A simple analytical method using trade and tariff data for identifying an offensive list when negotiating a free trade agreement: An example of Sri Lanka-China free trade agreement negotiations

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A simple analytical method using trade and tariff data for identifying an offensive list when negotiating a free trade agreement: An example of Sri Lanka-China free trade agreement negotiations

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Abstract

This paper presents a step-by-step discussion on the methodology of developing an "offensive list" – a priority list of products for which to insist on obtaining concessions during trade negotiations, using free trade agreement negotiations between Sri Lanka and China as an example. In developing the offensive list of products for Sri Lanka, it is proposed that the products on the list must be a) products which China already imports; b) products which Sri Lanka exports and could potentially export more to China; c) products on which China imposes non-zero tariffs, and d) products for which Sri Lanka has demonstrated a comparative advantage in (unless facing prohibitive tariffs). The methodology used in this study relies primarily on trade and tariff data and is applicable to potential trade agreements between other economies, noting that value thresholds used for the Sri Lanka/China case would most certainly need to be adjusted to reflect relative economic sizes of trade partners and their individual trade patterns. This paper further examines the trade effect of removing tariffs for the offensive list using partial equilibrium analysis, which itself is a parsimonious yet widely used technique in early stages of trade negotiations.

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Abbreviations and acronyms

APTA	Asia-Pacific Trade Agreement
ASEAN	Association of Southeast Asian Nations
BRCA	bilateral revealed comparative advantage
BRI	Belt and Road Initiative
c.i.f.	cost, insurance and freight
DFDQ	duty-free, quote-free
DOTS	Direction of Trade
ESCAP	United Nations Economic and Social Commission for Asia and the Pacific
FTA	free trade agreement
GSP	Generalised System of Preferences
GVCs	global value chains
HS	harmonized system
IMF	International Monetary Fund
ITC	International Trade Centre
LDCs	least developed countries
MFN	most favoured nation
PSFTA	Pakistan-Sri Lanka Free Trade Agreement
PTA	preferential trade agreement
SAFTA	South Asian Free Trade Area
SRCA	standard revealed comparative advantage
UNCTAD	United Nations Conference on Trade and Development
WITS	World Integrated Trade Solutions
WTO	World Trade Organization

1. Introduction

It is of vital importance to enter into Free Trade Agreement (FTA) negotiations with full knowledge of key offensive interest (which sectors/issues should the trade partner be asked to liberalise). Using Sri Lanka-China FTA negotiations as an example, this paper presents a simple method to generate an offensive list of products which Sri Lanka may prioritize for negotiation of better market access with China, based on trade and tariff data analysis. Such a list can be a useful starting point towards formulating a negotiating position, noting that the governments must also carry out inter-governmental and private sector/stakeholders' consultations, including with civil society organisations, as well as further impact analysis that looks at intersectoral linkages, subnational analysis, sustainability impact assessment, including impact on marginal and disadvantaged groups, to refine that position.[1] The offensive list is used to estimate the effects on trade of tariff removal by China.

To determine an offensive list for Sri Lanka, this paper considers all the products imported by China at the eight-digit Harmonised System (HS) classifications. This is the most detailed level at which trade data is available and is the closest to China's HS ten-digit national tariff line. Products are then included on the offensive list if they satisfy the following criteria if they are:

(i) imported by China,
(ii) produced by Sri Lanka with the capacity for expansion,
(iii) Sri Lanka must have comparative advantage in the product, and
(iv) China must already have a tariff on the product.

Using these criteria, the generated offensive list itself contains 385 HS eight-digit products, with 1,179 associated ten-digit tariff lines, and is included in Appendix (available separately online). Key findings from this analysis are that Sri Lanka's key offensive interests lie mainly in their biggest global exports (including tea, coconut products, rubber products and textiles), with the main exceptions being important exports which do not currently face a Chinese tariff. However, many of the products on the offensive list are not currently exported to China, but they are included because there is a potential for bilateral trade expansion in those products.

The partial equilibrium analysis is carried out using SMART software developed by the United Nations Conference on Trade and Development (UNCTAD) and the World Bank. This analysis explores the effect of reducing Chinese tariffs on bilateral trade flows, broken down into trade creation and trade diversion effects. This analysis relies on estimates for key trade elasticities, and is limited by its partial equilibrium nature, meaning that trade in one good does not impact trade in other goods (even if they are compliments/substitutes or inputs). However, it provides a useful prediction for the impact of a potential FTA. The key result from this analysis is that tariff free exports for all 385 goods on the offensive list would increase Sri Lankan exports of these goods to China by 97%. As these goods form the bulk of Sri Lanka's bilateral exports, this would also account for a 63% increase in total Sri Lankan exports to China.

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[1] Trade negotiations further involve trade in services, investments, addressing non-tariff measures, digital trade provisions. The method and analysis here is purely limited to trade in goods.

This paper proceeds as follows. Section 2 describes the data used in this paper. Section 3 gives a brief summary of Sri Lankan and Chinese trade patterns. Section 4 gives a summary of current Sri Lankan and Chinese FTAs. Section 5 details the criteria for selection to the offensive list, while Section 6 summarises the results from the final offensive list, which is presented in and summarised in Appendix (available separately online). Section 7 presents the partial equilibrium analysis technique and results. Section 8 concludes.

2. Data used in this paper

Most of the data for the primary results (i.e. the offensive list) in this paper is taken from the International Trade Centre (ITC) database. For this paper, data on bilateral and global trade flows were drawn from the Trade Map tool (ITC, 2018a), and data on Chinese bilateral and most favoured nation (MFN) tariffs was taken from the Market Access Map tool (ITC, 2018b) at ten-digit HS level. All data used is in import values, reflected in terms of cost, insurance and freight (c.i.f.) values since the importing statistics are usually more trustworthy. Thus, the value of 'Sri Lanka's exports to the world' is calculated by the value of the world's imports from Sri Lanka. The data used for the offensive list in this paper uses the HS data classification method. Analysis is carried out mainly at the eight-digit HS level, which differs from country to country (six-digit is the lowest common HS level), but which is most relevant to China's tariff line. Almost all original trade data uses the 2012 HS classification system; all other trade data is converted to the HS 2012 classification using the United Nations Statistics Division HS conversion tables (UN, 2016). While the Chinese tariff line is at the ten-digit HS level, the eight-digit level is the lowest at which trade data is available. The SMART analysis is embedded in the World Bank's World Integrated Trade Solution tool (World Bank, 2016), and utilises data from UNCOMTRADE and TRAINS.

3. A summary of trade to date

Bilateral trade between Sri Lanka and China has been fairly limited and one-sided. Figure 1 shows the sources and destinations of Sri Lanka's total exports and imports in 2016. As has been noted by Weerakoon and Perera (2014), Sri Lanka's export markets are heavily dominated by India and Western countries, in particular the United States and the United Kingdom, which are the destination for 26.6% and 9.9% of Sri Lanka's global exports respectively. Despite comprising attracting over 8% of world's exports in 2016, China only secured 2% of Sri Lanka's exports in 2016. In contrast, China is the source country for 21.9% of Sri Lanka's total imports.

Figure 1. Sri Lanka imports and exports by partner country in 2016
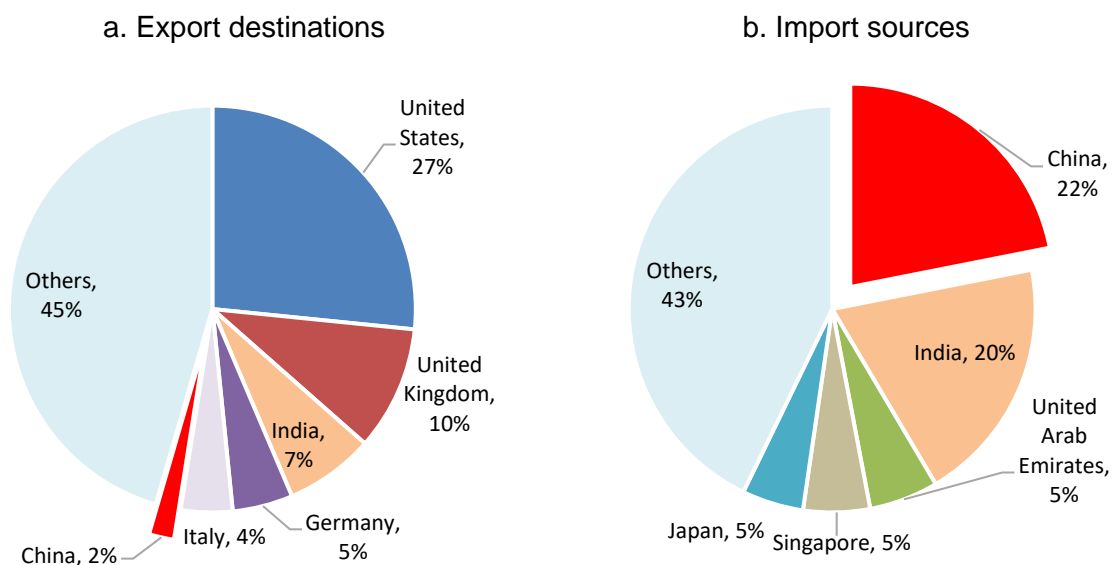
a. Export destinations

United States, 27%

Others, 45%

United Kingdom, 10%

India, 7%

Germany, 5%

Italy, 4%

China, 2%

b. Import sources

China, 22%

Others, 43%

India, 20%

United Arab Emirates, 5%

Japan, 5% Singapore, 5%

Source: International Trade Centre (2017) Trade Map tool. All data is for 2016. Calculations carried out by authors.

Looking over a longer period, Chinese exports to Sri Lanka have been over 12 times the value of Sri Lankan exports to China every year since 2006 (figure 2). Moreover, Sri Lankan exports to China have grown slowly over this period, while Chinese exports to Sri Lanka have increased more sharply. Hence, Sri Lanka had a significant bilateral trade deficit with China from 2006 to 2016, with the deficit amounting to around $4 billion in 2016, a major proportion of Sri Lanka's total trade deficit of around $8.9 billion in 2016. However, as the Institute for Policy Studies notes (Institute for Policy Studies, 2014a), this bilateral trade deficit should not be the focus of a Free Trade Agreement with China. Bilateral trade deficits and surpluses rely on differential production and demand between countries, and it is usual to have trade deficits with some countries, and not with others.

Figure 2. Bilateral imports and exports 2006-2016
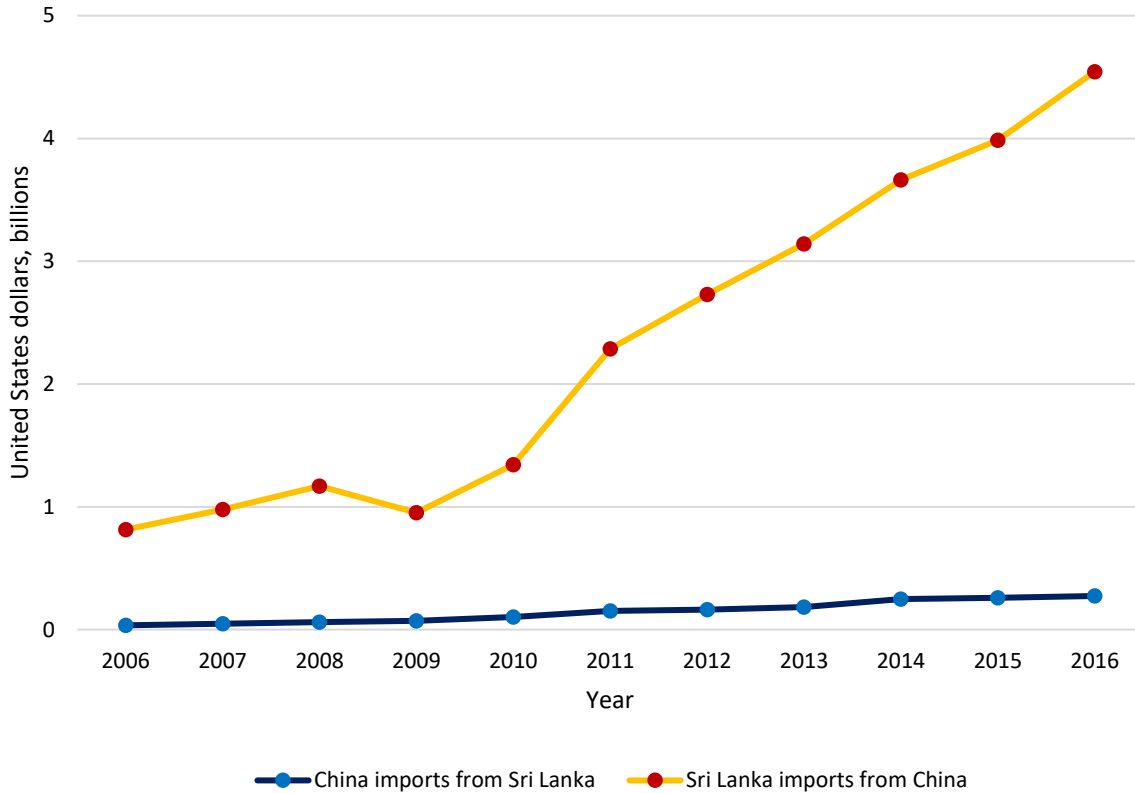
Source: International Trade Centre (2017) Trade Map tool. All data is for 2016. Calculations carried out by authors.

In 2016,[2] Sri Lankan exports were dominated by Western markets, but also by a select few products. The latter can be seen in table 1, which gives the top 15 categories, at the four-digit HS level, of Sri Lankan exports to the world, Chinese imports from the world, and Sri Lankan exports to China. To the world as a whole (table 1a), Sri Lanka mainly exported tea (mostly black tea), clothing (of various types), rubber products (in particular tyres), and precious stones. On the other hand, China's global imports (tale 1b) are largely based around its position as the assembly centre in 'Factory Asia'; much of China's growth in recent decades has been based around its importing intermediate goods from global value chains based in East Asia and South-East Asia and assembling them into final goods for exports to western markets. Hence key Chinese imports include electrical components (circuits, liquid crystal devices, diodes etc.) and primary resources (petroleum oils and iron ores).

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[2] Whilst not displayed here for reasons of space, the breakdown of Sri Lankan exports by category has remained fairly similar for the last 3 years

Table 1. Largest Sri Lanka exports and China imports by four-digit HS category in 2016

(United States dollars, millions)

a.   Top Sri Lanka exports to the world

Code	Commodity	Value
0902	Tea	1,252
6108	Slips, petticoats, briefs, panties, nightdresses, pyjamas …	607
6212	Brassieres, girdles, corsets, braces, suspenders, garters …	567
6104	Suits, ensembles, jackets, dresses, skirts, divided skirts, trousers, …	481
6204	Suits, ensembles, jackets, dresses, skirts, divided skirts, trousers, …	462
6109	T-shirts, singlets and other vests; knitted or crocheted	452
6203	Suits, ensembles, jackets, blazers, trousers, bib and brace overalls …	348
4012	Retreaded or used pneumatic tyres of rubber; solid or cushion tyres …	319
6116	Gloves, mittens and mitts; knitted or crocheted	258
6111	Garments and clothing accessories, babies'; knitted or crocheted	209
6205	Shirts; men's or boys' (not knitted or crocheted)	207
6110	Jerseys, pullovers, cardigans, waistcoats and similar articles …	198
4015	Articles of apparel and clothing accessories (including gloves, …	176
6107	Underpants, briefs, nightshirts, pyjamas, bathrobes, dressing gowns …	165
6206	Blouses, shirts and shirt-blouses; women's or girls' (not knitted …	159

b.   Top China global imports

Code	Commodity	Value
8542	Electronic integrated circuits	227,617
2709	Petroleum oils and oils obtained from bituminous minerals; crude	116,661
7108	Gold (including gold plated with platinum) unwrought or …	63,985
2601	Iron ores and concentrates; including roasted iron pyrites	58,033
8517	Telephone sets, including telephones for cellular networks …	45,900
8703	Motor cars and other motor vehicles; principally designed for …	44,005
9013	Liquid crystal devices not constituting articles provided for more …	37,981
1201	Soya beans, whether or not broken	33,981
8541	Diodes, transistors, similar semiconductor devices …	27,866
8471	Automatic data processing machines and units thereof, …	25,766
8708	Motor vehicles; parts and accessories, of heading no. 8701 to 8705	25,469
2711	Petroleum gases and other gaseous hydrocarbons	23,002
2603	Copper ores and concentrates	20,888
8802	Aircraft n.e.c. in heading no. 8801 (e.g. helicopters, aeroplanes) …	20,432
7403	Copper; refined and copper alloys, unwrought	18,118

c. Largest Sri Lanka exports to China

Code	Commodity	Value
0902	Tea	31.97
5305	Coconut, abaca (Manila hemp or Musa textilis Nee), ramie and other …	20.67
6406	Footwear; parts of footwear; removable in-soles, heel cushions …	18.20
6109	T-shirts, singlets and other vests; knitted or crocheted	15.13
6212	Brassieres, girdles, corsets, braces, suspenders, garters and similar …	13.95
4012	Retreaded or used pneumatic tyres of rubber; solid or cushion tyres …	7.82
3802	Activated carbon; activated natural mineral products; animal black …	6.64
2615	Niobium, tantalum, vanadium or zirconium ores and concentrates …	5.78
6203	Suits, ensembles, jackets, blazers, trousers, bib and brace overalls …	5.49
6204	Suits, ensembles, jackets, dresses, skirts, divided skirts, trousers, …	5.37
8802	Aircraft n.e.c. in heading no. 8801 (e.g. helicopters, aeroplanes); …	4.78
8542	Electronic integrated circuits	4.43
6104	Suits, ensembles, jackets, dresses, skirts, divided skirts, trousers …	4.36
6206	Blouses, shirts and shirt-blouses; women's or girls' (not knitted …	3.75
6108	Slips, petticoats, briefs, panties, nightdresses, pyjamas, negligees …	3.60

Source: International Trade Centre (2017) Trade Map tool. All data is for 2016. Calculations carried out by authors.

As evident, Sri Lankan exports to China (table 1c) do not tap into China's key imports to any great extent, with Sri Lanka currently excluded from the key Asia-Pacific global value chains (GVCs) that feed China. Evidently, Sri Lanka's exports, as they are, play a limited part in China's economic model, aside from a limited trade in electrical capacitors and transformers. Instead, the main exports from Sri Lanka to China reflect Sri Lanka's general export bundle, including tea (mostly black tea), precious stones, clothing (of various capacities), rubber products, coconut products (mainly coir) and some primary resources. It is noticeable that several of these goods, in particular tea, clothing and rubber products, are also produced by China, and thus may be considered a defensive interest in trade negotiations.

At the six-digit HS category, China has imported 5,003 items in 2014-2016 from the world, out of a total of approximately 5,300 different six-digit HS products. Of these, it has imported only 926 items from Sri Lanka in the same period. However, of the 5,003 items which were imported by China globally, Sri Lanka has exported 3,850 items to the world. These 3,850 items represented 82% of China's total import value in 2014-2016. Thus, there are many goods which Sri Lanka exports to the world and China imports too, but they do not trade bilaterally. Given this, and the fact that China is currently a lesser export destination than one might expect for its size, suggests that there is certainly scope for increased exports from Sri Lanka to China on several items.

Conversely, table 2 gives the top 15 commodities of Sri Lanka imports from the world, Chinese exports to the world, and Chinese exports to Sri Lanka. Sri Lankan imports from the world include both final goods for consumption (for example vehicles, telephone sets and aircraft),

and intermediate goods (for example fabrics for Sri Lanka's producers of garments and apparel, petroleum, and iron and concrete for domestic infrastructure development requirements). Chinese exports to the world are dominated by assembled electronic goods (telephones, computers and others), other final goods, and some intermediate electrical components. Finally, the value of Chinese exports to Sri Lanka dominates that of Sri Lankan exports to China; the largest category of the former is around six times the largest category of the latter. Bilateral trade in this direction is comprised of both final goods for consumption (telephones, monitors etc.), and inputs to Sri Lankan production. In particular, Sri Lankan imports of fabrics from China is a key source of inputs for Sri Lanka's textiles industry, given the lack of Sri Lankan produced inputs (Joint Feasibility Study, 2014). While Sri Lanka has embarked upon a backwards integration programme to build domestic input capacity (Joint Feasibility Study, 2014), it is likely that imported inputs will remain key to this industry, a fact that should be accounted for in am FTA with China.

Table 2. Largest Sri Lanka imports and China exports by four-digit HS category in 2016

(United States dollars, millions)

a. Sri Lanka imports from the world

Code	Commodity	Value
2710	Petroleum oils and oils from bituminous minerals, not crude…	1,450
8703	Motor cars and other motor vehicles…	634
6006	Fabrics; knitted or crocheted fabrics…	602
2523	Portland cement, aluminous cement (ciment fondu), …	536
2709	Petroleum oils and oils obtained from bituminous minerals; crude	489
8517	Telephone sets, including telephones for cellular networks …	452
3004	Medicaments; (not goods of heading no. 3002, 3005 or 3006) …	401
7108	Gold (including gold plated with platinum) unwrought …	375
1701	Cane or beet sugar and chemically pure sucrose, in solid form	335
5209	Woven fabrics of cotton, containing 85% or more by weight of cotton, …	299
8704	Vehicles; for the transport of goods	274
8802	Aircraft n.e.c. in heading no. 8801 (e.g. helicopters, aeroplanes); …	268
7207	Iron or non-alloy steel; semi-finished products thereof	245
0713	Vegetables, leguminous; shelled, whether or not skinned or split, dried	234
0402	Milk and cream; concentrated or containing added sugar …	231

b. China exports to the world

Code	Commodity	Value
8517	Telephone sets, including telephones for cellular networks …	201,365
8471	Automatic data processing machines and units thereof, magnetic …	125,006
8542	Electronic integrated circuits	61,157
9405	Lamps, light fittings; including searchlights, spotlights and parts thereof …	29,971
9013	Liquid crystal devices not constituting articles provided for ….	28,741
8708	Motor vehicles; parts and accessories, of heading no. 8701 to 8705	28,276
8528	Monitors and projectors, not incorporating television reception apparatus …	28,231
8541	Diodes, transistors, similar semiconductor devices; …	26,613
9403	Furniture and parts thereof, n.e.c. in chapter 94	25,912
8473	Machinery; parts and accessories (not covers, carrying cases and the like)	25,856
4202	Trunks; suit, camera, jewellery, cutlery cases; travel, tool, similar bags; …	24,923
6204	Suits, ensembles, jackets, dresses, skirts, divided skirts, trousers, bib …	24,833
8504	Electric transformers, static converters (e.g. rectifiers) and inductors	24,318
9401	Seats, whether or not convertible into beds …	21,867
6402	Footwear; with outer soles and uppers of rubber or plastics …	21,405

c. China exports to Sri Lanka

Code	Commodity	Value
2710	Petroleum oils and oils from bituminous minerals, not crude; …	222.1
8517	Telephone sets, including telephones for cellular networks or for …	179.7
6006	Fabrics; knitted or crocheted fabrics, …	140.5
5208	Woven fabrics of cotton, containing 85% or more by weight of cotton, …	105.5
7228	Alloy steel bars, rods, shapes and sections; hollow drill bars and rods, …	105.1
5407	Woven fabrics of synthetic filament yarn, including woven fabrics …	104.6
6004	Fabrics; knitted or crocheted fabrics of a width exceeding 30 cm, …	79.4
1604	Prepared or preserved fish; caviar and caviar substitutes …	70.7
7210	Iron or non-alloy steel; flat-rolled products, width 600mm or more, clad, …	69.1
9405	Lamps, light fittings; including searchlights, spotlights and parts thereof, …	66.7
303	Fish; frozen, excluding fish fillets and other fish meat of heading 0304	58.6
3102	Fertilizers; mineral or chemical, nitrogenous	58.1
5516	Woven fabrics of artificial staple fibres	44.8
5402	Synthetic filament yarn (other than sewing thread), …	44.7
8528	Monitors and projectors, not incorporating television reception apparatus; …	44.6

Source: International Trade Centre (2017) Trade Map tool. All data is for 2016. Calculations carried out by authors

Sri Lanka and China are members of the Asia-Pacific Trade Agreement (APTA) – a preferential trade agreement (PTA), through which participating members give tariff concessions through margin of preference over the most favoured nations (MFN) rates. As part of the 4th round of concessions, China has given concessions on 2,191 items at eight-digit HS national tariff line level. As such, at HS ten-digit level,[3] Sri Lankan exports to China face MFN tariffs on 9,449 items (including 945 zero), and a concession on 3,730 items through APTA (21 items zero rated).

A summary of the tariff rates facing Sri Lankan exports to China at the ten-digit HS Chinese tariff line is given in figure 3. There are 13,179 tariffs in total at the ten-digit HS level for China (below the six-digit HS level, classifications are specific to each country), with a mean level of 9.2%, a minimum of 0%, and a maximum of 65%.[4] Of these, the majority are between 3% and 12%, with the most common tariff being 10% (1,605 items face this tariff). Relatively few products have tariff-free access for Sri Lankan exporters (only 7% of tariff lines). The Sri Lankan exports facing the highest tariffs in China currently include cameras and film, rice and cereals, wools, rubber products, and some textile products. This suggests that Sri Lanka stands to benefit significantly from an FTA with China, given high tariffs in areas in which Sri Lanka has apparent comparative advantage (textiles and rubber). However, it also suggests that Sri Lanka may have some difficulty in achieving its offensive interests, given China's apparent defensive interest in these sectors.

Figure 3. Chinese tariff rates under APTA at ten-digit tariff line
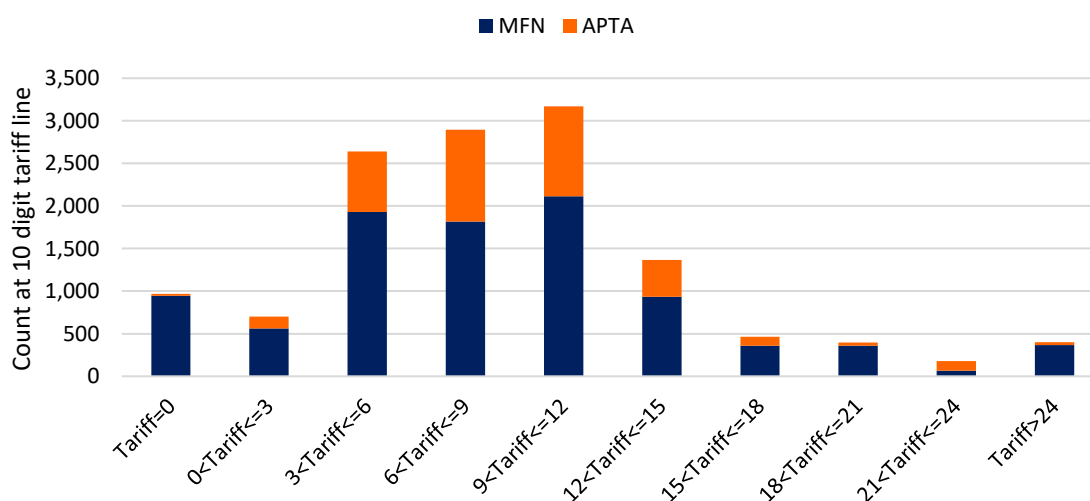
Source: International Trade Centre (2017) Market Access Map tool. All data is for tariffs in 2016. Calculations carried out by authors. Tariff rates are ad valorem equivalents; for the vast majority of categories, this is identical to the simple tariff.

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[3] Although concessions were given at eight-digit HS level, to match China's MFN rates at ten-digit HS level the subsequent analysis uses APTA rates for corresponding ten-digit HS level MFN tariff lines.

[4] Excluding the estimates of AVE of some non ad-valorem tariffs, such as on 3702520000 (Other film for color photography(polychrome), unexposed, of a width not exceeding 16mm) which is estimated to attract a 3,074 per cent tariff and thus skews the average figures.

In addition to trade in goods, recent years have seen an intensification in the Sri Lanka-China relationship due to the latter's Belt and Road Initiative (BRI) policy. Sri Lanka is a key part of the Maritime Silk Road component of BRI and has been a recipient of considerable Chinese investment in the last decade. Investment projects and Chinese-aid funded developments have focused on Sri Lankan infrastructure, including the Hambantota port ($1.1 billion), Colombo Port City ($1.4 billion), and Mattala International Airport (0.2 billion).[5,6] This new connectivity and infrastructure through BRI will provide Sri Lanka with new opportunities for trade and export-led development, though capacity is currently under-utilised in several of these developments. Further, closer ties with China through BRI may support Sri Lanka in accessing the GVCs which run through the Asia-Pacific region to China, or in becoming a destination for companies in the process of outsourcing for China in search of cheaper labour costs.

4. A summary of free trade agreements to date

As of 2017, Sri Lanka had signed five PTAs, three were under negotiation, and one has been signed and pending ratification (see table 3a). These are the Asia-Pacific Trade Agreement (APTA, a partial scope agreement), the South Asian Free Trade Area (SAFTA), the India-Sri Lanka Free Trade Agreement (ISFTA) and the Pakistan-Sri Lanka Free Trade Agreement (PSFTA). Of the economy's total exports, 21.8% are directed to its PTA partners, while 56.1% of total imports come from PTA partners.

While the regional agreements have been relatively limited in scope or in practice, the bilateral FTAs have been much wider in terms of goods coverage with the ISFTA liberalising 1,486 tariff lines, and the PSFTA providing duty free access on over 2,218 products.[7] Key lessons from these agreements to be borne in mind when negotiating a new FTA with China are to ensure degree of asymmetry in reciprocity of preferential treatment to take into account differential developmental levels of the two partners (Institute for Policy Studies, 2014b).

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[5] Xinhua (2017). Sri Lanka invites more Chinese investors. Available from http://www.chinadaily.com.cn/business/2017-08/02/content_30327604.htm

[6] from https://www.forbes.com/sites/wadeshepard/2016/05/28/the-story-behind-the-worlds-emptiest-international-airport-sri-lankas-mattala-rajapaksa/#3168b3d87cea

[7] Sum of number of preferential lines under respective agreements, as given in WITS.

Table 3. Sri Lanka and China's preferential trade agreements and respective shares of exports and imports in Sri Lanka's total trade, 2016

a. Sri Lanka

Title	Status	Year in force	Share of total exports (%)	Share of total imports (%)
Asia-Pacific Trade Agreement (APTA)	in force	1976	10.23	35.89
Global System of Trade Preferences (GSTP)	in force	1989	19.66	43.51
India-Sri Lanka	in force	2001	7.32	21.74
Pakistan-Sri Lanka	in force	2005	0.64	1.73
South Asian Free Trade Area (SAFTA) and SAARC Agreement on Trade in Services (SATIS)	in force	2006	10.15	24.13
Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC)	under neg.	NA	8.86	25.02
China-Sri Lanka	under neg.	NA	1.05	12.14
Singapore-Sri Lanka	under neg.	NA	0.94	5.86
Sri Lanka-Islamic Republic of Iran	signed & pending ratification	NA	1.69	0.04

b. China

Title	Status	Year in force	Share of total exports (%)	Share of total imports (%)
Asia-Pacific Trade Agreement (APTA)	in force	1976	8.21	10.91
China-Hong Kong, China	in force	2003	13.76	1.07
China-Macao, China	in force	2003	0.16	0.01
ASEAN-China	in force	2005	12.37	12.33
China-Chile	in force	2006	0.61	1.16
China-Pakistan	in force	2007	0.83	0.12
China-New Zealand	in force	2008	0.23	0.45
China-Singapore	in force	2009	2.22	1.63
China-Peru	in force	2010	0.28	0.59
Cross-Straits Economic Cooperation Framework Agreement (ECFA)	in force	2010	1.92	8.81
China-Costa Rica	in force	2011	0.07	0.04
China-Iceland	in force	2014	0.01	0.01
China-Switzerland	in force	2014	0.15	2.52
Australia-China	in force	2015	1.78	4.41
China-Republic of Korea	in force	2015	4.48	10.02
China-Eurasian Economic Union (EAEU)	under neg.	NA	2.48	2.37
China-Georgia	signed & pending ratification	NA	0.04	0.00
China-Gulf Cooperation Council (GCC)	under neg.	NA	2.73	3.51
China-Israel	under neg.	NA	0.39	0.20
China-Japan-Republic of Korea	under neg.	NA	10.55	19.17
China-Maldives	under neg.	NA	0.02	0.00
China-Norway	under neg.	NA	0.12	0.20
China-Southern African Customs Union (SACU)	under neg.	NA	0.64	1.43
China-Sri Lanka	under neg.	NA	0.21	0.02
Regional Comprehensive Economic Partnership (RCEP)	under neg.	NA	27.71	37.11

Source: APTIAD (2017) and IMF Direction of Trade (DOTS) database.

China had 15 trade agreements in force and 9 under negotiation (table 3b). Of the economy's total exports, 40.3% are directed to its PTA partners, while 42.4% of total imports come from PTA partners. China's agreements have typically been comprehensive in both coverage and depth. For example, the three agreements with Chile, Peru and New Zealand cover 94.6-97.2 of

Chinese tariff lines, and 88-99.1% of bilateral trade (Institute for Policy Studies, 2014b). In the majority of agreements, most tariffs were removed completely, with few only reduced partially and even fewer not removed at all (for example, 233 tariffs are left non-zero for Chile, and 402 for ASEAN). Common defensive list items include various grains (wheat and maize), rice, sugar, wool, oils, wood and paper products, motorcars, film, and textile products. Earlier Chinese FTAs (e.g. those with Chile, ASEAN and Pakistan) concentrated first on merchandise goods, while other topics, for example investment and services, were dealt with separately in later agreements. Lately however, Chinese FTA's have typically been more comprehensive (for example those with Costa Rica, Iceland and Australia), covering all these topics within one agreement.

One consequence of these Chinese FTAs is the possibility of trade diversion should Sri Lanka not sign its own FTA with China; several countries, many of which share similar industries with Sri Lanka, have duty free access to the Chinese market. Further, least developed countries (LDCs) in the region, for example Myanmar, enjoy preferential rates through the duty-free, quote-free (DFQF) market access program. In contrast, Sri Lanka's access to the Chinese market is only a limited number of items and the APTA preferential rates are only partial reduction on the MFN tariff levels and not duty free. Consequently, industries in these countries have easier access to the Chinese market, due to duty free treatment (FTA or DFQF) and may be able to outcompete Sri Lankan businesses (which gets only partial tariff concessions), even if they are costly. Secondly, the concessions under APTA are only on limited number of items and do not cover all trade. If a bilateral FTA with China is signed, it might open the opportunity for diversification of its exports to China.

5. How to offensive list is calculated

This section outlines the methodology used to determine the offensive list of Sri Lanka for negotiating the bilateral FTA. This methodology follows established approaches for the generation of offensive lists (see Manzano, 2014), as well as authors' personal experience in generating offensive lists in trade negotiations. In order to assess the list further and reach a final conclusion, consultations on the list with the private sector as well as other export and economic planning related agencies would be necessary. The offensive list prepared is at Appendix of this paper (available separately online).

China's tariff is at ten-digit level following the HS nomenclature. However, analysis is carried out at the eight-digit HS level, which has the most disaggregated level of bilateral trade data. Since eight-digit items cover all ten-digit items, the offensive list items which are prepared at eight-digit level, have also been level the offensive list in Appendix details, for each eight-digit HS category, every corresponding ten-digit tariff lines.

To be included in the offensive list, a product (at the eight-digit level) has to fulfil the following set of criteria:

1. The product must be one which China imports (a non-negligible amount)
2. The product must be one which Sri Lanka produces and has the capacity to increase exports
3. China must have a tariff on the product
4. The product must be one in which Sri Lanka has demonstrated comparative advantage

The length of the list will differ depending on how the criteria are applied (i.e. thresholds). For example, one set of criteria for a particular product could be that:

-   China has imported at least 1$ million worth of that good in the previous three years (i.e. non-zero imports of a product in any of the previous three years by China from world)
-   Sri Lanka has exported at least $1 million to the world in the last three years
-   China has a tariff of greater than 5%
-   Sri Lanka has a revealed comparative advantage in the product

This would produce a different list compared to a different set of criteria (for example, changing the final criterion to a tariff of greater than 10% would shorten the list). While the selection criteria are arbitrary, it follows the methodology outlined in Manzano (2014). It can, however, be adjusted, depending on countries' and partners' specific circumstances – such thresholds can and should be adjusted. The following provides a more detailed description of the specific criteria selected for this exercise.

1. The product must be one which China imports

Only products which China has imported from anywhere in the world in 2014, 2015 or 2016 (the latest available years at the time of conducting this study) are included in the data for this analysis. The logic is that only those products in which China has shown interest in buying should be considered in the offensive list. More importantly, it is also an indicator of which China allows market access.[8] In total, there were 7,750 products at the eight-digit HS level which China has imported from 2014 to 2016. Going further than this, it is important to consider only products for which China has a non-negligible level of demand, as there are many products for which China has only imported a very small value in recent years. These do not present worthwhile market opportunities for targeting. To capture this, a threshold value of Chinese imports is used in this analysis: China must have imported at least $1 million in one of the last 3 years. As demonstrated in table 4, this criterion covers 99.98% of items imported by China (by value) in 2016. When analysing other markets, however, it may be useful to relax (or tighten) this criterion ensuring higher level of market access. On the contrary, if this criterion is not used, items may find their way into the offensive list for which China has not shown interest as demonstrated by any

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[8] Notably, some products may be protected by prohibitive tariffs or non-tariff measures (NTMs) and be missed in such analysis, but arguably such products will also be hard to gain market access to anyway.

substantial imports within the previous three years, potentially drawing away focus from products of critical interest.[9]

Table 4. Application of the import volume criterion by China at different thresholds in 2014-2016 at HS8 level, and corresponding import value share of China's total imports in 2016

Threshold, United States dollars, millions	Number of products	Share in 2016
-	7,750	100.00%
0.001	7,750	100.00%
1	**5,977**	**99.98%**
1,000	263	75.13%
10,000	25	44.08%
100,000	2	13.92%

Source: Authors' calculations based on data from International Trade Centre (2017)

> *Criterion #1: China must have imported at least $1 million of the product in at least one of 2014, 2015 or 2016*

2. *The product must be one which Sri Lanka produces and has the capacity to increase exports*

Goods which Sri Lanka does not produce can be excluded from this analysis. If Sri Lanka has shown no evidence of being able to produce a good, then a Chinese tariff on this good is in effect irrelevant. While new industries may develop in Sri Lanka post-FTA implementation on items which has Chinese tariffs, the authors make the assumption that it is more likely that industry development will occur in areas in which Sri Lanka has demonstrated comparative advantage. A simple proxy for this is whether Sri Lanka has exported the product to the world at any point from 2014 to 2016.

Furthermore, for Sri Lanka to take advantage of the increased opportunities from a decreased Chinese tariff, it must have the capacity to increase production. This is proxied by a history of exports to China or to the world as a whole. Specifically, this criterion applies a threshold for products based on previous Sri Lankan exports; Sri Lanka must have exported at least $1 million of the product to the world (including to China) in 2014, 2015 or 2016. As with the criterion in the previous section, this threshold was arbitrary set, as in this case it covers 99.01%o the trade volume in 2019, while cutting down the number of products considered from 3,917 to 617 (see table 5).

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[9] It should be reiterated that it is possible that markets could also be protected by highly restrictive NTMs/tariffs, warranting further investigation, but beyond the scope of this paper.

Table 5. Sri Lankan exports to the world, with number of HS 6 categories reaching thresholds in 2014-2016, and export value share of Sri Lanka's total exports in 2016

Threshold, United States dollars, millions	Number of products	Share in 2016
-	3,916	100.0%
0.001	3,275	100.0%
0.01	2,479	100.0%
0.1	1,404	99.7%
1	**616**	**98.0%**
10	180	87.9%
100	30	55.7%

Source: Authors' calculations based on data from International Trade Centre (2017)

> ***Criterion #2: Sri Lanka must have exported at least $1 million of the product to the world in at least one of the previous three years***

3. *China must impose (or have the ability to potentially impose) a tariff on the product*

To be eligible for inclusion in the offensive list, China must apply a tariff, or have the ability to apply a tariff on a particular product. This means having a non-zero bound tariff rate notified to the WTO, since by definition China can potentially raise its MFN applied rate up to the level of the bound rate without any negative ramifications (at least through traditional dispute settlement processes). China's binding coverage is 100%, yet it has one of Asia-Pacific's lowest difference between bound and applied MFN rates (see figure 4), meaning China has relatively little "policy space" – also commonly referred to as "water" in tariff rates.[10]

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[10] Such policy space typically allows policymakers in developing countries to react in cases of import surges by increasing applied rates without violating WTO commitments. The magnitude of policy space varies substantially between Asia-Pacific economies, with, for example, Hong Kong, China and Macao, China not having any at all, while Bangladesh can increase its applied tariffs by more than 10 times and still comply with WTO rules (ESCAP, 2017).

Figure 4. Bound and applied MFN tariff rates in selected Asia-Pacific economies (all products, simple averages, percentage)
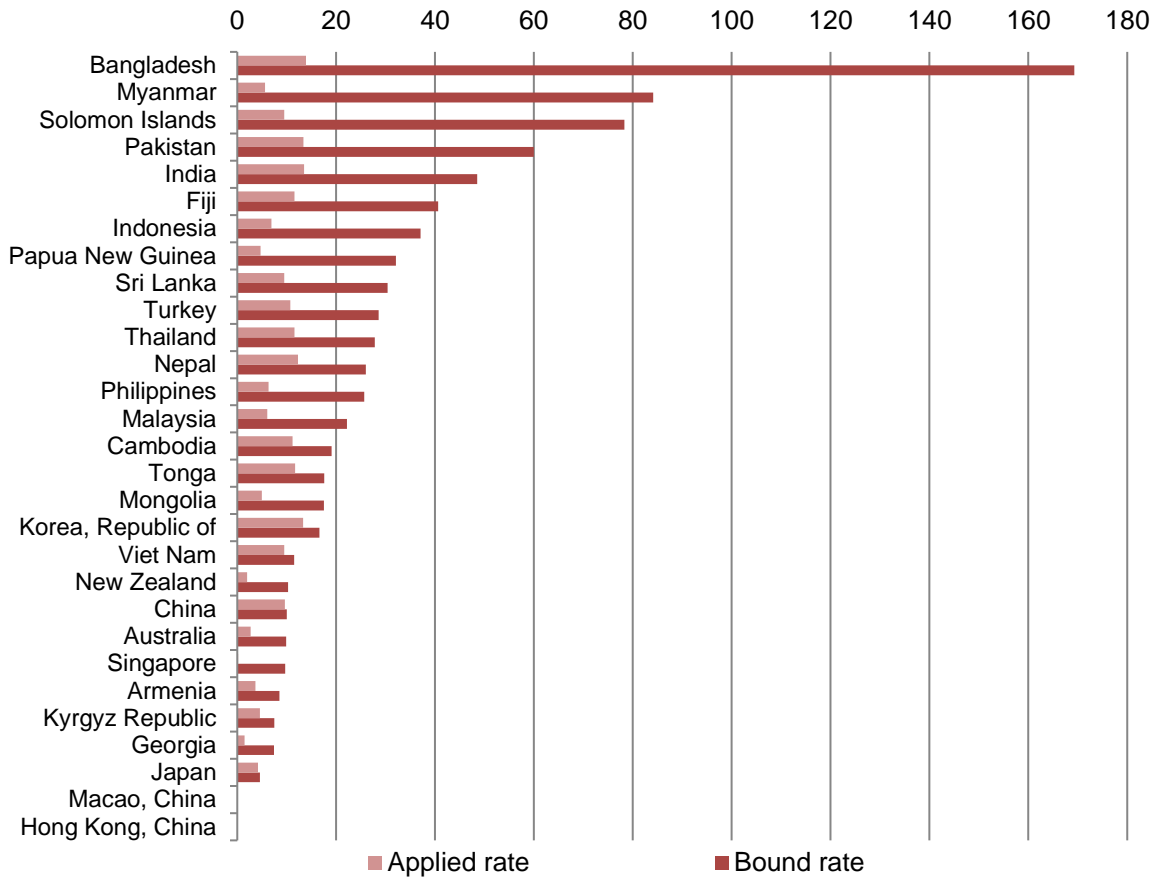
Source: ESCAP (2017).

As such, excluding products with zero bound tariffs is a good starting point. However, to narrow the list further, one can also consider excluding products that face low tariffs ("nuisance tariffs"). Thus, the threshold could be higher than a certain level (for example, 5%). In addition, it may make sense to concentrate specifically on products that have applied non-zero tariffs (i.e. they receive preferences under some other agreements or schemes, in this case, for example, under APTA). For the purposes of this study, we consider any product that faces non-zero applied tariffs to be included in the offensive list.

> ***Criterion #3: China must currently apply a tariff on the product for Sri Lankan exporters***

4. *The product must be one in which Sri Lanka has demonstrated comparative advantage bilaterally or generally*

The final criterion is that Sri Lanka must have had demonstrated a comparative advantage in production of a particular product. In short, comparative advantage looks at whether an economy is particularly good at producing some good.[11]

While there is a debate in the literature on the degree to which comparative advantage can be created or supported by government policy (Rodrik, 2004), the centrality of comparative advantage to trade analysis and trade policy is clear. It is an established technique for analysis; many papers (Ferto & Hubbard, 2002 and Batra & Khan, 2005, among many) have used comparative advantage analysis to determine a country's trade prospects.

In terms of this analysis, it is important that Sri Lanka has demonstrated comparative advantage in a product for its inclusion on the offensive list. The industries with the greatest potential for expansion are those in which Sri Lanka has comparative advantage, and the liberalisation of their tariffs should be a priority in an FTA. To estimate/proxy for comparative advantage, the authors use two common economic indicators, both based on the idea of revealed comparative advantage.

A product is said to have *revealed* comparative advantage when an economy's exports of that good, relative to economies total exports, are greater than the world's exports of that good, relative to total world exports. This is known as Balassa index of revealed comparative advantage, and it can be measured for exports in general as standard revealed comparative advantage (SRCA) or for a bilateral relationship as bilateral revealed comparative advantage (BRCA). The SRCA is calculated as follows:

$$SRCA_i^k = \left(\frac{X_{i,w}^k}{X_{i,w}}\right)\bigg/\left(\frac{X_{w,w}^k}{X_{w,w}}\right)$$

Where $SRCA_i^k$ is the standard revealed comparative advantage for product k exported by country i, $X_{i,w}^k$ is value of exports of product k from country i to the world, $X_{i,w}$ is country i's total exports, $X_{w,w}^k$ is the total global exports of product k, and $X_{w,w}$ is the total value of global exports. SRCA takes a value of greater than one for a given product if country i (in this analysis Sri Lanka) exports a disproportionate amount of that product compared to the world.[12]

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[11] A more detailed description of comparative advantage is given in any economics textbook on international trade. An excellent example is Krugman and Obstfeld (2009)

[12] For an illustrative example, suppose country A's total exports are $10 million, out of which $1 million is exports of one particular product. At the same time, the world's total exports are $100 million, out of which $2 million is exports of that one particular product. It is clear that country A, which while only represents 10% of the world total exports, is responsible for 50% of exports in that one particular product (i.e. in this case SRCA is 5).

The BRCA is calculated as follows:

$$BRCA_{i,j}^{k} = \left(\frac{X_{i,j}^{k}}{X_{i,j}}\right) \Bigg/ \left(\frac{X_{i,w}^{k}}{X_{i,w}}\right)$$

Where $BRCA_{i,j}^{k}$ is the bilateral revealed comparative advantage for product k exported by country i to country j, $X_{i,j}^{k}$ is the exports of product k from i to j, $X_{i,j}$ is the value of total exports from i to j, $X_{i,w}^{k}$ is the value of exports of product k by i to the world, and $X_{i,w}$ is the value of total exports by i. The index measures the extent to which country i's (in this case Sri Lanka's) exports of product k with respect to its total export matches with the share of i's exports of k to j in i's total exports to j. The value of BRCA is greater than unity implies that country i's exports of product k to country j are relatively higher than one would expect given by its overall exports, and visa versa if BRCA is less than one.

In this analysis, the SRCA is calculated for Sri Lanka as country i, while the BRCA is calculated with Sri Lanka as country i, and China as country j. All data is at the six-digit HS level (as Sri Lankan exports to the world are not available at the eight-digit Chinese HS nomenclature), and hence eight-digit categories within a six-digit group gain the same SRCA and BRCA values. Whilst this is not perfect, it is sufficient for two reasons. Firstly, if a good has comparative advantage at the eight-digit level, it would be expected for the six-digit group to also have a comparative advantage. The other products in the group would have to exhibit strong comparative disadvantage otherwise. Secondly, there are many six-digit groups with only one eight-digit product sub-division; for these groups, this calculation is equivalent to a calculation using eight-digit data.

As mentioned previously, in signing an FTA, Sri Lanka should concentrate efforts on products with comparative advantage, both bilaterally and compared to the world (as these are industries with strong global potential). However, while the BRCA and SRCA can provide good estimates of comparative advantage, they are flawed. Government policies, most obviously subsidies and tariffs, may drive a wedge between actual comparative advantage and revealed comparative advantage. For example, while a country may have comparative advantage in a good (i.e. they are relatively most productive in producing that good), a high tariff or non-tariff barriers against it by a major importer may hinder exports of that good to that importer. This good could then show revealed comparative disadvantage. Thus, the very thing that has justified the China-Sri Lanka FTA, an existing array of tariffs, may hinder the analysis of which tariffs to target. Conversely, a high level of government subsidies for a given industry or product may lead to that product demonstrating revealed comparative advantage, even if the country does not actually have a comparative advantage in that sector. However, in this analysis, a product must show either BRCA or SRCA to be included on the offensive list. To deal with this issue of tariffs distorting revealed comparative advantage, products which show neither BRCA or SRCA, but which have a tariff above the mean tariff level, are not removed from the analysis. Thus, those products which face particularly high tariffs, which may lower trade even if they have actual comparative advantage, are not removed. While this does not deal with the issue of subsidies, should these remain a constant feature of Sri Lankan public policy, then this distortion will remain in place, and should in fact be taken into account accordingly.

Summary statistics after carrying out the RCA analysis show that out of the 7,750 products considered at the eight digit level, Sri Lanka has Standard Revealed Comparative Advantage in 304 products, and Bilateral Revealed Comparative Advantage in 284 products (both using 3 year data). The maximum SRCA is at 407 for fermented tea products, meaning Sri Lanka exports 407 times as much of this good as a proportion of its total exports that the world exports as a proportion of its total exports. Other products with particularly high SRCA (i.e. in which Sri Lanka has demonstrated considerable revealed comparative advantage) are coconut products and frozen tunas, all of which have an SRCA of over 300. The maximum BRCA is 5,250,163 for desiccated coconuts. Most of the products in which Sri Lanka has demonstrated SRCA also demonstrate BRCA.

> ***Criterion #4: Sri Lanka must show BRCA or SRCA for the product, or have a tariff above the mean tariff level***

Further analysis

A simple economic analysis is carried out for each product on the list regarding whether China is likely to act in a defensive manner. To tackle this question, we look at whether China has a strong domestic industry in a good, and whether they are likely to be threatened by new imports from Sri Lanka. From their previous FTAs, it appears that both criteria are necessary; China seems willing to liberalise tariffs on goods for which there is a significant domestic industry, but in which the partner country has limited or no domestic capacity. For example, while China usually retains tariffs on tobacco products, it has liberalised these products in its bilateral FTAs with Chile and New Zealand, both of which countries export no tobacco products to China, and limited values worldwide.

Nevertheless, such analysis is inherently limited – there may be several other factors, most noticeably issues of political economy, which determine China's defensive list. Thus, this analysis simply highlights the products for which there is a good chance that China will act defensively. To be considered as a defensive Chinese interest, a product must satisfy the following two conditions:

1. Exports of the product from China to the world are in the top 75% of Chinese export values. This proxies for domestic production
2. The value of bilateral exports from Sri Lanka to China is over 10% of the total value of Chinese exports for that good. This proxies for the threat Sri Lankan imports pose to Chinese production

Whether or not China is likely to act defensively is included for each product in the defensive list. Other methods to highlight potentially sensitive products could be to examine past trade agreements and see China's exclusion lists (or products not in concession lists), particularly in cases where trade agreement partners have relatively strong revealed comparative advantage.

6. Summary of results

The main output of this paper, the offensive list constructed according to the methodology in the previous section, is given in full in Appendix (available separately online). This section details how to read this table and summarises various facets of the results. It should be noted here that this output should only be one input into a final offensive list, as it is constrained to a purely economic analysis based on tariff and trade data. Other inputs should be from all other stakeholders, including the private sector, government agencies, as well as public in general, as well as a more thorough sustainability impact analysis.

6.1. How to read the table

The offensive list table in Appendix has eight columns. The first two columns are the code and description for each product at the eight-digit HS classification. The next three columns give summary statistics for trade in the given product over across 2013-2015. Figures are given for Sri Lankan exports to China, Sri Lankan exports to the world, and Chinese imports for the world (all three-year averages from 2013-2015). Note that as Sri Lankan exports to the world are not available at the eight-digit level (since eight-digit nomenclature differs between China and Sri Lanka – they are standardized only up to six-digit HS level), the figures given are a simple division of the six-digit total by the number of eight-digit categories in that grouping, which may cause distortions.[13]

Column six gives an indication of whether China is likely to act defensively, based on the conditions defined in the previous section. As this study only takes into account strictly economic analysis, reasons of political economy, as well as those stemming from a more thorough sustainable impact assessment analysis, may result in a very different defensive strategy. The final two columns give every Chinese tariff line within the selected eight-digit categories, plus the latest available tariff applied for Sri Lanka at these categories. The Chinese tariff line is at the ten-digit HS level (again, this is specific to China).

6.2. Summary of the results

The offensive list in Appendix has 385 eight-digit HS products, with 1,179 associated ten-digit tariff lines. This accounts for 5% of the eight-digit products imported by China, and 8.9% of Chinese ten-digit tariff lines. The list accounts for most of Sri Lanka's key bilateral and global exports (including tea, coconut products, rubber products and textiles), though it excludes those that already have tariff free access to the Chinese market.

The mean tariff in the offensive list is 11.1%. This is around 1.9 percentage points higher than China's mean tariff overall, both due zero tariff categories being removed, and due to a proportionately lower amount of goods included with a tariff of less than 9%. Figure 5 presents the breakdown of goods in the offensive list by their APTA tariff level. The majority of products in the offensive list currently face tariffs from 9% to 15%. These tariffs are substantial, and hence

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[13] This is particularly true if there is a dominant eight-digit HS code product among the six-digit grouping. As such, the very first value of eight-digit HS code "53050092" – the value of exports from Sri Lanka to China are actually higher than the global exports.

their removal is likely to boost Sri Lankan exports considerably. The tariffs range from 1.5% for plants and parts of plants up to 50% for smoking tobacco.

Figure 5. Chinese tariff rates under APTA at ten-digit tariff line for offensive list goods
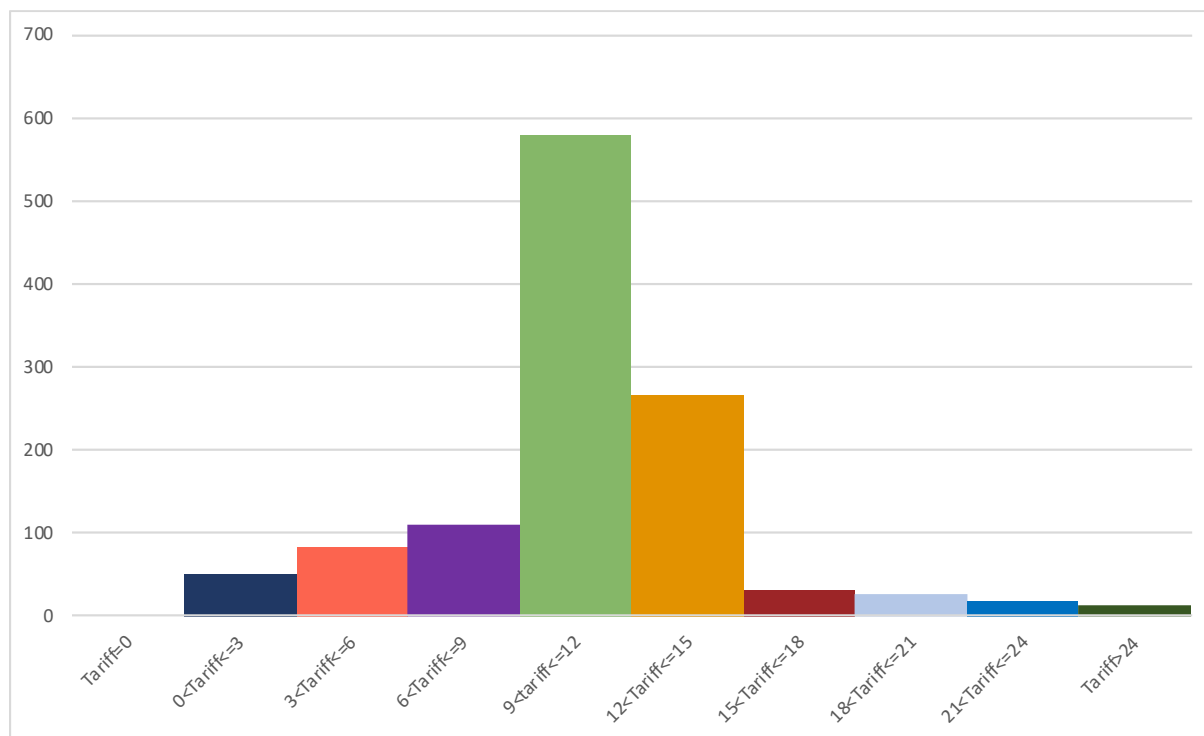
Source: International Trade Centre (2017) Market Access Map tool. All data is for tariffs in 2015. Calculations carried out by authors. Tariff rates are ad valorem equivalents; for the vast majority of categories, this is identical to the simple tariff.

The type of product included in the offensive list is quite varied (see table 6), with 44 of 97 HS two-digit categories represented by at least one eight-digit product. However, the two-digit categories with the most eight-digit sub-categories included in the list reflect Sri Lanka's bilateral and multilateral exports, and its consequent comparative advantage. One hundred and twenty eight products are included in the two-digit HS categories 61 and 62 (articles of apparel and clothing accessories, knitted or crocheted and not knitted or crocheted respectively). Other textiles categories are also well represented (i.e. 53 and 60). Rubber and rubber products are another important component of the offensive list through category 40, while tea is another important area (category 09).

China's position as an importer of intermediate goods means that electrical machinery, equipment and other machinery is a strong component of the offensive list (categories 84 and 85). Further important components are fish and crustaceans (03), precious stones (71), fruit produce (08) and others. Note that this analysis simply looks at the number of eight-digit products on the list, while not taking into account their relative importance. There are many products (73/385) in the offensive list for which Sri Lanka has not exported anything to China in the last three years. These are included as Sri Lanka has demonstrated capacity and comparative advantage, and

China is a significant importer of these products, and hence there is potential for future trade in these goods. However, they probably do not carry the same weight as those products which are staples of Sri Lanka's current exports to China.

Table 6. Two-digit categories in the offensive list

2 Digit HS Category	Description	Number of eight-digit Categories in List
61	Articles of apparel and clothing accessories, knitted or crocheted	66
62	Articles of apparel and clothing accessories, not knitted or crocheted	62
12	Oil seeds and oleaginous fruits; miscellaneous grains, seeds and fruit; industrial or medicinal	19
85	Electrical machinery and equipment and parts thereof; sound recorders and reproducers, television	17
03	Fish and crustaceans, molluscs and other aquatic invertebrates	15
71	Natural or cultured pearls, precious or semi-precious stones, precious metals, metals clad	15
87	Vehicles other than railway or tramway rolling stock, and parts and accessories thereof	15
60	Knitted or crocheted fabrics	13
08	Edible fruit and nuts; peel of citrus fruit or melons	12
84	Machinery, mechanical appliances, nuclear reactors, boilers; parts thereof	12
53	Other vegetable textile fibres; paper yarn and woven fabrics of paper yarn	12
09	Coffee, tea, maté and spices	11
20	Preparations of vegetables, fruit, nuts or other parts of plants	11
27	Mineral fuels, mineral oils and products of their distillation; bituminous substances; mineral	11
64	Footwear, gaiters and the like; parts of such articles	8
90	Optical, photographic, cinematographic, measuring, checking, precision, medical or surgical	8
40	Rubber and articles thereof	7
21	Miscellaneous edible preparations	7
96	Miscellaneous manufactured articles	6
52	Cotton	5
38	Miscellaneous chemical products	5
69	Ceramic products	5
33	Essential oils and resinoids; perfumery, cosmetic or toilet preparations	4
32	Paints and varnishes	4
65	Headgear and parts thereof	4
55	Man-made staple fibres	3
24	Tobacco and manufactured tobacco substitutes	3
23	Residues and waste from the food industries; prepared animal fodder	3
59	Impregnated, coated, covered or laminated textile fabrics; textile articles of a kind suitable	3
22	Beverages, spirits and vinegar	2
15	Animal or vegetable fats and oils and their cleavage products; prepared edible fats; animal	2
14	Vegetable plaiting materials; vegetable products not elsewhere specified or included	2

73	Articles of iron or steel	2
25	Salt; sulphur; earths and stone; plastering materials, lime and cement	1
68	Articles of stone, plaster, cement, asbestos, mica or similar materials	1
19	Preparations of cereals, flour, starch or milk; pastrycooks' products	1
58	Special woven fabrics; tufted textile fabrics; lace; tapestries; trimmings; embroidery	1
18	Cocoa and cocoa preparations	1
95	Toys, games and sports requisites; parts and accessories thereof	1
34	Surface-active preparations and washing preparations	1
11	Products of the milling industry; malt; starches; inulin; wheat gluten	1
63	Other made-up textile articles; sets; worn clothing and worn textile articles; rags	1
74	Copper and articles thereof	1
94	Furniture; bedding, mattresses, mattress supports, cushions and similar stuffed furnishings	1

Source: Authors' Calculations based on data sourced from the ITC.

Finally, of the products on the offensive list, economic analysis according to the indicators detailed in the last section suggests that China will act defensively for only six goods at the eight-digit HS classification. These are predominantly those goods which Sri Lanka exports large values to China; namely black tea, precious stones, some rubber products, and some textiles products. It is important to note however that the conditions used to determine whether China is likely to act defensively are rather blunt. As well as total Chinese and Sri Lankan exports of a good, other important factors may be the outside opportunities for Chinese producers of certain products, political economy considerations, and the substitutability of Sri Lankan and Chinese produce in the domestic market.

7. Partial equilibrium analysis

In this section, we carry out a simple partial equilibrium analysis on the economic effects of China's removing tariffs on goods in this offensive list. Outcomes of interest include the change in trade flows, and whether these come from trade diversion or trade creation. Analysis is carried out using SMART software, provide on the World Bank's World Integrated Trade Solutions interface (World Bank, 2016). This analysis is limited by its partial equilibrium nature (a general equilibrium analysis is beyond the scope of this paper), and by data limitations (data is only available at six-digit HS level).

SMART is an economic tool built by the World Bank to analyse the effect of a change in applied tariff rates on tariff revenue, bilateral trade flows, consumer prices and welfare. SMART is based on an economic model, which is calibrated with data from UNCOMTRADE (TRAINS) and other sources. It is a partial equilibrium model, and so looks at the impact of tariff changes within the market for a single product (at the six-dig HS level or above), without capturing spill-overs into other products.

For each product, the model is as follows. In the supply side, countries compete to export to a home market. The supply from a certain exporter depends on the price that the export country faces. The degree of responsiveness of supply to price is the export elasticity, which measures

the percentage increase in supply given a one percent increase in price. In the SMART model, the export elasticity can be infinite (i.e. exporters will sell any amount of the good at an exogenous price), or positive and finite (i.e. an increase in the price increases the amount countries will export by a finite amount). For this analysis, an infinite export elasticity is assumed for simplicity. This can be justified by the fact that it is likely that Sri Lanka has significant spare capacity in the export of most goods to China, as typically Sri Lanka exports considerably more goods to western countries.

On the demand side of the model, imports follow the Armington assumption. This says that the home country imports different 'varieties' of the good from each exporter country. These different varieties are not perfect substitutes. In practice, this means that the home country will not solely demand the good from the cheapest exporter; instead, they have a 'preference for variety'. Hence firstly the home country demands a total amount of the good, given a general price index. The responsiveness of overall imports of a good to the price index is the import elasticity. Secondly, the home country determines the level of spending on each variety of the good, depending on the relative price of each variety. The level of responsiveness to relative prices is the Armington substitution elasticity.

Together, the demand and supply sides complete the model, which is then calibrated with data on trade flows, tariffs and estimations of the three elasticities. Data is collected by the programme from UNCOMTRADE and TRAINS, and for this analysis data is from 2016. One can then explore the hypothetical impact of a reduction in tariffs on a good through their impact on the good's price index, and on the relative prices of the varieties of that good. From this, the model produces estimates of changes in tariff revenue, bilateral trade flows, prices, and welfare. As mentioned before, the model is a partial equilibrium tool, and thus suffers from not capturing spill-over effects between markets (i.e. a change in the market for one six-digit good is assumed to have no effect on other six-digit goods) or along supply chains. The model is simply run separately for each good.

In this analysis, a simulation is run for removing all tariffs on goods under the offensive list. Unfortunately, while the offensive list specifies goods at the eight-digit HS level, SMART can only be run at the six-digit level. Hence for this analysis, we look at removing tariffs on any six-digit good which has an associated eight-digit good on the offensive list. This will overstate the effect of liberalisation.

The results are given in table 7 below. This table presents data on the impact of tariff reduction for the full offensive list, and for sub-sections of the offensive list (by the two-digit HS classification). SMART produces a statement of existing 2016 trade flows for the goods under question, and a counterfactual estimate of how much trade there would have been in 2016 had the tariffs been removed. Further, any estimated change in trade is broken down into trade creation (new trade spurred by a decrease in prices and consequent increased demand) and trade diversion (increased Sri Lankan exports at the expense of other exporters). The authors also calculate the estimated percentage change in trade under the tariff removal.

Table 7. Results from SMART analysis

HS 2-digit	Description	Bilateral Trade Before	Bilateral Trade After	Change	Trade Creation	Trade Diversion	Percentage Change
Full Offensive List		217,271	367,696	150,425	53,453	96,972	69
61	Articles of apparel and clothing accessories, knitted or crocheted	42,568	78,338	35,770	8,927	26,842	84
9	Coffee, tea, maté and spices	38,971	62,431	23,461	16,841	6,619	60
71	Natural or cultured pearls, precious or semi-precious stones, precious metals, metals clad	28,752	37,465	8,713	2,564	6,149	30
62	Articles of apparel and clothing accessories, not knitted or crocheted	25,231	54,758	29,527	5,201	24,326	117
64	Footwear, gaiters and the like; parts of such articles	22,305	40,299	17,994	3,000	14,995	81
53	Other vegetable textile fibres; paper yarn and woven fabrics of paper yarn	21,591	35,555	13,964	10,119	3,845	65
40	Rubber and articles thereof	14,609	22,579	7,970	1,647	6,323	55
38	Miscellaneous chemical products	5,944	8,663	2,719	1,615	1,104	46
85	Electrical machinery and equipment and parts thereof; sound recorders and reproducers, television	4,328	5,552	1,225	188	1,037	28
63	Other made-up textile articles; sets; worn clothing and worn textile articles; rags	1,982	4,602	2,620	1,243	1,377	132
84	Machinery, mechanical appliances, nuclear reactors, boilers; parts thereof	1,440	2,030	590	64	526	41
48	Paper and paperboard; articles of paper pulp, of paper or of paperboard	1,325	1,746	420	89	332	32
14	Vegetable plaiting materials; vegetable products not elsewhere specified or included	1,227	1,931	704	89	614	57
58	Special woven fabrics; tufted textile fabrics; lace; tapestries; trimmings; embroidery	971	1,455	484	92	391	50
60	Knitted or crocheted fabrics	786	1,128	342	62	280	44
90	Optical, photographic, cinematographic, measuring, checking, precision, medical or surgical	678	834	156	24	132	23
25	Salt; sulphur; earths and stone; plastering materials, lime and cement	652	734	81	24	58	12
42	Articles of leather; saddlery and harness; travel goods, handbags and similar containers; articles	649	1,208	559	41	518	86
3	Fish and crustaceans, molluscs and other aquatic invertebrates	609	891	282	126	156	46
21	Miscellaneous edible preparations	593	969	376	28	348	63
33	Essential oils and resinoids; perfumery, cosmetic or toilet preparations	378	671	293	77	216	77
	Others	1,468	1,904	436	128	308	30

Source: SMART statistical package, embedded in the World Bank's World Integrated Trade Solutions (WITS) tool (World Bank, 2017).

If all the goods on the offensive list were granted duty free access to the Chinese market, bilateral trade in these goods is estimated to increase from $217 million to $368 million, an increase of 69%. This demonstrates the enormous impact that a free trade agreement with China could have on Sri Lankan trade. This increase is also a 58% increase in Sri Lankan exports to China overall (i.e. looking at the initial exports of all goods, of which $260 million was exported to China in 2015, not just those on the offensive list). Finally, it accounts for a 1.35% increase in Sri Lankan exports worldwide, demonstrating that trade with China is currently limited.

Looking at the effect of liberalising goods on the offensive list within specific two-digit categories, there are substantial heterogeneities in results. Percentage increases in bilateral exports range from 12.5% to 472. Among Sri Lanka's largest export categories, clothing, tea and textile fibres (coconut) are estimated to see the biggest benefit from trade liberalisation, with predicted growth of 60% to 117%. Trade in precious stones, electrical equipment, and rubber and rubber products, is expected to be less effected (although the estimated change is still considerable).

Much of the total increase in trade under Chinese liberalisation is expected to come from trade diversion, in which Sri Lankan exports displace exports to China from other countries. This is particularly the case for clothing and rubber products, though it is less true for tea and coconut products. However, one should note that many countries, particularly in the Asia-Pacific region, currently have preferential access to the Chinese market due to their having signed bilateral FTAs with China, or their receiving Generalised System of Preferences (GSP) access. Hence much of this trade diversion may result from Sri Lanka regaining access to a level playing field, rather than being due to Sri Lanka receiving an unfair advantage.

8. Conclusion

This paper's primary purpose was to create an offensive list to support Sri Lankan negotiations for An FTA with China, using easily accessible trade and tariff data. This list details the products for which is it most important to Sri Lanka for China to remove or lower tariffs, and is included in the Appendix. This list contains 385 products at the Chinese HS eight-digit classification, corresponding to 1,179 products at the Chinese ten-digit tariff line (for which trade data is not available). It is important to reiterate here that this output should be only one input to a final offensive list to be used in trade negotiations; considerations other than economic analysis include detailed dialogue with private sector and civil society actors, political factors, as well as from a detailed sustainability impact assessment.

This paper also completed analysis into the effect of the potential trade deal on Sri Lankan exports, trade creation, and trade diversion, using the SMART tool available in WITS (World Bank, 2016). This analysis predicts a 97% increase in exports of the goods on the offensive list given total duty-free access to the Chinese market for these goods, and a 63% increase in total Sri Lankan exports to China.

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