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APPENDIX

Section 1: Introduction

Table A1. List of TAC countries in the GTAP Data Base and sectoral aggregation

FTA67 countries in the GTAP Data Base:
Korea (kor); Canada (can); Mexico (mex); Chile (chl); Colombia (col); Ecuador (ecu); Peru (per); Costa Rica (cri); Guatemala (gtm); Honduras (hnd); Nicaragua (nic); Panama (pan); El Salvador (slv); Rest of Central America (xca); Dominican Republic (dom); Jamaica (jam); Trinidad and Tobago (tto); Caribbean (xcb); Switzerland (che); Norway (nor); Rest of EFTA (xef); Albania (alb); Ukraine (ukr); Rest of Eastern Europe (xee); Georgia (geo); Israel (isr); Jordan (jor); Turkey (tur); Egypt (egy); Morocco (mar); Tunisia (tun); Cameroon (cmr); Cote d'Ivoire (civ); Ghana (gha); Madagascar (mdg); Mauritius (mus); Mozambique (moz); Zimbabwe (zwe); Botswana (bwa); Namibia (nam); South Africa (zaf); Rest of South African Customs (xsc)

Aggregated sector	**GTAP sector (code)**
Agriculture	Paddy Rice (pdr); Wheat (wht); Other Grains (gro); Veg & Fruit (v_f); Oil Seeds (osd); Cane & Beet (c_b); Plant Fibres (pfb); Other Crops (ocr); Cattle (ctl); Other Animal Prod (oap); Wool (wol); Forestry (frs); Fishing (fsh)
Food	Cattle Meat (cmt); Other Meat (omt); Vegetable Oils (vol); Dairy prod. (mil, rmk); Processed Rice (pcr); Sugar (sgr); Other Food (ofd); Beverages and Tobacco prod. (b_t)
Mining, petroleum and coke	Coal (coa); Oil (oil); Gas (gas); Other Mining (omn); Petroleum & Coke (p_c)
Textiles	Textiles (tex); Wearing Apparel (wap); Leather (lea)
Chemicals	Chemical Rubber Prod. (crp)
Iron, Steel and Metals	Iron & Steel (i_s); Non-Ferrous Metals (nfm); Fabricated Metal Prod. (fmp)
Motor Vehicles	Motor vehicles and parts (mvh); Other Transport Equipment (otn)
Electronic and Machinery	Electronic Equipment (ele); Other Machinery & Equipment (ome)
Other Manufactures	Lumber (lum); Paper & Paper Prod. (ppp); Non-Metallic Minerals (nmm); Other Manufacturing (omf)
Services	Electricity (ely); Gas Distribution (gdt); Water (wtr); Construction (cns); Trade (trd); Other Transport (otp); Water transport (wtp); Air transport (atp); Communications (cmn); Other Financial Intermediation (ofi); Insurance (isr); Other Business Services (obs); Recreation & Other Services (ros); Public Services (osg, dwe)

Inter-country input-output linkages

Within the GTAP framework, imports of a particular GTAP product from a particular country are captured by a single number, whether they are destined for final use by consumers or governments or for intermediate use by firms. However, each GTAP product includes many different products

measured at the HS-6 level and for many of these products it is clear from the nature of the product what the likely destination is. We follow Liapis and Tsigas (2014) and Walmsley et al. (2014) in exploiting this latter information to get a better estimate of the linkages between firms in different countries.

The method relies on the use of a series of concordances from the United Nations Statistics Division (UNSD) (correspondence tables are retrieved from: https://unstats.un.org/unsd/classifications/econ/). In particular we use the Classification by Broad Economic Categories (BEC) to obtain derive shares that can attribute bilateral imports in the GTAP Data Base across different agents (i.e., firms, government, private households). Specifically, we start with UN COMTRADE import data at the six-digit level of the Harmonized Commodity and Coding System (HS) and apply the first concordance between HS and the BEC Rev.5. Each economic category is completely decomposable by end use. Accordingly, the mapping between BEC and the System of National Accounts (SNA) end-use dimension makes it possible to identify three different end use classes, namely, intermediate consumption, gross fixed capital formation and final consumption. Finally, the HS-GTAP concordance is applied to map each HS line to a GTAP commodity which gives the BEC-informed shares for each GTAP commodity.

Section 3: Modelling Trade Policy

(A) Scenarios

Table A.2 gives the full set of trade cost changes in our scenarios. For tariffs, we potentially have different rates on trade in different directions, whereas for all other costs we assume either symmetry over directions of trade or no change from the base, in which case any asymmetries are built into the trade functions.

Table A2 Definitions of Scenarios

Simulation values	Base	No Deal'		FTA UK-EU		FTAs EU,USA,Japan	
		UK	partner	UK	partner	UK	partner
Tariff UK-EU27	zero	UKGT	EU MFN	zero	zero	zero	zero
Tariff UK-Japan, USA	MFN	UKGT	J/U MFN	UKGT	J/U MFN	zero	zero
Tariff UK-MFN partners	MFN	UKGT	RoW MFN	UKGT	RoW MFN	UKGT	RoW MFN
Tariff UK-TAC partners	FTA	FTA		FTA		FTA	
NTM goods UK-EU27	zero	(FTA+nonFTA)/2		FTA		FTA	
NTM goods UK-Japan, USA	nonFTA	nonFTA		nonFTA		FTA	
NTM goods UK-MFN partners	nonFTA	nonFTA		nonFTA		nonFTA	
NTM goods UK-TAC partners	FTA	FTA		FTA		FTA	
NTM serv UK-EU27	zero	MFN		¾*MFN		¾*MFN	
NTM services UK-Japan, USA	MFN	MFN		MFN		MFN	
NTM serv UK-MFN partners	MFN	MFN		MFN		MFN	
NTM serv UK-TAC partners	FTA	FTA		FTA		FTA	
Border costs goods UK-EU27	no	yes		yes		yes	
Border costs goods UK-others	yes	yes		yes		yes	
ROOs UK-EU27	no	no		yes		yes	
ROOs UK-Japan, USA	no	no		no		yes	
ROOs UK-MFN partners	no	no		no		no	
ROOs UK-TAC partners	yes	yes		yes		yes	

GREEN: no change relative to base

RED: trade cost increase relative to base

BLUE: trade cost decrease relative to base

(B) Details on Trade Costs

Tariffs

We use the tariff estimates provided in the G-TAP database for most of the countries and cases in this exercise. However, we need to provide estimates of the UK's new Global Tariff (UKTP). These were published at the 8-digit level on 19th May 2020 in https://www.gov.uk/government/news/uk-global-tariff-backs-uk-businesses-and-consumers. The changes are summarised by Magntorn Garett et al (2020). We converted the 8-digit tariffs to 6-digit level of the HS Classification by simple averaging within each HS-6 heading and then weighted these up to GTAP 57 industry level using trade weights. We also conducted the same exercise on the EU MFN tariff that the UK is seeking to bind in the WTO, and calculated the difference between the two at GTAP industry level.

In compiling the 'No Deal' scenario we used the UKGT for UK imports from the EU and the EU MFN for EU imports from the UK – both increased from zero in the base year. For other trade flows – e.g. UK-USA - we used the GTAP base estimates of the tariff that was applicable and added our calculated change in in the UK tariff due to the UK moving from the MFN to the UKGT. The reason for this approach is that tariffs in the GTAP base dataset have been subject to a certain amount of manipulation and balancing in constructing the GTAP database, and to drop an independent estimate into the middle of them runs the risk of disturbing the balance of the latter.

As noted in the text, we assume no change in the tariff applied by the UK to imports from the TAC countries and vice versa.

Non-Tariff Measures: Goods[1]

Estimates of the ad-valorem equivalents of non-tariff measures (NTMs) for the GTAP's 43 agriculture and manufacturing sectors are taken from Cadot and Gourdon (2016). Using trade unit values from the CEPII database as price data, they applied the price-gap method to estimate the ad-valorem equivalents (AVE) of the NTMs for 21 sections of the Harmonized System of product classification. Using the estimates, we then matched with the GTAP 43 sector (Agriculture and Manufacturing Sectors, excluding the service sectors).

To estimate the ad valorem equivalent (AVE) of the NTMs, an estimable equation is derived by assuming (1) a standard monopolistic competition model with heterogeneous firms, where each firm draws its productivity level before exporting, and (2) a constant marginal cost assumption. With these assumptions, the aggregate CIF price over varieties using a CES aggregator is given as follows:

$$P_{odk}^{CIF} = \left\{ \int_0^{\infty} \left[p_{odk}^{CIF}(\varphi) \right]^{1-\sigma} M_o \mu_o(\varphi) d\varphi \right\}^{\frac{1}{1-\sigma}} \quad (1)$$

where o, d and k refer to origins, destinations, and products respectively, φ is firm productivity level, M_o is the mass of firms producing product k, $\mu_o(\varphi)$ is the unconditional distribution of firm productivities. Equation (1) P_{odk}^{CIF} can be interpreted as the trade unit values which are observed in

[1] We are grateful to Yohannes Ayele of UKTPO for providing these estimates and preparing this section.

the data. As in Meltiz (2003), equation (1) can be rewritten in terms of productivity aggregator $\widetilde{\varphi_o}$ as follow

$$P_{odk}^{CIF} = M_o^{\frac{1}{1-\sigma}} p(\widetilde{\varphi_o}) = M_o^{\frac{1}{1-\sigma}} \tau_{odk} \left(\frac{\sigma}{\sigma-1}\right) \frac{w_o}{\widetilde{\varphi_o}}, \qquad \text{with } \widetilde{\varphi_o} = [\int_0^\infty \varphi^{1-\sigma}\, \mu_o(\varphi) d\varphi]^{\frac{1}{\sigma-1}} \qquad (2)$$

τ_{odk} in equation (2) is the iceberg-type trade costs that include both (1) the traditional trade costs such as distance and (2) the associated costs of complying with any NTMs imposed by the country of destination on product k. w_o is the wage in origin *o*. The trade cost τ_{odk} can be written as follows:

$$\tau_{odk} = exp\,[\beta_1 n_{dk} + \beta_2 \ln(1 + t_{odk}) + x_{od}\gamma] \qquad (3)$$

where n_{dk} is a binary indicator of the presence or absence of an NTM on product k in destination market d, t_{odk} is an ad-valorem tariff on product k from origin o on destination market d, and x_{od} captures the bilateral determinants of trade (e.g. distance).

Cadot and Gourdon (2016) derived the baseline estimation equation after the log-linearization of equation (2) and (3) as follows:

$$lnv_{odk} = \delta_0 + \beta_1^A n_{dk}^A + \beta_1^B n_{dk}^B + \beta_1^{other} n_{dk}^{other} + \beta_2 \ln(1 + t_{odk}) + x_{od}\gamma_1 + z_d\gamma_2 + u_{odk} \qquad (4)$$

where lnv_{odk} ($\sim P_{odk}^{CIF}$) is the unit value of product k imported from o to d, x_{od} is the bilateral determinants of trade (e.g. distance), n_{dk} binary indicator of the presence or absence of an NTM type (A (SPS), B (TBT), and C(other)) on product k in destination market d, and z_d controls for importer characteristics. Equation (4) shows that the presence of NTMs on the product is regressed on the unit trade values in a product-by-product regression. The product-by-product estimates are then aggregated to the HS section averages.

Cadot and Gourdon (2016) also estimated whether regional trade agreements (RTA) dampen the effect of NTMs on prices by modifying equation (4) with simply interacting NTM dummies with dummies marking deep-integration clauses as follows.

$$lnv_{odk} = \delta_0 + \delta_d + \sum_{j=A,B,Other} \alpha_1^j n_d^j + \sum_{j=A,B,Other} \beta_1^j \left(n_d^j x \alpha_{od}\right) + \beta_2 \ln(1 + t_{odk}) + x_{od}\gamma_1 + z_d\gamma_2 + u_{odk} \qquad (5)$$

where *j = h, m, and c* refers standards harmonization, mutual recognition and mutual recognition of conformity-assessment procedures , i.e. *l={h, m, c},* and α_{od}^l is a binary variable equal to 1 if o and d have an RTA with deep integration clauses. It should be noted that both equations (4) and (5) are estimated separately product by product, and then section averages are calculated.

This is a very interesting approach to NTMs and seems to us among the most convincing. Nonetheless, there are four main issues arises in the calculation of the average.

- as the estimation is fundamentally at product level, there are some destination-product pairs where there is no NTM, which implies no AVE, and they are set arbitrary zero values.

- only coefficients statistically significant at 10% are kept (40% of the estimates).
- 15% of the observations provide negative AVE estimates. They considered these as aberrations and thus replaced with missing values.
- as some of the AVE estimates are implausible (such as a 500% AVE), Cadot and Gourdon used a hyperbolic tangent function to transform the estimates prior to averaging.

Finally, three caveats are important in interpreting the estimates: the first is general in nature for any NTM estimation (including that for services) and the other two are specific to the price-gap method. First, NTMs are not only highly diverse in numbers and scope but also the mechanisms by which they affect international trade and the economy are complex and broad. Thus estimating and identifying a single tariff equivalent of the NTMs is overly simple. Second, the estimates should be interpreted carefully considering that other factors than NTMs might contribute to the price-gap, e.g. internal transportation cost. Third, sometimes firms may choose to internalize the cost of NTMs to keep their market share by decreasing their mark-up, and thus the price-gap may be sensitive to extraneous shocks.

Converting Cadot and Gourdon's estimates to GTAP sectors:

Cadot and Gourdon (2016) estimate of the tariff equivalents of NTMs for 21 sections of the Harmonized System of product classification. They now have to be matched to the GTAP 43 Agriculture and Manufacturing Sectors. To match the NTMs estimate of Cadot and Gourdon (2016) with GTAP's 43 sectors:

- First, we used HS—GTAP concordance provided by GTAP. Using this concordance, we matched the Cadot and Gourdon (2016) 21 HS sections estimates to the GTAP's 43 sectors in a many-to-many matching.
- Second, once each 21 HS section was matched with the GTAP's 43 sectors, we took the unweighted average when multiple HS sections were matched to the single GTAP sector. For instance, for the baseline AVE estimates, the GTAP sector Metal Products (FMP) matches with multiple HS sections: Metals (with an AVE of 5.6%), Machinery (7.1%), Pearls (6%), Arms (5.3%), and Miscellaneous (0.8%). Thus, by taking the average of the matched HS section, the GTAP's Metal Products (FMP) sector unweighted average baseline AVE becomes 4.96%.
- The result is reported in Table 1 for all sectors.

Table A3: Estimates of GTAP sectors AVE

GTAP Sector	**GTAP Sector Name**	**AVE Base-line**	**AVE without RTA**	**AVE with RTA**
B_T	Beverages and tobacco products	18.45	18.40	13.85
CMT	Bovine meat products	20.70	19.05	14.50
COA	Coal	9.00	9.40	6.80
CRP	Chemical, rubber, plastic products	6.95	7.13	5.34
CTL	Bovine cattle, sheep goats, horses	26.20	20.80	16.40
C_B	Sugar cane, sugar beet	19.60	20.30	15.80
ELE	Electronic equipment	7.10	6.70	4.80
ELY	Electricity	9.00	9.40	6.80
FMP	Metal products	4.96	4.78	3.64
FRS	Forestry	10.83	11.27	8.83
FSH	Fishing	17.27	15.47	12.40
GAS	Gas	9.00	9.40	6.80
GDT	Gas manufacture, distribution	9.00	9.40	6.80
GRO	Cereal grains nec	19.60	20.30	15.80
I_S	Ferrous metals	7.30	7.60	5.35
LEA	Leather products	5.78	5.10	3.65
LUM	Wood products	3.65	3.55	3.15
MIL	Dairy products	16.93	15.07	11.23
MVH	Motor vehicles and parts	9.00	8.00	6.35
NFM	Metals nec	6.98	7.10	5.28
NMM	Mineral products nec	6.30	6.20	4.54
OAP	Animal products nec	16.33	14.87	11.07
OCR	Crops nec	18.45	18.40	13.85
OFD	Food products nec	17.60	16.38	12.38
OIL	Oil	9.00	9.40	6.80
OME	Machinery and equipment nec	6.08	5.56	4.21
OMF	Manufactures nec	8.25	7.20	5.53
OMN	Minerals nec	7.50	7.35	5.90
OMT	Meat products nec	19.57	18.20	13.63
OSD	Oil seeds	19.60	20.30	15.80
OTN	Transport equipment nec	9.00	8.00	6.35
PCR	Processed rice	19.60	20.30	15.80
PDR	Paddy rice	19.60	20.30	15.80
PFB	Plant-based fibers	6.40	5.60	4.30
PPP	Paper products, publishing	6.00	5.88	4.15
P_C	Petroleum, coal products	9.00	9.40	6.80
SGR	Sugar	17.30	16.50	11.90
TEX	Textiles	6.03	5.17	4.27
VOL	Vegetable oils and fats	17.37	18.03	13.43
V_F	Vegetables, fruit, nuts	19.60	20.30	15.80
WAP	Wearing apparel	6.27	5.70	3.90
WHT	Wheat	19.60	20.30	15.80
WOL	Wool, silk-worm cocoons	6.40	5.60	4.30

Non-Tariff Measures: Services

Estimates of the barriers to services trade are notoriously difficult to undertake and offer widely different estimates of their effect – see, for example, Walsh (2008), Guillin (2013) and Ciuriak (2020). As noted in the text, we have sought to by-pass the full exercise by merely estimating the supposed benefits of the Single Market for services trade. One estimate of these is Fontagne, Mitaritonna and Signoret (2016), which offers estimates for the nine of the GTAP services sectors. The full set of estimates comes from the website in the USITC version of the paper

Fontagne et al's estimates of country-specific services NTMs are based on importer fixed effects from gravity models for each of nine sectors estimated from cross-section data for 2011 for 117 countries. The data are from GTAP's bilateral trade database and hence contain a very large number of imputed values. The estimates assume that the NTMs are importer-specific, applying equally to all exporters to that market. They are derived from the full set of importer fixed effects in the gravity model, and thus capture the extent to which an importer's services imports are, on average, higher or lower than other importers'. The average trade effects are converted into ad valorem tariff equivalents by asking what increments to trade costs over those faced by the most liberal importer would have produced the observed trade outcomes. The most liberal country is defined as the country with the largest estimated fixed effect, and this is set by definition as having 'barrier-free' trade. That is, Fontagne et al measure relative trade costs for imports of services from different sources, not the cost of imports relative to domestic sales.

Based on a structural gravity equation, the AVEs are the changes in iceberg trade costs that generate the best fit for the gravity model to the 2011 data. Fontagne et al assumed that the elasticity of trade wrt to prices, σ, was -5.6. This is basically the elasticity of substitution between sources. The key relationship is

$$\ln[\,(1+\,\tau_j)^{1-\,\sigma}] = \,\gamma_j - \,\gamma_0 \qquad (1)$$

where τ_j is the AVE and γ_j the fixed effect for importer *j*, with *0* denoting the country with the largest fixed effect, i.e. lowest NTMs.

The fixed effects clearly capture any country-specific feature, including, since this is a cross section, GDP and GDP pc, which clearly can affect trade in services. For this reason, we cannot take them very seriously as estimates of the absolute values of services trade barriers.

Fontagne et al's equations include the usual cross-section gravity variables for trading costs, including dummies for certain FTAs, including the EU (not the EEA, note). In principle, the EU variable captures the trade-increasing effects of the Single Market. It is the same for each member state and acts additively to the fixed effect for each member state's MFN policies. It is best thought of as an additive factor to γ_j for intra-EU trade, so that the appropriate AVE for intra-trade is

$$\ln[\,(1+\,\tau'_j)^{1-\,\sigma}] = \,\gamma_j + \mu - \,\gamma_0 \qquad (2)$$

where μ is the coefficient on the EU dummy.

Table 2 reports Fontagne's dummies for the GTAP sectors they estimated. In our exercise we have set the trade increment for Recreation & Other Services to the unweighted mean of the other sectors (0.315) and those for the utilities to zero. (There are only very low levels of trade in utilities.) In addition, when we come to convert these fixed effects to AVEs we have assumed an elasticity of -

3.8, the elasticity of substitution used for services in the GTAP model we use. It essentially gears the model up to reproduce the 'excess trade' that the fixed effects estimate.

Table A4 The effects of Single Market membership on services trade

Dummy variable estimates from Fontagne et al (2016)

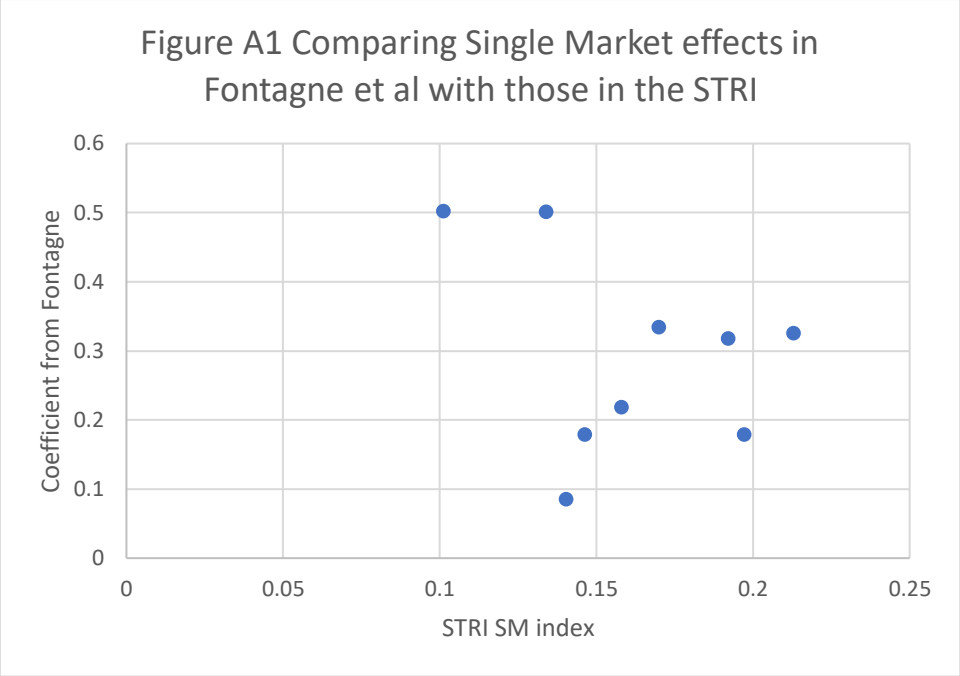
GTAP sector	**acronym**	**EU effect**
Electricity		n.a.
Gas Distribution		n.a.
Water		n.a.
Construction	cns	0.334
Trade	trd	0.502
Other Transport	trn*	0.178
Air transport	trn*	0.178
Water transport	wtp*	0.317
Communications	Cmn	0.085
Other Financial Intermediation	ofi	0.501
Insurance	isr	0.208
Other Business Services	obs	0.325
Recreation & Other Services		n.a.
Public Services	osg	0.379

* Trn includes all three GTAP transport sectors, wtp is also estimated separately by Fontagne et al.

Although Fontagne's estimates do not come from a proper structural gravity model, because the equations do not include domestic sales as well as trade flow, the estimated EU dummy coefficients will probably be less distorted than the catch-all NTM estimates. Thus our approach is to work in terms of the changes in NTMs wrought by Brexit (rather than levels), i.e. as if NTMs were zero in the base year, and conduct all our estimates with the increments alone.

There are few AVEs in services to compare these estimates with, but figure 1 below offers a crude comparison with OECD's index of services barriers. This is a measure of restrictiveness constructed from the legal instruments on services trade policy with no reference to their trade effects. Subtracting Benz and Gonzales' (2019) estimates of the intra-EEA STRI from the corresponding OECD estimates for MFN barriers, we have an STRI indicator of the benefits of the Single Market. The STRI is defined by reference to ISIC sectors, which also map to GTAP sectors. Averaging across the 25 EEA countries included in Benz and Gonzales and across any STRI sectors mapping into each GTAP sector, we find some positive association between the OECD and the Fontagne estimates of the Single Market effects[2]. There are two exceptions: Trade and Other Financial Intermediation, which appear to have much larger effects on trade in the Fontagne et al estimates than one would expect from the STRI estimates. These differences could reflect shortcomings in either or both of the estimates themselves and their fundamental incomparability. In particular, Financial Services are regulated in some ways which the STRI may not capture well, as are retail trades, which are affected by issues such as EU consumer protection requirements.

[2] The one exception to simple averaging is for air transport for which we take the simple average of the four logistics scores and then the simple average of that with the STRI for Air Transport.



We would be the first to admit that these estimates are extremely crude. On the other hand, our estimates are more detailed than those in the literature and for that reason may be more informative. For example, the influential study by Dhingra et al (2017) takes estimates for about a dozen sectors from Berden et al (2009, 2013), along with the latter's estimate of the proportion are amenable to policy change. From these they calculate a single estimate of non-tariff trade costs for goods and services, and, making assumptions about how much of these would apply under a given Brexit scenario, 'apply these increases uniformly to UK-EU trade in all sectors of the economy'.

Border Costs

Other than within in the EU, all goods trade faces border formalities (customs forms, regulatory checks, etc). We assume that after Brexit, all trade does. These costs are not related to the height of the tariff and are not avoided by an FTA except an extraordinarily deep one (i.e membership of the Single Market).

The cost of these formalities varies hugely between firms and even transactions, and there appears to be little evidence on which to base an average estimate. The UK government did admit, however, that it believed that the extra private border costs associated with Brexit would be £7 billion (implicitly per year, because forms will be required in perpetuity). UK exports and imports of goods summed to £435 billion in 2018, and so allowing a little extra for the costs at the EU border, we have set overall additional border costs on UK-EU goods trade, conservatively, at 2% of transaction value. No change is assumed for trade other than UK-EU trade.

Rules of Origin

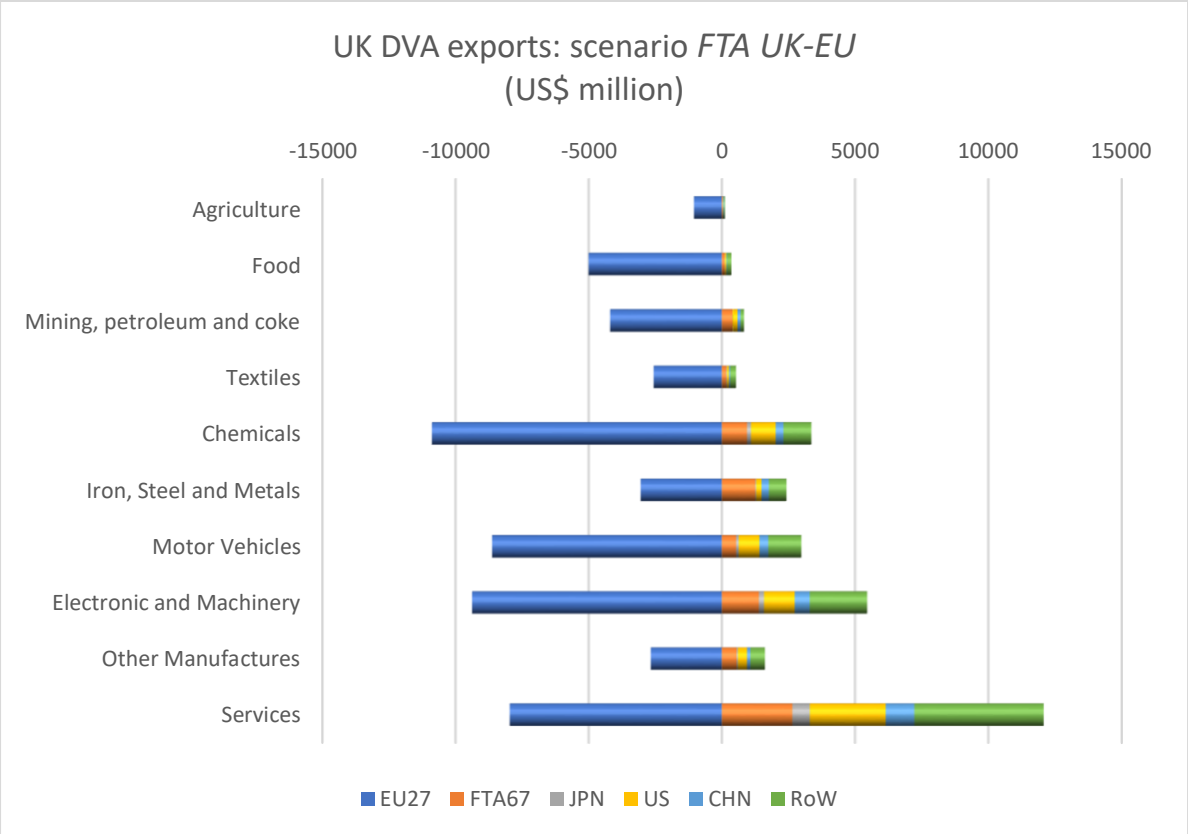
Rules of origin are also highly variable across firms and transactions, but here there is a little evidence to work with. Based on gravity modelling, Cadestin et al (2016) estimate that RoOs in Latin American preferential agreements have an Ad Valorem Equivalent of the order of 8-9 per cent. This

is rather higher than Francois, Hoekman and Manchin (2006) find by seeking the threshold at which it is no longer worth a developing country exporter seeking to take advantage of a preference. Their exercise identifies the total (additional) cost involved in using the preference (i.e. not only RoOs) and they suggest that it is 4 per cent for manufactures and 15 per cent for agricultural products, although the latter is almost certainly not all because of RoOs *per se*.

Recognising that costs are probably lower in a developed country, we estimate that, on average, RoOs add 3.5% to the cost of a transaction. Imports that cannot prove they meet the ROO face the MFN tariff, so if the latter is below 3.5% for any commodity, we apply that to the flow, whereas if it is above, we apply 3.5% (a preferential tariff of zero plus the 3.5% ROO-cost of claiming it). We do this at the level of the GTAP commodity. We assume no change in the cost of RoOs for the TAC.

Section 4: Supplementary Figures

The Effects of Brexit with an FTA



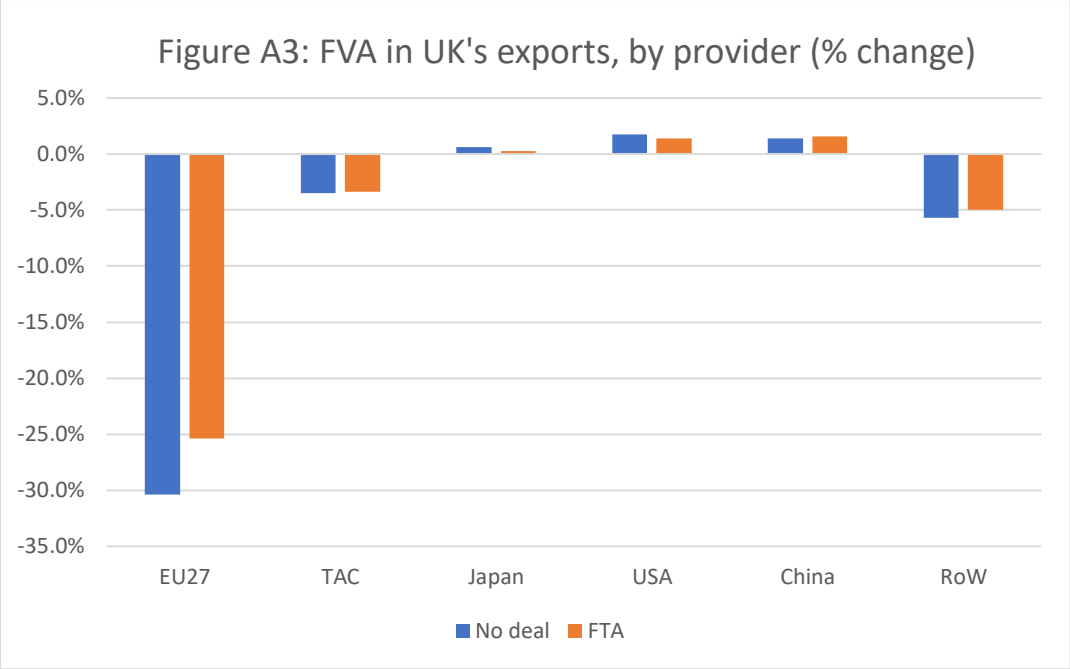


Figure A3: FVA in UK's exports, by provider (% change)
5.0%
0.0%
-5.0%
-10.0%
-15.0%
-20.0%
-25.0%
-30.0%
-35.0%
EU27
TAC
Japan
USA
China
RoW
No deal
FTA

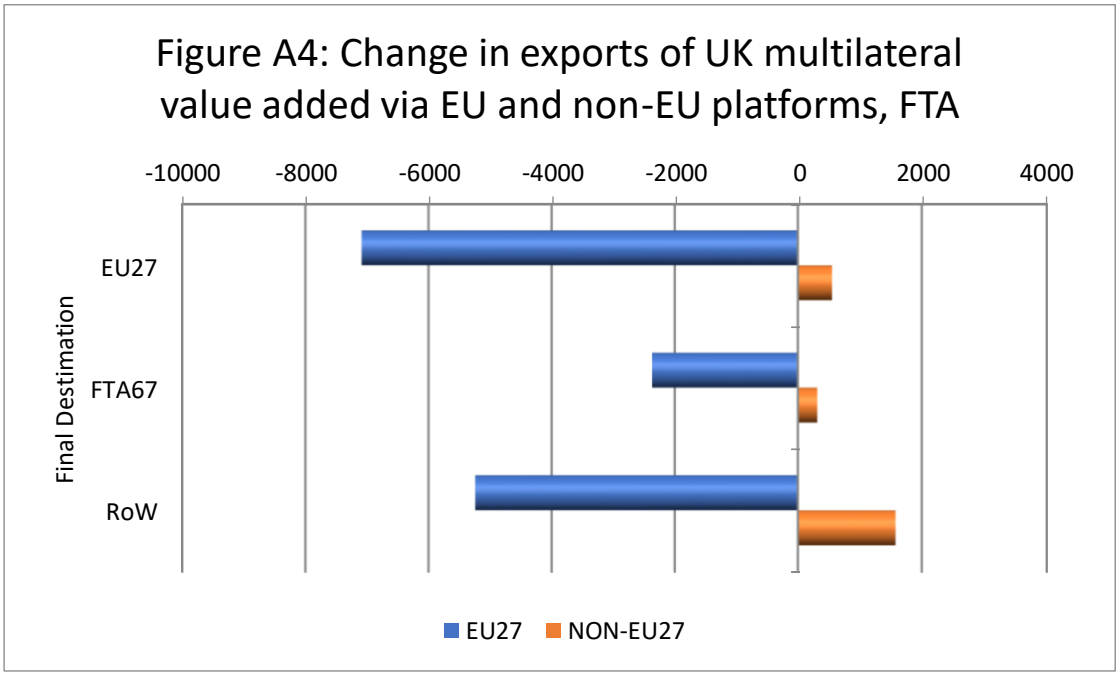


Figure A4: Change in exports of UK multilateral value added via EU and non-EU platforms, FTA
-10000
-8000
-6000
-4000
-2000
0
2000
4000
Final Destimation
EU27
FTA67
RoW
EU27
NON-EU27

Figure A5: UK bilateral import-export:
No-deal (% change)

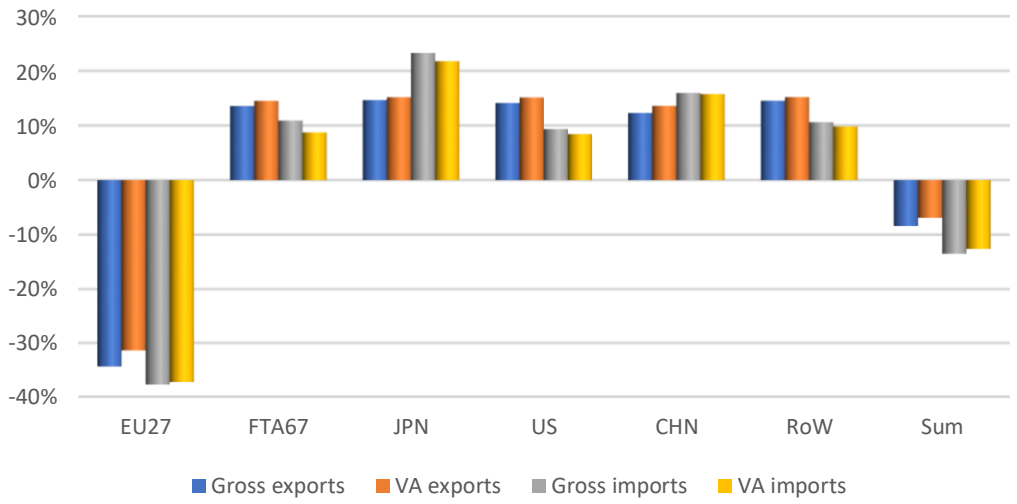
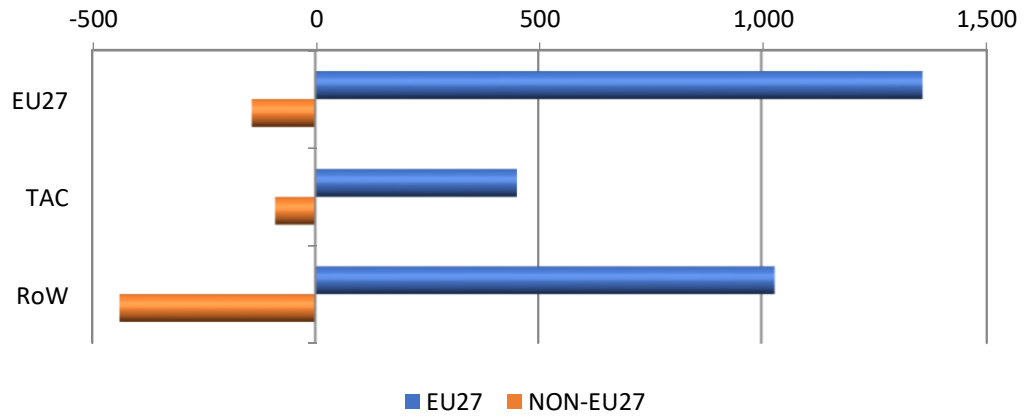


Figure A6: Change in UK multilateral VA exports via EU and non-EU platforms due to UK-EU FTA ($million)



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