
Appendix A

World Price Bands

Table A.1 shows the upper margin and the lower margin of the broad world price band (BWPB). The BWPB is calculated as the average price in 17 US cities, plus or minus two standard deviations. For 5 of the 154 products, the average price minus two standard deviations produced a negative value. These five products are local-brand beer, the cost of a tune-up, yearly road tax or vehicle registration fee, rent for a two-bedroom furnished apartment, and rent for a two-bedroom unfurnished apartment. Most of these five products are excluded from the calculations because they are services; however, for local-brand beer, the highest and lowest prices in 17 US cities are dropped from the calculation of BWPB so that the lower margin of BWPB is a positive value.

Table A.1 shows the actual maximum and minimum observed prices in the 17 US cities. The US maximum and minimum prices are shown in boldface when they are above (or below) the margins of the BWPB. A glance at table A.1 shows that many observed maximum prices are below the upper margin of the BWPB, and most observed minimum prices are above the lower margin of the BWPB. This is another way of pointing out that the BWPB covers an ample range of price dispersion.

Table A.2 compares the calculated BWPB based on 17 US cities versus 25 European cities (two standard deviations in each case). In most cases, the Europe-based BWPB is much wider than the US-based BWPB. For about 40 percent of products, the ratio between the upper and lower margins based on European cities is about 50 percent wider than the ratio based on US cities. If the European BWPB represents the practical limits

of price convergence, the gains we have described in this paper would be substantially diminished. We think the European BWPB conveys an overly pessimistic impression of the scope for price convergence.

A more optimistic set of calculations comes from a narrow world price band (NWPB). Table A.1 shows the upper and lower margins of the NWPB, defined as the 17-US-city average plus or minus one standard deviation. The NWPB is, of course, much narrower than the BWPB. Table A.3 shows the calculated static benefits if prices converge to the NWPB (starting with market exchange rates). The gains are far larger than when the BWPB serves as the reference price band. For some low-income countries, such as India and Indonesia, the NWPB benefits are unbelievably large. However, world total gains of 14 percent of GDP might eventually be realized through a combination of policy liberalization and new technology.

Table A.1 Alternative world price bands for each product (in US dollars per unit)^a

Sector/product	Mean	Narrow world price band (one standard deviation)		Broad world price band (two standard deviations)		Actual US prices ^b	
		Upper margin	Lower margin	Upper margin	Lower margin	Maximum	Minimum
Processed foods							
T Bread, white (1 kg)	3.25	3.86	2.64	4.46	2.04	4.38	2.41
T Butter (500 gm)	2.87	3.46	2.27	4.06	1.68	4.20	1.99
T Cheese, imported (500 gm)	9.05	10.48	7.62	11.91	6.20	11.44	7.00
T Corn flakes (375 gm)	2.51	2.96	2.06	3.41	1.60	3.41	1.92
T Flour, white (1 kg)	0.99	1.24	0.74	1.49	0.49	1.53	0.70
T Margarine (500 gm)	1.62	2.05	1.19	2.48	0.77	2.19	0.87
T Milk, pasteurized (1 liter)	1.11	1.35	0.86	1.60	0.61	1.59	0.79
T Olive oil (1 liter)	12.13	13.97	10.28	15.81	8.44	14.40	8.29
T Peanut or corn oil (1 liter)	2.91	3.47	2.36	4.03	1.80	3.91	2.29
T Rice, white (1 kg)	2.41	3.35	1.47	4.29	0.53	4.68	1.10
T Spaghetti (1 kg)	2.74	3.60	1.87	4.46	1.01	4.30	1.74
T Sugar, white (1 kg)	1.11	1.31	0.92	1.51	0.72	1.64	0.92
T Yogurt, natural (150 gm)	0.58	0.71	0.44	0.84	0.31	0.96	0.46
T Peaches (500 gm)	1.40	1.57	1.23	1.74	1.06	1.88	1.20
T Peas (250 gm)	0.53	0.64	0.43	0.74	0.33	0.75	0.40
T Sliced pineapples (500 gm)	1.32	1.61	1.03	1.89	0.75	1.97	1.02
T Tomatoes (250 gm)	0.56	0.74	0.38	0.92	0.20	1.09	0.30
Fresh vegetables and fruit							
T Apples (1 kg)	2.73	3.26	2.20	3.78	1.67	3.72	1.96
T Bananas (1 kg)	1.40	1.76	1.04	2.13	0.68	2.42	1.08
T Carrots (1 kg)	1.72	2.20	1.24	2.68	0.76	2.75	1.06
T Eggs (12)	1.51	2.10	0.92	2.69	0.33	2.73	0.95
T Lemons (1 kg)	3.27	4.26	2.28	5.24	1.30	5.52	1.33
T Lettuce (per head)	1.25	1.47	1.04	1.69	0.82	1.79	0.99
T Mushrooms (1 kg)	6.73	8.45	5.00	10.18	3.27	11.00	4.38
T Onions (1 kg)	1.91	2.47	1.35	3.03	0.80	2.84	0.93

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Table A.1 Alternative world price bands for each product (in US dollars per unit)^a (continued)

Sector/product	Mean	Narrow world price band (one standard deviation)		Broad world price band (two standard deviations)		Actual US prices ^b		
		Upper margin	Lower margin	Upper margin	Lower margin	Maximum	Minimum	
T Oranges (1 kg)	2.57	3.44	1.69	4.31	0.82	4.38	1.50	
T Potatoes (2 kg)	3.11	3.91	2.31	4.71	1.51	4.45	1.74	
T Tomatoes (1 kg)	4.14	5.29	2.98	6.45	1.82	6.60	3.28	
Meat and fish (fresh or frozen)								
T Beef roast (1 kg)	7.89	10.08	5.70	12.27	3.51	13.19	4.38	
T Beef steak, entrecote (1 kg)	15.16	17.37	12.95	19.58	10.74	18.72	10.97	
T Stewing beef, shoulder (1 kg)	7.52	9.32	5.72	11.12	3.93	12.11	5.48	
T Beef tournedos, filet mignon (1 kg)	23.54	28.60	18.48	33.66	13.42	35.24	14.52	
T Ground or minced beef (1 kg)	6.12	7.46	4.79	8.79	3.45	8.48	4.38	
T Veal chops (1 kg)	17.01	21.22	12.81	25.42	8.61	26.43	10.53	
T Veal fillet (1 kg)	20.04	22.46	17.62	24.87	15.20	24.21	15.35	
T Veal roast (1 kg)	10.55	14.28	6.82	18.01	3.09	17.60	6.12	
T Lamb chops (1 kg)	13.21	18.31	8.10	23.41	3.00	22.42	6.59	
T Leg of lamb (1 kg)	8.69	10.04	7.34	11.38	6.00	12.75	6.59	
T Stewing lamb (1 kg)	6.97	8.88	5.06	10.78	3.16	10.99	4.38	
T Bacon (1 kg)	7.56	9.18	5.93	10.81	4.31	9.89	4.85	
T Pork chops (1 kg)	9.25	10.94	7.56	12.63	5.87	13.28	6.81	
T Pork loin (1 kg)	8.07	9.59	6.54	11.12	5.02	10.77	6.15	
T Whole ham (1 kg)	8.91	11.13	6.70	13.34	4.49	13.19	5.48	
T Fresh chicken (1 kg)	3.73	4.90	2.55	6.08	1.37	5.48	1.96	
T Frozen chicken (1 kg)	3.90	5.32	2.48	6.74	1.06	6.59	2.18	
T Fresh fish (1 kg)	16.89	20.83	12.94	24.77	9.00	26.41	10.99	
T Frozen fish fingers or sticks (1 kg)	10.84	13.53	8.15	16.22	5.46	16.23	7.60	

Beverages

T	Coca-Cola (1 liter)	0.77	0.91	0.63	1.04	0.50	1.10	0.59
T	Cocoa (250 gm)	2.95	3.56	2.34	4.17	1.73	4.00	1.66
T	Ground coffee (500 gm)	5.78	6.59	4.96	7.41	4.14	7.30	4.57
T	Instant coffee (125 gm)	3.90	4.96	2.83	6.03	1.76	6.50	2.42
T	Mineral water (1 liter)	1.84	2.23	1.45	2.62	1.06	2.48	1.09
T	Nesquick, chocolate powder (500 gm)	3.12	3.88	2.35	4.65	1.58	4.99	2.11
T	Orange juice (1 liter)	1.84	2.26	1.41	2.69	0.99	2.63	1.37
T	Tea bags (25 bags)	1.65	2.32	0.98	2.98	0.31	3.07	0.81
T	Tonic water (200 ml)	0.25	0.32	0.19	0.38	0.13	0.36	0.11
T	Beer, local brand (1 liter)	2.69	3.39	1.98	4.09	1.28	8.45	1.58
T	Beer, top quality (330 ml)	1.54	2.09	0.98	2.65	0.42	2.79	1.07
T	Gin, Gilbey's or equivalent (700 ml)	11.81	14.71	8.91	17.60	6.02	16.69	8.98
T	Imported French VSOP cognac (700 ml)	38.69	44.27	33.10	49.86	27.51	47.78	26.66
T	Liqueur, Cointreau (700 ml)	33.34	38.82	27.86	44.29	22.38	46.27	26.03
T	Vermouth, Martini & Rossi (1 liter)	10.38	13.15	7.62	15.92	4.85	17.47	6.15
H	Whiskey, Scotch, six years old (700 ml)	19.63	21.73	17.54	23.82	15.45	24.26	16.72
T	Wine, common table (1 liter)	10.53	12.31	8.75	14.09	6.97	13.44	8.19
T	Wine, fine quality (700 ml)	34.35	41.74	26.96	49.13	19.57	47.94	24.26
T	Wine, superior quality (700 ml)	15.02	20.76	9.28	26.50	3.53	28.81	8.39

Household items

T	Batteries (two, for flashlight/radio)	3.30	3.88	2.71	4.47	2.12	3.99	2.38
T	Electric toaster (for two slices)	34.52	43.53	25.52	52.53	16.51	49.95	24.06
T	Frying pan (Teflon or good equivalent)	28.18	38.42	17.94	48.67	7.70	45.57	15.45

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Table A.1 Alternative world price bands for each product (in US dollars per unit)^a (continued)

Sector/product	Mean	Narrow world price band (one standard deviation)		Broad world price band (two standard deviations)		Actual US prices ^b	
		Upper margin	Lower margin	Upper margin	Lower margin	Maximum	Minimum
T Insect killer spray (330 gm)	4.02	5.26	2.79	6.49	1.55	6.46	1.79
T Laundry detergent (3 liters)	11.45	14.20	8.69	16.96	5.93	16.62	8.10
T Light bulbs (two, 60 watts)	2.23	3.10	1.35	3.98	0.47	3.60	1.12
T Liquid dishwashing detergent (750 ml)	2.32	2.68	1.95	3.04	1.59	2.97	1.83
T Soap (100 gm)	1.00	1.16	0.83	1.33	0.66	1.34	0.77
T Toilet tissue (two rolls)	0.97	1.23	0.71	1.49	0.44	1.49	0.68
T Aspirin (100 tablets)	7.96	10.51	5.40	13.07	2.85	15.00	5.89
T Facial tissues (box of 100)	1.12	1.45	0.79	1.77	0.46	1.75	0.73
T Hand lotion (125 ml)	3.90	5.38	2.43	6.86	0.95	6.45	2.10
T Lipstick (deluxe type)	25.43	30.12	20.74	34.81	16.05	38.50	22.26
T Razor blades (five pieces)	4.75	5.51	4.00	6.26	3.25	6.33	3.99
T Shampoo and conditioner in one (400 ml)	4.67	6.01	3.32	7.36	1.97	8.64	3.49
T Toothpaste with fluoride (120 gm)	2.13	2.56	1.70	2.99	1.27	3.27	1.58
T Kodak color film (C 135, 36 exposures)	8.04	9.35	6.73	10.66	5.43	10.75	6.89
T Compact disc album	18.74	20.91	16.57	23.08	14.41	25.06	15.74
T Color TV set (56 cm)	709.12	868.26	549.98	1,027.40	390.84	1,199.99	528.00
T Tennis balls (six)	6.47	9.01	3.93	11.55	1.39	10.38	3.22
Cigarettes and tobacco							
H Cigarettes, local brand (pack of 20)	3.03	3.78	2.29	4.52	1.54	4.54	2.18
H Cigarettes, Marlboro (pack of 20)	3.10	3.69	2.50	4.28	1.91	4.11	2.18
H Pipe tobacco, MacBaren type (50 gm)	4.65	5.49	3.81	6.33	2.97	6.11	3.35

Clothing

T	Business shirt, white	65.10	80.85	49.34	96.60	33.59	95.40	45.00
T	Business suit, two-piece, medium weight	685.12	822.14	548.10	959.16	411.08	872.00	526.00
T	Cardigan sweater	167.74	194.03	141.46	220.32	115.17	201.18	129.90
T	Dress, ready-to-wear, daytime	248.98	313.52	184.45	378.05	119.92	347.20	180.00
T	Raincoat, Burberry type (men's)	436.63	616.87	256.38	797.11	76.14	750.00	222.60
T	Raincoat, Burberry type (women's)	459.58	597.47	321.68	735.37	183.79	775.75	298.00
T	Shoes, business wear	216.89	270.71	163.06	324.54	109.23	312.70	160.00
T	Shoes, town	176.66	219.86	133.46	263.06	90.26	249.00	95.00
T	Socks, wool mixture	12.92	16.61	9.22	20.31	5.53	18.27	9.00
T	Tights/pantyhose	11.16	14.56	7.76	17.96	4.36	18.50	5.72
T	Boy's dress trousers	45.77	60.83	30.71	75.89	15.65	80.25	28.00
T	Boy's jacket, smart	94.99	116.07	73.92	137.15	52.84	126.14	46.80
T	Girl's dress	74.36	90.40	58.32	106.44	42.28	99.00	47.84
T	Jeans	37.23	43.39	31.08	49.55	24.92	50.87	27.56
T	Shoes, dress wear	54.70	66.79	42.61	78.88	30.53	71.78	32.00
T	Shoes, sportswear	58.60	68.49	48.71	78.38	38.82	76.13	44.94

Automobiles

T	Compact car (1300-1799 cc)	20,355.53	24,356.72	16,354.33	28,357.92	12,353.14	30,975.00	15,021.90
T	Deluxe car (2500 cc and higher)	78,974.93	93,041.87	64,907.99	107,108.81	50,841.05	101,123.00	57,650.00
T	Family car (1800-2499 cc)	43,006.98	47,592.31	38,421.65	52,177.64	33,836.31	50,925.00	36,000.00
T	Low-priced car (900-1299 cc)	13,054.02	14,903.44	11,204.61	16,752.85	9,355.19	15,888.00	9,999.00

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Table A.1 Alternative world price bands for each product (in US dollars per unit)^a (continued)

Sector/product	Mean	Narrow world price band (one standard deviation)		Broad world price band (two standard deviations)		Actual US prices ^b	
		Upper margin	Lower margin	Upper margin	Lower margin	Maximum	Minimum
Books and newspapers							
N Daily local newspaper	0.49	0.64	0.34	0.79	0.20	0.75	0.25
N International foreign daily newspaper	1.44	1.87	1.01	2.30	0.58	2.00	1.00
N International weekly news magazine (<i>Time</i>)	3.12	3.37	2.88	3.62	2.63	3.64	2.95
N Paperback novel (at bookstore)	8.83	10.55	7.10	12.28	5.37	13.90	6.99
Dry cleaning, haircut, and other services							
N Dry cleaning, man's suit	9.34	12.11	6.57	14.88	3.80	16.00	7.50
N Dry cleaning, trousers	4.60	5.62	3.58	6.63	2.56	7.00	3.75
N Dry cleaning, woman's dress	8.40	9.46	7.34	10.51	6.28	10.00	7.50
N Laundry (one shirt)	1.82	2.48	1.15	3.14	0.49	3.25	1.25
N Man's haircut (tips included)	42.43	59.25	25.61	76.07	8.79	75.00	25.00
N Woman's haircut and blow dry (tips included)	65.07	90.69	39.45	116.32	13.83	120.00	35.00
N Cost of developing 36 color pictures	13.71	16.73	10.69	19.76	7.67	17.39	6.49
Domestic help							
N Babysitter's rate per hour	11.70	14.96	8.44	18.22	5.17	16.00	6.75
N Hourly rate for domestic cleaning help	21.04	25.14	16.94	29.24	12.84	27.50	14.75
N Maid's monthly wages (full-time, live-in)	1,939.05	2,531.89	1,346.21	3,124.74	753.37	3,375.00	1,250.00

Entertainment, meal, and hotel								
N	Cinema, one ticket	7.76	8.67	6.84	9.59	5.93	9.25	6.25
N	Fast food snack: hamburger and soft drink	4.06	4.63	3.48	5.21	2.90	5.00	3.31
N	Four best seats at cinema	34.00	39.82	28.18	45.64	22.36	48.00	26.00
N	Four best seats at theater or concert	266.88	344.44	189.32	421.99	111.77	365.00	110.00
N	Three-course dinner for four persons	394.00	490.35	297.65	586.70	201.30	620.00	300.00
N	Visit of four persons to nightclub	148.21	203.08	93.35	257.94	38.49	260.00	80.00
N	Two-course meal including wine, dessert, coffee, etc., for one person	115.86	165.93	65.79	216.00	15.71	240.00	55.00
N	One drink at bar of first-class hotel (Scotch or local equivalent)	9.42	11.79	7.05	14.17	4.68	14.00	7.80
N	One night in single room at Hilton/Intercontinental Hotel	245.96	293.89	198.03	341.82	150.10	324.75	173.50
N	One night in single room at moderate/comfortable hotel	169.49	229.22	109.77	288.95	50.04	276.00	79.00
N	Simple meal (water, steak, vegetables, dessert, etc.) for one person	37.35	50.70	24.01	64.04	10.66	70.00	15.00
Transportation								
N	Annual premium for car insurance	2,439.14	3,174.84	1,703.44	3,910.54	967.75	3,750.00	1,500.00
N	Cost of tune-up (no major repairs)	206.78	307.92	105.64	409.07	4.49	487.00	105.00
H	Regular unleaded petrol (1 liter)	0.32	0.38	0.26	0.44	0.19	0.43	0.23

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Table A.1 Alternative world price bands for each product (in US dollars per unit)^a (continued)

Sector/product	Mean	Narrow world price band (one standard deviation)		Broad world price band (two standard deviations)		Actual US prices ^b	
		Upper margin	Lower margin	Upper margin	Lower margin	Maximum	Minimum
N Yearly road tax or vehicle registration fee	267.88	493.81	41.94	493.81	41.94	799.00	30.00
N Initial taxi meter charge	2.18	2.76	1.61	3.33	1.03	3.00	1.30
N Rate per additional kilometer	1.21	1.52	0.89	1.84	0.57	1.75	0.57
N Taxi ride from airport to city center	33.68	45.71	21.65	57.74	9.62	60.00	17.00
N One week car rental, low price (mileage, taxes, and charges included)	356.79	429.97	283.62	503.14	210.45	549.00	275.10
N One week car rental, moderate price (mileage, taxes, and charges included)	437.59	513.86	361.31	590.14	285.03	585.00	321.24
Housing							
N Furnished apartment, 3 rooms (1 bedroom)	1,476.79	2,088.57	865.01	2,700.35	253.22	2,800.00	750.00
N Furnished apartment, 4 rooms (2 bedrooms)	1,817.92	2,606.90	1,028.94	3,395.88	239.96	4,100.00	800.00
N Furnished house, 5-6 rooms (3 bedrooms)	2,935.71	4,209.48	1,661.95	5,483.24	388.19	5,400.00	1,200.00
N Unfurnished apartment, 4 rooms (2 bedrooms)	1,464.17	1,987.88	940.45	2,511.59	416.74	3,650.00	800.00
N Unfurnished apartment, 5-6 rooms (3 bedrooms)	1,950.71	2,868.28	1,033.15	3,785.85	115.58	3,950.00	900.00
N Unfurnished apartment, 7-9 rooms (4 bedrooms)	2,855.50	4,207.86	1,503.14	5,560.21	150.79	5,650.00	1,795.00

N	Unfurnished house, 5-6 rooms (3 bedrooms)	2,485.71	3,691.22	1,280.21	4,896.72	74.70	5,150.00	1,100.00
N	Unfurnished house, 7-9 rooms (3 bedrooms)	3,469.23	5,150.44	1,788.02	6,831.66	106.81	7,750.00	1,750.00
Utilities								
N	Electricity	230.71	312.94	148.49	395.16	66.26	350.00	115.00
N	Gas	143.33	196.48	90.19	249.62	37.05	220.00	70.00
N	Heating oil (100 liters)	27.78	33.46	22.11	39.14	16.43	36.72	22.46
N	Telephone and line, monthly rental	23.57	32.45	14.68	41.34	5.80	45.90	14.13
N	Telephone, charge per local call from home	0.09	0.11	0.07	0.13	0.04	0.11	0.06
N	Water	76.23	103.35	49.11	130.47	21.99	150.00	45.00

a. The NWPB and BWPB represent, respectively, one and two standard deviations around observed prices in 17 US cities.

b. When the minimum or maximum price observed in the 17 US cities exceeds or falls short of the margins of the BWPB, the price is shown in bold.

Note: T = tradable product; H = highly taxed product; and N = nontradable product.

Source: Authors' calculations using the EIU dataset.

Table A.2 Broad world price band (BWPB) centered on 25 European cities^a versus 17 US cities

Sector/product	European BWPB			US BWPB		
	Upper margin	Lower margin	EU BWPB > US BWPB ^b	Upper margin	Lower margin	US BWPB > EU BWPB ^c
Processed foods						
Bread, white (1 kg)	5.03	1.08	X	4.46	2.04	
Butter (500 gm)	5.53	1.68		4.06	1.68	
Cheese, imported (500 gm)	11.26	3.54	X	11.91	6.20	
Corn flakes (375 gm)	2.96	1.47		3.41	1.60	
Flour, white (1 kg)	1.64	0.45		1.49	0.49	
Margarine (500 gm)	3.15	0.79		2.48	0.77	
Milk, pasteurized (1 liter)	1.42	0.54		1.60	0.61	
Olive oil (1 liter)	16.19	1.95	X	15.81	8.44	
Peanut or corn oil (1 liter)	5.67	0.40	X	4.03	1.80	
Rice, white (1 kg)	4.59	1.95		4.29	0.53	X
Spaghetti (1 kg)	4.19	0.67		4.46	1.01	
Sugar, white (1 kg)	1.82	0.71		1.51	0.72	
Yogurt, natural (150 gm)	0.92	0.10	X	0.84	0.31	
Peaches (500 gm)	2.30	0.66	X	1.74	1.06	
Peas (250 gm)	1.59	0.09	X	0.74	0.33	
Sliced pineapples (500 gm)	2.31	0.66		1.89	0.75	
Tomatoes (250 gm)	0.82	0.13		0.92	0.20	
Fresh vegetables and fruit						
Apples (1 kg)	2.95	0.92		3.78	1.67	
Bananas (1 kg)	2.62	1.29		2.13	0.68	X
Carrots (1 kg)	2.33	0.21	X	2.68	0.76	
Eggs (12)	4.69	0.84		2.69	0.33	
Lemons (1 kg)	4.70	0.17	X	5.24	1.30	
Lettuce (per head)	2.74	0.05	X	1.69	0.82	
Mushrooms (1 kg)	10.24	0.82	X	10.18	3.27	
Onions (1 kg)	1.82	0.53		3.03	0.80	
Oranges (1 kg)	3.14	0.81		4.31	0.82	
Potatoes (2 kg)	3.84	0.62	X	4.71	1.51	
Tomatoes (1 kg)	4.04	0.88		6.45	1.82	
Meat and fish (fresh or frozen)						
Beef roast (1 kg)	24.36	6.00		12.27	3.51	
Beef steak, entrecote (1 kg)	29.74	5.47	X	19.58	10.74	
Stewing beef, shoulder (1 kg)	19.60	3.24	X	11.12	3.93	
Beef tournedos, filet mignon (1 kg)	43.84	9.69	X	33.66	13.42	
Ground or minced beef (1 kg)	12.28	5.23		8.79	3.45	
Veal chops (1 kg)	26.33	5.56	X	25.42	8.61	
Veal fillet (1 kg)	39.15	5.57	X	24.87	15.20	
Veal roast (1 kg)	26.65	6.36		18.01	3.09	
Lamb chops (1 kg)	25.79	4.64		23.41	3.00	
Leg of lamb (1 kg)	24.24	2.72	X	11.38	6.00	
Stewing lamb (1 kg)	22.97	0.98	X	10.78	3.16	

(table continues next page)

Table A.2 (continued)

Sector/product	European BWPB			US BWPB		
	Upper margin	Lower margin	EU BWPB > US BWPB ^b	Upper margin	Lower margin	US BWPB > EU BWPB ^c
Bacon (1 kg)	19.71	5.49		10.81	4.31	
Pork chops (1 kg)	14.70	2.85	X	12.63	5.87	
Pork loin (1 kg)	18.52	1.14	X	11.12	5.02	
Whole ham (1 kg)	29.62	6.55	X	13.34	4.49	
Fresh chicken (1 kg)	10.42	0.81	X	6.08	1.37	
Frozen chicken (1 kg)	7.11	0.93		6.74	1.06	
Fresh fish (1 kg)	36.99	2.17	X	24.77	9.00	
Frozen fish fingers or sticks (1 kg)	12.47	3.75		16.22	5.46	
Beverages						
Coca-Cola (1 liter)	1.70	0.50	X	1.04	0.50	
Cocoa (250 gm)	4.18	0.91	X	4.17	1.73	
Ground coffee (500 gm)	9.64	2.46	X	7.41	4.14	
Instant coffee (125 gm)	8.52	3.13		6.03	1.76	
Mineral water (1 liter)	2.02	0.24	X	2.62	1.06	
Nesquick, chocolate powder (500 gm)	4.58	1.34		4.65	1.58	
Orange juice (1 liter)	2.81	0.66	X	2.69	0.99	
Tea bags (25 bags)	3.47	0.69		2.98	0.31	X
Tonic water (200 ml)	0.73	0.01	X	0.38	0.13	
Beer, local brand (1 liter)	4.17	0.31	X	4.09	1.28	
Beer, top quality (330 ml)	2.25	0.11	X	2.65	0.42	
Gin, Gilbey's or equivalent (700 ml)	28.00	2.41	X	17.60	6.02	
Imported French VSOP cognac (700 ml)	56.92	14.53	X	49.86	27.51	
Liqueur, Cointreau (700 ml)	39.78	1.94	X	44.29	22.38	
Vermouth, Martini & Rossi (1 liter)	15.27	1.09	X	15.92	4.85	
Whiskey, Scotch, six years old (700 ml)	37.92	1.13	X	23.82	15.45	
Wine, common table (1 liter)	11.90	2.66	X	14.09	6.97	
Wine, fine quality (700 ml)	59.56	5.65	X	49.13	19.57	
Wine, superior quality (700 ml)	21.92	2.10		26.50	3.53	
Household items						
Batteries (two, for flashlight/radio)	6.11	2.46		4.47	2.12	
Electric toaster (for two slices)	63.31	26.76		52.53	16.51	
Frying pan (Teflon or good equivalent)	56.53	7.51		48.67	7.70	
Insect repellent spray (330 gm)	7.42	1.42		6.49	1.55	
Laundry detergent (3 liters)	21.23	5.26		16.96	5.93	

(table continues next page)

Table A.2 Broad world price band (BWPB) centered on 25 European cities^a versus 17 US cities (continued)

Sector/product	European BWPB			US BWPB		
	Upper margin	Lower margin	EU BWPB > US BWPB ^b	Upper margin	Lower margin	US BWPB > EU BWPB ^c
Light bulbs (two, 60 watts)	3.94	0.77		3.98	0.47	X
Liquid dishwashing detergent (750 ml)	3.52	1.11	X	3.04	1.59	
Soap (100 gm)	1.21	0.31	X	1.33	0.66	
Toilet tissue (two rolls)	1.98	0.44		1.49	0.44	
Aspirin (100 tablets)	22.63	2.67	X	13.07	2.85	
Facial tissues (box of 100)	2.65	0.96		1.77	0.46	
Hand lotion (125 ml)	5.04	0.57		6.86	0.95	
Lipstick (deluxe type)	34.82	15.30		34.81	16.05	
Razor blades (five pieces)	6.50	1.64	X	6.26	3.25	
Shampoo and conditioner in one (400 ml)	11.41	3.41		7.36	1.97	
Toothpaste with fluoride (120 gm)	4.33	1.87		2.99	1.27	
Kodak color film (C 135, 36 exposures)	10.72	4.69		10.66	5.43	
Compact disc album	31.79	17.02		23.08	14.41	
Color TV set (56 cm)	1,970.97	540.49		1,027.40	390.84	
Tennis balls (six)	25.60	6.93		11.55	1.39	X
Cigarettes and tobacco						
Cigarettes, local brand (pack of 20)	5.54	0.65	X	4.52	1.54	
Cigarettes, Marlboro (pack of 20)	5.54	1.30	X	4.28	1.91	
Pipe tobacco, MacBaren type (50 gm)	10.28	2.30	X	6.33	2.97	
Clothing						
Business shirt, white	118.89	44.13		96.60	33.59	
Business suit, two-piece, medium weight	755.62	463.14		959.16	1.08	
Cardigan sweater	270.66	76.72	X	220.32	115.17	
Dress, ready-to-wear, daytime	431.73	140.05		378.05	119.92	
Raincoat, Burberry type, men's	624.13	168.43		797.11	76.14	X
Raincoat, Burberry type, women's	625.43	284.29		735.37	183.79	X
Shoes, business wear	258.67	112.06		324.54	109.23	
Shoes, town	215.67	82.34		263.06	90.26	
Socks, wool mixture	21.55	6.27		20.31	5.53	
Tights, pantyhose	21.14	5.26		17.96	4.36	
Boy's dress trousers	90.50	36.39		75.89	15.65	X
Boy's jacket, smart	149.15	71.38		137.15	52.84	

(table continues next page)

Table A.2 (continued)

Sector/product	European BWPB			US BWPB		
	Upper margin	Lower margin	EU BWPB > US BWPB ^b	Upper margin	Lower margin	US BWPB > EU BWPB ^c
Girl's dress	125.98	54.11		106.44	42.28	
Jeans	75.62	34.18		49.55	24.92	
Shoes, dress wear	95.91	36.80		78.88	30.53	
Shoes, sportswear	78.74	41.50		78.38	38.82	
Automobiles						
Compact car (1300-1799 cc)	31,181.02	12,611.04		28,357.92	12,353.14	
Deluxe car (2500 cc and higher)	179,439.63	25,600.49	X	107,108.81	50,841.05	
Family car (1800-2499 cc)	71,401.51	10,236.92	X	52,177.64	33,836.31	
Low-priced car (900-1299 cc)	19,558.71	8,742.27		16,752.85	9,355.19	
Books and newspapers						
Daily local newspaper	1.58	0.38		0.79	0.20	
International foreign daily newspaper	2.75	1.17		2.30	0.58	X
International weekly news magazine (<i>Time</i>)	4.43	2.73		3.62	2.63	
Paperback novel (at bookstore)	16.13	7.86		12.28	5.37	
Dry cleaning, haircut, and other services						
Dry cleaning, man's suit	23.50	4.77		14.88	3.80	
Dry cleaning, trousers	10.46	2.92		6.63	2.56	
Dry cleaning, woman's dress	20.68	1.52	X	10.51	6.28	
Laundry (one shirt)	5.56	2.29		3.14	0.49	X
Man's haircut (tips included)	65.55	9.43		76.07	8.79	
Woman's haircut and blow dry (tips included)	108.81	20.75		116.32	13.83	X
Cost of developing 36 color pictures	29.96	7.94		19.76	7.67	
Domestic help						
Babysitter's rate per hour	17.30	1.35	X	18.22	5.17	
Hourly rate for domestic cleaning help	22.61	1.03	X	29.24	12.84	
Maid's monthly wages (full-time, live-in)	2,367.85	213.53	X	3,124.74	753.37	
Entertainment, meal, and hotel						
Cinema, one ticket	12.64	3.63	X	9.59	5.93	
Fast food snack: hamburger and soft drink	7.81	2.67	X	5.21	2.90	

(table continues next page)

Table A.2 Broad world price band (BWPB) centered on 25 European cities^a versus 17 US cities *(continued)*

Sector/product	European BWPB			US BWPB		
	Upper margin	Lower margin	EU BWPB > US BWPB ^b	Upper margin	Lower margin	US BWPB > EU BWPB ^c
Four best seats at cinema	61.00	12.34	X	45.64	22.36	
Four best seats at theater or concert	501.59	51.39	X	421.99	111.77	
Three-course dinner for four persons	874.33	212.81		586.70	201.30	
Visit of four persons to nightclub	360.60	8.59	X	257.94	38.49	
Two-course meal, including wine, dessert, coffee, etc., for one person	250.33	81.56		216.00	15.71	X
One drink at bar of first-class hotel (Scotch or local equivalent)	22.29	3.18	X	14.17	4.68	
One night in single room at Hilton/Intercontinental Hotel	403.25	110.32	X	341.82	150.10	
One night in single room at moderate/comfortable hotel	244.39	68.72		288.95	50.04	X
Simple meal (water, steak, vegetables, dessert, etc.) for one person	66.79	24.68		64.04	10.66	X
Transportation						
Annual premium for car insurance	3,791.59	1,021.57		3,910.54	967.75	
Cost of tune-up (no major repairs)	495.72	108.24		409.07	4.49	X
Regular unleaded petrol (1 liter)	1.14	0.66		0.44	0.19	
Yearly road tax or vehicle registration fee	584.73	14.06	X	493.81	41.94	
Initial taxi meter charge	4.38	0.94		3.33	1.03	
Rate per additional kilometer	2.44	0.00	X	1.84	0.57	
Taxi ride from airport to city center	58.50	0.96	X	57.74	9.62	
One week car rental, low price (mileage, taxes, and charges included)	598.03	190.98		503.14	210.45	
One week car rental, moderate price (mileage, taxes, and charges included)	940.92	257.10	X	590.14	285.03	

(table continues next page)

Table A.2 (continued)

Sector/product	European BWPB			US BWPB		
	Upper margin	Lower margin	EU BWPB > US BWPB ^b	Upper margin	Lower margin	US BWPB > EU BWPB ^c
Housing						
Furnished apartment, 3 rooms (1 bedroom)	1,929.40	235.18		2,700.35	253.22	
Furnished apartment, 4 rooms (2 bedrooms)	2,428.46	523.63		3,395.88	239.96	X
Furnished house, 5-6 rooms (3 bedrooms)	4,693.40	560.08		5,483.24	388.19	X
Unfurnished apartment, 4 rooms (2 bedrooms)	2,462.30	343.45		2,511.59	416.74	
Unfurnished apartment, 5-6 rooms (3 bedrooms)	3,517.41	211.66		3,785.85	115.58	X
Unfurnished apartment, 7-9 rooms (4 bedrooms)	4,905.80	359.72		5,560.21	150.79	X
Unfurnished house, 5-6 rooms (3 bedrooms)	4,367.16	574.75		4,896.72	74.70	X
Unfurnished house, 7-9 rooms (3 bedrooms)	6,359.85	488.74		6,831.66	106.81	X
Utilities						
Electricity	292.56	15.48	X	395.16	66.26	
Gas	203.49	22.46		249.62	37.05	
Heating oil (100 liters)	68.66	2.87	X	39.14	16.43	
Telephone and line, monthly rental	24.43	5.89		41.34	5.80	X
Telephone, charge per local call from home	0.26	0.01	X	0.13	0.04	
Water	105.45	13.33		130.47	21.99	
Number of "X" observations			67 (42 percent)			22 (14 percent)

a. The 25 EU cities are located in the following countries: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom. Prices were converted into US dollar figures using the market exchange rate.

b. "X" indicates that the ratio of upper margin to lower margin using the EU cities is more than 50 percent larger than the ratio using the US cities.

c. "X" indicates that the ratio of the upper margin to lower margin using the US cities is more than 50 percent larger than the ratio using the EU cities.

Source: Authors' calculations using the EIU dataset.

Table A.3 Potential static benefits at country level assuming price convergence to narrow world price band, calculated with market exchange rates

	Benefits from falling prices	Benefits from rising prices	Total benefits
High-income group, weighted total benefits	1.05	1.21	2.27
Australia	0.71	4.95	5.65
Austria	0.72	0.75	1.47
Belgium	0.21	0.67	0.88
Canada	0.07	3.94	4.01
China (Hong Kong)	1.17	0.35	1.52
Denmark	0.89	0.31	1.20
Finland	0.47	0.07	0.55
France	0.82	0.78	1.60
Germany	2.01	2.28	4.29
Greece	0.39	1.95	2.33
Ireland	0.13	0.61	0.74
Israel	0.57	0.50	1.08
Italy	0.30	3.49	3.79
Japan	2.79	0.05	2.83
Kuwait	0.08	3.17	3.26
Luxembourg	0.22	0.48	0.70
Netherlands	0.53	1.85	2.38
New Zealand	0.48	3.38	3.86
Norway	0.65	0.05	0.70
Portugal	0.15	7.28	7.43
Singapore	0.99	1.50	2.50
Spain	0.53	4.27	4.80
Sweden	0.60	0.03	0.63
Switzerland	1.56	0.05	1.61
Taiwan	0.25	0.32	0.56
United Arab Emirates	0.33	4.91	5.24
United Kingdom	0.37	0.17	0.54
United States	0.53	0.88	1.41
Middle-income group, weighted total benefits	0.41	21.32	21.72
Algeria	n.a.	n.a.	n.a.
Argentina	0.29	3.60	3.90
Bahrain	0.36	2.18	2.55
Brazil	0.08	42.20	42.28
Chile	0.11	8.21	8.32
Colombia	0.25	13.33	13.58
Costa Rica	0.13	30.47	30.60
Czech Republic	0.05	11.43	11.48
Ecuador	0.04	97.54	97.59
Egypt	0.94	10.13	11.07
Guatemala	0.59	13.64	14.23
Hungary	0.08	40.80	40.88
Iran	0.43	26.79	27.22
Jordan	1.93	11.67	13.60
Korea	0.53	1.24	1.77
Malaysia	0.14	6.62	6.76
Mexico	0.24	11.40	11.63
Panama	0.19	6.77	6.96
Paraguay	0.16	74.76	74.92

(table continues next page)

Table A.3 (continued)

	Benefits from falling prices	Benefits from rising prices	Total benefits
Peru	0.76	32.00	32.77
Philippines	0.07	42.19	42.25
Poland	0.07	21.43	21.51
Romania	0.66	45.19	45.85
Russia	2.11	16.61	18.73
Saudi Arabia	0.58	6.64	7.22
Serbia	0.35	13.59	13.94
South Africa	0.04	21.90	21.94
Sri Lanka	0.18	69.79	69.96
Thailand	0.22	35.88	36.10
Tunisia	0.70	25.78	26.48
Turkey	0.15	22.94	23.09
Uruguay	0.24	8.74	8.99
Venezuela	0.31	15.11	15.41
Low-income group, weighted total benefits	3.44	160.85	164.29
Bangladesh	0.36	29.85	30.22
Cameroon	2.12	30.44	32.56
China	5.35	19.68	25.03
India	0.63	451.44	452.08
Indonesia	0.45	534.89	535.35
Kenya	0.41	129.32	129.74
Nigeria	3.80	21.32	25.12
Pakistan	0.38	113.23	113.60
Vietnam	1.17	160.84	162.01
Zimbabwe	n.a.	n.a.	n.a.
World total, weighted by GDP	1.11	12.83	13.93

n.a. = not available

Note: Based on calculations at city level (appendix B). Total is weighted by country size, measured by GDP.

Source: Authors' calculations.

Appendix B

Static Benefits from Price Convergence

This appendix explains our method of computing the potential static benefits from price convergence. If all barriers to trade and investment were removed, and if perfectly competitive markets were integrated by e-commerce, together with efficient shipping and airfreight, the prices of individual goods would tend to converge among cities around the world. Using simple supply and demand analysis, therefore, we can calculate the resulting changes in consumer surplus and producer surplus. We can also calculate the net gain, which equals the difference between the positive change in consumer surplus and the negative change in producer surplus (or vice versa). The net gain represents the potential static benefit from price convergence.

To carry out the computation of static benefits, we first explain our concept of the broad world price band (BWPB). This band represents our arbitrary guess as to the range of prices that would emerge in a totally competitive environment. We then explain how we calculate the net gains from price convergence.

The Broad World Price Band for Individual Goods

The prices for individual goods are determined by many forces: the average and marginal costs of production and distribution, the strength of demand, the tax on each product, and the extent of competition. Some of these forces are city-specific or country-specific, especially the costs of

distribution (e.g., transportation costs and floor space costs) and taxes on individual products. Specific forces will persist even if all trade and investment barriers vanish and markets become perfectly competitive. Taking specific forces into consideration, eliminating all barriers between countries would not ensure the law of one price. But their elimination might bring about a broad world price band for each product. In perfectly free and competitive markets, the width of the BWPB would reflect differences in city-specific or country-specific costs and product taxes.

We choose the United States as the representative country to construct the BWPBs that we assume would prevail for individual products in an open and competitive world economy. We have several reasons for using the United States as the BWPB reference: the US market is relatively competitive; the United States is geographically large; the United States is relatively diversified in terms of city-specific circumstances; the extent of price dispersion within the United States has been constant for about 5 years¹; and the United States has the largest number of cities included in the EIU dataset.

The BWPB is defined as the average price of product i in US cities plus and minus two standard deviations. This range is intended to capture the normal extent of city-specific or country-specific cost and tax differences. For the United States, a range of two standard deviations captures more than 95 percent of individual price observations.

The BWPB for each product i , \bar{P}_i , is thus defined as follows:

$$\bar{P}_i = \bar{P}_{i,US} \pm 2[std P_{i,US}] \quad (B.1)$$

where:

i = product,

$$\bar{P}_{i,US} = \frac{1}{A} \sum_{a=1}^A P_{i,a} \quad (B.2)$$

A = number of US cities covered in the EIU data

$$std P_{i,US} = \sqrt{\frac{\sum_{a=1}^A (P_{i,a} - \bar{P}_{i,US})^2}{(A - 1)}} \quad (B.3)$$

$\bar{P}_{i,US}$ represents the simple average of the prices of product i in the US cities covered by EIU data, and $std P_{i,US}$ represents the standard deviation of the city prices. If the price of product i in city n , outside the United States, is below the lower boundary of the BWPB, we assume that an open

1. O'Connell and Wei (1997).

market will raise the local price until it reaches the lower limit of the BWPB. Conversely, if the local price is above the upper boundary of the BWPB, we assume that an open market will lower the local price until it reaches the upper limit of the BWPB.

We think the broad world price band represents a conservative guess as to the degree of price convergence in a world economy free of trade and investment restraints and integrated by world commerce. Table A.1 in appendix A shows the absolute upper and lower bound prices associated with the BWPB. The upper figure is often two to four times the lower figure—a margin large enough to accommodate known trade barriers as well as country-specific and city-specific frictions.

Price Convergence

The EIU dataset includes price data from more than 70 countries. The original price figures, which are expressed in national currency, are converted into US dollars using the market exchange rate during the collection period. Market exchange rates usually do not reflect the purchasing power of currency for well-known reasons. When the country enters the realm of completely open and competitive markets postulated in our calculations, the exchange rate, or the general price level, will likely move toward a purchasing power level. To provide an alternative assessment of price convergence gains, we also performed calculations starting with PPP exchange rates. We used purchasing power parity exchange rates provided by the Economist Intelligent Unit. These are very highly correlated with the World Bank's PPP rates. Using either market exchange rates or PPP exchange rates as the starting point, local currency prices are converted into the US dollar prices, identified as the dollar price of product i .

Price convergence will occur when the dollar price of product i falls outside the broad world price band, \bar{P}_i , as described by the following equations.

$$\bar{P}_i = \bar{P}_{i,US} \pm 2[std P_{i,US}] \quad (B.1)$$

$$\text{define upper limit of BWPB: } P_i^{upper} = \bar{P}_{i,US} + 2[std P_{i,US}] \quad (B.4)$$

$$\text{define lower limit of BWPB: } P_i^{lower} = \bar{P}_{i,US} - 2[std P_{i,US}] \quad (B.5)$$

$$\text{dollar price} = P_{i,n}^* = P_{i,n} * \left(\frac{1}{exrt_m} \right)$$

where:

$exrt_m$ = market exchange rate or PPP exchange rate of country m

Then:

if $P_{i,n}^* > P_i$ then

$P_{i,n}^* \downarrow$ by

$$\Delta P_{i,n}^* = P_{i,n}^* - P_i > 0 \quad (\text{B.6})$$

if $P_{i,n}^* < P_i$ then

$P_{i,n}^* \uparrow$ by

$$\Delta P_{i,n}^* = P_i - P_{i,n}^* > 0 \quad (\text{B.7})$$

Whether the price of product i in city n goes up or down, we have specified equations (B.6) and (B.7) so that $\Delta P_{i,n}^*$ is always positive. This device simplifies the calculation process. Also, all exchange rates—both market exchange rates and PPP exchange rates—are defined as the number of local currency units per US dollar. For example, 1.73 Swiss francs per US dollar means $exrt$ is 1.73. Accordingly, $1/exrt$ is 0.57.

Net Gain When the Local Price Falls

Figure B.1 illustrates simple supply and demand analysis. In this figure, the dollar price of product i in city n is originally b , which is higher than the upper limit of the BWPB shown by d . At the original price b , domestic demand equals domestic supply plus preexisting imports at quantity c . Following liberalization, the price of product i is assumed to drop to d . At that lower price, domestic supply plus preexisting imports decrease to e while domestic demand increases to f .

The gap between domestic supply and demand, shown by $(f-e)$, is equivalent to the incremental quantity of imports.² Accordingly, the consumer surplus in city n increases from area abc to area adf , while the producer surplus in city n decreases from area boc to area doe . Hence the net gain is the area cef . This triangle cef represents the static benefits of price convergence in city n when the upper limit of BWPB is below the dollar price. The size of the net gain triangle cef is calculated as follows:

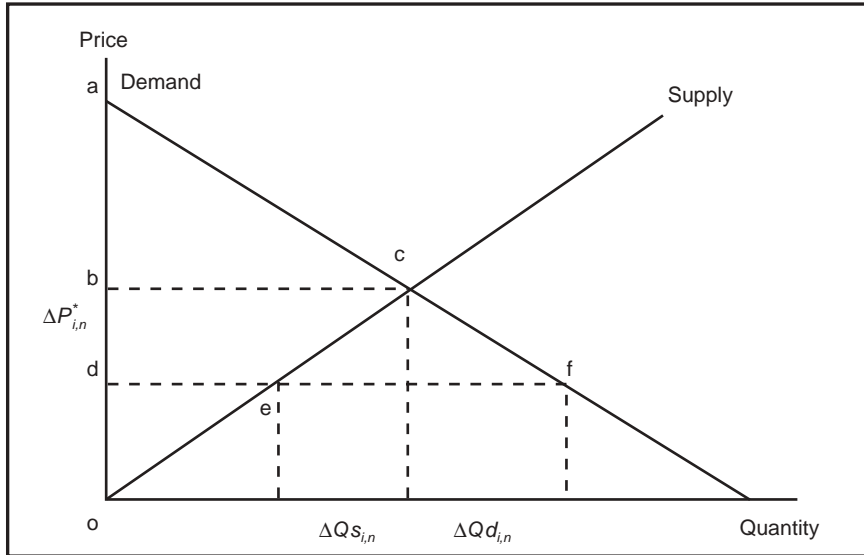
$$\text{area } cef = \frac{1}{2}(b-d) * (f-e) \quad (\text{B.8})$$

$$(b-d) = \Delta P_{i,n}^* \quad (\text{B.9})$$

$$(f-e) = \Delta Qs_{i,n} + \Delta Qd_{i,n} \quad (\text{B.10})$$

2. In calculating static benefits, the domestic supply schedule is assumed not to change. Consequently, any change in price will lead to a change in quantity supplied along the given domestic supply curve.

Figure B.1 Potential static benefits when local prices fall



In equation (B.10), $(f - e)$ equals the sum of the absolute value of the negative change in the quantity supplied, $\Delta Q_{S_{i,n}}$, plus the positive change in quantity demanded, $\Delta Q_{D_{i,n}}$.

We specify the demand elasticity for product i as Ed_i , stated as a positive value. (The demand elasticity is normally negative, but in order to measure the distance $(f - e)$, we use the absolute value of the demand elasticity.) Likewise, we specify the supply elasticity of product i as Es_i . (The supply elasticity is normally positive.) With these specifications, equation (B.10) may be expressed as follows.

$$(f - e) = \Delta Q_{S_{i,n}} + \Delta Q_{D_{i,n}} \quad (\text{B.10})$$

$$\text{since } Es_i = \frac{\Delta Q_{S_{i,n}}}{Q_{i,n}} * \frac{P_{i,n}^*}{\Delta P_{i,n}^*} \quad (\text{B.11})$$

$$\Delta Q_{S_{i,n}} = Es_i * \frac{\Delta P_{i,n}^*}{P_{i,n}^*} * Q_{i,n} \quad (\text{B.11a})$$

$$\text{since } Ed_i = \frac{\Delta Q_{D_{i,n}}}{Q_{i,n}} * \frac{P_{i,n}^*}{\Delta P_{i,n}^*} \quad (\text{B.12})$$

$$\Delta Q_{D_{i,n}} = Ed_i * \frac{\Delta P_{i,n}^*}{P_{i,n}^*} * Q_{i,n} \quad (\text{B.12a})$$

therefore

$$(f - e) = (Es_s * \frac{\Delta P_{i,n}^*}{P_{i,n}^*} * Q_{i,n}) + (Ed_i * \frac{\Delta P_{i,n}^*}{P_{i,n}^*} * Q_{i,n}) \quad (\text{B.10a})$$

$$= (Es_i + Ed_i) * \left(\frac{\Delta P_{i,n}^*}{P_{i,n}^*} * Q_{i,n} \right) \quad (\text{B.10b})$$

Hence, the net gain from decreasing the price of product i may be calculated as follows.

$$\text{area } cef = \frac{1}{2}(b - d) * (f - e) \quad (\text{B.8})$$

$$\begin{aligned} &= \frac{1}{2} \Delta P_{i,n}^* * (\Delta Qd_{i,n} + \Delta Qs_{i,n}) \\ &= \frac{1}{2} \Delta P_{i,n}^* * (Es_i + Ed_i) * \left(\frac{\Delta P_{i,n}^*}{P_{i,n}^*} * Q_{i,n} \right) \\ &= \frac{(Es_i + Ed_i)}{2} * (\Delta P_{i,n}^*)^2 * \frac{Q_{i,n}}{P_{i,n}^*} \end{aligned} \quad (\text{B.8a})$$

Define $\frac{Es_i + Ed_i}{2} = ELCO$, then

$$\text{area } cef = ELCO * (\Delta P_{i,n}^*)^2 * \frac{Q_{i,n}}{P_{i,n}^*} \quad (\text{B.8b})$$

$ELCO$ is a mnemonic expression for “elasticity coefficient.” Our calculations assume that $ELCO$ takes the value of $1/2$ for all goods. For example, when the demand elasticity is unity ($Ed_i = 1$) and supply is fixed ($Es_i = 0$), the sum of the demand and supply elasticities will be 1, and $ELCO$ will be $1/2$. This is a conservative assumption. When both demand and supply elasticities are unity ($Ed_i = 1$ and $Es_i = 1$), their sum will be 2, and $ELCO$ will be 1. An $ELCO$ value of 1 would double the calculated benefits shown in our tables. When demand is very sensitive to price ($Ed_i = 3$) and supply is unit elastic ($Es_i = 1$), their sum will be 4, and $ELCO$ will be 2. This would redouble the calculated benefits.

To express the net gain in money terms, multiply equation (B.8b) by $\frac{P_{i,n}^*}{P_{i,n}^*}$. This creates the expression:

$$\text{area } cef = ELCO * (\Delta P_{i,n}^*)^2 * \frac{Q_{i,n}}{P_{i,n}^*} * \frac{P_{i,n}^*}{P_{i,n}^*} \quad (\text{B.8b})$$

$$= ELCO * \left(\frac{\Delta P_{i,n}^*}{P_{i,n}^*} \right)^2 * (Q_{i,n} * P_{i,n}^*) = \text{net gain in money terms} \quad (\text{B.8c})$$

In other words, the net gain in money terms can be described as $ELCO$ multiplied by the squared percentage change in the price, and then multiplied again by the expenditure on the product ($Q_{i,n} * P_{i,n}^*$).

Net gains can also be expressed relative to money GDP:

$$\text{net gain as a percent of } GDP_n \text{ in city } n = ELCO * \left(\frac{\Delta P_{i,n}^*}{P_{i,n}^*} \right)^2 * \frac{(Q_{i,n} * P_{i,n}^*)}{POP_n GDP_m} \quad (\text{B.13})$$

where

$$POP_n = \frac{\text{population of city } n}{\text{population of all EIU cities in country } m}$$

$$GDP_m = \text{GDP of country } m$$

The third term in equation (B.13) equals the percentage of GDP in city n spent on product i . Note that GDP_n is the GDP of city n , not country m . Since the net gain shown by equation (B.8b) represents the static net gain at the city level, we prorate the population of all EIU cities in country m to calculate the static net gain at the national level. In other words, we assume that each EIU city in country m reflects a slice of national experience. To express net gains at the national level, we simply sum up the experience of all cities in the country:

$$\text{net gain as a percent of GDP} = \sum_{n=1}^N ELCO * \left(\frac{\Delta P_{i,n}^*}{P_{i,n}^*} \right)^2 * \frac{(Q_{i,n} * P_{i,n}^*)}{POP_n GDP_m} \quad (\text{B.13a})$$

N = number of cities in country m covered in the EIU dataset

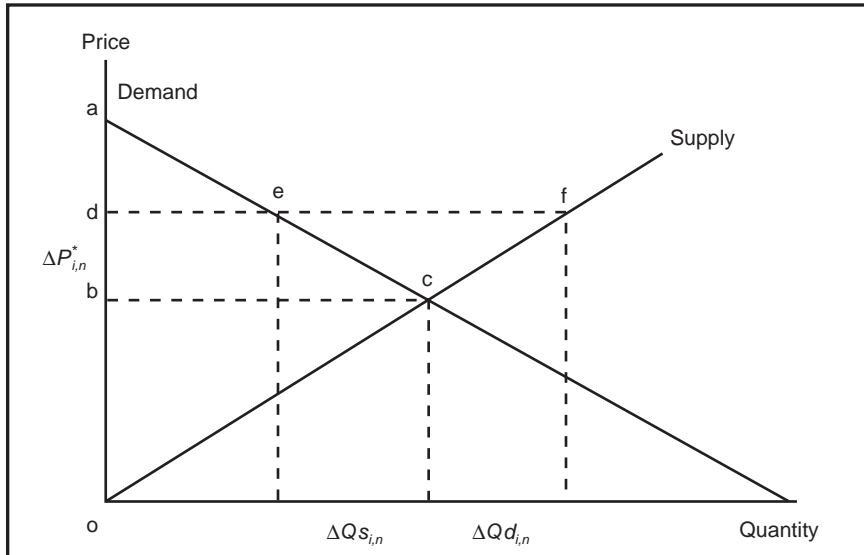
Net Gain When the Local Price Rises

What happens if the dollar price of product i starts off below the lower limit of the broad world price band and then rises with open and competitive markets? In this case, the producer surplus rises, while the consumer surplus falls. The net gain is calculated in the same manner as before.

Figure B.2 illustrates the case when the price of product i in city n , shown by b , is lower than the lower limit of the BWPB, shown by d . At the original price b , domestic supply equals domestic demand plus preexisting exports at quantity c . Following liberalization, the price of good i is assumed to rise to d . At that higher price, domestic supply increases to f while domestic demand plus preexisting exports decrease to e . The gap between domestic supply and demand, shown by $(f - e)$, is equivalent to the incremental quantity of exports. Accordingly, the consumer surplus in city n decreases from area abc to area ade ; the producer surplus increases from area boc to area dof . The net gain is shown by the area ecf . The net gain is calculated as follows.

$$\begin{aligned} \text{area } ecf &= \frac{1}{2}(d - b) * (f - e) \\ &= \frac{1}{2} \Delta P_{i,n}^* * (\Delta Q_{d,i,n} + \Delta Q_{s,i,n}) \end{aligned} \quad (\text{B.14})$$

Figure B.2 Potential static benefits when local prices rise



Again, specifying demand elasticity as Ed_i (stipulating a positive number) and supply elasticity as Es_i (also positive) yields:

$$\text{area } ecf = \frac{1}{2} \Delta P_{i,n}^* * (Ed_i + Es_i) * \left(\frac{\Delta P_{i,n}^*}{P_{i,n}^*} * Q_{i,n} \right) \quad (\text{B.14a})$$

$$= ELCO * (\Delta P_{i,n}^*)^2 * \frac{Q_{i,n}}{P_{i,n}^*} \quad (\text{B.14b})$$

multiplying equation (B.14b) by $\frac{P_{i,n}^*}{P_{i,n}^*}$ yields net gains expressed in money terms:

$$\text{net gain in money terms} = ELCO * \left(\frac{\Delta P_{i,n}^*}{P_{i,n}^*} \right)^2 * (Q_{i,n} * P_{i,n}^*) \quad (\text{B.14c})$$

This net gain of city n can be expressed relative to money GDP as follows:

$$\text{net gain as a share of } GDP_n \text{ in city } n = ELCO * \left(\frac{\Delta P_{i,n}^*}{P_{i,n}^*} \right)^2 * \frac{Q_{i,n} * P_{i,n}^*}{POP_n * GDP_m} \quad (\text{B.15})$$

$$POP_n = \frac{\text{population in city } n}{\text{population of all EIU cities in country } m}$$

$$GDP_m = \text{GDP of country } m$$

The net gains of all cities can be added to calculate gains at the country level.

Product Weights

We assume that the EIU dataset represents the extent of price dispersion for a much wider range of consumer goods than the enumerated items. However, we do not assume that the price data for any given item within a sector is “more representative” than the price data for any other item within that sector. In other words, we assign the same importance to the price observations for “laundry detergent” and “razor blades” within the household items sector. This boils down to the proposition that all items within a sector are given equal weighting. However, each sector is assigned a weight corresponding to its share of GDP, based on the experience of representative countries (see table 3.1). The United States is the representative for rich countries, Mexico for middle-income countries, and India for poor countries. Note that consumer goods are only a part of personal consumption. They represent about 60 to 70 percent of personal consumption, which in turn accounts for 30 to 50 percent of GDP (table 3.1).

Static Benefits from Price Convergence

We can now calculate the net gains if all trade and investment barriers vanished and if markets suddenly became as competitive as those within the United States. The calculation can be carried out country by country, region by region, or for the entire world. Following full liberalization, we assume the prices of individual products will all converge to the BWPB, at the country, regional, or world level.

We can imagine different scenarios that bring different stages of static benefits. For example, when a country opens up its markets unilaterally, price dispersion within the country might be assumed to converge to the BWPB. Internal liberalization could bring similar benefits. Imagine a country such as China or Russia, where domestic markets are segmented by an array of monopolistic and regulatory barriers. Removing these distortions would bring prices closer among cities. In other words, country benefits can result from internal liberalization as well as external liberalization.

Regional integration, such as the NAFTA or EU, can also propel convergence within the region to the BWPB. Similarly, open and competitive markets at a global level will bring worldwide convergence and global benefits.

The countrywide static benefits may be described as follows:

country net gain from opening the market in product i =

$$\sum_{n=1}^N ELCO * \left(\frac{\Delta P_{i,n}^*}{P_{i,n}^*} \right)^2 * \frac{Q_{j,n} * P_{i,n}^*}{POP_n GDP_m} = \Pi_{i,m} \quad (B.16)$$

$$\text{country static benefits} = \sum_{i=1}^I \Pi_{i,m} \quad (\text{B.17})$$

$\Pi_{i,m}$ = static benefit of country m from price convergence of product i
(as shown in equation (B.16))

Regional static benefits are the total of country benefits within the region:

$$\text{regional static benefits} = \sum_{r=1}^R \left[\left(\sum_{i=1}^I \Pi_{i,r} \right) * \frac{GDP_r}{GDP_{region}} \right] \quad (\text{B.18})$$

where:

R = number of countries in a region

$\Pi_{i,r}$ = countrywide benefits from price convergence of product i

GDP_r = country r 's GDP

GDP_{region} = total GDP of countries in region r represented in the EIU dataset

Finally, if all trade and investment barriers disappear, and prices around the world move toward the BWPB, world static benefits may be described as follows.

$$\text{world static benefits} = \sum_{m=1}^M \left[\sum_{i=1}^I \Pi_{i,m} * \frac{GDP_m}{GDP_{world}} \right] \quad (\text{B.19})$$

where:

$\Pi_{i,m}$ = countrywide benefits from price convergence of product i

GDP_m = GDP of country m

GDP_{world} = total GDP of countries represented in the EIU dataset

Implied Imports and Exports

We can calculate the implied change in national imports and exports arising from the assumed convergence of prices. For this exercise, we only use the results based on market exchange rates. Returning to figure B.1, the implied change of imports of product i in city n is given by:

$$\begin{aligned}
\Delta M_{i,n} &= (\Delta Qs_{i,n} + \Delta Qd_{i,n})(P^*_{i,n} - \Delta P^*_{i,n}) \\
&= (Es_{i,n} + Ed_{i,n})\left(\frac{\Delta P^*_{i,n}}{P^*_{i,n}} * Q_{i,n}\right)(P^*_{i,n} - \Delta P^*_{i,n}) \\
&= (Es_{i,n} + Ed_{i,n})(Q_{i,n})\left(\Delta P^*_{i,n} - \frac{(\Delta P^*_{i,n})^2}{P^*_{i,n}}\right)
\end{aligned} \tag{B.20}$$

where

$$\text{dollar price} = P^*_{i,n} = p^*_{i,n} [1 / \text{exrt}_m]$$

Recall that *exrt* is the market exchange rate. The net gain from decreasing the price of product *i*, based on equation (B.8a), can be stated as:

$$\text{net gain from decreasing price} = \frac{(Es_i + Ed_i)}{2} * Q_{i,n} * \frac{(\Delta P^*_{i,n})^2}{P^*_{i,n}} \tag{B.21}$$

Hence, the implied change in imports can be expressed as a function of the net gain, as follows:

$$\text{implied changes in imports} = 2 * \text{net gain} * \left(\frac{P^*_{i,n}}{\Delta P^*_{i,n}} - 1\right) \tag{B.22}$$

By similar reasoning, the implied increase in exports can be expressed as a function of the net gain, as follows:

$$\text{implied changes in exports} = 2 * \text{net gain} * \left(\frac{P^*_{i,n}}{\Delta P^*_{i,n}} + 1\right) \tag{B.23}$$

For convenience, quantity units are all redefined so that the initial price of each item ($P^*_{i,n}$) is \$1. Accordingly, $\Delta P^*_{i,n}$ equals the average percentage above the BWPB (for potential import items) or the average percentage below the BWPB (for potential export items).

As the results in table B.1 indicate, for most countries the calculated increment in exports does not equal the calculated increment in imports. This reflects the limitations of partial equilibrium analysis: unlike general equilibrium analysis, no condition is built in that forces import changes to match export changes.

Table B.1 Implied increase in trade using market exchange rates
(percent of GDP)

	Increase in imports	Increase in exports	Trade expansion (imports + exports)
High-income group, weighted total	3.25	1.07	4.32
Australia	3.36	5.54	8.90
Austria	3.21	0.12	3.33
Belgium	0.68	0.27	0.96
Canada	0.20	2.32	2.52
China (Hong Kong)	4.07	0.00	4.07
Denmark	3.67	0.26	3.93
Finland	2.25	0.01	2.26
France	3.25	1.10	4.35
Germany	7.83	2.56	10.38
Greece	2.27	1.23	3.50
Ireland	0.45	0.16	0.62
Israel	1.86	0.14	2.00
Italy	1.21	5.32	6.53
Japan	7.10	0.04	7.14
Kuwait	0.22	1.47	1.69
Luxembourg	0.80	0.43	1.23
Netherlands	1.90	2.13	4.04
New Zealand	1.90	4.09	6.00
Norway	2.38	0.00	2.38
Portugal	0.59	4.28	4.87
Singapore	4.03	2.33	6.36
Spain	2.19	6.43	8.62
Sweden	1.98	0.00	1.98
Switzerland	4.72	0.04	4.76
Taiwan	1.18	1.09	2.27
United Arab Emirates	1.06	2.23	3.29
United Kingdom	1.37	0.11	1.48
United States	1.44	0.12	1.56
Middle-income group, weighted total	1.04	19.32	20.37
Algeria	n.a.	n.a.	n.a.
Argentina	1.04	5.19	6.23
Bahrain	1.53	1.25	2.79
Brazil	0.24	47.40	47.65
Chile	0.34	6.63	6.97
Colombia	1.01	9.20	10.21
Costa Rica	0.27	19.67	19.95
Czech Republic	0.20	17.20	17.40
Ecuador	0.15	141.52	141.67
Egypt	3.64	8.85	12.49
Guatemala	0.55	11.30	11.85
Hungary	0.27	34.50	34.78
Iran	0.98	20.91	21.90
Jordan	3.12	12.04	15.16
Korea	1.70	0.57	2.27
Malaysia	0.56	6.04	6.61
Mexico	0.94	7.17	8.11
Panama	0.62	8.88	9.51
Paraguay	0.21	138.55	138.76
Peru	0.25	6.54	6.80

(table continues next page)

Table B.1 (continued)

	Increase in imports	Increase in exports	Trade expansion (imports + exports)
Philippines	0.16	17.71	17.87
Poland	0.18	15.77	15.95
Romania	0.43	9.33	9.77
Russia	3.45	21.55	25.00
Saudi Arabia	2.44	5.58	8.03
Serbia	n.a.	n.a.	n.a.
South Africa	0.05	13.33	13.39
Sri Lanka	0.32	33.10	33.42
Thailand	0.82	13.10	13.92
Tunisia	1.33	19.32	20.65
Turkey	0.89	22.48	23.37
Uruguay	0.92	9.05	9.97
Venezuela	1.38	2.71	4.09
Low-income group, weighted total	8.54	65.04	73.58
Bangladesh	2.21	37.48	39.69
Cameroon	2.57	10.59	13.16
China	13.54	6.68	20.22
India ^a	1.38	219.05	220.43
Indonesia	1.65	15.82	17.47
Kenya	1.17	27.93	29.10
Nigeria	4.93	15.10	20.03
Pakistan	0.80	144.72	145.52
Vietnam	3.19	69.51	72.70
Zimbabwe	n.a.	n.a.	n.a.
World total, weighted by GDP	3.26	7.04	10.30

n.a. = not available

a. Excludes fresh and frozen meat.

Note: Based on calculations at city level (appendix B).

Source: Authors' calculations.

Appendix C

The Exchange Rate Wedge and the Exchange Rate System

It is often said that the exchange rate system is an important source of exchange rate distortion. In our particular context—comparing market exchange rates and PPP exchange rates—the exchange rate system could make a difference in the “wedge” between the market exchange rate and the purchasing power value of the currency. For example, one might guess that a flexible exchange rate system would make it easier for the market rate of a currency to approach its PPP rate. We use simple regression analysis to examine whether the exchange rate system is an important source of variation between market rates and PPP rates.

We measure the wedge by the difference between the market exchange rate and the PPP rate, divided by the PPP rate. We use both EIU PPP rates and World Bank PPP rates for the analysis. If a country’s currency is undervalued at the market exchange rates, the wedge is positive. If a country’s currency is overvalued at the market exchange rates, the wedge is negative.

In this exercise, exchange rate regimes are categorized into four different types, following the IMF classification scheme: fixed, limited floating, managed floating, and independently floating. Table 3.3 lists each country’s exchange rate system. The regression analysis covers the 68 countries covered in the EIU data. Among the 68 countries, 19 countries have independently floating exchange rate systems (the most flexible exchange rate system); 20 countries have managed floating exchange rate systems (including crawling pegs, exchange rates within crawling bands, and managed floats with no preannounced path); 8 countries have limited

Table C.1 Exchange rate wedges and exchange rate systems**Dependent variable: Log of (market exchange rates / EIU PPP rates) / EIU PPP rates**

Number of observations = 65

R-squared = 0.48

	Coefficient
Log of per capita GDP in US dollars	-0.32**
Log of trade value as a share of GDP	0.01
Independently floating system dummy ^a	0.14*
Managed floating system dummy ^b	-0.15
Fixed system dummy ^c	0.09
Constant	3.16**

Dependent variable: Log of (market exchange rates / World Bank PPP rates) / World Bank PPP rates

Number of observations = 61

R-squared = 0.89

	Coefficient
Log of per capita GDP in US dollars	-0.35**
Log of trade value as a share of GDP	0.04*
Independently floating system dummy ^a	0.19**
Managed floating system dummy ^b	0.09
Fixed system dummy ^c	0.06
Constant	2.85**

EIU = Economist Intelligence Unit.

PPP = purchasing power parity

** Significant at 95 percent level of confidence.

* Significant at 90 percent level of confidence.

a. Dummy is 1 if country adopts independently floating exchange rate system, and 0 otherwise.

b. Dummy is 1 if country adopts a managed floating system (such as a crawling peg system), and 0 otherwise.

c. Dummy is 1 if country adopts a fixed exchange rate system, and 0 otherwise.

Source: Authors' calculations.

flexibility exchange rate systems (pegged exchange rates within bands that do not change or crawl over time); and 21 countries have fixed exchange rate systems (including dollarization, currency boards, and conventional fixed pegs). As additional explanatory variables to explain the wedge, besides the exchange rate system, we use per capita income and the trade-to-GDP ratio.

Table C.1 shows the regression coefficients. The exchange rate wedge is mostly explained by the level of income, measured by per capita GDP. This is a familiar result. The trade ratio makes no difference. Turning to exchange rate systems, we found no evidence that a flexible exchange rate regime leads to a smaller wedge between market rates and PPP rates. Instead, we found that the exchange rate wedge is significantly wider for a country that adopts an independently floating exchange rate system, the most flexible exchange rate system. Apart from this result, none of the exchange rate systems has a significant impact on the wedge. We conclude

that an array of explicit and implicit trade and investment barriers on tradable products, coupled with a large nontradable sector, are far more important in determining the size of the wedge between market exchange rates and PPP rates than the exchange rate system.

Appendix D

An Alternative Calculation of the Benefits of Price Convergence in Both Tradable and Service Sectors

In the main text, we focused on international price convergence in tradable sectors in calculating potential benefits. These calculations excluded service items. However, the sharp distinction often made between tradable sectors and service sectors is becoming more an artifact of old classification schemes, and less a reflection of economic substance. Even when trade in service items is limited or nonexistent, foreign direct investment can lead to technology transfer that brings about convergence in the prices of some service items. But this will not happen in all service sectors. For example, housing prices in Tokyo are not going to be as low as in Los Angeles, although Japan may have better construction technology, because land scarcity is critical in Tokyo.

In this alternative calculation, we assess the potential benefits of price convergence in both tradable items and some service items. We excluded domestic help, entertainment, and housing because these sectors are exceedingly resistant to the forces of economic integration.

Tables D.1 and D.2 demonstrate the potential benefits from price convergence in all the covered sectors. The potential static benefits starting with market exchange rates (covering both tradable and service items) are 3.4 percent of GDP or \$1 trillion per year (table D.1). These benefits are somewhat larger than the benefits calculated with tradable sectors alone (table 1.1). The additional gains are distributed among high-, middle-, and low-income countries. For high-income countries, the benefits for both tradable and service items are 1.1 percent of GDP whereas the benefits including only tradable items are 0.6 percent of GDP, starting with market

exchange rates. The potential static benefits for middle-income countries including tradable and service items are 7.5 percent, while the benefits including only tradable items are 3.8 percent. For low-income countries, the benefits including tradable and service items are 26.9 percent, while the benefits including only tradable items are 19.4 percent of GDP.

The potential static benefits calculated using PPP exchange rates including tradable and service items are 7.9 percent of GDP or \$3.1 trillion per year, while the benefits calculating included only tradable items are 6.3 percent of GDP or \$2.4 trillion. Additional gains from including service items are distributed among high-, middle-, and low-income countries more evenly when the benefits are calculated using PPP exchange rates. For high-income countries, the benefits including tradable and service items are 0.8 percent of GDP, while the benefits including only tradable items are 0.4 percent. For middle-income countries, the benefits including tradable and service items are 3.6 percent of GDP, while the benefits including only tradable items are 2.1 percent. For low-income countries, the benefits including tradable and service items are 31.0 percent of GDP, while the benefits including only tradable items are 26.1 percent.

Table D.1 Potential benefits at country level, calculated with market exchange rates (percent of GDP, all sectors except domestic help, entertainment, and housing)

	Benefits from falling prices	Benefits from rising prices	Total benefits	GDP (in US\$ billions)
High-income group, weighted total benefits	0.90	0.20	1.10	23,076.1
Australia	0.46	0.83	1.30	364.7
Austria	0.73	0.02	0.75	211.9
Belgium	0.26	0.02	0.28	249.7
Canada	0.09	0.20	0.29	603.8
China (Hong Kong)	1.06	0.00	1.06	166.0
Denmark	1.00	0.02	1.02	174.1
Finland	0.63	4.92	5.55	126.5
France	0.89	0.10	0.99	1,451.8
Germany	1.49	0.22	1.71	2,361.8
Greece	0.26	1.59	1.84	120.7
Ireland	0.16	0.02	0.18	68.8
Israel	0.49	0.01	0.50	89.0
Italy	0.53	0.75	1.28	1,171.9
Japan	2.80	0.00	2.80	3,798.2
Kuwait	0.07	3.61	3.68	30.2
Luxembourg	0.14	0.04	0.18	17.4
Netherlands	0.38	0.26	0.64	378.4
New Zealand	0.28	0.50	0.78	52.7
Norway	0.77	0.00	0.77	145.9
Portugal	0.19	1.32	1.51	99.4
Singapore	1.02	1.15	2.16	84.4
Spain	0.39	0.99	1.38	553.2
Sweden	0.65	0.00	0.65	226.5
Switzerland	1.68	0.00	1.68	264.5
Taiwan	0.34	0.16	0.50	321.9
United Arab Emirates	0.22	4.93	5.16	44.6
United Kingdom	0.38	0.02	0.39	1,387.4
United States	0.21	0.07	0.28	8,510.7
Middle-income group, weighted total benefits	0.44	7.08	7.52	3,663.2
Algeria	n.a.	n.a.	n.a.	33.4
Argentina	0.36	0.75	1.12	298.3
Bahrain	0.18	1.55	1.73	6.1
Brazil	0.76	9.70	10.46	776.4
Chile	0.23	0.90	1.13	72.9
Colombia	0.10	4.49	4.59	62.8
Costa Rica	0.05	5.77	5.82	8.8
Czech Republic	0.07	4.25	4.32	55.0
Ecuador	0.02	43.47	43.49	14.5
Egypt	0.56	1.85	2.41	82.7
Guatemala	0.34	1.69	2.03	19.0
Hungary	0.31	8.49	8.80	31.9
Iran	0.29	55.92	56.21	160.2
Jordan	1.36	6.90	8.26	7.1
Korea	0.42	0.29	0.71	320.7
Malaysia	0.09	4.43	4.52	70.2
Mexico	0.36	3.80	4.16	415.0
Panama	0.11	1.71	1.82	9.2
Paraguay	0.06	37.47	37.53	8.4

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Table D.1 Potential benefits at country level calculated with market exchange rates (percent of GDP, all sectors except domestic help, entertainment, and housing) *(continued)*

	Benefits from falling prices	Benefits from rising prices	Total benefits	GDP (in US\$ billions)
Peru	0.33	1.33	1.66	62.7
Poland	0.17	4.39	4.56	128.0
Philippines	0.03	4.33	4.36	65.1
Romania	0.38	11.08	11.46	38.2
Russia	0.87	4.48	5.35	276.7
Saudi Arabia	0.57	3.54	4.11	128.9
Serbia	0.13	69.06	69.19	21.2
South Africa	0.02	2.25	2.27	116.7
Sri Lanka	0.08	10.42	10.50	15.7
Thailand	0.11	6.86	6.97	111.3
Tunisia	0.34	6.13	6.48	20.0
Turkey	0.10	4.53	4.63	110.2
Uruguay	0.32	1.53	1.85	20.8
Venezuela	0.36	0.96	1.32	95.0
Low-income group, weighted total benefits	2.01	24.87	26.88	1,665.2
Bangladesh	0.25	12.26	12.51	32.9
Cameroon	1.55	3.98	5.53	8.5
China	3.08	1.20	4.27	918.9
India ^a	0.36	80.79	81.15	379.0
Indonesia	0.25	13.50	13.75	98.8
Kenya	0.23	6.41	6.63	9.2
Nigeria	3.05	49.18	52.23	56.5
Pakistan	0.22	45.85	46.08	61.3
Vietnam	0.48	22.09	22.57	96.2
Zimbabwe	n.a.	n.a.	n.a.	n.a.
World total, weighted by GDP	0.90	2.48	3.38	28,404.5

n.a. = not available

a. Excludes fresh and frozen meat.

Notes: Based on calculations at city level (appendix B). Group totals are weighted by country GDP size.

Source: Authors' calculations.

Table D.2 Potential benefits at country level, calculated with EIU PPP rates (percent of GDP, all sectors except domestic help, entertainment, and housing)

	Benefits from falling prices	Benefits from rising prices	Total benefits	GDP (in US\$ billions)
High-income group, weighted total benefits	0.61	0.22	0.82	22,369.1
Australia	1.01	0.37	1.39	410.3
Austria	0.58	0.05	0.63	196.4
Belgium	0.28	0.02	0.29	252.4
Canada	0.39	0.01	0.41	795.2
China (Hong Kong)	1.37	0.00	1.37	182.3
Denmark	0.49	0.08	0.56	143.9
Finland	0.47	6.12	6.59	116.4
France	0.68	0.17	0.85	1,365.8
Germany	0.94	0.55	1.48	2,128.8
Greece	0.49	1.06	1.55	135.2
Ireland	0.21	0.01	0.22	72.9
Israel	0.92	0.00	0.92	103.5
Italy	0.74	0.49	1.23	1,288.4
Japan	1.33	0.11	1.45	2,909.5
Kuwait	1.02	0.52	1.54	53.2
Luxembourg	0.11	0.05	0.16	16.7
Netherlands	0.34	0.28	0.62	371.9
New Zealand	1.09	0.06	1.15	71.6
Norway	0.36	0.00	0.36	121.0
Portugal	1.04	0.23	1.28	146.6
Singapore	0.76	2.02	2.77	72.6
Spain	0.91	0.41	1.32	665.6
Sweden	0.34	0.00	0.34	195.3
Switzerland	0.46	0.19	0.65	192.2
Taiwan	1.82	0.00	1.82	533.9
United Arab Emirates	0.22	4.93	5.16	44.6
United Kingdom	0.25	0.03	0.28	1,272.2
United States	0.21	0.07	0.28	8,510.7
Middle-income group, weighted total benefits	3.05	0.52	3.57	7,635.8
Algeria	5.24	1.64	6.88	70.2
Argentina	1.06	0.17	1.23	399.7
Bahrain	1.33	0.03	1.36	9.9
Brazil	4.76	0.32	5.08	1,729.1
Chile	4.23	0.00	4.23	207.3
Colombia	3.40	0.02	3.42	168.4
Costa Rica	1.98	0.09	2.08	20.8
Czech Republic	1.23	0.13	1.36	112.5
Ecuador	3.24	0.23	3.47	64.0
Egypt	3.83	0.00	3.83	193.2
Guatemala	3.73	0.00	3.73	48.2
Hungary	1.21	0.91	2.11	54.6
Iran	2.79	4.28	7.07	464.3
Jordan	4.73	0.36	5.10	15.5
Korea	2.43	0.00	2.43	596.8
Malaysia	2.72	0.04	2.76	217.7
Mexico	2.74	0.38	3.12	806.3
Panama	2.44	0.00	2.44	22.7
Paraguay	1.49	5.04	6.53	18.3

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Table D.2 Potential benefits at country level, calculated with EIU PPP rates (percent of GDP, all sectors except domestic help, entertainment, and housing) (*continued*)

	Benefits from falling prices	Benefits from rising prices	Total benefits	GDP (in US\$ billions)
Peru	3.31	0.00	3.31	141.5
Philippines	3.15	0.00	3.15	235.7
Poland	1.51	0.19	1.70	229.8
Romania	2.57	0.83	3.39	90.8
Russia	2.25	1.16	3.41	392.6
Saudi Arabia	2.32	0.10	2.43	199.7
Serbia	n.a.	n.a.	n.a.	n.a.
South Africa	1.25	0.00	1.25	288.5
Sri Lanka	3.18	0.01	3.19	51.2
Thailand	4.01	0.02	4.03	359.2
Tunisia	3.51	0.16	3.67	51.1
Turkey	0.98	0.55	1.52	183.1
Uruguay	0.70	0.41	1.11	27.4
Venezuela	1.69	0.07	1.76	166.4
Low-income group, weighted total benefits	29.34	1.62	30.96	8,212.8
Bangladesh	2.85	0.01	2.85	114.5
Cameroon	9.19	0.00	9.19	28.9
China	42.30	0.00	42.30	5,044.6
India ^a	6.09	7.83	13.92	1,633.6
Indonesia	7.66	0.02	7.68	460.1
Kenya	4.89	0.00	4.89	29.2
Nigeria	8.66	3.09	11.75	139.9
Pakistan	4.06	0.26	4.32	228.9
Vietnam	22.00	0.00	22.00	511.7
Zimbabwe	4.08	0.36	4.44	21.5
World total, weighted by GDP	7.27	0.58	7.85	38,217.6

EIU = Economist Intelligence Unit

PPP = purchasing power parity

a. Excludes fresh and frozen meat.

Notes: Based on calculations at city level (appendix B). Totals are weighted by country GDP size.

Source: Authors' calculations.