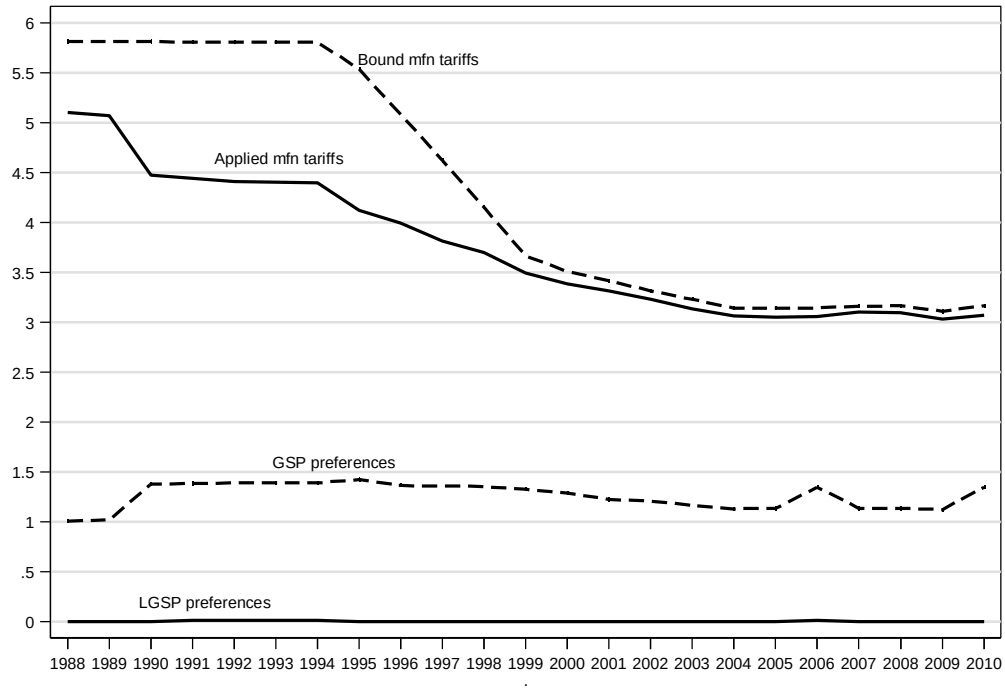
Notes: All regressions are based on heteroskedasticity robust standard errors and clustering at the ISIC 3-digti industry level. *, **, *** illustrate the 10%, 5%, 1% significance levels, respectively. The displayed F-test at the bottom of table 12 reports the probability value for the rejection of the hypothesis that all excluded instruments are jointly insignificant. The probability values for standard partial R^2 and Shea's R^2 are reasonably close pointing to the sufficient relevance for the instruments to explain the endogenous regressors. All F-statistics for the preference indicator variable and the reciprocity proxy variable exceed 10, while the F-statistics of political economy variable reports values that vary around 2.3.

Annex Table 5: Japanese MFN Tariff Cuts and GSP Preferences: Excluding individual covariates

	OLS					IV-GMM				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	GSP Preferences (Baseline)	GSP Preferences	GSP Preferences	GSP Preferences	GSP Preferences	GSP Preferences (Baseline)	GSP Preferences	GSP Preferences	GSP Preferences	GSP Preferences
$I_i^{j‡}$	0.018***	0.018***	0.018***	0.018***	0.014***	0.017***	0.018***	0.010***	0.009***	0.007**
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.002)	(0.002)	(0.003)	(0.003)	(0.003)
$R_i^{‡}$	0.002					-0.010*				
	(0.006)					(0.006)				
Δx‡	0.003	0.003				0.011*	0.009			
	(0.002)	(0.002)				(0.006)	(0.006)			
P_i	-0.001	-0.001	-0.002			-0.001	-0.001	-0.001*		
	(0.002)	(0.002)	(0.002)			(0.001)	(0.001)	(0.001)		
$t_{i,t-1}$	-0.376***	-0.376***	-0.370***	-0.370***		-0.334***	-0.350***	-0.308***	-0.290***	
	(0.017)	(0.017)	(0.017)	(0.017)		(0.074)	(0.076)	(0.093)	(0.093)	
Constant	-0.021***	-0.022***	-0.024***	-0.025***	-0.045***	-0.022***	-0.018***	-0.025***	-0.026***	-0.042***
	(0.005)	(0.004)	(0.004)	(0.003)	(0.002)	(0.006)	(0.004)	(0.005)	(0.005)	(0.001)
Observations	2532	2532	2532	2532	2532	2532	2532	2532	2532	2532
Number of FTA goods	1226	1226	1226	1226	1226	1226	1226	1226	1226	1226
Hansen's J (p-val.)[a]	-	-	-	-	-	0.673	0.6600	0.941	0.947	0.485
C-stat (p-val.)[b]	-	-	-	-	-	0.655	0.6098	0.952	0.958	0.478
Endogeneity (p-val.)[c]	-	-	-	-	-	0.442	0.574	0.033	0.021	0.166
Heterosked. (p-val.)[d]	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Notes. All regressions are based on heteroskedasticity robust standard errors and clustering at the 3-digit ISIC industry level. *, **, *** illustrate the 10%, 5%, 1% significance levels, respectively.

Annex Figure 1: Applied Average MFN and GSP Preferential Tariffs: 1988-2010



Source: Authors' own calculations based on UN-Trains tariff data