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ABSTRACT

One of the criticisms on the official poverty statistics being compiled by the National Statistical Coordination Board is the issue on the “apparent” non-comparability across space of poverty estimates resulting from the menus. Consistency or comparability of poverty lines is necessary to enable comparison across provinces. Thus, poverty lines for different provinces should indicate the same standard of living. To address the above concerns, the NSCB implemented the project *Improvement of the Provincial Poverty Estimation Methodology* with funding assistance from the World Bank ASEM Technical Assistance on Poverty Monitoring and Analysis. The study came up with provincial menus that satisfy the test of revealed preferences. With all the menus passing the test of revealed preferences, it is assured that the formulated provincial menus are comparable and consistent and can therefore be used to estimate absolute poverty estimates in the country. The resulting food and poverty thresholds derived from the study were generally lower than the official thresholds. However, eight provinces namely, Bulacan, Capiz, Cebu, Negros Oriental, Siquijor, Eastern Samar, Zamboanga del Sur, and Bukidnon, registered higher food thresholds than the official estimates.

This paper assesses the eight provinces that registered higher food poverty thresholds than the official estimates. It will check the consistency of the provincial menus of the eight provinces vis-à-vis those of the other provinces that passed the test of revealed preferences.

I. Background

Consistency or comparability of poverty lines is necessary to enable comparison across provinces. Thus, poverty lines for different provinces should indicate the same standard of living.

One of the most persistent issues raised on the official poverty estimation methodology is the issue on comparability across space. Many suggest that a national menu be used to address the issue. Virola and Encarnacion (2003), however, presented evidences that the use of a national menu or regional menus does not produce a threshold that is equal to or approximates the minimum income needed to satisfy the nutritional requirements, and therefore, leads to invalid food thresholds and incorrect measures of poverty incidence. They maintained that the use of a national menu for all

¹ Director IV, Statistical Coordination Officer III and Statistical Coordination II, respectively, of the National Statistical Coordination Board. The views expressed in this paper are those of the authors and do not necessarily reflect the views of the NSCB.

the provinces or regions would lead to the following conclusions: 1) Food items used in determining the food threshold will not necessarily be low cost; some home-grown commodities in a particular province may be cheaper than the ones identified in the national menu but still satisfy the minimum nutritional requirements; and 2) Food items in the national menu may not necessarily be locally available in a province/region; given the geographical structure of the country, commodities available in one region/island group may not be available in others.

The same conclusion holds if a regional menu is used for all the provinces in that region.

Thus, while the existing official methodology determines the provincial food thresholds by using regional menus and provincial prices, it is worth examining whether the use of provincial menus would yield more valid thresholds. Virola and Encarnacion (2003) asserted that if a provincial menu is used for each province, the food bundle/menu can be constructed to consist of 1) low cost food items; 2) locally available; 3) visualizable; and 4) satisfy the nutritional requirements as prescribed by the FNRI.

Although provincial poverty estimates were initially computed from provincial menus, which were developed thru UNDP-funded project *Development of an Integrated Poverty Monitoring and Indicator System* implemented by the NSCB from 1999 to 2002, these were not released due to some methodological issues that need to be addressed in the methodology as reported by Virola and Encarnacion (2003). Thus, the NSCB Technical Staff was instructed by the NSCB Executive Board to compute the provincial food thresholds using regional menus and henceforth, the first set of official poverty statistics at the provincial level was released on 15 January 2003 covering the years 1997 and 2000.

In line with the Board's instruction to undertake a phased revision of the provincial poverty methodology, it was recommended that improvements be made on the provincial menus by studying their validity.

II. Construction of the Provincial Menus

To address the above concerns, the NSCB implemented the project *Improvement of the Provincial Poverty Estimation Methodology* with funding assistance from the World

Bank ASEM Technical Assistance on Poverty Monitoring and Analysis, which came up with a set of provincial menus.

Provincial differences in population composition, consumption patterns, and availability of cheaper sources of food nutrients were taken into account in the determination of the provincial menus. Starting from a uniform set of age and sex specific Recommended Dietary Allowance (RDA) requirements, differences in population structure translate directly into differences in provincial per capita nutrient requirements.

The following essential requirements were considered in identifying the food items to be included in the provincial menus, namely, that they: 1) are minimum cost; 2) are locally available; 3) satisfy the nutritional requirements; and 4) visualizable. In practice, however, it is difficult to derive a food bundle with minimum cost and an approximation is derived by using low-cost instead of minimum-cost food items.

The initial validation/formulation of the provincial menus was done by starting with a nationally-representative reference menu (Table 1) that is simple, potentially least-cost and one that reflects the meal pattern of a poor household. Food items are allowed to vary across provinces depending on their cost and availability in the province.

Table 1. National Reference Menu

Reference Menu	Food Item	Indicative weight (in gms) ¹
Breakfast		
Scrambled egg	Itlog, manok, buo	48 <i>(wt. of 1 med sized egg)</i>
Coffee with milk	Instant coffee	1
Boiled rice/corn	Gatas, pulbos, filled, instant	5
Lunch		
[Boiled/sautéed/ginataang] monggo with malunggay and dried dilis	Munggo, buto, berde, tuyo Malunggay Dried dilis	35 25-35 20-30
[Banana]	Latundan/Lakatan	65 <i>(wt of 1 med -sized lakatan)</i>
Boiled rice		
Supper		
Fried [fish]/boiled pork	Bangus/galunggong/tulingan/mat ambaka/tilapia/sapsap/tambakol/flying fish/aloy/Baboy, liempo	50 - 55 <i>(wt of a med -sized fish)</i> 50

Reference Menu	Food Item	Indicative weight (in gms) ¹
[Vegetable] dish Boiled rice	[Kangkong/kamote tops/saluyot/ alugbati/pechay/sayote leaves]	85-100 (wt of 1- 1 1/4 hh cup of all other veg, raw wt)
Snack Bread or boiled [saba/rootcrop]	Pan de sal or cassava/kamote/ saba	30 (med sized pan de sal)/ 120-190 (kamote/cassava)/ 150-200 (saba)
	Bigas, puti Mais, durog, puti Langis, niyog Asukal, pula Kakang gata Asin, magaspang Bawang Sibuyas Luya	360 (raw wt) 210 15 10 5 7 2 5 5

1- Based on the range of usual intakes of households who consume these items, with consideration of households in the 2nd income quintile and all households regardless of income class

III. Consistency Check of Provincial Menus

Consistency of provincial menus was evaluated through the test of revealed preferences.

In essence, the theory of revealed preferences says that the preferences of consumers is revealed by their actual behavior in purchasing goods and services. The conception of poverty in the consumption approach is the non-fulfillment of basic preferences. The 'preference' part stems from the fact that consumer preferences, as revealed by consumer choices (***revealed preference theory***), are the informational source from which levels of well-being and poverty are derived.

A simple procedure for assessing the consistency of poverty lines based on longstanding ideas on the use of quantity indices in computing alternative price and quantity combinations, and invoking the theory of revealed preference is outlined in this section. The reader is referred to Ravallion and Lokshin (2003) for a more detailed discussion as well as the underlying economic theory behind the utility consistency of poverty lines.

To illustrate how to decide whether a set of poverty lines is utility consistent, we take two provinces, say, A and B, each of which has a poverty line, which is the cost in that province of pre-specified bundles of goods specific to each province. Assuming identical preferences in the two provinces, a straightforward revealed preference test is applied. This requires that the poverty line for A is no greater than the cost in province A of B's bundle. Otherwise, if the bundle in B is more affordable when A was chosen, this implies that B should have been the preferred bundle. Similarly, the province B poverty line cannot be greater than the cost in that province of the bundle for A.

To outline the test formally, let $q_i = (q^1, q^2, \dots, q^m)$ be the m -vector giving the poverty bundle for province $i = 1, 2, \dots, n$ and p_i be the corresponding vector of prices. The poverty line in province i may then be denoted as $z_i = p_i q_i$, while the cost of j 's bundle using i 's prices is denoted by $p_i q_j$.

We define the $n \times n$ quantity-index matrix \mathbf{Q} by:

$$Q_{ij} = \frac{p_i q_j}{p_i q_i}$$

The \mathbf{Q} matrix is used to compare the poverty bundles across provinces; the higher Q_{ij} is, the higher the value of the poverty bundle for province j when judged by its cost in province i . The quantity index ranks poverty bundles across provinces conditional on the price relatives. So the key testable implication of consistent poverty lines across the full set of preferences is that none of the elements of the \mathbf{Q} matrix should be below unity. If consistency is rejected, the original bundles can be re-designed to pass the test.

According to Ravallion and Lokshin (2003), some relaxation of the test criterion is warranted to account for errors. There is no way of calculating standard errors for the \mathbf{Q} matrix since there is no explicit sampling or parameter estimation involved. The best thing to do is to test sensitivity to relaxing the test criterion, say, 0.95. If the test is passed using the relaxed criterion, *that is, Q_{ij} is greater than 0.95*, then consistency of poverty lines may be accepted.

A summary statistic for the value of the poverty line of each province is given by the mean quantity index calculated by taking the simple average across rows for each column of the Q matrix. This index is written as:

$$\bar{Q}_j = \sum_{i=1}^n Q_{ij} / n$$

Finding that $\bar{Q}_j > \bar{Q}_k$ means that poverty bundle j dominates k at least partially (for some price relatives in P), though not necessarily fully.

IV. Results

The test of revealed preferences, as outlined in the previous section, was applied to the provincial food thresholds as estimated from the application of the proposed provincial menus [Florentino, 2006].

1. Results of initial produced menus

Tables 2 and 3 illustrate the matrix of urban food thresholds and quantity indices for selected provinces. As can be gleaned from Table 2, there are provinces having cheaper or more affordable menus than Bulacan and Capiz, when priced in these two areas, as shown by provinces with lower food thresholds. Results of consistency test for the two provinces are summarized in Table 3, which shows that there are 42 and 35 provinces, respectively, having indices lower than 1, thus failing the test of revealed preference. In contrast, the initial menu for Negros Oriental, on the other hand, passed the consistency test as indicated by its zero failed test.

Table 2. Food thresholds for selected provinces in URBAN areas, 2000

PRICE	MENU							
	Bulacan	Capiz	Negros Oriental	Ilocos Sur			Surigao Del Norte	Surigao Del Sur
Bulacan	9,467	9,864	9,301	9,682	.....	.....	8,912	9,152
Capiz	8,115	8,428	8,627	7,796	.....	.....	8,433	8,735
Negros Oriental	7,253	7,685	6,943	7,509	.....	.....	7,045	7,120

Table 3. Matrix of Laspeyres quantity indices for selected provinces in URBAN areas, 2000

PRICE	No. of Failed Tests (no. of provinces test fails)	MENU						
		Bulacan	Capiz	Negros Oriental	Ilocos Sur		Surigao Del Norte	Surigao Del Sur
Bulacan	42	1.0000	1.0420	0.9825	1.0227	....	0.9414	0.9667
Capiz	35	0.9628	1.0000	1.0236	0.9250	....	1.0006	1.0364
Negros Oriental	0	1.0447	1.1070	1.0000	1.0816	....	1.0147	1.0256

Consistency of food thresholds across the full set of preferences (prices) is rejected for both urban and rural areas as indicated by the presence of indices that are greater than one, $Q_{ij} < 1$ for some (i, j) 's.

For urban areas, only 9 out of 80 menus passed the consistency test or registered zero failed test, namely Ilocos Sur, Cavite, Antique, Negros Oriental, Western Samar, Bukidnon, Davao del Sur, Mountain Province and Sulu.

Provincial menus that passed the consistency test for the urban areas are also the menus that passed the consistency test in the rural areas, with the addition of Northern Samar and Surigao del Sur.

2. Adjustments in/revision of the provincial menus to achieve consistency

The more practical and straightforward way to pass the test is by re-designing the original menus of those provinces for which consistency is rejected. "Re-designing" involves either of the following: (a) adjustment only of the weights but not the composition of the food items in the menu, and at the same time still satisfying the nutritional standard and making sure that the adjusted weights are still within reasonable/acceptable range; and (b) revision of the composition of the food items in the menu.

To achieve consistency, revisions were thus done for Bulacan and Capiz Menus as given in Tables 4 and 5. Adjustments in the weight of food items in Bulacan and Capiz

menus were initially done. However, the least cost arrived at were still higher than the cost of Surigao del Norte and Ilocos Sur menus, respectively. Thus, revision in the composition of food items in the menus of the two provinces was unavoidable. The final option was to adopt the menus of Surigao del Norte for Bulacan and Ilocos Sur for Capiz.

Table 4. Original, adjusted and cheapest menu for Bulacan

BULACAN MENU APPLIED TO BULACAN				CHEAPEST MENU (Surigao del Norte) APPLIED TO BULACAN*		
Menu	Ingredients	A.P. WT.		Menu	Ingredients	A.P. WT.
		Original	Adjusted			
Breakfast				Breakfast		
Scrambled Egg	Saging, latundan	65	65	Scrambled Egg	Saging, latundan	65
Boiled Rice	Itlog, manok, buo	48	48	Boiled Rice	Itlog, manok, buo	48
Coffee w/ milk	Coffee, instant	1	1	Coffee w/ milk	Coffee, instant	1
Lunch				Lunch		
	Gatas, pulbos, filled, instant	5	5		Gatas, pulbos, filled, instant	5
Boiled Mongo w. Malunggay leaves and dried dilis	Asukal pula	10	10	Boiled Mongo w. Malunggay leaves and dried dilis	Asukal pula	10
	Dilis, tuyo	30	25		Dilis, tuyo	25
	Galunggong	54	50		Tulingan	54
Boiled Rice	Munggo, buto, berde, tuyo	35	35	Boiled Rice	Munggo, buto, berde, tuyo	35
	Malunggay, dahon	35	35		Malunggay, dahon	33
Banana				Banana		
Supper				Supper		
	Kangkong	85	99		Kamote dahon	85
Fried Galunggong	Asin, magaspang	7	7	Fried Tulingan	Asin, magaspang	7
Boiled Kangkong	Cooking oil	15	15	Boiled Camote tops	Langis, niyog	15
Boiled Rice	Bigas, maputi	360	360	Boiled Rice	Bigas, maputi	360
Snack				Snack		
	Banana, saba	150	150		Kamoteng kahoy	120
Boiled Saba				Boiled Cassava		
Total weight		900	905	Total weight		863
Total cost (URBAN)		9,467	9,298	Total cost (URBAN)		8,912

BULACAN MENU APPLIED TO BULACAN				CHEAPEST MENU (Surigao del Norte) APPLIED TO BULACAN*		
Menu	Ingredients	A.P. WT.		Menu	Ingredients	A.P. WT.
		Original	Adjusted			
Total cost (RURAL)				Total cost (RURAL)		
8,935				8,766		
8,935				8,766		
% ENERGY/NUTRIENT ADEQUACY						
	Energy	101	100		Energy	104
	Protein	127	121		Protein	128
	Calcium	153	137		Calcium	138
	Iron	81	81		Iron	80
	Vitamin A	134	140		Vitamin A	151
	Thiamin	81	82		Thiamin	88
	Riboflavin	80	80		Riboflavin	80
	Niacin	239	228		Niacin	253
	Vitamin C	158	162		Vitamin C	187

* Proposed revised menu for Bulacan

Table 5. Original, adjusted and cheapest menu for Capiz

CAPIZ MENU APPLIED TO CAPIZ				CHEAPEST MENU (Ilocos Sur) APPLIED TO CAPIZ		
Menu	Ingredients	A.P. WT.		Menu	Ingredients	A.P. WT.
		Original	Adjusted			
Breakfast				Breakfast		
Scrambled Egg	Saging, latundan	65	65	Scrambled Egg	Saging, latundan	65
Boiled Rice	Itlog, manok, buo	48	48	Boiled Rice	Itlog, manok, buo	48
Coffee w/ milk	Coffee, instant	1	1	Coffee w/ milk	Coffee, instant	1
Lunch				Lunch		
	Gatas, pulbos, filled, instant	5	5		Gatas, pulbos, filled, instant	5
Ginataang Mongo w/ Malunggay leaves and dried dilis	Asukal pula	10	10	Boiled Mongo w/ Malunggay leaves and dried dilis	Asukal, pula	10
	Dilis, tuyo	30	27		Dilis, tuyo	20
	Sapsap	54	55		Tulingan	54
Boiled Rice	Munggo, buto, berde, tuyo	35	35	Boiled Rice	Munggo, berde, buto, tuyo	35
Banana	Malunggay, dahon	33	35	Banana	Malunggay, dahon	30
Supper				Supper		
	Kangkong	100	100		Saluyot	85
Fried Sapsap	Kakang gata	5	5	Fried Tulingan	Asin magaspang	7
Boiled Kangkong	Asin, magaspang	7	5	Boiled Saluyot	Langis, niyog	15

Boiled Rice	Langis, niyog	10	10	Boiled Rice	Bigas, maputi	360
Snack	Bigas, maputi	360	360	Snack	Pandesal	30
Boiled Saba	Saging, saba	200	200	Pandesal		
	Bawang	2	2			
	Sibuyas	5	5			
Total weight		763	761	Total weight		765
Total cost (URBAN)		8,428	8,329	Total cost (URBAN)		7,796
Total cost (RURAL)		8,048	7,945	Total cost (RURAL)		7,491

% ENERGY/NUTRIENT ADEQUACY

Energy	101	101	Energy	100
Protein	129	125	Protein	126

% ENERGY/NUTRIENT ADEQUACY

Calcium	152	143	Calcium	132
Iron	84	83	Iron	89
Vitamin A	139	142	Vitamin A	168
Thiamin	81	81	Thiamin	89
Riboflavin	80	80	Riboflavin	80
Niacin	226	221	Niacin	248
Vitamin C	174	178	Vitamin C	134

3. Results for adjusted/ revised provincial menus

Revisions in the Bulacan and Capiz menus, thus resulted to passing the consistency test as illustrated in Table 6.

Table 6. Matrix of Laspeyre's quantity indices based on adjusted menus (URBAN, 2000)

PRICE	No. of Failed Tests (no. of provinces test fails)	MENU						
		Bulacan	Capiz	Negros Oriental	Ilocos Sur		Surigao Del Norte	Surigao Del Sur
Bulacan	0	1.0000	1.1068	1.0436	1.0864	....	1.0000	1.0268
Capiz	0	1.0427	1.0000	1.1085	1.0018	....	1.0836	1.1224
Negros Oriental	0	1.0447	1.1070	1.0000	1.0816	....	1.0147	1.0256

For urban areas, adjustment/revision of menus resulted in 76 out of the 80 menus completely passing the consistency test. For rural areas, adjustment/revision of menus resulted in 61 out of the 80 menus completely passing the consistency test.

4. Poverty estimates from the proposed provincial menus

Poverty statistics were likewise computed out of the food thresholds derived from costing the provincial menus that passed the test of revealed preferences.

5. Summary

Results prove that the provincial menus of the Philippines can be constructed to satisfy the test of revealed preferences.

Although overall consistency was initially rejected, with only 9 provinces passing the initial test, revision of the menus by either adjusting the weights of the original menu or by changing the composition of the food items, greatly improved the consistency of the provincial menus. While the revised menus produced some Q_j 's that are less than 1.00, these were very close to unity with none of the indexes falling below 0.98 for the urban areas and 0.95 for the rural areas. In fact, using the revised menus, consistency test was passed for 6,315 out of the 6320 possible pairwise comparisons (equivalent to 99.9 percent) for urban areas and 6,209 out of 6,241 pairwise comparisons for rural areas (99.5 percent).

With the menus passing the test of revealed preferences, it is assured that the formulated provincial menus are comparable and consistent and can therefore be used to estimate absolute poverty estimates in the country.

The resulting food and poverty thresholds derived from the study were generally lower than the official thresholds. However, eight provinces namely, Bulacan, Capiz, Cebu, Negros Oriental, Siquijor, Eastern Samar, Zamboanga del Sur, and Bukidnon, registered higher food thresholds than the official estimates (Table 10).

V. Assessment of the Provincial Menus of the Eight Provinces

The comparison of proposed provincial menus and regional menus, which is currently being used in the generation of official estimates, is shown in Tables 7a and 7b. It can be noted that provincial menus are more standardized and consistent across provinces than the regional menus.

Table 7a: Comparison of Proposed Provincial Menus and Regional Menus, URBAN

Province	Regional Menu (Urban)		Proposed Provincial Menu	
	Ingredients	A.P. wt	Ingredients	A.P. wt
Bulacan	Rice, White,ordinary	355	Bigas, maputi	360
	Pandesal	35	Banana, saba	150
	Sugar, white	25	Asukal pula	10
	Cooking Oil	17	Langis, niyog	15
	Margarine	7		
	Egg, chicken	20	Itlog, manok, buo	48
	Milk, filled, evap.	33	Gatas, pulbos, filled, instant	5
	Galunggong	49	Galunggong	54
	Small shrimps	10	Dilis, tuyo	30
	Pork, liver	5		
	Pork, liempo	15		
	Munggo, green	15	Munggo, buto, berde, tuyo	35
	Tomatoes	40		
	Kamote tops	80	Kangkong	85
	Eggplant	22	Malunggay, dahon	35
	Papaya, ripe	62	Saging, latundan	65
	Onion	5		
	Garlic	1		
	Salt	5	Asin, magaspang	7
	Coffee, soluble	1	Coffee, instant	1
	Sili, bell	6		
	Vinegar, coconut	5		
Capiz	Rice, White,ordinary	360	Bigas, maputi	360
	Pandesal	30	Saging, saba	200
	Sugar, white	15	Asukal pula	10
	Cooking Oil	20	Langis, niyog	15
	Margarine	8		
	Egg, Chicken	17	Itlog, manok, buo	48
	Milk, filled, evap.	33	Gatas, pulbos, filled, instant	5
	Bangus	22	Sapsap	54
	Small Shrimp	15	Dilis, tuyo	30
	Chicken, liver	10		
	Chicken,breast	12		
	Munggo, green	15	Munggo, buto, berde, tuyo	35
	Tomatoes	40		
	Kamote, yellow	45		
	Alugbati	47	Kangkong	100
	Eggplant	22	Malunggay, dahon	30
	Banana, latundan	68	Saging, latundan	65
	Onion	5		
	Garlic	1		
	Salt	5	Asin, magas pang	7
Coffee, soluble	1	Coffee, instant	1	

Province	Regional Menu (Urban)		Proposed Provincial Menu		
	Ingredients	A.P. wt	Ingredients	A.P. wt	
Cebu	Rice, White, ordinary	355	Bigas, maputi	360	
	Cassava	135	Saging, saba	150	
	Sugar, brown	12	Asukal pula	10	
	Cooking Oil	15	Langis, niyog	15	
	Coconut, matured	107			
	Munggo, green	10	Munggo, buto, berde, tuyo	35	
	Milk, filled, evap.	33	Gatas, pulbos, filled, instant	5	
	Dilis, dried	12	Dilis, tuyo	30	
	Pork, pig	10			
	Pork, liver	12			
	Tulingan	21	Tulingan	54	
	Malunggay leaves	9	Malunggay, dahon	30	
	Kangkong	34	Kamote, dahon	85	
	Tomatoes	20			
	Eggplant	22			
	Banana, lakatan	58	Saging, latundan	65	
	Onion	5			
	Garlic	1			
	Vinegar	5			
	Toyo	5			
	Salt	5	Asin, magaspang	7	
	Coffee, soluble	1	Coffee, instant	1	
	Margarine	6			
			Itlog, manok, buo	48	
	Negros Oriental	Rice, White, ordinary	355	Bigas, maputi	360
		Cassava	135	Saging, saba	150
Sugar, brown		12	Asukal pula	10	
Cooking Oil		15	Langis, niyog	15	
Coconut, matured		107			
Munggo, green		10	Munggo, buto, berde, tuyo	35	
Milk, filled, evap.		33	Gatas, pulbos, filled, instant	5	
Dilis, dried		12	Dilis, tuyo	30	
Pork, pig		10	Galunggong	54	
Pork, liver		12			
Tulingan		21			
Malunggay leaves		9	Malunggay, dahon	35	
Kangkong		34	Kangkong	85	
Tomatoes		20			
Eggplant		22			
Banana, lakatan		58	Saging, latundan	65	
Onion		5			
Garlic		1			
Vinegar		5			
Toyo		5			
Salt		5	Asin, magaspang	7	
Coffee, soluble		1	Coffee, instant	1	
Margarine		6			
			Itlog, manok, buo	48	

Province	Regional Menu (Urban)		Proposed Provincial Menu	
	Ingredients	A.P. wt	Ingredients	A.P. wt
Siquijor	Rice, White, ordinary	355	Bigas, maputi	360
	Cassava	135	Pandesal	30
	Sugar, brown	12	Asukal pula	10
	Cooking Oil	15	Langis, niyog	15
	Coconut, matured	107		
	Munggo, green	10	Munggo, buto, berde, tuyo	35
	Milk, filled, evap.	33	Gatas, pulbos, filled, instant	5
	Dilis, dried	12	Dilis, tuyo	25
	Pork, pig	10		
	Pork, liver	12		
	Tulingan	21	Tulingan	54
	Malunggay leaves	9	Malunggay, dahon	30
	Kangkong	34	Kangkong	85
	Tomatoes	20		
	Eggplant	22		
	Banana, lakatan	58	Saging, latundan	65
	Onion	5		
	Garlic	1		
	Vinegar	5		
	Toyo	5		
	Salt	5	Asin, magaspang	7
	Coffee, soluble	1	Coffee, instant	1
	Margarine	6		
		Itlog, manok, buo	48	
Eastern Samar	Rice, White, Ordinary	360	Bigas, maputi	360
	Pandesal	40	Pandesal	30
	Sugar, brown	12	Asukal pula	10
	Cooking, Oil	17	Langis, niyog	15
	Margarine	7		
	Coconut, mature	107		
	Milk, filled, evap.	33	Gatas, pulbos, filled, instant	5
	Galunggong	29		
	Alumahan	16	Sapsap	54
	Tulingan	16		
	Bagoong, alamang	10		
	Pork, liver	10	Dilis, tuyo	30
	Munggo, green	10	Munggo, buto, berde, tuyo	35
	Papaya, ripe	94	Saging, lakatan	65
	Tomatoes	30		
	Malunggay, leaves	9	Malunggay, dahon	30
	Langka, unripe	133		
	Garlic	1		
	Onion	5		
	Salt	5	Asin, magaspang	7
	Coffee, soluble	1	Coffee, instant	1
			Itlog, manok, buo	48
			Kamote, dahon	100
Zamboanga del Sur	Rice, White, ordinary	350	Bigas, maputi	360

Province	Regional Menu (Urban)		Proposed Provincial Menu	
	Ingredients	A.P. wt	Ingredients	A.P. wt
	Pandesal	25	Pandesal	30
	Sugar, white	10	Asukal pula	10
	Cooking Oil	10	Langis, niyog	15
	Margarine	7		
	Coconut, mature	150		
	Egg, Chicken	25	Itlog, manok, buo	48
	Tulingan	25	Galunggong	54
	Milk, filled, evap.	20	Gatas, pulbos, filled, instant	5
	Small shrimps	8	Dilis, tuyo	30
	Chicken, liver	5		
	Chicken, breast	50		
	Munggo, green	10	Munggo, buto, berde, tuyo	35
	Tomatoes	30		
	Papaya, ripe	55	Saging, lakatan	65
	Eggplant	20		
	Malunggay, leaves	10	Malunggay, dahon	35
	Sayote	35	Kangkong	85
	Onion	5		
	Garlic	1		
	Salt	5	Asin, magaspang	7
	Coffee, soluble	1	Coffee, instant	1
Bukidnon	Rice, White, ordinary	360	Bigas, maputi	360
	Cassava	209	Saging, saba	150
	Sugar, white	10	Asukal pula	10
	Cooking Oil	10	Langis, niyog	15
	Margarine	8		
	Egg, Chicken	23	Itlog, manok, buo	48
	Milk, filled, evap.	33	Gatas, pulbos, filled, instant	5
	Alumahan	40	Tulingan	54
	Small shrimps	15	Dilis, tuyo	20
	Pork, liver	10		
	Pork liempo	17		
	Munggo, green	13	Munggo, buto, berde, tuyo	35
	Tomatoes	20		
	Patola	56		
	Upo	60	Alugbati	85
	Eggplant	27	Malunggay, dahon	20
	Onion	5		
	Garlic	1		
	Salt	5	Asin, magaspang	7
	Coffee, soluble	1	Coffee, instant	1
	Banana, latundan	68	Saging, latundan	65
	Ginger	14		

Table 7b: Comparison of Proposed Provincial Menus and Regional Menus, RURAL

Province	Regional Menu (Rural)		Proposed Provincial Menu	
	Ingredients	A.P. wt	Ingredients	A.P. wt
Bulacan	Rice, White,ordinary	360	Bigas, maputi	360
	Kamote, yellow	131	Banana, saba	150
	Sugar, white	20	Asukal pula	10
	Cooking Oil	20	Langis, niyog	15
	Margarine	7		
	Dalagang Bukid	20	Galunggong	54
	Dilis dried	12	Dilis, tuyo	30
	Bangus	22		
	Milk filled, evap.	33	Gatas, pulbos, filled, instant	5
	Pork, liver	12	Itlog, manok, buo	48
	Bagoong Alamang	7		
	Malunggay leaves	9	Malunggay, dahon	35
	Squash, fruit	35	Kangkong	85
	Sitao	32		
	Tomatoes	20		
	Munggo, green	10	Munggo, buto, berde, tuyo	35
	Onion	5		
	Garlic	1		
	Banana, latundan	75	Saging, latundan	65
	Salt	5	Asin, magaspang	7
Coffee, soluble	1	Coffee, instant	1	
Capiz	Rice, White,ordinary	360	Bigas, maputi	360
	Cassava, tuber	122	Saging, saba	200
	Sugar, brown	15	Asukal pula	10
	Cooking Oil	12	Langis, niyog	15
	Margarine	6		
	Tulingan	24	Dilis, tuyo	30
	Bangus	24	Sapsap	54
	Milk, filled, evap.	33	Gatas, pulbos, filled, instant	5
	Pork, liver	15		
	Galunggong	49		
	Bagoong, isda	5		
	Bagoong, alamang	10		
	Squash, fruit	35		
	Sitao	22	Munggo, buto, berde, tuyo	35
	Tomatoes	40	Malunggay, dahon	30
	Langka, unripe	83	Kangkong	100
	Onion	5		
	Garlic	1		
	Banana, bungulan	75	Saging, latundan	65
	Coconut mature	143		
Salt	5	Asin, magaspang	7	

Province	Regional Menu (Rural)		Proposed Provincial Menu	
	Ingredients	A.P. wt	Ingredients	A.P. wt
	Coffee	1	Coffee, instant	1
			Itlog, manok, buo	48
Cebu	Corn meal, Yellow	350	Bigas, maputi	360
	Cassava	135	Saging, saba	150
	Sugar, brown	20	Asukal pula	10
	Cooking Oil	20	Langis, niyog	15
	Dilis, fresh	20	Dilis, tuyo	30
	Tulingan	32	Tulingan	54
	Milk, filled, evap.	33	Gatas, pulbos, filled, instant	5
	Pork, liver	5		
	Pork, pigji	15		
	Kamyas	10	Kamote, dahon	85
	Coconut, mature	143		
	Tomatoes	15		
	Malunggay, leaves	9	Malunggay, dahon	30
	Langka, unripe	67		
	Vinegar, coconut	5		
	Banana, lakatan	58	Saging, latundan	65
	Onion	5		
	Squash, fruit	42	Munggo, buto, berde, tuyo	35
	Bagoong, alamang	5		
	Ginger	7		
	Salt	5	Asin, magaspang	7
	Coffee, soluble	1	Coffee, instant	1
			Itlog, manok, buo	48
Negros Oriental	Corn meal, Yellow	350	Bigas, maputi	360
	Cassava	135	Saging, saba	150
	Sugar, brown	20	Asukal pula	10
	Cooking Oil	20	Langis, niyog	15
	Dilis, fresh	20	Dilis, tuyo	30
	Tulingan	32	Galunggong	54
	Milk, filled, evap.	33	Gatas, pulbos, filled, instant	5
	Pork, liver	5		
	Pork, pigji	15		
	Kamyas	10		
	Coconut, mature	143		
	Tomatoes	15		
	Malunggay, leaves	9	Malunggay, dahon	35
	Langka, unripe	67	Munggo, buto, berde, tuyo	35
	Vinegar, coconut	5		
	Banana, lakatan	58	Saging, latundan	65
	Onion	5		
	Squash, fruit	42	Kangkong	85
	Bagoong, alamang	5		
	Ginger	7		
	Salt	5	Asin, magaspang	7
	Coffee, soluble	1	Coffee, instant	1
			Itlog, manok, buo	48

Province	Regional Menu (Rural)		Proposed Provincial Menu	
	Ingredients	A.P. wt	Ingredients	A.P. wt
Siquijor	Corn meal, Yellow	350	Bigas, maputi	360
	Cassava	135	Pandesal	30
	Sugar, brown	20	Asukal pula	10
	Cooking Oil	20	Langis, niyog	15
	Dilis, fresh	20	Dilis, tuyo	25
	Tulingan	32	Tulingan	54
	Milk, filled, evap.	33	Gatas, pulbos, filled, instant	5
	Pork, liver	5		
	Pork, pigi	15		
	Kamyas	10		
	Coconut, mature	143		
	Tomatoes	15		
	Malunggay, leaves	9	Malunggay, dahon	30
	Langka, unripe	67		
	Vinegar, coconut	5		
	Banana, lakatan	58	Saging, latundan	65
	Onion	5		
	Squash, fruit	42	Munggo, buto, berde, tuyo	35
	Bagoong, alamang	5		
	Ginger	7		
Salt	5	Asin, magaspang	7	
Coffee, soluble	1	Coffee, instant	1	
		Itlog, manok, buo	48	
		Kangkong	85	
Eastern Samar	Rice, white, ordinary	360	Bigas, maputi	360
	Kamote, yellow	91	Pandesal	30
	Sugar, brown	12	Asukal pula	10
	Cooking Oil	15	Langis, niyog	15
	Margarine	6		
	Dilis, dried	10	Dilis, tuyo	30
	Tulingan	16	Sapsap	54
	Milk, filled, evap.	33	Gatas, pulbos, filled, instant	5
	Pork, liver	10		
	Galunggong	24		
	Coconut, mature	143		
	Patola	56	Malunggay, dahon	30
	Kangkong	69	Kamote, dahon	100
	Squash, fruit	42		
	Tomatoes	40		
	Munggo, green	10	Munggo, buto, berde, tuyo	35
	Banana, bungulan	75	Saging, lakatan	65
	Onion	5		
	Garlic	1		
Salt	5	Asin, magaspang	7	
Coffee, soluble	1	Coffee, instant	1	
		Itlog, manok, buo	48	
Zamboanga del Sur	Rice white ordinary	360	Bigas, maputi	360

Province	Regional Menu (Rural)		Proposed Provincial Menu	
	Ingredients	A.P. wt	Ingredients	A.P. wt
	Cassava	135	Pandesal	30
	Sugar, brown	25	Asukal pula	10
	Margarine	7		
	Cooking oil	15	Langis, niyog	15
	Milk, filled, evap. Carnation	30	Gatas, pulbos, filled, instant	5
	Tulingan	40	Galunggong	54
	Dalagang Bukid	35	Dilis, tuyo	30
	Bagoong, isda	10		
	Bagoong, alamang	10		
	Chicken liver	5		
	Banana, lakatan	75	Saging, lakatan	65
	Ampalaya, fruit	20	Kangkong	85
	Squash, fruit	23		
	Sitao	30		
	Tomatoes	20		
	Munggo, green	15	Munggo, buto, berde, tuyo	35
	Malungay, leaves	15	Malunggay, dahon	35
	Onion	3		
	Garlic	1		
	Eggplant	33		
	Salt	5	Asin, magaspang	7
	Coffee, soluble	1	Coffee, instant	1
			Itlog, manok, buo	48
Bukidnon	Rice, White, ordinary	360	Bigas, maputi	360
	Cassava	135	Saging, saba	150
	Sugar, white	15	Asukal pula	10
	Margarine	7		
	Cooking Oil	22	Langis, niyog	15
	Milk, filled, evap.	33	Gatas, pulbos, filled, instant	5
	Galunggong	61	Tulingan	54
	Tamban	48		
	Tagunton	12	Dilis, tuyo	20
	Bagoong, isda	10		
	Pork, liver	12		
	Banana, bungulan	75	Saging, latundan	65
	Malunggay, leaves	13	Malunggay, dahon	20
	Sitaw	38	Alugbati	85
	Tomatoes	20		
	Munggo, green	10	Munggo, buto, berde, tuyo	35
	Onion	5		
	Garlic	1		
	Eggplant	33		
	Salt	5	Asin, magaspang	7
	Coffee, soluble	1	Coffee, instant	1
			Itlog, manok, buo	48

The cost of the provincial menus (both for urban and rural) of the eight provinces vis-à-vis other provinces is displayed in Tables 8a and 8b. The resulting costs were lower compared to the other 79 provinces. The corresponding Q matrix of Laspeyres quantity indices for urban and rural areas for the eight provinces, on the other hand, is shown in Tables 9a and 9b. As **Q** indices for the eight provinces is equal to one and as there is no observed indices for the other provinces lower than one, it can therefore be concluded that the menus passed the consistency test.

Table 8a: Food thresholds by province for URBAN areas based on ADJUSTED menus, 2000

PRICE	MENU									
	Bulacan	Capiz	Cebu	Negros Oriental	Siquijor	Eastern Samar	Zamboanga del Sur	Bukidnon	....	Surigao Del Sur
	(12)	(35)	(40)	(41)	(42)	(43)	(50)	(52)	....	(80)
Bulacan	8,912	9,864	9,772	9,301	9,094	9,659	9,612	9,175	....	9,152
Capiz	8,115	7,782	8,306	8,627	7,951	9,386	8,297	7,967	....	8,735
Cebu	7,776	7,887	7,114	7,820	7,955	7,862	8,005	7,783	....	7,934
Negros Oriental	7,253	7,685	7,304	6,943	7,572	7,776	7,669	7,002	....	7,120
Siquijor	7,943	8,074	7,757	7,841	7,482	8,039	8,025	7,485	....	7,812
Eastern Samar	8,519	8,701	8,769	8,231	8,274	7,793	8,486	8,240	....	8,223
Zamboanga del Sur	6,979	7,259	7,449	6,715	7,177	7,011	6,563	7,077	....	7,016
Bukidnon	7,731	7,842	7,502	7,419	7,729	8,019	8,293	7,118	....	7,167

Table 8b: Food thresholds by province for RURAL areas based on ADJUSTED menus, 2000

PRICE	MENU									
	Bulacan	Capiz	Cebu	Negros Oriental	Siquijor	Eastern Samar	Zamboanga del Sur	Bukidnon	....	Surigao Del Sur
	(12)	(35)	(40)	(41)	(42)	(43)	(50)	(52)	....	(80)
Bulacan	8,418	9,291	9,089	8,768	8,705	9,235	9,187	8,638	....	8,634
Capiz	7,772	7,443	7,820	8,232	7,653	8,974	7,981	7,615	....	8,330
Cebu	7,437	7,534	6,705	7,474	7,698	7,634	7,753	7,444	....	7,580
Negros Oriental	6,930	7,315	6,847	6,636	7,323	7,523	7,418	6,679	....	6,785
Siquijor	7,599	7,700	7,293	7,492	7,200	7,742	7,711	7,160	....	7,460
Eastern Samar	8,124	8,277	8,209	7,847	7,910	7,489	8,105	7,872	....	7,827
Zamboanga del Sur	6,682	6,929	6,986	6,425	6,931	6,821	6,323	6,737	6,682

Bukidnon	7,408	7,504	7,074	7,103	7,526	7,818	8,051	6,815	6,860
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**Table 9a: Matrix of Laspeyre's quantity indices based on adjusted menus
(URBAN, 2000)**

PRICE	No. of Failed Tests (no. of provinces test fails)	MENU									
		Bulacan	Capiz	Cebu	Negros Oriental	Siquijor	Eastern Samar	Zamboanga del Sur	Bukidnon	....	Surigao Del Sur
		(12)	(35)	(40)	(41)	(42)	(43)	(50)	(52)	....	(80)
Bulacan	0	1.0000	1.1068	1.0965	1.0436	1.0204	1.0838	1.0785	1.0295	....	1.0268
Capiz	0	1.0427	1.0000	1.0673	1.1085	1.0216	1.2061	1.0661	1.0237	....	1.1224
Cebu	0	1.0931	1.1087	1.0000	1.0993	1.1183	1.1052	1.1253	1.0940	....	1.1153
Negros Oriental	0	1.0447	1.1070	1.0521	1.0000	1.0906	1.1201	1.1046	1.0085	....	1.0256
Siquijor	0	1.0617	1.0791	1.0369	1.0481	1.0000	1.0746	1.0727	1.0005	....	1.0442
Eastern Samar	0	1.0933	1.1166	1.1253	1.0563	1.0618	1.0000	1.0890	1.0574	....	1.0552
Zamboanga del Sur	0	1.0634	1.1060	1.1350	1.0233	1.0936	1.0683	1.0000	1.0783	....	1.0690
Bukidnon	0	1.0862	1.1018	1.0540	1.0424	1.0858	1.1266	1.1652	1.0000	....	1.0070

**Table 9b: Matrix of Laspeyre's quantity indices based on adjusted menus
(RURAL, 2000)**

PRICE	No. of Failed Tests (no. of provinces test fails)	MENU									
		Bulacan	Capiz	Cebu	Negros Oriental	Siquijor	Eastern Samar	Zamboanga del Sur	Bukidnon	....	Surigao Del Sur
		(12)	(35)	(40)	(41)	(42)	(43)	(50)	(52)	....	(80)
Bulacan	0	1.0000	1.1036	1.0797	1.0415	1.0341	1.0970	1.0913	1.0261	....	1.0256
Capiz	0	1.0442	1.0000	1.0506	1.1061	1.0282	1.2057	1.0723	1.0231	....	1.1192
Cebu	0	1.1093	1.1236	1.0000	1.1148	1.1482	1.1386	1.1563	1.1102	....	1.1305
Negros Oriental	0	1.0444	1.1024	1.0318	1.0000	1.1035	1.1337	1.1179	1.0065	....	1.0225
Siquijor	2	1.0555	1.0694	1.0129	1.0405	1.0000	1.0753	1.0710	0.9945	....	1.0361
Eastern Samar	1	1.0848	1.1052	1.0962	1.0477	1.0561	1.0000	1.0822	1.0511	....	1.0452
Zamboanga del Sur	0	1.0567	1.0958	1.1049	1.0161	1.0962	1.0787	1.0000	1.0655	....	1.0568
Bukidnon	0	1.0869	1.1010	1.0380	1.0422	1.1043	1.1472	1.1813	1.0000	....	1.0065

The resulting poverty estimates from the proposed provincial menus vis-à-vis the official estimates is given in Table 6.

Table 10: Comparison with 2000 Official Poverty Estimates

Province	Food Threshold		Percent Difference	Poverty Threshold		Poverty Incidence (families)			Difference	Poverty Incidence (population)		Difference
	Official Estimates Using Regional Menus	Estimates Using Proposed Provincial Menus		Official Estimates Using Regional Menus	Estimates Using Proposed Provincial Menus	Percent Difference	Official Estimates Using Regional Menus	Estimates Using Proposed Provincial Menus		Official Estimates Using Regional Menus	Estimates Using Proposed Provincial Menus	
Bulacan	8,760	8,912	1.7	13,882	14,091	1.5	5.36	5.47	0.1	7.51	7.65	0.1
Capiz	7,297	7,503	2.8	10,536	11,059	5.0	40.83	45.31	4.5	47.21	51.83	4.6
Cebu	6,732	6,824	1.4	9,914	9,961	0.5	26.20	25.95	(0.3)	29.46	29.32	(0.1)
Negros Oriental	6,670	6,691	0.3	8,981	9,009	0.3	29.69	31.71	2.0	37.07	39.85	2.8
Siquijor	6,497	7,222	11.2	8,892	9,791	10.1	28.55	33.88	5.3	32.74	37.67	4.9
Eastern Samar	7,162	7,544	5.3	9,108	9,820	7.8	45.91	49.25	3.3	55.55	58.84	3.3
Zamboanga del Sur	6,325	6,342	0.3	8,975	9,011	0.4	34.94	34.11	(0.8)	41.41	40.55	(0.9)
Bukidnon	6,706	6,859	2.3	9,201	9,427	2.5	33.43	34.08	0.6	41.01	41.69	0.7

Of the eight provinces that registered higher food thresholds than the official estimates, only Siquijor marked an 11.2 percent difference. The rest of the provinces recorded percent differences lower than 6 percent. Correspondingly, the poverty thresholds for the eight provinces are higher than the official figures. For poverty incidence, on the other hand, estimates for Cebu and Zamboanga del Sur were slightly lower than the official figures.

VI. Concluding Statements/ Future Directions

The study was able to address the issue on comparability across space of menus by passing the test of revealed preference of the proposed provincial menus. The use of a national reference menu has served the purpose of coming up with standardized menus across provinces.

For the eight provinces that registered higher food thresholds than the official estimates, result of assessment shows that the proposed menus are proven consistent across provinces as the menus passed the test of revealed preferences.

The outputs of the study were already presented to the Technical Committee on Poverty Statistics (TC-PovStat), a multi-sectoral representation consisting of noted experts in the area of poverty statistics coming from the academe, producers and users of poverty statistics from both government and non-government organizations. The TC-PovStat, in general, approved the results but recommended to wait for the outputs of other improvement activities being done on the official poverty estimation methodology before giving its official endorsement to the NSCB Executive Board. The Committee likewise suggested that the adoption of the proposed provincial menus, together with other methodological changes, coincide with the start of the next administration to avoid political-related controversies that may arise from releasing poverty estimates from the new methodology. As a general practice, related activities to promote and disseminate the metadata and information on the improvements in the methodology will be conducted by the NSCB along this line for better appreciation and use of policy makers and program implementers of poverty reduction efforts at the national and local levels.

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