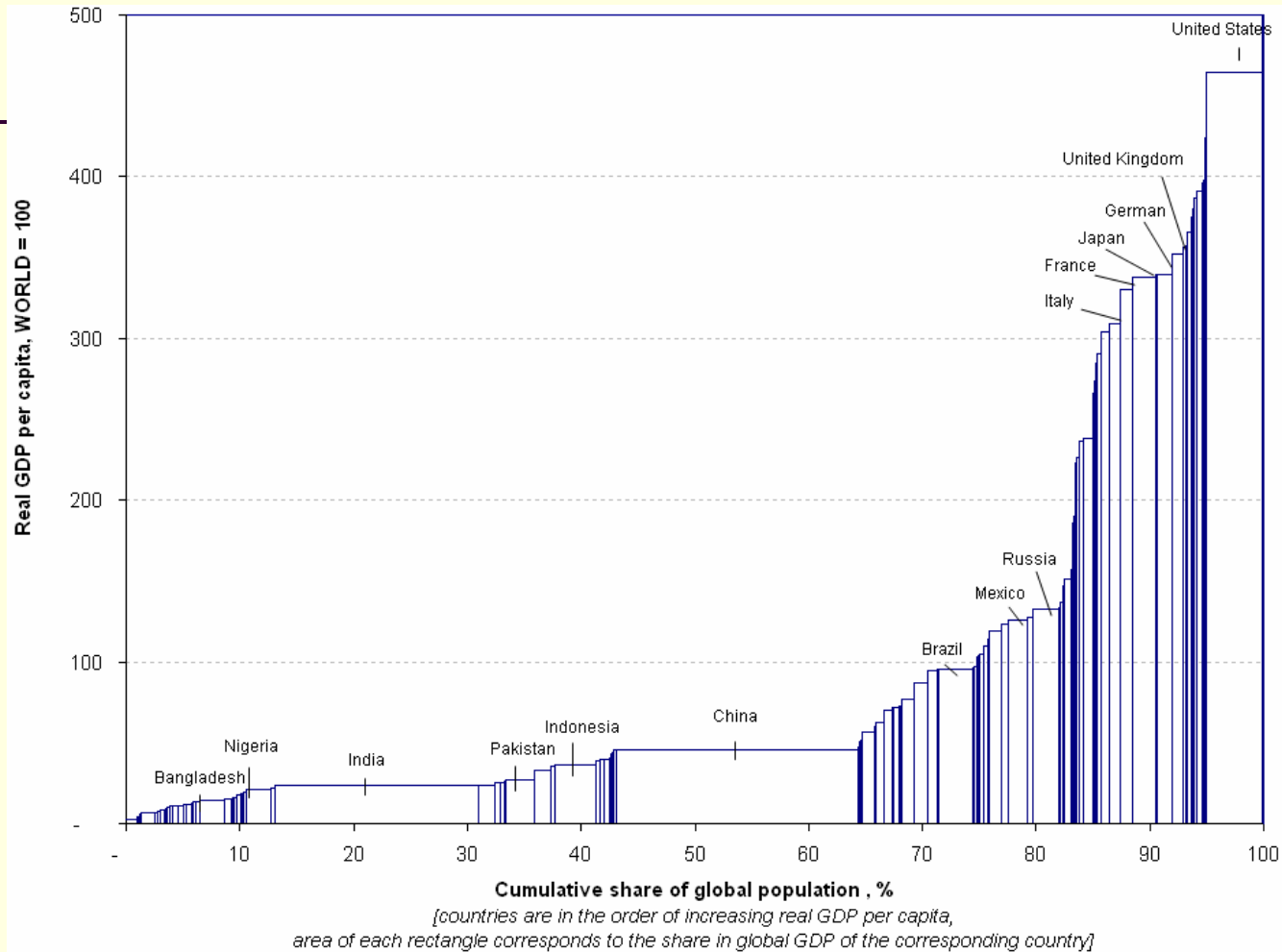


ICP ASIA PACIFIC: 2009 UPDATE

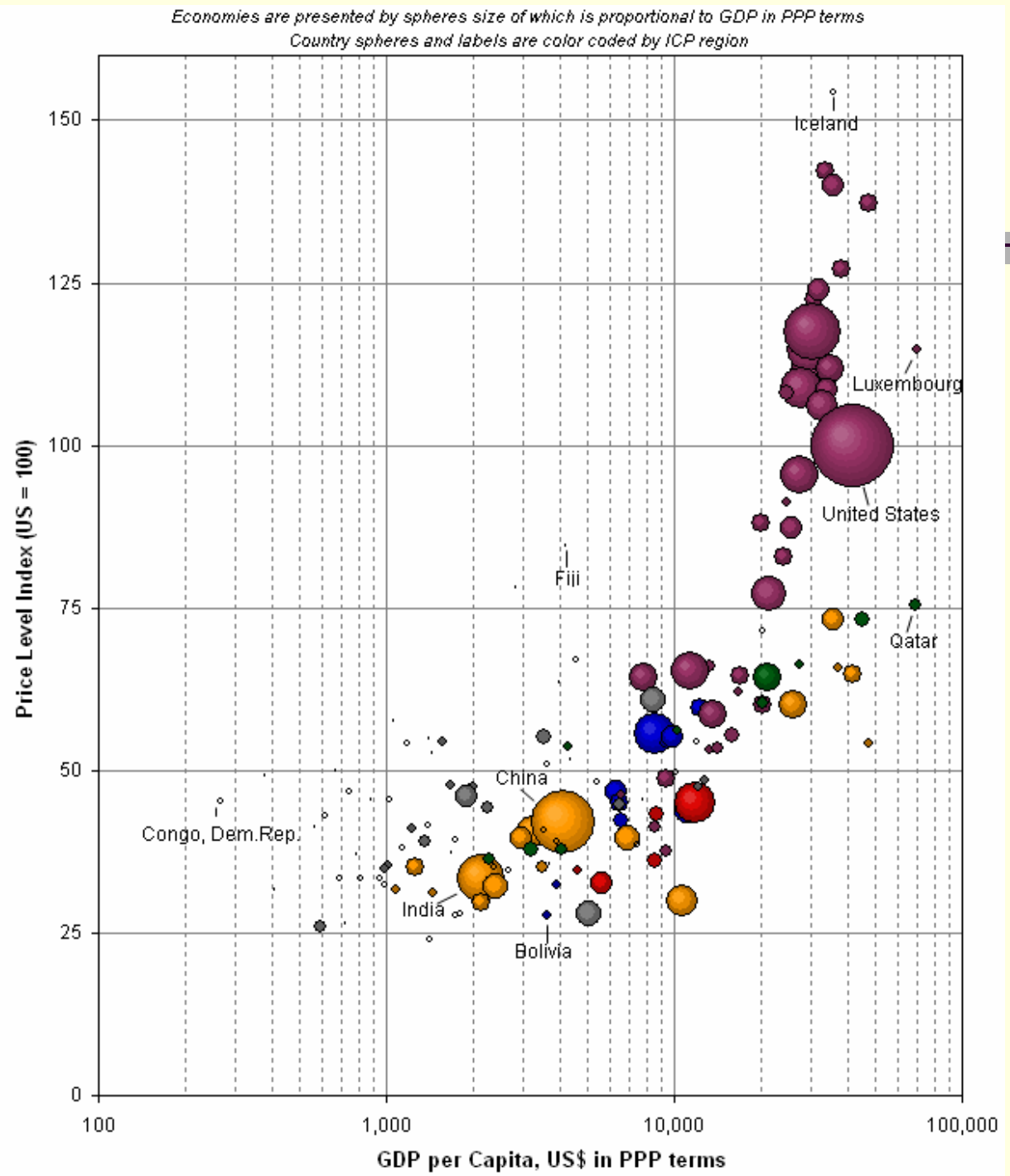
Yuri Dikhanov
World Bank

Bird's view: Distribution of global GDP by economy



Source: 2005 ICP

PLI vs. GDP per capita (United States = 100)



ICP ASIA PACIFIC: 2009 UPDATE

- MAJOR OBJECTIVES
- A relatively small-scale exercise [covering around 200 products, or around 30% of the original list in Consumption] to be carried out in the capital areas, that is intended to be much less resource intensive than a regular ICP comparison. Given the complexities involved in undertaking this exercise for the whole GDP, the main focus will be on the Consumption and Government aggregates of the national accounts. PPPs for Gross Fixed Capital Formation will be estimated using simpler extrapolation methods.

-
- The 2009 Update for the Asia Pacific region will achieve a number of important objectives:
 - i. To identify a core list of products that can be used in compiling quick updates of PPPs for the years in between benchmark years.
 - ii. To build scaling factors that can be used in scaling capital city prices to national average prices using the CPI information from the national sources and/or information from the price data collected as a part of the 2005 ICP.
 - iii. Recognizing the interest in increased CPI-ICP harmonization, the proposal will attempt to integrate the core ICP list into the regular price collection to facilitate price collection for the 2009 Update as well as in the upcoming round 2011 round.

-
- iv. Another objective of the Update is to establish a framework for using the CPI information for estimating sub-national price levels (PPPs for sub-regions within a country) – for this part of the project, the main focus will be on China, India, Indonesia, Philippines and Thailand.

 - v. Enhanced capacity building: An important consideration for bringing the countries onboard for the 2009 ICP Update and CPI-ICP Harmonization is establishing the foundation for the next 2011 round in the countries. As the countries will be able to manage and run the sub-national comparisons themselves, they will acquire knowledge and institutional infrastructure necessary for participation, and will be able to grasp the full cycle of the program: from planning and price collection to the aggregation and results.

BUILDING A CORE PRODUCT LIST – COMBINATORIAL APPROACH

- The number of k-combinations from a set of size n would be given by the following formula:

- $$C_k^n = \binom{n}{k} = \frac{n!}{k!(n-k)!}$$

- For a core list of six items out of 19 that would mean 27,132 combinations

		Table 1. Average price in local currency																							
Item name	CV of CPD residuals by item	N. of countries pricing item	BAN	BHU	BRU	PRC	FIJ	HKG	INO	IND	IRN	CAM	LAO	SRI	MAC	MLD	MON	MAL	NEP	PAK	PHI	SIN	THA	TAP	VIE
1.Coarse #3	0.15	3		109.34						69.562						42.8									
2.White rice #3	0.19	12	316.59	253.58	8.3378				59953	172.68		11200	24465	251.83				18.944			243.35		139.2		48265
3.White rice #4	0.26	4	228.56	129.01					48968					388.85											
4.White rice #5	0.13	6	257.49						38608		79806			293.41					293.6						64856
5.White rice #6	0.06	4	239.87						35989					271.38	57.825										
6.White rice #7	0.11	3	253.7					57.437						350.33											
7.White rice #8	0.16	5	193.27					65.895						83.771				19.636				165.76			
8.White rice #9	0.07	4	239.18				11.057	64.884																336.79	
9.White rice #10	0.14	5	246.62				10.977	70.896												169.37				373.7	
10.Premium rice #1	0.19	10	410.68	215.87		44.437		75.462	31953			14625		76.34		6127.6	23.665						149.99		
11.Premium rice #2	0.20	12	470.24					110		387.64	147262	13114					35.556	480.28	360.23	226.41	16.13	249.57	356.61		
12.Premium rice #3	0.10	4	384.57									12734												433.34	64451
13.Premium rice #4	0.12	13	221.05		5.8937		10.555	55.217	38598	180.27	67678					60		15.895		145.8	133.94	7.8462	111.08		
14.Coarse #2	0.33	3											35584	151.15				10.19							
15.Coarse #6	0.17	5	94.516			13.3				60.571				153.46						106.59					
16.Coarse #5	0.18	3	90.451							68.784				166.81											
17.Brown rice	0.29	5	99.478	128.54										138.16								11.139		183.51	
18.White rice #1	0.15	9	376.32			36.435						13704		325.35			5694.9		252.37		179.14			272.3	43899
19.White rice #2	0.15	7	213.62							153.73		12362	29488	272.64					194.18		220.29				
CV of CPD residuals by country			0.19	0.21	0.04	0.08	0.08	0.06	0.24	0.19	0.07	0.18	0.35	0.19	0.10	0.08	-	0.11	0.14	0.16	0.20	0.32	0.09	0.18	0.15
N. of items priced by country			17	5	2	3	3	7	6	7	3	6	3	11	3	2	2	6	4	4	5	3	5	6	4

Table 2. Quotes to be collected

Item name	N. of countries pricing item	BAN	BHU	BRU	PRC	FIJ	HKG	INO	IND	IRN	CAM	LAO	SRI	MAC	MLD	MON	MAL	NEP	PAK	PHI	SIN	THA	TAP	VIE	
1.Coarse #3	3																								
2.White rice #3	12																								
3.White rice #4	4																								
4.White rice #5	6																								
5.White rice #6	4																								
6.White rice #7	3																								
7.White rice \$8	5																								
8.White rice #9	4																								
9.White rice #10	5																								
10.Premium rice #1	10	x	x		x		x	x			x			x		x	x					x			
11.Premium rice #2	12																								
12.Premium rice #3	4	x									x												x	x	
13.Premium rice #4	13	x		x		x	x	x	x	x					x		x		x	x	x	x			
14.Coarse #2	3																								
15.Coarse #6	5																								
16.Coarse #5	3																								
17.Brown rice	5	x	x										x								x		x		
18.White rice #1	9	x			x						x		x			x		x		x			x	x	
19.White rice #2	7	x							x		x	x	x					x		x					
TOTAL QUOTES:	48																								
DEVIATION:	8.1%																								

Table 3. Diagnostic table of CPD residuals

Item name	CV of CPD residuals by item	N. of countries pricing item	BAN	BHU	BRU	PRC	FUJ	HKG	INO	IND	IRN	CAM	LAO	SRI	MAC	MLD	MON	MAL	NEP	PAK	PHI	SIN	THA	TAP	VIE	
			Coarse #3																							
White rice #3																										
White rice #4																										
White rice #5																										
White rice #6																										
White rice #7																										
White rice \$8																										
White rice #9																										
White rice #10																										
Premium rice #1	0.13	10	0.27	-0.10		0.07		-0.02	-0.27			0.06					0.00	0.02						-0.03		
Premium rice #2																										
Premium rice #3	0.13	4	0.06									-0.23													0.08	0.09
Premium rice #4	0.14	13	0.01		0.00			0.02	0.27	0.15									-0.02			-0.12	-0.36	0.03		
Coarse #2																										
Coarse #6																										
Coarse #5																										
Brown rice	0.26	5	-0.42	0.10										-0.12											0.09	
White rice #1	0.12	9	0.25			-0.07						0.06		0.08			0.00		0.06		-0.12				-0.17	-0.09
White rice #2	0.13	7	-0.17							-0.15		0.10		0.05					-0.06		0.23					
CV of CPD residuals by country			0.24	0.10	-	0.07	-	0.02	0.27	0.15	-	0.13	-	0.09	-	-	-	0.02	0.06	-	0.17	0.36	0.03	0.12	0.09	
BH CV	0.150																									

SUBREGIONAL COMPARISONS

- Group 1 would include: India, China, Indonesia, Philippines, Thailand, Malaysia, and Vietnam;
 - Group 2 would consist of: Hong Kong, Macao, Singapore, Taiwan, Brunei;
 - Group 3 would include the rest (11 countries).
-
- Group 2 would require no adjustment
 - Group 3 would be adjusted based on their submission for the 2005 round (if there is enough information)
 - Group 1 would require a special exercise that is described below.

CPD

$$\ln p_{cp} = y_{cp} = x_{cp}\beta + \varepsilon_{cp} \quad (1)$$

where p_{cp} - price of product p in country c ;

Dc_j and Dp_i - country and product dummies;

Np and Nc - number of products and countries, respectively;

$$x_{cp} = \left[Dc_2 \dots Dc_{Nc} Dp_1 Dp_2 \dots Dp_{Np} \right] \quad (2)$$

$$\beta = \left[\alpha_2 \dots \alpha_{Nc} \gamma_1 \gamma_2 \dots \gamma_{Np} \right]^T$$

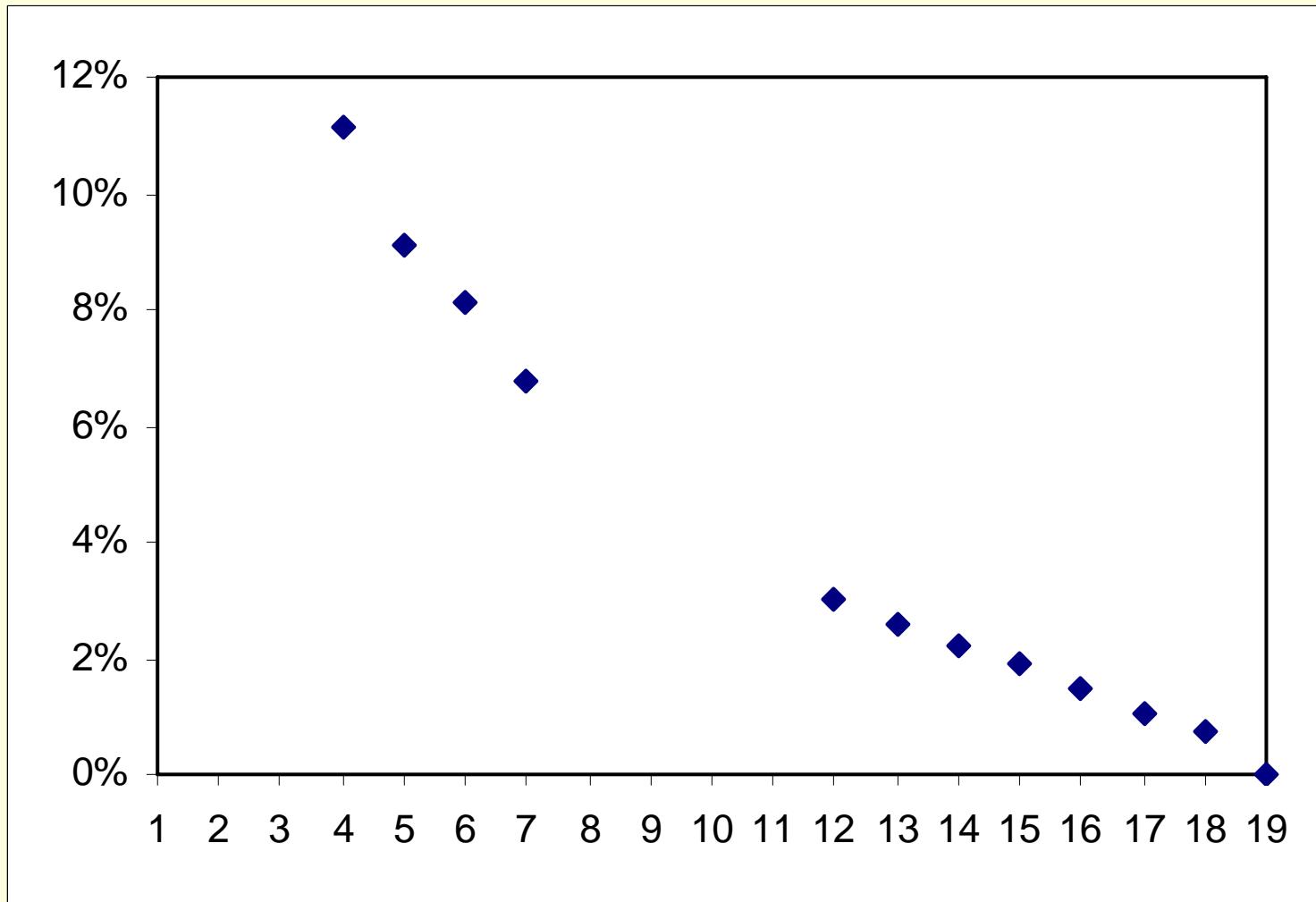
Sub-national [intra-country] PPPs: Case of the Philippines

■ Regional Data Availability Matrix for CPI, the Philippines

PRODUCT_ID	PRODUCT_NAME	Region																
		01	02	03	04	05	06	07	08	09	10	11	12	13	14	16	17	15
1112135	RICE, SPECIAL, KG	x																
1113145	RICE, ORDINARY, KG	x																
1113151	RICE, ORDINARY, NFA, KG	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
1113127	RICE, ORDINARY, GRADE 2, IR-64, RMR, KG		x															
1112152	RICE, SPECIAL, WAG-WAG, KG			x										x				
1113136	RICE, ORDINARY, IR-60, KG			x						x		x						
1113142	RICE, ORDINARY, IR-68, KG			x														
1111115	RICE, FANCY, DINORADO, KG				x	x												
1111117	RICE, FANCY, IR-42, KG				x													
1111121	RICE, FANCY, WAG-WAG, KG				x													
1112120	RICE, SPECIAL, C-4, KG				x	x			x	x	x							x
1112145	RICE, SPECIAL, R-60, KG				x													
1112147	RICE, SPECIAL, SINANDOMENG, KG				x	x												
1112144	RICE, SPECIAL, PREMIUM, KG						x											
1112153	RICE, SPECIAL, WMR, KG							x										
1113159	RICE, ORDINARY, RMR, KG							x										
1112134	RICE, SPECIAL, JOLO, KG								x									
1113126	RICE, ORDINARY, DINORADO, KG								x									x
1112138	RICE, SPECIAL, MANILA RICE, KG									x								
1113157	RICE, ORDINARY, RC-8, KG									x								
1112111	RICE, SPECIAL, 7-TONNER, KG										x							
1112139	RICE, SPECIAL, MASIPAG, KG										x							
1113115	RICE, ORDINARY, BORDAGOL, KG										x		x					
1113143	RICE, ORDINARY, IR-74, KG										x							
1113122	RICE, ORDINARY, C-4, KG											x	x	x	x	x		
1113164	RICE, ORDINARY, VALENCIA, KG											x						
1113112	RICE, ORDINARY, 7-TONNER, KG												x			x		
1112115	RICE, SPECIAL, BORDAGOL, SACK													x				x
1112140	RICE, SPECIAL, MASIPAG, SACK																	x
1113147	RICE, ORDINARY, M-1, SACK																	x
1113163	RICE, ORDINARY, UPI RICE, SACK																	x
1112148	RICE, SPECIAL, SUPER TONNER, KG															x		
1111112	RICE, FANCY, C-64, KG																	x
1113131	RICE, ORDINARY, IR-10, KG																	x

Size of the core list

- Standard deviation of the BH PPP estimates depending on the number of items in the core list



CORE PRODUCT LIST FOR THE 2009 ASIAN REGIONAL UPDATE

The combinatorial approach was applied to the Asian regional product list to arrive at the core product list. 269 products were identified as candidates for the core list. In order to achieve better uniformity among basic headings, an additional criterion was used within each basic heading: if the number of items within the basic heading was too low then all items from that basic heading were included in the core list. In addition, if the *deviation of the normalized BH parities based on the core list from the normalized BH parities based on the full list* was greater than 15% then the number of items from that BH in the core list was increased.

As a result, each country would be required to price from 165 items [Bhutan] to 245 items [Malaysia and Indonesia]. Precision for each BH is presented in the table below, along with precision for the aggregates. Thus, the overall precision for Individual consumption is 1.6% [measured as the CV].

Among individual countries, the highest deviations were in Iran [+3.8%], as well as in Cambodia [-3.3%] and Pakistan [+3.3%], with most countries being within one percent boundaries. Again, those deviations quoted are for unadjusted parities. Once we adjust them for the coefficients from Table 4 or from Table 7, they become zero. Those unadjusted deviations are only here to show what the overall results would be like if the only product list we had were the core product list, and we did not have our 2005 comparison to be the benchmark. As we can see, the overall precision would still be well within the ICP target: it can be estimated that the precision of the ICP exercise is around 5%.