

8 Appendices

Appendix 1 HS 1988/92 product nomenclature

Product Group	Product Group Description	Product Code	Product Description
01-05_Animal	Animal	1	Live animals
01-05_Animal	Animal	2	Meat and edible meat offal
01-05_Animal	Animal	3	Fish & crustacean, mollusc & other aquatic inv
01-05_Animal	Animal	4	Dairy prod; birds' eggs; natural honey; edible
01-05_Animal	Animal	5	Products of animal origin, nes or included.
06-15_Vegetable	Vegetable	6	Live tree & other plant; bulb, root; cut flowe
06-15_Vegetable	Vegetable	7	Edible vegetables and certain roots and tubers
06-15_Vegetable	Vegetable	8	Edible fruit and nuts; peel of citrus fruit or
06-15_Vegetable	Vegetable	9	Coffee, tea, mati and spices.
06-15_Vegetable	Vegetable	10	Cereals
06-15_Vegetable	Vegetable	11	Prod.mill.indust; malt; starches; inulin; whea
06-15_Vegetable	Vegetable	12	Oil seed, oleagi fruits; miscell grain, seed,
06-15_Vegetable	Vegetable	13	Lac; gums, resins & other vegetable saps & ext
06-15_Vegetable	Vegetable	14	Vegetable plaiting materials; vegetable produc
06-15_Vegetable	Vegetable	15	Animal/veg fats & oils & their cleavage produc
16-24_FoodProd	Food Products	16	Prep of meat, fish or crustaceans, molluscs et
16-24_FoodProd	Food Products	17	Sugars and sugar confectionery.
16-24_FoodProd	Food Products	18	Cocoa and cocoa preparations.
16-24_FoodProd	Food Products	19	Prep.of cereal, flour, starch/milk; pastrycook
16-24_FoodProd	Food Products	20	Prep of vegetable, fruit, nuts or other parts
16-24_FoodProd	Food Products	21	Miscellaneous edible preparations.
16-24_FoodProd	Food Products	22	Beverages, spirits and vinegar.
16-24_FoodProd	Food Products	23	Residues & waste from the food indust; prepr a
16-24_FoodProd	Food Products	24	Tobacco and manufactured tobacco substitutes
25-26_Minerals	Minerals	25	Salt; sulphur; earth & ston; plastering mat; l
25-26_Minerals	Minerals	26	Ores, slag and ash.
27-27_Fuels	Fuels	27	Mineral fuels, oils & product of their distill
28-38_Chemicals	Chemicals	28	Inorgn chem; compds of prec mtl, radioact elem
28-38_Chemicals	Chemicals	29	Organic chemicals.
28-38_Chemicals	Chemicals	30	Pharmaceutical products.
28-38_Chemicals	Chemicals	31	Fertilisers.
28-38_Chemicals	Chemicals	32	Tanning/dyeing extract; tannins & derivs; pigm
28-38_Chemicals	Chemicals	33	Essential oils & resinoids; perf, cosmetic/toi
28-38_Chemicals	Chemicals	34	Soap, organic surface-active agents, washing p
28-38_Chemicals	Chemicals	35	Albuminoidal subs; modified starches; glues; e
28-38_Chemicals	Chemicals	36	Explosives; pyrotechnic prod; matches; pyrop a
28-38_Chemicals	Chemicals	37	Photographic or cinematographic goods.

Product Group	Product Group Description	Product Code	Product Description
28-38_Chemicals	Chemicals	38	Miscellaneous chemical products.
39-40_PlastiRub	Plastic or Rubber	39	Plastics and articles thereof.
39-40_PlastiRub	Plastic or Rubber	40	Rubber and articles thereof.
41-43_HidesSkin	Hides and Skins	41	Raw hides and skins (other than furskins) and
41-43_HidesSkin	Hides and Skins	42	Articles of leather; saddlery/harness; travel
41-43_HidesSkin	Hides and Skins	43	Furskins and artificial fur; manufactures ther
44-49_Wood	Wood	44	Wood and articles of wood; wood charcoal.
44-49_Wood	Wood	45	Cork and articles of cork.
44-49_Wood	Wood	46	Manufactures of straw, esparto/other plaiting
44-49_Wood	Wood	47	Pulp of wood/of other fibrous cellulosic mat;
44-49_Wood	Wood	48	Paper & paperboard; art of paper pulp, paper/p
44-49_Wood	Wood	49	Printed books, newspapers, pictures & other pr
50-63_TextCloth	Textiles and Clothing	50	Silk.
50-63_TextCloth	Textiles and Clothing	51	Wool, fine/coarse animal hair, horsehair yarn
50-63_TextCloth	Textiles and Clothing	52	Cotton.
50-63_TextCloth	Textiles and Clothing	53	Other vegetable textile fibres; paper yarn & w
50-63_TextCloth	Textiles and Clothing	54	Man-made filaments.
50-63_TextCloth	Textiles and Clothing	55	Man-made staple fibres.
50-63_TextCloth	Textiles and Clothing	56	Wadding, felt & nonwoven; yarns; twine, cordag
50-63_TextCloth	Textiles and Clothing	57	Carpets and other textile floor coverings.
50-63_TextCloth	Textiles and Clothing	58	Special woven fab; tufted tex fab; lace; tapes
50-63_TextCloth	Textiles and Clothing	59	Impregnated, coated, cover/laminated textile f
50-63_TextCloth	Textiles and Clothing	60	Knitted or crocheted fabrics.
50-63_TextCloth	Textiles and Clothing	61	Art of apparel & clothing access, knitted or c
50-63_TextCloth	Textiles and Clothing	62	Art of apparel & clothing access, not knitted/
50-63_TextCloth	Textiles and Clothing	63	Other made up textile articles; sets; worn clo
64-67_Footwear	Footwear	64	Footwear, gaiters and the like; parts of such
64-67_Footwear	Footwear	65	Headgear and parts thereof.
64-67_Footwear	Footwear	66	Umbrellas, walking-sticks, seat-sticks, whips,
64-67_Footwear	Footwear	67	Prepr feathers & down; arti flower; articles h
68-71_StoneGlas	Stone and Glass	68	Art of stone, plaster, cement, asbestos, mica/
68-71_StoneGlas	Stone and Glass	69	Ceramic products.
68-71_StoneGlas	Stone and Glass	70	Glass and glassware.
68-71_StoneGlas	Stone and Glass	71	Natural/cultured pearls, prec stones & metals,
72-83_Metals	Metals	72	Iron and steel.
72-83_Metals	Metals	73	Articles of iron or steel.
72-83_Metals	Metals	74	Copper and articles thereof.
72-83_Metals	Metals	75	Nickel and articles thereof.
72-83_Metals	Metals	76	Aluminium and articles thereof.
72-83_Metals	Metals	78	Lead and articles thereof.
72-83_Metals	Metals	79	Zinc and articles thereof.
72-83_Metals	Metals	80	Tin and articles thereof.

Product Group	Product Group Description	Product Code	Product Description
72-83_Metals	Metals	81	Other base metals; cermets; articles thereof.
72-83_Metals	Metals	82	Tool, implement, cutlery, spoon & fork, of bas
72-83_Metals	Metals	83	Miscellaneous articles of base metal.
84-85_MachElec	Machine and Electrical Equipment	84	Nuclear reactors, boilers, mchy & mech applian
84-85_MachElec	Machine and Electrical Equipment	85	Electrical mchy equip parts thereof; sound rec
86-89_Transport	Transportation	86	Railw/tramw locom, rolling-stock & parts there
86-89_Transport	Transportation	87	Vehicles o/t railw/tramw roll-stock, pts & acc
86-89_Transport	Transportation	88	Aircraft, spacecraft, and parts thereof.
86-89_Transport	Transportation	89	Ships, boats and floating structures.
90-99_Miscellan	Miscellaneous	90	Optical, photo, cine, meas, checking, precisio
90-99_Miscellan	Miscellaneous	91	Clocks and watches and parts thereof.
90-99_Miscellan	Miscellaneous	92	Musical instruments; parts and access of such
90-99_Miscellan	Miscellaneous	93	Arms and ammunition; parts and accessories the
90-99_Miscellan	Miscellaneous	94	Furniture; bedding, mattress, matt support, cu
90-99_Miscellan	Miscellaneous	95	Toys, games & sports requisites; parts & acces
90-99_Miscellan	Miscellaneous	96	Miscellaneous manufactured articles.
90-99_Miscellan	Miscellaneous	97	Works of art, collectors' pieces and antiques.
90-99_Miscellan	Miscellaneous	98	UN Special Code
90-99_Miscellan	Miscellaneous	99	UN Special Code

Source: WITS

Appendix 2 Balassa Indices of Philippine Commodities

Year	Hides and Skins	Foot wear	Stone and Glass	Minerals	Textiles and Clothing	Wood	Animal	Misc	Plastic or Rubber	Vegetable	Food Products	Chemicals	Metals	Transportation	Fuels	Mach and Elec
1998	1.22	0.70	0.42	0.75	1.34	0.33	0.49	0.41	0.18	1.27	0.63	0.12	0.22	0.12	0.11	2.39
1999	1.09	0.40	0.37	0.90	1.15	0.28	0.40	0.32	0.18	0.87	0.49	0.08	0.25	0.14	0.12	2.50
2000	1.19	0.40	0.32	1.02	1.32	0.38	0.49	0.32	0.20	1.17	0.51	0.09	0.25	0.16	0.15	2.42
2001	1.24	0.40	0.27	0.97	1.45	0.34	0.52	0.39	0.22	1.24	0.60	0.10	0.31	0.22	0.10	2.44
2002	0.78	0.28	0.28	0.70	1.35	0.28	0.54	0.38	0.22	1.13	0.55	0.08	0.24	0.22	0.14	2.58
2003	0.64	0.29	0.32	0.77	1.27	0.32	0.53	0.36	0.23	1.31	0.67	0.08	0.28	0.30	0.18	2.60
2004	0.51	0.27	0.25	0.80	1.20	0.30	0.50	0.35	0.23	1.32	0.72	0.10	0.34	0.38	0.13	2.57
2005	0.49	0.23	0.40	0.91	1.31	0.37	0.47	0.36	0.25	1.47	0.76	0.12	0.30	0.46	0.17	2.57
2006	0.55	0.19	0.73	1.17	1.36	0.75	0.48	0.35	0.29	1.55	0.75	0.15	0.55	0.36	0.18	2.46
2007	0.56	0.17	0.39	1.85	1.16	0.80	0.55	0.35	0.30	1.35	0.78	0.18	0.54	0.37	0.23	2.46
2008	0.60	0.19	0.42	1.25	1.15	1.03	0.61	0.37	0.39	1.53	0.98	0.19	0.60	0.49	0.22	2.48
2009	0.55	0.16	0.32	1.33	1.03	1.10	0.54	0.37	0.37	1.20	1.05	0.20	0.49	0.61	0.16	2.47
2010	0.34	0.11	0.29	1.16	0.61	1.08	0.56	3.33	0.35	1.45	0.90	0.26	0.45	0.44	0.15	1.58
2011	0.32	0.21	0.37	1.54	0.84	1.91	0.69	2.71	0.42	1.92	1.34	0.36	0.60	0.61	0.18	1.50
2012	0.43	0.22	0.28	1.67	0.88	2.21	0.61	0.61	0.89	1.59	1.17	0.34	0.60	0.61	0.15	2.27
2013	0.70	0.20	0.20	3.03	0.79	2.79	0.57	0.59	0.33	1.82	1.44	0.40	0.67	0.42	0.24	2.21
2014	0.84	0.27	0.21	3.66	0.84	2.54	0.55	0.58	0.30	2.13	1.22	0.28	0.52	0.55	0.20	2.16
2015	1.23	0.26	0.24	2.60	0.63	2.29	0.52	0.57	0.35	1.26	0.98	0.21	0.54	0.54	0.14	2.26
2016	1.51	0.24	0.32	2.04	0.51	2.36	0.49	0.61	0.35	1.41	0.91	0.23	0.46	0.48	0.15	2.25
2017	1.25	0.22	0.49	1.38	0.50	1.08	0.42	0.53	0.37	1.69	0.98	0.20	0.78	0.44	0.15	2.32
2018	1.56	0.36	0.56	1.50	0.45	0.63	0.36	0.53	0.47	1.78	0.92	0.15	0.64	0.42	0.15	2.41
Average	0.84	0.28	0.35	1.48	1.01	1.10	0.52	0.69	0.33	1.45	0.87	0.19	0.46	0.40	0.16	2.33

Source: Own calculation and elaboration

Appendix 3 Vollrath Indices of Philippine Commodities

Year	Hides and Skins	Foot wear	Stone and Glass	Minerals	Textiles and Clothing	Wood	Animal	Misc	Plastic or Rubber	Vegetable	Food Products	Chemicals	Metals	Transportation	Fuels	Mach and Elec
1998	1.41	1.25	0.80	-0.78	0.66	-0.51	-0.47	0.13	-1.40	-0.01	-0.33	-1.87	-1.18	-0.96	-2.32	0.25
1999	1.28	0.53	0.53	-0.84	0.45	-0.86	-0.84	-0.01	-1.52	-0.29	-0.63	-2.33	-1.25	-0.72	-2.25	0.36
2000	1.53	0.59	0.34	-0.62	0.63	-0.50	-0.67	0.23	-1.39	0.13	-0.71	-2.16	-1.11	-0.67	-1.99	0.32
2001	1.57	0.67	0.22	-0.79	0.79	-0.58	-0.58	0.54	-1.26	0.14	-0.55	-2.05	-0.93	-0.35	-2.35	0.27
2002	1.37	0.48	0.32	-0.69	0.86	-0.60	-0.30	0.64	-1.12	0.09	-0.54	-2.03	-1.07	-0.24	-1.83	0.20
2003	1.18	0.49	0.37	-0.55	0.86	-0.57	-0.36	0.21	-1.11	0.42	-0.30	-2.03	-0.96	-0.04	-1.65	0.21
2004	1.00	0.71	0.11	-0.45	0.80	-0.62	-0.58	0.14	-1.13	0.38	-0.35	-1.86	-0.65	0.34	-1.98	0.23
2005	0.77	0.49	0.58	-0.24	0.85	-0.45	-0.51	0.29	-0.98	0.23	-0.33	-1.66	-0.76	0.24	-1.75	0.24
2006	0.91	0.28	0.97	0.29	0.79	0.23	-0.53	0.26	-0.84	0.18	-0.27	-1.45	-0.02	-0.11	-1.75	0.22
2007	0.81	-0.08	0.36	0.72	0.70	0.36	-0.62	0.32	-0.74	0.14	-0.27	-1.28	0.06	-0.17	-1.65	0.25
2008	0.85	0.16	0.27	0.67	0.91	0.46	-0.66	0.50	-0.56	-0.25	-0.21	-1.37	0.04	-0.05	-1.72	0.39
2009	0.62	-0.14	-0.06	-0.22	0.93	0.45	-0.69	0.43	-0.55	-0.39	-0.19	-1.40	-0.25	0.01	-2.01	0.42
2010	0.13	-0.68	-0.33	-0.22	0.45	0.39	-0.81	2.59	-0.70	-0.18	-0.46	-1.07	-0.32	-0.50	-2.03	0.00
2011	-0.28	-0.70	0.05	0.48	0.41	0.58	-0.84	2.19	-0.86	0.22	-0.25	-1.03	-0.29	-0.23	-2.01	0.30
2012	0.13	-0.46	-0.01	0.47	0.62	0.87	-0.82	0.77	0.07	0.20	-0.29	-0.92	-0.10	-0.38	-2.06	0.47
2013	0.56	-0.70	0.26	0.88	0.39	1.05	-0.96	0.80	-0.89	0.58	-0.13	-0.69	-0.06	-0.99	-1.62	0.48
2014	0.67	-0.53	-0.55	2.25	0.51	0.89	-1.08	0.72	-1.20	0.48	-0.37	-1.10	-0.39	-0.65	-1.81	0.54
2015	0.89	-0.56	-0.28	1.47	0.30	0.87	-1.06	0.58	-0.90	-0.02	-0.48	-1.29	-0.46	-0.51	-2.04	0.42
2016	0.99	-0.48	0.22	0.97	0.03	0.88	-0.97	0.43	-1.00	0.21	-0.61	-1.17	-0.85	-0.81	-1.89	0.50
2017	0.89	-0.62	0.61	-0.17	0.05	0.08	-1.17	0.14	-0.84	0.43	-0.45	-1.31	-0.36	-0.89	-1.88	0.58
2018	1.05	-0.32	0.55	0.50	-0.15	-0.46	-1.31	0.18	-0.64	0.25	-0.52	-1.51	-0.64	-0.93	-1.76	0.60
Average	0.92	0.00	0.26	0.18	0.61	0.38	-0.78	0.84	-0.87	0.14	0.38	1.38	0.51	-0.45	1.90	0.34

Source: Own calculation and elaboration

Appendix 4 OLS

Model 2: OLS, using observations 1998-2018 (T = 21)

Dependent variable: l_y

	coefficient	std. error	t-ratio	p-value	
const	-5.28527	2.25961	-2.339	0.0326	**
l_x1	1.02843	0.495714	2.075	0.0545	*
l_x2	1.64356	0.191250	8.594	2.16e-07	***
l_x3	-0.663563	0.359795	-1.844	0.0837	*
l_x4	0.0814769	0.0569733	1.430	0.1719	
Mean dependent var	5.044788	S.D. dependent var	0.559514		
Sum squared resid	0.395166	S.E. of regression	0.157156		
R-squared	0.936886	Adjusted R-squared	0.921107		
F(4, 16)	59.37697	P-value (F)	2.14e-09		
Log-likelihood	11.91849	Akaike criterion	-13.83697		
Schwarz criterion	-8.614359	Hannan-Quinn	-12.70353		
rho	0.197402	Durbin-Watson	1.601268		

Log-likelihood for y = -94.0221

Excluding the constant, p-value was highest for variable 10 (l_x4)

Source: Gretl output

Appendix 5 D-W Test

Durbin-Watson statistic = 1.60127

p-value = 0.0736594

Source: Gretl output

Appendix 6 Normality Test

frequency distribution for uhat2, obs 1-21

number of bins = 7, mean = -3.80648e-016, sd = 0.157156

interval	midpt	frequency	rel.	cum.	
< -0.21368	-0.26856	2	9.52%	9.52%	***
-0.21368 -	-0.10391	2	9.52%	19.05%	***
-0.10391 -	0.0058547	4	19.05%	38.10%	*****
0.0058547 -	0.11562	10	47.62%	85.71%	*****
0.11562 -	0.22538	2	9.52%	95.24%	***
0.22538 -	0.33515	0	0.00%	95.24%	
>= 0.33515	0.39003	1	4.76%	100.00%	*

Test for null hypothesis of normal distribution:

Chi-square(2) = 8.870 with p-value 0.01186

Source: Gretl output

Appendix 7 White's Test for Heteroskedasticity

White's test for heteroskedasticity

OLS, using observations 1998-2018 (T = 21)

Dependent variable: uhat^2

	coefficient	std. error	t-ratio	p-value	
const	3.91780	129.498	0.03025	0.9768	
l_x1	9.06503	44.1085	0.2055	0.8440	
l_x2	-10.2415	10.3896	-0.9857	0.3623	
l_x3	-3.11323	46.5538	-0.06687	0.9489	
l_x4	6.40405	10.8526	0.5901	0.5767	
sq_l_x1	-1.10569	3.79268	-0.2915	0.7805	
X2_X3	0.530768	1.27774	0.4154	0.6923	
X2_X4	-1.27905	8.73432	-0.1464	0.8884	
X2_X5	-0.0462524	1.83809	-0.02516	0.9807	
sq_l_x2	0.710161	0.533110	1.332	0.2312	
X3_X4	1.27085	3.06147	0.4151	0.6925	
X3_X5	-1.09316	0.559105	-1.955	0.0983	*
sq_l_x3	1.65011	1.74914	0.9434	0.3819	
X4_X5	-1.60259	2.28652	-0.7009	0.5096	
sq_l_x4	0.200953	0.258866	0.7763	0.4671	

Unadjusted R-squared = 0.793698

Test statistic: $TR^2 = 16.667661$,

with p-value = $P(\text{Chi-square}(14) > 16.667661) = 0.274321$

Source: Gretl output