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On questions about Philippine GDP estimates[1]

Romulo A. Virola
National Statistical Coordination Board

This paper seeks to clarify some of the points raised in the UP School of Economics Discussion Paper 0802, "Philippine GDP Growth after the Asian Financial Crisis: Resilient Economy or Weak Statistical System?" by Felipe M. Medalla and Karl Robert L. Jandoc.[2]

The National Statistical Coordination Board (NSCB) has made clarifications on similar concerns raised in an article written by Felipe F. Salvosa II in the *Business World* (July 4, 2007) entitled "Reliability of Government Economic Data Questioned". The NSCB reply was posted on its website (http://www.nscb.gov.ph/announce/ForTheRecord/20july07_reliability.asp) on July 20, 2007.

As we have said in the past, the NSCB has always been transparent regarding the weaknesses and limitations of the gross domestic product (GDP) estimates, particularly on the expenditure side. This has been discussed in the Philippine System of National Accounts (PSNA) Technical Notes for the Second Quarter of 2002 Estimates (http://www.nscb.gov.ph/sna/2002/2qtr-2002/2002tn2.asp). Similarly, the NSCB discussed revisions made in the national accounts in the following articles: "Revision of Official Statistics—Is It Cheating?" (http://www.nscb.gov.ph/headlines/StatsSpeak/091205_rav_revPolicy.asp), "For the Record: On Data Revisions" (http://www.nscb.gov.ph/announce/ForTheRecord/21Sept05_revisions.asp), and "NSCB Technical Notes on the Estimates of the Philippine System of National Accounts (PSNA) Series 2007-Q2" (http://www.nscb.gov.ph/sna/2007/2ndQ2007/2007tn_2007-Q2.asp).

Moreover, NSCB officials have openly discussed these matters in several forums, such as "Understanding the PSNA", presented by Dr. Romulo A. Virola on October 24, 2005, for the Annual Training for Institutional Members of the Philippine Statistical Association; and "The PSNA: Today and Tomorrow", presented by Estrella V. Domingo on January 16, 2008, for the Philippine Statistical System (PSS) Review Committee.

[1] This paper also appeared in the nscb.gov.ph website last December 16, 2009.

[2] This article appeared in the June 2009 issue of this journal. — Editor

It should also be noted that revisions made on the national accounts estimates are based on the revision policy guidelines set by the NSCB Executive Board, through NSCB Resolution 8, Series of 1997, "Approving the Policy on Updating the National Accounts" (http://www.nscb.gov.ph/resolutions/1997/8.asp). A technical note on the revision policy can be found at http://www.nscb.gov.ph/sna/2007/2ndQ2007/2007tn_2007-Q2.asp; further clarification can be found at http://www.nscb.gov.ph/headlines/StatsSpeak/091205_rav_revPolicy.asp.

As in the earlier clarificatory note, we do not wish to comment on the economic theories and expectations or speculations as to how the economy and its components should be performing; this article is written purely from the point of view of the NSCB as the compiler of the national accounts of the Philippines. We release estimates of the national accounts using guidelines formulated and recognized by the international community, including the United Nations Statistical Commission. Foremost of these guidelines is the 2008 System of National Accounts (SNA) (the earlier versions were called the 1968 UNSNA and the 1993 SNA) adopted by the UN Statistical Commission during its 40th session on February 24-27, 2009, in New York. The 2008 SNA was formulated by the Inter-Secretariat Working Group on National Accounts (ISWGNA)—comprising representatives from the Statistical Office of the European Commission (Eurostat), the International Monetary Fund (IMF), the Organisation for Economic Co-operation and Development (OECD), the United Nations Statistics Division, regional commissions of the United Nations Secretariat, and the World Bank—after wide and thorough consultations with expert national accounts compilers all over the world. The Philippines, through the NSCB, participated actively in the finalization of the 2008 SNA. In accordance with these internationally accepted standards, the NSCB, after thorough deliberation, releases GDP growth rate estimates based on what the data tell us, not on theories and expectations or speculations of what the growth rate should be.

At the outset, we also like to reiterate what we have said so many times in the past. While the PSNA, like the systems of national accounts of other countries including those of developed countries, has its many limitations, we are proud to say that the NSCB is recognized by our peers in the international statistical community for our professionalism and expertise in the compilation of the PSNA. We have benefited from study visits to the national accounts compilers of Statistics Canada, Statistics Sweden, Australian Bureau of Statistics, and the US Bureau of Economic Analysis, among others.

Members of our staff have participated in training programs, expert group meetings, and workshops on the national accounts sponsored by the United Nations Statistics Division, the IMF, the World Bank, the UN Statistical Institute for Asia and the Pacific, the UN Economic and Social Commission for Asia and the Pacific (ESCAP), the ASEAN Secretariat, the Asian Productivity Organization, the Asian Development Bank, the Government of Japan, etc. We have hosted study tours and conducted training sessions on the national accounts for/from other countries, including China, Indonesia, India, Bhutan, Bangladesh, Uganda, Vietnam, and Sri Lanka. We have presented technical papers and learned from the experiences of other national accounts compilers in various international forums, such as the sessions of the United Nations Statistical Commission and the International Statistical Institute, and various regional and international workshops. We would like to assure Prof. Medalla and Mr. Jandoc that when we attend an international gathering of statistical professionals, we take home with us new knowledge and skills that we, after careful thought, apply in our work at the NSCB. We also invite them to talk with and be enlightened by professionals who have had wide experiences in the actual compilation of the national accounts in other countries.

For the record, the recent quarterly GDP growth rate estimates of the Philippines from 1992 to 2008 (a total of 60 quarters, excluding the breaks in the series) underwent 33 upward revisions, 22 downward revisions, and 5 quarters with no revisions from the preliminary to the final/latest estimates (Table 1).

Table 1. Gross domestic product: history of revisions
At constant prices, quarterly, 1992-2008

Year	Quarter	Growth rate at constant		Percentage points
		First estimate	Final/Latest	Revision
1992	Q1	0.5	2.2	1.7
	Q2	-1.4	-0.3	1.1
	Q3	-0.1	0.4	0.5
	Q4	0.9	-0.8	-1.7
1993	Q1	-0.2	0.7	0.9
	Q2	1.7	2.5	0.8
	Q3	2.1	2.7	0.6
	Q4	2.3	2.5	0.2

Table 1. (continued)

Year	Quarter	Growth rate at constant		Percentage points
		First estimate	Final/Latest	Revision
1994	Q1	3.8	3.6	-0.2
	Q2	4.5	4.6	0.1
	Q3	5.1	5.1	0.0
	Q4	3.9	4.2	0.3
1995	Q1	4.8	4.8	0.0
	Q2	4.9	4.3	-0.6
	Q3	5.7	6.0	0.3
	Q4	4.5	3.8	-0.7
1996	Q1	4.7	5.2	0.5
	Q2	5.8	6.6	0.8
	Q3	5.9	6.1	0.2
	Q4	5.2	5.6	0.4
1997	Q1	5.0	5.1	0.1
	Q2	5.7	6.0	0.3
	Q3	4.9	4.7	-0.2
	Q4	4.7	4.9	0.2
1998	Q1	1.7	2.5	0.8
	Q2	-1.2	-1.4	-0.2
	Q3	-0.1	-0.7	-0.6
	Q4	-1.9	-2.4	-0.5
1999	Q1	1.2	0.7	-0.5
	Q2	3.6	3.8	0.2
	Q3	3.1	3.8	0.7
	Q4	4.6	5.1	0.5
2000[1]	Q1	**	**	**
	Q2	**	**	**
	Q3	**	**	**
	Q4	**	**	**

Table 1. (continued)

Year	Quarter	Growth rate at constant		Percentage points
		First estimate	Final/Latest	Revision
2001	Q1	2.5	1.3	-1.2
	Q2	3.3	2.0	-1.3
	Q3	2.9	1.4	-1.5
	Q4	3.8	2.3	-1.5
2002	Q1	3.8	4.2	0.4
	Q2	4.5	4.6	0.1
	Q3	3.8	3.3	-0.5
	Q4	5.8	5.5	-0.3
2003	Q1	4.5	4.8	0.3
	Q2	3.2	4.3	1.1
	Q3	4.4	5.4	1.0
	Q4	4.5	5.1	0.6
2004[2]	Q1	**	**	**
	Q2	**	**	**
	Q3	**	**	**
	Q4	**	**	**
2005	Q1	4.6	4.5	-0.1
	Q2	4.8	5.1	0.3
	Q3	4.1	4.7	0.6
	Q4	6.1	5.4	-0.7
2006	Q1	5.5	5.5	0.0
	Q2	5.5	5.3	-0.2
	Q3	4.8	5.2	0.4
	Q4	4.8	5.4	0.6
2007	Q1	6.9	6.9	0.0
	Q2	7.5	8.3	0.8
	Q3	6.6	6.8	0.2
	Q4	7.4	6.3	-1.1

Table 1. (continued)

Year	Quarter	Growth rate at constant		Percentage points
		First estimate	Final/Latest	Revision
2008	Q1	5.2	3.9	-1.3
	Q2	4.6	4.2	-0.4
	Q3	4.6	4.6	0.0
	Q4	4.5	2.9	-1.6

Notes:
** Break in the series.
[2] Break in the 2003 and 2004.
Source: NSCB.

Also in the regular deliberation of the quarterly estimates, given the various sources of our data, we conduct validation exercises and consistency checks between demand and supply as well as between outputs and inputs. For further reference, please visit http://www.nscb.gov.ph/sna/2002/2qtr-2002/2002tn2.asp.

Medalla and Jandoc statement:

Excerpts from Section 3: "Increase in GDP Growth Due to Import Growth Compression"

> "How can the growth rate of domestic production rise when there is a fall in the growth rate of demand due to the decline in the growth rates of both domestic absorption (C+ I + G) and exports?"
>
> "If the National Income Accounts are reliable, GDP grew faster after the AFC because of the large decline in the growth rate of imports after the AFC, not because of the rise in consumption growth."

NSCB clarification

- There are three basic approaches to the compilation of national accounts: the production approach, the expenditure approach, and the income approach. In the quarterly estimates of the national accounts, the NSCB shows both the production and expenditure approaches. In the annual consolidation of the accounts, the NSCB shows the income approach.

- Theoretically, estimates of GDP should be the same whether one uses the production approach, the expenditure approach, or the income approach. In reality, because of varying qualities of data sources under each approach, the three sets of estimates differ, and the difference is reflected in the statistical discrepancy. The statistical discrepancy can be forced to zero through supply-use tables, or by distributing it to the GDP estimates from the production and the expenditure sides.
- In the quarterly PSNA, while the NSCB compiles both the production and the expenditure accounts, the GDP levels and growth estimates have always been based on the production accounts. This is for the simple reason that we consider the data support to the production accounts to be stronger compared to the expenditure accounts. Data for the production side of the accounts come from established surveys that are regularly conducted and whose sampling frame is updated fairly regularly.

On the other hand, we do not have regular retail trade surveys that we can use to estimate the personal consumption expenditure (PCE), which accounts for at least 70 percent of GDP on the expenditure side. Instead, we use rough commodity-flow approaches, related indicators, and the Family Income and Expenditures Survey (FIES), which is conducted by the National Statistics Office (NSO) only every three years. This partly explains the weakness of the PCE estimates and implies that users must be careful and must understand the limitations when analysing the GDP growth on the expenditure side, or when assessing the relationships among the components of the two sets of accounts. Obviously, economic theories do not always work in our imperfect world.

- Toward improving the PCE estimates, the NSCB and the PSS have taken initiatives toward coming up with other indicators on consumer spending. Upon the recommendation of the Interagency Committee on Trade Statistics and its Task Force on Wholesale and Retail Trade Indices, on March 11, 2009, the NSCB Executive Board passed NSCB Resolution 7, Series of 2009, "Approving and Adopting the Official Concepts and Definitions for Statistical Purposes of Wholesale and Retail Trade and the Methodology in Computing Wholesale and Retail Trade Sales Index", which will lead to the institutionalization of the generation of the quarterly wholesale and retail trade sales index by the NSO.

- We are not really sure what Dr. Medalla and Mr. Jandoc mean with their statement. But the NSCB annual estimates of the national accounts from 1989 to 2007 do not show growth in domestic production (GDP) when there is a fall in demand due to the decline in both domestic absorption ("C + I + G") and exports (Table 2). However, on a quarterly basis, there were three out of 68 quarters (excluding the breaks)—the third and fourth quarters of 2001 and the first quarter of 2002—when GDP grew but both "C+I+G" and exports declined (Table 3).

Table 2. GDP by expenditure shares
At constant prices, annual, 1989-2007

YEAR	LEVEL				
	GDP	GDE	PCE + GDCF + GGCE C + I + G	Exports X	Imports M
1989	699,448	676,661	707,363	213,888	244,590
1990	720,690	710,482	761,765	217,865	269,148
1991	716,522	708,037	742,661	231,515	266,139
1992	718,941	723,256	771,098	241,431	289,273
1993	734,156	737,635	803,732	256,451	322,548
1994	766,368	781,126	843,246	307,205	369,325
1995	802,224	791,632	875,926	344,181	428,475
1996	849,121	827,764	930,757	397,201	500,194
1997	893,151	888,721	991,071	465,322	567,672
1998	888,000	858,215	975,003	367,447	484,235
1999	918,160	904,590	994,508	380,755	470,673
2000[1]	972,960	1,025,674	1,070,769	445,673	490,768
2001	990,042	998,340	1,076,045	430,339	508,044
2002	1,034,094	1,006,544	1,095,392	447,686	536,535
2003	1,085,072	1,021,364	1,146,429	469,537	594,603
2004[2]	1,154,295	1,124,375	1,213,335	539,950	628,911
2005	1,211,452	1,160,076	1,238,173	565,742	643,839
2006	1,276,156	1,294,976	1,309,225	641,457	655,706
2007	1,366,493	1,448,541	1,401,005	676,098	628,562

Table 2. (continued)

GROWTH RATE						Contibution to GDP growth			Dummy variable for growth rates			
YEAR	GDP	GDE	PCE + GDCF + GGCE C + I + G	Exports X	Im-ports M	PCE + GDCF + GGCE C + I + G	Exports X	Im-ports M	1, if GDP > 0	1, if C+I+G <0	1, if X <0	3, if GDP > 0 and C+I+G <0 and X <0
1989	6.2	6.2	6.0	8.1	8.9	15.2	8.03	2.65	4.89	1		1
1990	3.0	3.0	5.0	7.7	1.9	10.0	7.78	0.57	3.51	1		1
1991	-0.6	-0.6	-0.3	-2.5	6.3	-1.1	-2.65	1.89	-0.42		1	1
1992	0.3	0.3	2.1	3.8	4.3	8.7	3.97	1.38	3.23	1		1
1993	2.1	2.1	2.0	4.2	6.2	11.5	4.54	2.09	4.63	1		1
1994	4.4	4.4	5.9	4.9	19.8	14.5	5.38	6.91	6.37	1		1
1995	4.7	4.7	1.3	3.9	12.0	16.0	4.26	4.82	7.72	1		1
1996	5.8	5.8	4.6	6.3	15.4	16.7	6.83	6.61	8.94	1		1
1997	5.2	5.2	7.4	6.5	17.2	13.5	7.10	8.02	7.95	1		1
1998	-0.6	-0.6	-3.4	-1.6	-21.0	-14.7	-1.80	-10.96	-9.34		1	2
1999	3.4	3.4	5.4	2.0	3.6	-2.8	2.20	1.50	-1.53	1		1
2000[1]	**	**	**	**	**	**	**	**	**	1		
2001	1.8	1.8	-2.7	0.5	-3.4	3.5	0.54	-1.58	1.78	1		2
2002	4.4	4.4	0.8	1.8	4.0	5.6	1.95	1.75	2.88	1		1
2003	4.9	4.9	1.5	4.7	4.9	10.8	4.94	2.11	5.62	1		1
2004[2]	**	**	**	**	**	**	**	**	**	1		
2005	5.0	5.0	3.2	2.0	4.8	2.4	2.15	2.23	1.29	1		1
2006	5.3	5.3	11.6	5.7	13.4	1.8	5.87	6.25	0.98	1		1
2007	7.1	7.1	11.9	7.0	5.4	-4.1	7.19	2.71	-2.13	1		1
Number of Years when GDP Growth Rates>0 and C+I+G Growth Rates<0 and X Growth Rates<0												0

Notes:
** Break in the series.
1 Break in the 1999 and 2000.
2 Break in the 2003 and 2004.
Source: NSCB.

- Also, as shown in Table 3, immediately after the start of the Asian financial crisis, imports declined only in Q2 1998 to Q1 1999. In this four-quarter period, imports declined faster than exports only in Q1 1999 and all this time PCE grew!

Table 3. GDP by expenditure shares
At constant prices, quarterly, 1989-2007

YEAR	QRTR	LEVEL						GROWTH RATE					
		GDP	GDE	PCE C	PCE + GDCF + GGCE C + I + G	Exports X	Imports M	GDP	GDE	PCE C	PCE + GDCF + GGCE C + I + G	Exports X	Imports M
1989	Q1	162,483	154,757	113,865	158,595	49,864	53,702	6.3	5.0	5.6	6.8	10.9	16.5
	Q2	169,601	162,910	124,365	173,189	53,042	63,321	5.4	6.8	4.4	11.2	8.7	21.8
	Q3	166,980	162,214	125,241	171,026	54,601	63,413	5.4	2.0	4.6	3.9	7.2	12.3
	Q4	200,384	196,780	141,148	204,553	56,381	64,154	7.4	9.6	5.4	10.2	9.0	11.0
1990	Q1	171,001	169,230	119,902	178,804	53,984	63,558	5.2	9.4	5.3	12.7	8.3	18.4
	Q2	175,530	172,811	130,988	189,318	54,927	71,434	3.5	6.1	5.3	9.3	3.6	12.8
	Q3	173,135	167,227	132,046	181,744	56,645	71,162	3.7	3.1	5.4	6.3	3.7	12.2
	Q4	201,024	201,214	148,836	211,899	52,309	62,994	0.3	2.3	5.4	3.6	-7.2	-1.8
1991	Q1	170,766	170,949	124,334	178,044	55,145	62,240	-0.1	1.0	3.7	-0.4	2.2	-2.1
	Q2	173,321	173,225	134,451	180,278	58,981	66,034	-1.3	0.2	2.6	-4.8	7.4	-7.6
	Q3	169,851	167,421	134,715	179,821	55,882	68,282	-1.9	0.1	2.0	-1.1	-1.3	-4.0
	Q4	202,584	196,442	150,288	204,518	61,507	69,583	0.8	-2.4	1.0	-3.5	17.6	10.5
1992	Q1	174,547	175,971	129,829	183,520	59,619	67,168	2.2	2.9	4.4	3.1	8.1	7.9
	Q2	172,868	170,171	138,703	188,784	55,511	74,124	-0.3	-1.8	3.2	4.7	-5.9	12.3
	Q3	170,486	173,089	139,051	188,146	59,670	74,727	0.4	3.4	3.2	4.6	6.8	9.4
	Q4	201,040	204,025	153,926	210,648	66,631	73,254	-0.8	3.9	2.4	3.0	8.3	5.3
1993	Q1	175,701	175,893	132,628	186,112	59,751	69,970	0.7	0.0	2.2	1.4	0.2	4.2
	Q2	177,248	176,206	143,069	195,181	60,648	79,623	2.5	3.5	3.1	3.4	9.3	7.4
	Q3	175,044	178,180	143,802	200,059	63,424	85,303	2.7	2.9	3.4	6.3	6.3	14.2
	Q4	206,163	207,356	159,090	222,380	72,628	87,652	2.5	1.6	3.4	5.6	9.0	19.7
1994	Q1	182,112	177,810	137,450	196,118	69,868	88,176	3.6	1.1	3.6	5.4	16.9	26.0
	Q2	185,472	190,036	148,549	210,023	74,671	94,658	4.6	7.8	3.8	7.6	23.1	18.9
	Q3	183,936	192,601	148,969	201,976	78,849	88,224	5.1	8.1	3.6	1.0	24.3	3.4
	Q4	214,848	220,679	165,138	235,129	83,817	98,267	4.2	6.4	3.8	5.7	15.4	12.1
1995	Q1	190,873	185,480	143,389	207,424	72,549	94,493	4.8	4.3	4.3	5.8	3.8	7.2
	Q2	193,439	183,474	154,434	214,866	81,036	112,428	4.3	-3.5	4.0	2.3	8.5	18.8
	Q3	194,997	195,970	153,749	210,147	92,758	106,935	6.0	1.7	3.2	4.0	17.6	21.2
	Q4	222,915	226,708	171,413	243,489	97,838	114,619	3.8	2.7	3.8	3.6	16.7	16.6
1996	Q1	200,770	190,184	149,421	218,570	84,005	112,391	5.2	2.5	4.2	5.4	15.8	18.9
	Q2	206,169	195,198	161,553	230,268	92,116	127,186	6.6	6.4	4.6	7.2	13.7	13.1
	Q3	206,844	205,636	161,074	227,270	109,044	130,678	6.1	4.9	4.8	8.1	17.6	22.2
	Q4	235,338	236,746	179,742	254,649	112,036	129,939	5.6	4.4	4.9	4.6	14.5	13.4

Table 3. (continued)

YEAR	QRTR	Contibution to GDP growth			Dummy variable for growth rates			
		PCE + GDCF + GGCE C + I + G	Exports X	Imports M	1, if GDP > 0	1, if C+ I + G <0	1, if X <0	3, if GDP > 0 and C + I + G < 0 and X < 0
1989	Q1	6.62	3.20	4.99	1			1
	Q2	10.84	2.64	7.05	1			1
	Q3	4.09	2.30	4.37	1			1
	Q4	10.11	2.49	3.40	1			1
1990	Q1	12.44	2.54	6.07	1			1
	Q2	9.51	1.11	4.78	1			1
	Q3	6.42	1.22	4.64	1			1
	Q4	3.67	-2.03	-0.58	1		1	2
1991	Q1	-0.44	0.68	-0.77		1		1
	Q2	-5.15	2.31	-3.08		1		1
	Q3	-1.11	-0.44	-1.66		1	1	2
	Q4	-3.67	4.58	3.28	1	1		2
1992	Q1	3.21	2.62	2.89	1			1
	Q2	4.91	-2.00	4.67			1	1
	Q3	4.90	2.23	3.79	1			1
	Q4	3.03	2.53	1.81				0
1993	Q1	1.48	0.08	1.61	1			1
	Q2	3.70	2.97	3.18	1			1
	Q3	6.99	2.20	6.20	1			1
	Q4	5.84	2.98	7.16	1			1
1994	Q1	5.69	5.76	10.36	1			1
	Q2	8.37	7.91	8.48	1			1
	Q3	1.10	8.81	1.67	1			1
	Q4	6.18	5.43	5.15	1			1
1995	Q1	6.21	1.47	3.47	1			1
	Q2	2.61	3.43	9.58	1			1
	Q3	4.44	7.56	10.17	1			1
	Q4	3.89	6.53	7.61	1			1
1996	Q1	5.84	6.00	9.38	1			1
	Q2	7.96	5.73	7.63	1			1
	Q3	8.78	8.35	12.18	1			1
	Q4	5.01	6.37	6.87	1			1

Table 3. (continued)

YEAR	QRTR	LEVEL						GROWTH RATE					
		GDP	GDE	PCE C	PCE + GDCF + GGCE C + I + G	Exports X	Imports M	GDP	GDE	PCE C	PCE + GDCF + GGCE C + I + G	Exports X	Imports M
1997	Q1	210,954	211,539	156,862	234,549	102,777	125,787	5.1	11.2	5.0	7.3	22.3	11.9
	Q2	218,642	213,859	169,755	243,348	107,938	137,427	6.0	9.6	5.1	5.7	17.2	8.1
	Q3	216,653	209,537	169,099	240,914	121,904	153,281	4.7	1.9	5.0	6.0	11.8	17.3
	Q4	246,902	253,786	188,600	272,260	132,703	151,177	4.9	7.2	4.9	6.9	18.4	16.3
1998	Q1	216,215	202,186	163,980	237,138	98,147	133,099	2.5	-4.4	4.5	1.1	-4.5	5.8
	Q2	215,629	206,808	176,450	239,989	87,009	120,190	-1.4	-3.3	3.9	-1.4	-19.4	-12.5
	Q3	215,234	201,963	173,976	235,488	95,758	129,283	-0.7	-3.6	2.9	-2.3	-21.4	-15.7
	Q4	240,922	247,258	193,498	262,388	86,533	101,663	-2.4	-2.6	2.6	-3.6	-34.8	-32.8
1999	Q1	217,810	219,625	168,030	240,428	89,885	110,688	0.7	8.6	2.5	1.4	-8.4	-16.8
	Q2	223,756	217,074	181,018	247,567	89,864	120,357	3.8	5.0	2.6	3.2	3.3	0.1
	Q3	223,489	215,918	178,325	240,376	106,810	131,268	3.8	6.9	2.5	2.1	11.5	1.5
	Q4	253,105	251,973	199,205	266,137	94,196	108,360	5.1	1.9	2.9	1.4	8.9	6.6
2000[1]	Q1	229,415	241,451	173,407	255,808	102,746	117,103	**	**	**	**	**	**
	Q2	237,420	252,794	186,729	263,967	105,050	116,223	**	**	**	**	**	**
	Q3	239,521	255,194	184,866	261,959	124,044	130,809	**	**	**	**	**	**
	Q4	266,604	276,235	207,064	289,035	113,833	126,633	**	**	**	**	**	**
2001	Q1	232,325	243,034	179,439	255,890	109,780	122,636	1.3	0.7	3.5	0.0	6.8	4.7
	Q2	242,057	240,130	192,885	272,365	102,084	134,319	2.0	-5.0	3.3	3.2	-2.8	15.6
	Q3	242,983	246,690	191,769	261,419	118,819	133,548	1.4	-3.3	3.7	-0.2	-4.2	2.1
	Q4	272,677	268,486	214,918	286,371	99,656	117,541	2.3	-2.8	3.8	-0.9	-12.5	-7.2
2002	Q1	242,041	239,991	185,680	253,901	103,499	117,409	4.2	-1.3	3.5	-0.8	-5.7	-4.3
	Q2	253,271	242,415	200,314	274,799	109,084	141,467	4.6	1.0	3.9	0.9	6.9	5.3
	Q3	250,996	251,377	199,932	263,926	128,800	141,349	3.3	1.9	4.3	1.0	8.4	5.8
	Q4	287,785	272,761	224,859	302,766	106,304	136,309	5.5	1.6	4.6	5.7	6.7	16.0
2003	Q1	253,672	234,734	195,033	271,712	108,898	145,876	4.8	-2.2	5.0	7.0	5.2	24.2
	Q2	264,189	244,714	211,023	285,687	111,436	152,409	4.3	0.9	5.3	4.0	2.2	7.7
	Q3	264,671	264,355	210,321	278,352	132,396	146,393	5.4	5.2	5.2	5.5	2.8	3.6
	Q4	302,539	277,561	237,221	310,680	116,807	149,925	5.1	1.8	5.5	2.6	9.9	10.0
2004[2]	Q1	271,817	260,295	206,766	287,916	123,401	151,022	**	**	**	**	**	**
	Q2	282,939	269,912	224,318	301,675	130,984	162,747	**	**	**	**	**	**
	Q3	279,581	290,724	221,873	291,318	155,608	156,202	**	**	**	**	**	**
	Q4	319,959	303,443	250,856	332,426	129,957	158,939	**	**	**	**	**	**

Table 3. (continued)

YEAR	QRTR	Contibution to GDP growth			Dummy variable for growth rates			
		PCE + GDCF + GGCE C + I + G	Exports X	Imports M	1, if GDP > 0	1, if C+ I + G <0	1, if X <0	3, if GDP > 0 and C + I + G < 0 and X < 0
1997	Q1	7.96	9.35	6.67	1			1
	Q2	6.34	7.67	4.97	1			1
	Q3	6.60	6.22	10.93	1			1
	Q4	7.48	8.78	9.02	1			1
1998	Q1	1.23	-2.19	3.47	1		1	2
	Q2	-1.54	-9.57	-7.88		1	1	2
	Q3	-2.50	-12.07	-11.08		1	1	2
	Q4	-4.00	-18.70	-20.05		1	1	2
1999	Q1	1.52	-3.82	-10.37	1		1	2
	Q2	3.51	1.32	0.08	1			1
	Q3	2.27	5.13	0.92	1			1
	Q4	1.56	3.18	2.78	1			1
2000[1]	Q1	**	**	**				0
	Q2	**	**	**				0
	Q3	**	**	**				0
	Q4	**	**	**				0
2001	Q1	0.04	3.07	2.41	1			1
	Q2	3.54	-1.25	7.62	1		1	2
	Q3	-0.23	-2.18	1.14	1	1	1	3
	Q4	-1.00	-5.32	-3.41	1	1	1	3
2002	Q1	-0.86	-2.70	-2.25	1	1	1	3
	Q2	1.01	2.89	2.95	1			1
	Q3	1.03	4.11	3.21	1			1
	Q4	6.01	2.44	6.88	1			1
2003	Q1	7.36	2.23	11.76	1			1
	Q2	4.30	0.93	4.32	1			1
	Q3	5.75	1.43	2.01	1			1
	Q4	2.75	3.65	4.73	1			1
2004[2]	Q1	**	**	**				0
	Q2	**	**	**				0
	Q3	**	**	**				0
	Q4	**	**	**				0

Table 3. (continued)

YEAR	QRTR	LEVEL						GROWTH RATE					
		GDP	GDE	PCE C	PCE + GDCF + GGCE C + I + G	Exports X	Imports M	GDP	GDE	PCE C	PCE + GDCF + GGCE C + I + G	Exports X	Imports M
2005	Q1	284,063	269,789	216,695	291,552	125,943	147,707	4.5	3.6	4.8	1.3	2.1	-2.2
	Q2	297,426	277,225	235,173	310,027	134,168	166,970	5.1	2.7	4.8	2.8	2.4	2.6
	Q3	292,665	297,678	232,159	298,444	167,158	167,924	4.7	2.4	4.6	2.4	7.4	7.5
	Q4	337,298	315,384	263,478	338,149	138,473	161,238	5.4	3.9	5.0	1.7	6.6	1.4
2006	Q1	299,681	296,012	227,928	305,443	142,391	151,822	5.5	9.7	5.2	4.8	13.1	2.8
	Q2	313,112	318,931	247,502	325,361	167,603	174,033	5.3	15.0	5.2	4.9	24.9	4.2
	Q3	307,750	335,464	244,561	320,098	184,637	169,271	5.2	12.7	5.3	7.3	10.5	0.8
	Q4	355,613	344,569	279,737	358,323	146,825	160,580	5.4	9.3	6.2	6.0	6.0	-0.4
2007	Q1	320,326	339,962	241,363	331,640	157,359	149,037	6.9	14.8	5.9	8.6	10.5	-1.8
	Q2	339,218	369,250	261,402	350,769	174,676	156,195	8.3	15.8	5.6	7.8	4.2	-10.2
	Q3	328,795	365,620	258,446	336,301	190,650	161,331	6.8	9.0	5.7	5.1	3.3	-4.7
	Q4	378,154	373,710	296,966	382,295	153,413	161,998	6.3	8.5	6.2	6.7	4.5	0.9

YEAR	QRTR	Contibution to GDP growth			Dummy variable for growth rates			
		PCE + GDCF + GGCE C + I + G	Exports X	Imports M	1, if GDP > 0	1, if C+ I + G <0	1, if X <0	3, if GDP > 0 and C + I + G < 0 and X < 0
2005	Q1	1.34	0.94	-1.22	1			1
	Q2	2.95	1.13	1.49	1			1
	Q3	2.55	4.13	4.19	1			1
	Q4	1.79	2.66	0.72	1			1
2006	Q1	4.89	5.79	1.45	1			1
	Q2	5.16	11.24	2.37	1			1
	Q3	7.40	5.97	0.46	1			1
	Q4	5.98	2.48	-0.20	1			1
2007	Q1	8.74	4.99	-0.93	1			1
	Q2	8.11	2.26	-5.70	1			1
	Q3	5.27	1.95	-2.58	1			1
	Q4	6.74	1.85	0.40	1			1
Number of Quarters when GDP Growth Rates>0 and C+I+G Growth Rates<0 and X Growth Rates<0								3

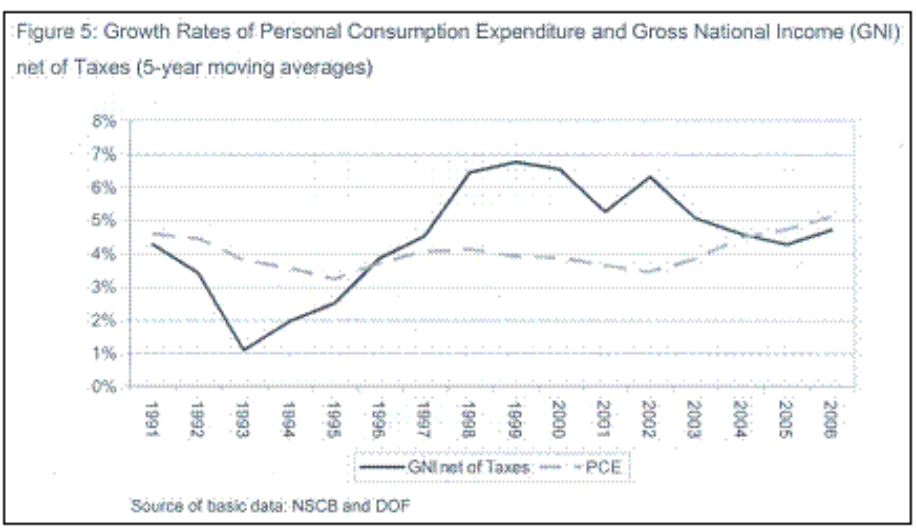
Notes:
** Break in the series.
1 Break in the 1999 and 2000.
2 Break in the 2003 and 2004.
Source: NSCB.

Incidentally, in 2003, then-congressman Joey Sarte Salceda called the attention of the NSCB and the PSS to some inconsistencies emanating from our foreign trade statistics. At the initiative of the Bangko Sentral ng Pilipinas (BSP), the NSCB created a Task Force on Imports Statistics to study the matter, in collaboration with the Semiconductor and Electronics Industries in the Philippines Inc. (SEIPI). As cited in NSCB Resolution 8, Series of 2005, "Approving the Interim Methodology for the Revision of Electronic Imports Statistics", the task force found the data on foreign trade, particularly on consigned imports, to be understated. This came about because of errors in the reporting of imports by companies, especially those whose mother companies reside abroad. As a result, the NSO revised the imports data for 2002 together with the monthly import data for 2000 and 2001 (http://www.census.gov.ph/data/technotes/TR2005_Interim_Methodology_Elect_Import.html and http://www.nscb.gov.ph/headlines/StatsSpeak/091205_rav_revPolicy.asp).

Medalla and Jandoc statement:

Excerpt from Section 5: "Consumption Growth Is Probably Overestimated"

"Figure 5 below shows that the average growth rate of Personal Consumption Expenditure (from the National Income Accounts) in 2006 was the highest in 15 years, but the growth rates of Gross National Income (GNI) net of taxes was falling and was lowest in the last 10 years."



NSCB clarification

- Again, we are not sure what Dr. Medalla and Mr. Jandoc mean. But in their Figure 5, while the computed moving average of the PCE growth rates for 2006 was indeed the highest in 15 years, the computed GNI net of taxes was increasing in 2006, and was certainly not the lowest in the last ten years.
- These omissions notwithstanding, and as already mentioned in the previous paragraphs, the data support to the PCE compilation is not as strong as that to the production accounts. Nonetheless, even if the data support to PCE is strong and even if it accounts for more than 70 percent of GDP, it can easily be demonstrated mathematically and empirically that the GDP or GDE growth rate will not necessarily follow the trend of the PCE. The GDP/GDE has other components like exports and imports that will not necessarily move in the same direction as the PCE.
- Also, with the statistical discrepancy reflected on the expenditure side, GNI is derived from the production side of the accounts using the estimated GDP levels and incorporating the Net Factor Income from Abroad and Trading Gains and Losses. The GNI estimate is not directly based on the PCE estimate and while there may be economic theories about their relationship, one has to be careful when mixing analysis of the production accounts and the expenditure accounts.

Medalla and Jandoc statement:

Excerpt from Section 5: "Consumption Growth Is Probably Overestimated"

> "Since consumption is a very large part of GDP and the estimates of personal consumption expenditures in the accounts are derived directly from the estimates of value added in the production side of the accounts, any evidence that would show that the growth of personal consumption is overestimated is also evidence that the growth rate of GDP is overestimated. Moreover, since the estimates of the growth of personal consumption and GDP are based on the same sources (i.e., the estimates of consumption come from the estimate of production of goods and services that are classified as purchased by consumers), the growth rate of both personal consumption and GDP could be overestimated without necessarily causing any large change in the statistical discrepancy."

NSCB clarification

- First, we would like to clarify that the estimates of personal consumption expenditure (PCE) are not derived directly from the estimates of value added in the production accounts.As mentioned earlier, the PCE estimates are based on rough commodity-flow approaches and various sets of indicators.
- Second, it is not correct to say that overestimating the PCE, even if it comprises more than 70 percent of GDP, will automatically overestimate GDP. Simple arithmetic bears this out: if other components of GDP on the expenditure side are underestimated more than the PCE is overestimated, the GDP will not be overestimated.
- Incidentally, based on the quarterly estimates of PCE for the period 1998-2008 covering a total of 44 quarters, 19 quarters showed an upward revision from the first PCE estimates to the final estimates. On the other hand, 14 quarters showed downward revisions and 11 quarters recorded no revisions. In contrast, for the GDP estimates in the same period, there were 23 upward revisions, 18 downward revisions, and 3 quarters with no revisions (including the breaks; see Table 4).

  Obviously, upward revisions on the PCE do not necessarily result in upward revisions of GDP.The same follows for downward revisions. Also we wonder why Dr. Medalla and Mr. Jandoc talk about overestimation of PCE when, in fact, PCE had been underestimated more times than it had been overestimated (see Table 4).
- As mentioned or implied in earlier paragraphs, the sectors in the production accounts and the items in the expenditure accounts are estimated using different data sources and methodologies.This causes the statistical discrepancy, which is reflected in the difference between the estimates from the production and the expenditure accounts.
- Other countries do not have discrepancies because the components of other approaches in estimating GDP are estimated as residual. Notably, small discrepancies do not necessarily mean strong estimates since the operationalization of various approaches in estimating GDP may be biased in the same direction.The Philippine System of National Accounts chose to show the statistical discrepancy to keep the users better informed on the limitations of the estimates.

Table 4. Personal consumption expenditure and gross domestic product: history of revisions
At constant prices, quarterly, 1998-2008

Year	Quarter	Growth rate at constant				Percentage points	
		First estimate		Final/Latest estimate		Revision	
		PCE	GDP	PCE	GDP	PCE	GDP
1998	Q1	4.5	1.7	4.5	2.5	0.0	0.8
	Q2	4.4	-1.2	3.9	-1.4	-0.5	-0.2
	Q3	3.3	-0.1	2.9	-0.7	-0.4	-0.6
	Q4	2.8	-1.9	2.6	-2.4	-0.2	-0.5
1999	Q1	2.5	1.2	2.5	0.7	0.0	-0.5
	Q2	2.6	3.6	2.6	3.8	0.0	0.2
	Q3	2.6	3.1	2.5	3.8	-0.1	0.7
	Q4	3.0	4.6	2.9	5.1	-0.1	0.5
2000[1]	Q1	3.2	3.4	3.2	5.3	0.0	1.9
	Q2	3.2	4.5	3.2	6.1	0.0	1.6
	Q3	3.5	4.8	3.7	7.2	0.2	2.4
	Q4	3.9	3.6	3.9	5.3	0.0	1.7
2001	Q1	3.5	2.5	3.5	1.3	0.0	-1.2
	Q2	3.2	3.3	3.3	2.0	0.1	-1.3
	Q3	3.3	2.9	3.7	1.4	0.4	-1.5
	Q4	3.7	3.8	3.8	2.3	0.1	-1.5
2002	Q1	3.4	3.8	3.5	4.2	0.1	0.4
	Q2	3.8	4.5	3.9	4.6	0.1	0.1
	Q3	4.1	3.8	4.3	3.3	0.2	-0.5
	Q4	4.4	5.8	4.6	5.5	0.2	-0.3
2003	Q1	4.9	4.5	5.0	4.8	0.1	0.3
	Q2	5.1	3.2	5.3	4.3	0.2	1.1
	Q3	4.9	4.4	5.2	5.4	0.3	1.0
	Q4	5.2	4.5	5.5	5.1	0.3	0.6
2004[2]	Q1	5.9	6.4	6.0	7.2	0.1	0.8
	Q2	6.0	6.2	6.3	7.1	0.3	0.9
	Q3	5.6	6.3	5.5	5.6	-0.1	-0.7
	Q4	5.8	5.4	5.7	5.8	-0.1	0.4
2005	Q1	5.0	4.6	4.8	4.5	-0.2	-0.1
	Q2	4.9	4.8	4.8	5.1	-0.1	0.3
	Q3	4.8	4.1	4.6	4.7	-0.2	0.6
	Q4	5.2	6.1	5.0	5.4	-0.2	-0.7

Table 4. (continued)

Year	Quarter	Growth rate at constant				Percentage points	
		First estimate		Final/Latest estimate		Revision	
		PCE	GDP	PCE	GDP	PCE	GDP
2006	Q1	5.1	5.5	5.2	5.5	0.1	0.0
	Q2	5.2	5.5	5.2	5.3	0.0	-0.2
	Q3	5.3	4.8	5.3	5.2	0.0	0.4
	Q4	5.6	4.8	6.2	5.4	0.6	0.6
2007	Q1	5.9	6.9	5.9	6.9	0.0	0.0
	Q2	6.0	7.5	5.6	8.3	-0.4	0.8
	Q3	5.6	6.6	5.7	6.8	0.1	0.2
	Q4	6.3	7.4	6.2	6.3	-0.1	-1.1
2008	Q1	5.1	5.2	5.1	3.9	0.0	-1.3
	Q2	3.4	4.6	4.1	4.2	0.7	-0.4
	Q3	4.6	4.6	4.4	4.6	-0.2	0.0
	Q4	4.5	4.5	5.0	2.9	0.5	-1.6

Year	Count		Year	Count	
	PCE	GDP		PCE	GDP
1998-1999			1998-2008 (Including the Breaks)		
Upward	0	4	Upward	19	23
Downward	5	4	Downward	14	18
No revision	3	0	No revision	11	3
2001-2003			1998-2008 (Excluding the Breaks)		
Upward	11	6	Upward	16	16
Downward	0	6	Downward	12	17
No revision	1	0	No revision	8	3
2005-2008					
Upward	5	6			
Downward	7	7			
No revision	4	3			

Notes:
1 Break in the GDP 1999 and 2000.
2 Break in the GDP 2003 and 2004.
Source: NSCB.

Medalla and Jandoc statement:

Excerpt from Section 7: "On the Contrary, Industry Is Weakening"

> "Table 7 shows that in the period 2002-2007, the strength of the relationship between Manufacturing growth in the NIA and MISSI VOPI growth deteriorated as reflected by the lower R-square. Thus, the correlation between the two series weakened and manufacturing growth rates are now higher than before 2002, holding the movements of VOPI constant."

NSCB clarification

We have talked many times about the differences and similarities between MISSI VOPI and the NIA estimates of manufacturing GVA, and we do not know what economic theories form the basis of the relationship between these two variables that may have been hypothesized by Dr. Medalla and Mr. Jandoc. We think that their interpretation of the meaning of R-squared is not correct.

Medalla and Jandoc statement:

Excerpt from Section 8: "There Are Many Problems in the Measurement of Services Sector Growth"

> "While there is nothing inherently wrong with trying to capture the effects of new sources of growth in the National Income Account, it is important to make sure that such does not introduce an upward bias in the growth rates. For instance, if the attempt to capture the output of new sectors is done for current years but is not done retroactively, then estimated growth in recent years would be overestimated since the output in the earlier years would be understated."

NSCB clarification

- Yes, there are many problems in the measurement of the services sector emanating from various sources like e-commerce, smuggling, informal-sector activities, emerging industries, etc. This has been acknowledged by the international community. The NSCB is fully

aware of this, as well as are the many stakeholders of the PSNA. But as in other aspects of our work, the NSCB continuously tries to improve its craft. For one, it has taken a leadership role in accounting for trade in services such as medical tourism. In October 2008, we held a workshop in the Philippines on the measurement of international trade in services, which was participated in by representatives from the APEC economies.

- In the case of the business process outsourcing (BPO), a task force was created to account for the contribution of the sector. A survey was conducted to account for the contribution of BPO not only for the NIA but also for the Balance of Payments (BoP).
- The NSCB keeps in constant coordination with the NSO with regard to the updating of its sampling frame, particularly the inclusion of new/emerging industries.
- The statement of Dr. Medalla and Mr. Jandoc on attempting to capture new sectors for current years without doing it retroactively is surprising. We do not know of any statistical office that does this. It is certainly not a practice in the Philippine System of National Accounts. Among the major agencies of the Philippine Statistical System, whenever new methodologies or new concepts and definitions are used, we make parallel runs to ensure that we are able to provide our users with comparable estimates. This is done when we rebase the CPI and the national accounts, when we revise the methodology for poverty monitoring, the BoP, merchandise imports, etc. We may not be able to go as far back in the series as may be desirable due to data and resource constraints, but we backtrack and we never do what Dr. Medalla and Mr. Jandoc are worried that we might be doing. The PSS agencies are also fully aware of the importance of producing and disseminating metadata to guide users about the strengths and weaknesses of the data we release.

Medalla and Jandoc statement:

Excerpts from Section 9: "Other Indicators Point to a Lethargic Economy"

"There are also other indicators that lend to the belief that the economy is not as robust as the NSCB paints it to be. A rapidly growing economy should be intensive users of energy: the increase in demand comes from

both residents that increase their energy requirements to complement their higher standards of living and from firms that need more energy to fuel their increased production."

"…the slowdown of credit coincides with the period where economic has been robust as indicated by the NIA statistics.This indicator appears to be pointing at an economy that is relatively more fragile than what official statistics suggest."

"As an offshoot of weak domestic lending, investment as a proportion of GDP (investment to GDP ratio) continues its slide dating back to the Asian Financial Crisis."

NSCB clarification

- Assessing the estimates of the National Income Accounts or the progress of the Philippine economy based on limited or conveniently selected indicators is dangerous since the economy is much more complex than two or three sectors that comprise it.
- The compilation of national accounts is also much more complex and difficult than what may be implied by the paper of Dr. Medalla and Mr. Jandoc.
- During the quarterly press conferences held by the NSCB to release the accounts, we generate and publish indicators to support the estimates.

Medalla and Jandoc statement:

Excerpt from Conclusion: "The National Income Accounts Should Be Improved"

NSCB clarification

- The NSCB fully and certainly agrees.
- Currently, the NSCB is implementing a three-year project funded by the World Bank on "Improving the Quality and Usefulness of the Philippine System of National Accounts (PSNA)". The focus of the project includes the following:

    - Revision of the annual and quarterly series 1998-2008
    - Shift to the 2000 base year (from 1985 base year)

  - Adoption of the 1993 SNA recommendations and to some extent include the recommendations of the 2008 SNA
  - Use of the results of the recent census and surveys of establishment
  - Updating of parameters and assumptions

- The revised/rebased annual and quarterly series in real terms will adopt the chain volume measures (CVM) that more accurately reflect economic growth compared to fixed base-year method.
- The NSCB is also adopting the use of supply-and-use table (SUT) to address the statistical discrepancy (SD) in the PSNA.

Additional information

Breaks in the PSNA series

- In June 2007, the NSCB issued a technical note regarding breaks in the series of the national accounts (please refer to NSCB Technical Notes on the Estimates of the Philippine System of National Accounts (PSNA) Series 2007-Q1 (http://www.nscb.gov.ph/sna/2007/1stQ2007/2007tnq_1.asp). The technical note cites the following breaks:

  - 2000-2003 not linked to the 1949-1999 (as of May 2003)
    "The revised annual series and quarterly three-year series (2000-2002) released in May 2003, incorporated the updated estimates in Construction using data from government-owned and controlled corporations (GOCCs) from the Department of Finance and revisions in the data sources of the PSNA. There were data sources that revised their figures as far back as CY 2000 …"
  - 2003-2005 not linked to the 2002 and back (as of May 2006)
    The revised annual series and quarterly three-year series (2003-2005) released in May 2006 incorporated the estimates for the BPO/call center industry, which is included under the Business Services subsector of Private Services with the availability of more complete data from the Business Processing Association/Philippines (BPA/P) beginning 2003. Likewise, the Miscellaneous Services of the Exports of Non-Factor Services was revised to

account for the undercoverage of IT-enabled services/BPOs. In addition, export of Government Services was revised to account for the expenses on goods and services of embassies and international institutions.

- 2004-2006 not linked to the 2003 and back (as of May 2007) The revised annual series and quarterly three-year series (2004-2006) released in May 2007 incorporated the following: (1) Updated estimates for the BPO/call center industry, which is included under the Business Services subsector of Private Services with the availability of latest data from the Business Processing Association/Philippines (BPA/P), Contact Center Association of the Philippines (CCAP), Commission on Information and Communication Technology (CICT), and Board of Investments (BOI) beginning 2004. Correspondingly, the Miscellaneous Services of the Exports of Non-Factor Services was revised to account for the undercoverage of IT-enabled services/BPOs. (2) Updated estimates for Manufacturing with the use of the Quarterly Survey of Business and Industry (QSPBI) to supplement the Monthly Integrated Survey of Selected Industries (MISSI) data beginning 2004. And (3) updated estimates for Construction with the availability of more updated data on building permits from the National Statistics Office beginning 2004.

- These breaks in the series are the result of an NSCB decision to incorporate in the NSCB estimates new data and estimates of emerging industries in the economy. They are not "ad hoc" decisions; rather, they are a conscious decision to make the National Accounts more reflective of the current developments in the economy. The other option is to wait until the overall revision to do this, but we believe that since overall revisions are not or cannot be done frequently enough, this is an inferior option if we want to be relevant to our stakeholders.

While clearly we do not agree with everything they said in their paper, the NSCB would like to thank Dr. Felipe M. Medalla and Mr. Karl Robert L. Jandoc for their interest in statistics and for the challenges they have posed for the improvement of the Philippine System of National Accounts and the Philippine Statistical System in general.

We would also like to take this opportunity to acknowledge the strong support and guidance given by Dr. Medalla to the Philippine Statistical System when he was the secretary of Socio-Economic Planning and NEDA director-general as well as chairman of the NSCB. During his time, the budget for the 2000 FIES was cut, but upon his dedicated representation, the budget was restored and the conduct of the 2000 FIES pushed through. Likewise, during his chairmanship of the NSCB, he called the attention of the NSCB to the weaknesses of its deflators on imports, which led to an improved methodology in the estimation of exports and imports in constant prices.

Finally, for better appreciation of the System of National Accounts (SNA), we strongly encourage those interested in the improvement of the PSNA to read and understand the 1993 and 2008 SNA. These can be accessed at http://unstats.un.org/unsd/sna1993/toctop.asp and http://unstats.un.org/unsd/nationalaccount/SNA2008.pdf, respectively. We also encourage readers to peruse the technical notes on the PSNA, published on the NSCB website, for better comprehension of our national accounts.

21 December 2010