



A common framework for communicating and presenting revisions and alignment to standards

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A common framework for communicating and presenting revisions

- A Common Terminology
- A Common Taxonomy
- A Common way to measure implementation

(1) A Common Terminology

OECD / Eurostat Guidelines on Revisions Policy and Analysis

This website presents a set of guidelines on best practice for performing and using the results of revision analyses for sub-annual economic statistics, and in formulating a revisions policy which effectively supports user needs. It also contains a set of standard tools as a resource to both producers and users of official statistics to perform their own revision analyses.

Guidelines and related documents are presented for the range of themes listed in the table below with live links to their content. These were produced by a joint OECD / Eurostat taskforce which brought together eminent experts on this topic from a wide range of institutions around the world.

Theme related to revision policy and analysis

[Summary of recommendations for revisions policy and analysis](#)

[Guidelines for establishing a real-time database for performing revisions analysis](#)

[Recommended statistical measures for interpreting the outputs of revision analyses](#)

[Pre-programmed software for performing revisions analysis](#)

[A framework for revisions policy of key economic indicators](#)

[Comprehensive framework of reasons for revisions and their timing](#)

[Guidelines on how to decompose total revision into different reasons for revisions](#)

[Guidelines on how to use the results from revision analyses to improve compilation](#)

[Case studies on the relationship between timeliness of release and size of revision](#)

[Assessing the efficiency of early release estimates of economic statistics](#)

Comprehensive Update of Industry Accounts Now Available

November 30, 2018

The U.S. Bureau of Economic Analysis has released a comprehensive update of its industry statistics, including improvements that reflect the evolving U.S. economy, update the benchmark year, and provide more detailed annual and quarterly data.

The update in November included release of the new 2012 benchmark **supply-use tables** (also known as input-output tables), as well as updated benchmark tables for 2007. Benchmark updates are based on the most detailed data available for the five years by the U.S. Census Bureau. The benchmark tables cover all major commodities. They provide the foundation for BEA's estimates of industry output.

The updated industry tables incorporate changes made earlier this year to the National Income and Product Accounts (NIPAs). With the update, BEA is releasing annual and quarterly industry accounts, and the NIPAs. For more detailed information on that component in the benchmark tables, visit [this page](#).

QUARTERLY NATIONAL ACCOUNTS MANUAL 2017 EDITION

Summary of Key Recommendations

- *Revisions are an essential part of good QNA compilation practice. Revisions provide the possibility to incorporate new and more accurate information in the QNA, and thus to improve the accuracy of the estimates, without introducing breaks in the time series.*
- *Series that are revised regularly to reflect new and better information are more accurate than those subject to little or no revision.*
- *To avoid unnecessary criticism, a well-designed and carefully managed revision policy is needed. Essential features of a well-designed revision policy are predictability and openness, advance notice of causes and effects, and explanation, as well as easy access to sufficiently long time series of revised data.*
- *Quarterly accounts are subject to three "waves" of statistical source data: (a) quarterly source data, (b) annual source data, and (c) periodic census data. Periodic benchmark revisions are also used to introduce revised international standards, major methodological updates, and changes in classifications.*
- *A crucial part of a well-established and transparent revision policy is devising an appropriate compilation and release schedule, which should specify timeliness, frequency of update, and revisions period of the preliminary estimates.*
- *Revisions should be communicated in a clear and transparent way. Users should be notified well in advance of any major revisions with significant impact on the current estimates. When a benchmark revision of national accounts is released, a minimum of five years of continuous series for the quarterly GDP and its main components should be made available to the public.*
- *Revisions analysis of QNA data is essential to monitor the reliability of the estimates and advise users on the range of uncertainty. Real-time databases (or revisions triangles) and revisions indicators should be developed and regularly maintained as part of the QNA compilation process. Best practices also involve periodically conducting and publishing revision studies of QNA data and disseminate real-time databases and revisions indicators of key QNA aggregates to the public.*

Practical guidelines for
revising ESA 2010 data | 2019 edition

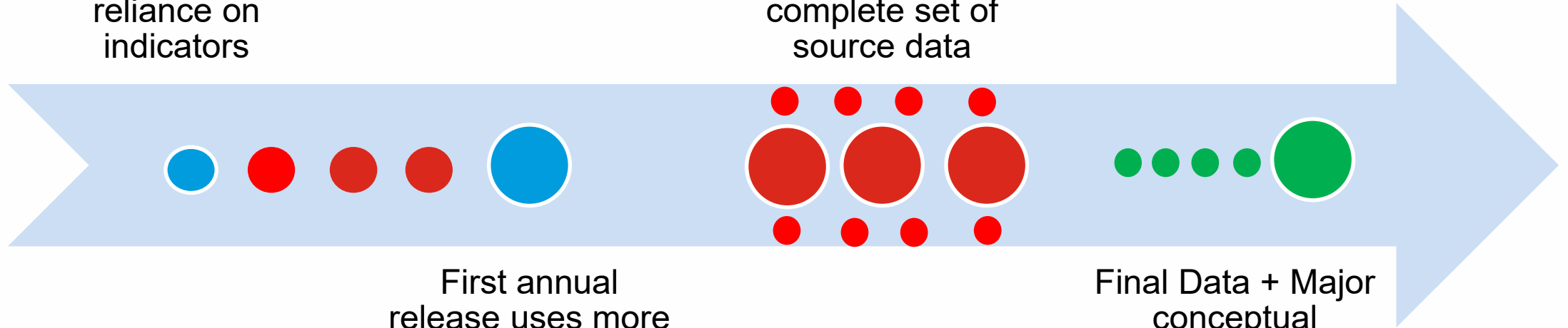
Table 3
Reconciliation - revised gross domestic product (GDP) vs. previous GDP

Category	2007	2008	2009	2010	2011
Previous estimate_GDP	1,529,589	1,603,418	1,528,985	1,624,608	1,720,748
Capitalization of business research and development	10,341	11,638	10,730	10,502	11,091
Consumption of fixed capital - government research and development	9,049	9,631	9,832	10,057	10,251
Consumption of fixed capital - military weapons systems	890	1,076	1,348	1,446	1,527
Consumption of fixed capital - governments (method of depreciation)	5,061	5,936	6,111	5,957	6,782
Net statistical revisions	11,085	14,176	7,784	12,192	12,033
Revised estimate_GDP	1,566,015	1,645,875	1,564,790	1,664,762	1,762,432

The National Accounting Processing Cycle

Initial set of (usually sub-annual) release(s) have a heavy reliance on indicators

Second, third, fourth? annual release uses updated and final versions of the complete set of source data



First annual release uses more complete but not yet final data

Final Data + Major conceptual changes



Routine Revisions

First Annual Revision / First Initial Estimate



Final Annual Revision = Benchmark Revisions



Comprehensive Revision

A common terminology – a possible starting point

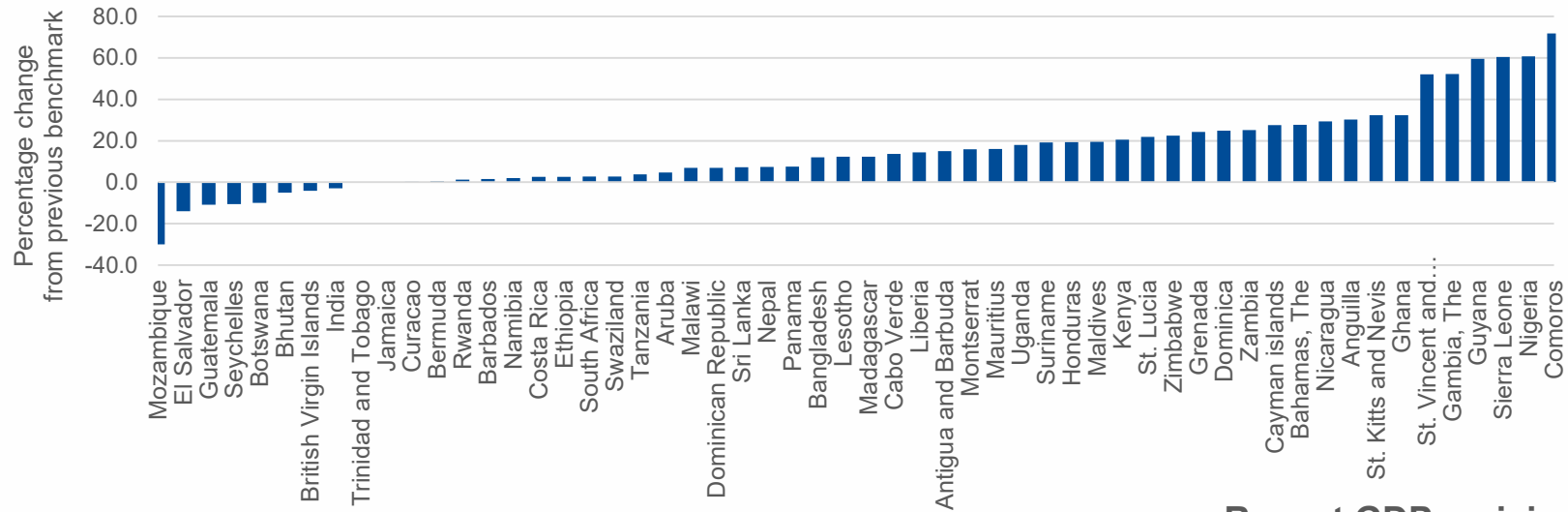
Term	Definition
Routine revisions	<ul style="list-style-type: none">• Revisions to sub-annual series (reference months and quarters) generally within the current reference year or current reference year and previous reference year.
Annual revisions	<ul style="list-style-type: none">• Annual revisions generally refer to revisions affecting data for the current calendar year along with the most recent calendar year(s) and generally incorporate the latest (but not necessarily final) annual information available from respondents or administrative data sources.
Benchmark revisions	<ul style="list-style-type: none">• Benchmark revisions are a special case of annual revisions and are used to incorporate final vintages of source data.
Comprehensive revisions	<ul style="list-style-type: none">• Comprehensive revisions are special cases of benchmark revisions where the macroeconomic account program not only incorporates the final vintages of source data but also integrates new or updated concepts, accounting treatment, classifications or improved methods.

A common terminology – a possible starting point

Term	Definition
Revision	<ul style="list-style-type: none">• A revision is defined as the numerical difference between two vintages of the same data point.
Benchmark Estimate	<ul style="list-style-type: none">• A benchmark estimate is defined as the final vintage of a data point. It is the data point that was compiled using the highest quality source data and the most advanced methods.
Processing Cycle	<ul style="list-style-type: none">• The calendar period during which a vintage of national accounts are compiled.
Benchmarking	<ul style="list-style-type: none">• Benchmarking is a process by which an existing series is calibrated to a new higher quality series of the same or different frequency.
Rebasing	<ul style="list-style-type: none">• Rebasing refers to the process by which constant price aggregates are updated using the prices of a more recent period.
Time-series	<ul style="list-style-type: none">• A time-series is a set of regular time-ordered observations of a quantitative characteristic of an individual or collective phenomenon taken at successive, in most cases equidistant, periods / points of time.
Backcasting	<ul style="list-style-type: none">• A break in a time-series can occur when there is a change in the standards for defining, observing or measuring the variable over time, such that estimates are no longer comparable from one period to another.

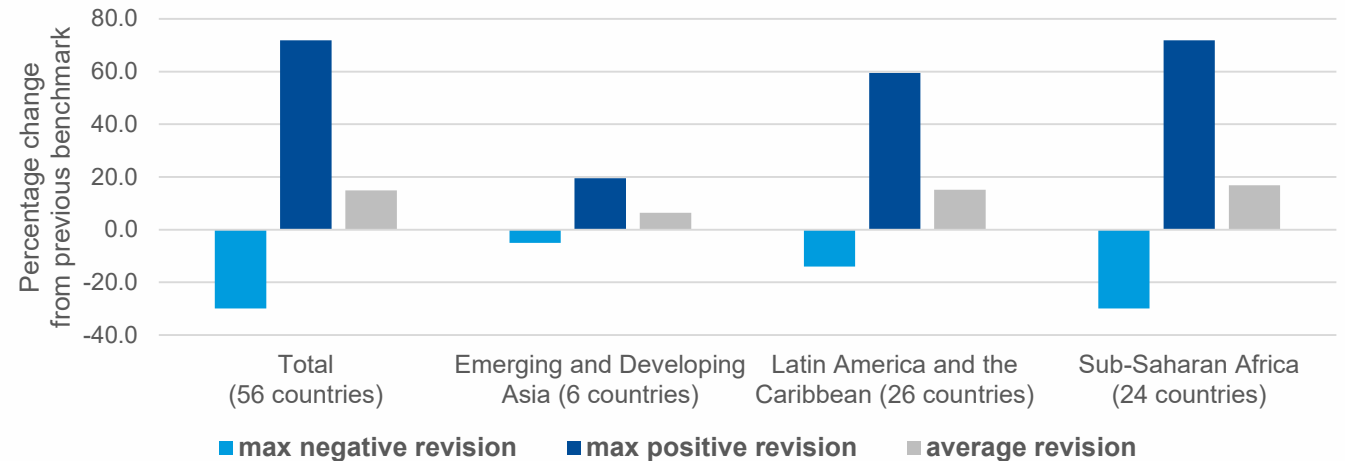
(2) A common classification for revisions

Recent GDP revisions from benchmarking exercises
(selected countries)



Source: IMF staff (preliminary data from survey on country practices)

Recent GDP revisions from benchmarking exercises
(selected countries)



Source: IMF staff (preliminary data from survey on country practices)

Revisions to GDP – A cross country perspective

Some countries publish details of the revisions by activity/aggregate

Colombia (2018)

Cuadro 7. Valor corrientes del PIB Total y valor agregado bruto según actividad económica, en miles de millones de pesos 2014

Actividad económica	Base 2005	Base 2015
Agricultura, ganadería, caza, silvicultura y pesca	42.619	41.555
Explotación de minas y canteras	63.665	64.274
Industrias manufactureras	85.647	93.603
Suministro de electricidad, gas, vapor y aire acondicionado ¹	24.975	22.947
Construcción	72.152	55.568
Comercio al por mayor y al por menor; reparación de vehículos automotores y motocicletas ²	118.289	120.677
Información y comunicaciones	23.425	23.336
Actividades financieras y de seguros	36.630	31.839
Actividades inmobiliarias	57.630	65.194
Actividades profesionales, científicas y técnicas; Actividades de servicios administrativos y de apoyo	43.615	55.216
Administración pública y defensa; planes de seguridad social de afiliación obligatoria ³	103.909	102.459
Actividades artísticas, de entretenimiento y recreación y otras actividades de servicios ⁴	20.760	18.084
Total Valor Agregado	693.318	694.752
Impuestos menos subvenciones a la producción y a las importaciones	63.747	68.151
Producto Interno Bruto	757.065	762.903

Source: DANE (<https://www.dane.gov.co/files/investigaciones/boletines/pib/cuentas-nal-anales/cuentas-nal-anales-base-2015.pdf>)

Paraguay (2018)

PIB en millones de guaraníes corrientes

PIB	AÑO 2014 BASE 1994	AÑO 2014 BASE 2014	Diferencia BASE 2014 respecto a BASE 1994 (%)
Producción	137.797.686	179.721.609	30,4
Sector Primario	25.744.857	21.587.879	-16,1
Sector Secundario	35.665.632	59.962.588	68,1
Sector Servicios	62.922.870	84.647.961	34,5
Impuestos Netos a los Productos	13.464.326	13.523.182	0,4
Gasto	137.797.686	179.721.609	30,4
Consumo Privado	95.254.715	115.312.289	21,1
Consumo Público	16.913.821	20.302.493	20,0
Formación Bruta de Capital	22.449.657	40.513.161	80,5
Exportaciones	62.269.490	62.568.657	0,5
Importaciones	59.089.997	58.974.991	-0,2
Ingreso	137.797.686	179.721.609	30,4
Remuneraciones	42.468.759	56.662.241	33,4
Impuesto a la producción	14.641.230	14.700.997	0,4
Ingreso mixto	24.641.230	31.795.754	29,0
Excedente bruto de explotación	55.855.212	76.562.618	37,1

Source: Banco Central del Paraguay (<https://www.bcp.gov.py/nuevo-ano-base-2014-i642>)

Revisions to GDP – A cross country perspective

Few countries publish details by type of revision

OECD countries (2015)

Table 1. The overall impact of the benchmark revision on GDP-levels, by type of revision, in year 2010

	Overall impact								
	Change over of standards					Statistical benchmark revision			
		R&D	Military weapons systems	Other		New/improved sources	Illegal activities	Other	
Australia	4.4	3.9	1.4	0.3	2.2	0.5	n.a.	n.a.	n.a.
Austria	3.2	3.8	2.3	0.0	1.4	-0.6	1.1	0.0	-1.7
Belgium	2.8	2.5	2.4	0.0	0.1	0.3	-0.3	0.4	0.2
Canada	2.5	1.7	1.2	0.1	0.4	0.8	n.a.	n.a.	n.a.
Chile	-	-	-	-	-	-	-	-	-
Czech Republic	4.3	3.1	1.2	0.1	1.7	1.2	1.1	0.0	0.1
Denmark*	2.5	2.7	2.6	0.1	0.0	-0.2	-0.6	0.2	0.2
Estonia	1.2	1.4	0.9	0.4	0.0	-0.2	-0.2	0.0	0.0
Finland	4.7	4.2	4.0	0.2	0.0	0.5	0.5	0.0	0.0
France	3.2	2.4	2.2	0.2	0.0	0.8	0.8	0.0	0.0
Germany	3.3	2.7	2.3	0.1	0.3	0.6	0.2	0.1	0.3
Greece	1.8	1.3	0.6	0.6	0.2	0.6	-0.1	0.0	0.6
Hungary	1.6	1.6	1.2	n.a.	n.a.	0.0	-0.1	0.0	0.1
Iceland	5.5	1.4	1.4	0.0	0.0	4.1	3.6	0.5	0.0
Ireland	4.2	3.6	3.5	0.0	0.1	0.6	0.0	0.6	0.0
Israel*	6.4	2.3	2.2	0.0	0.1	4.1	3.2	0.0	0.9
Italy	3.4	1.5	1.3	0.2	0.0	1.9	0.4	1.0	0.5
Japan	-	-	-	-	-	-	-	-	-
Korea	7.8	5.1	3.6	0.3	1.2	2.7	n.a.	n.a.	n.a.
Luxembourg*	0.2	1.6	0.5	0.0	1.2	-1.4	0.0	0.2	-1.7
Mexico ^{2c}	0.9	1.5	1.4	0.0	0.0	-0.6	0.0	0.0	-0.6
Netherlands	7.6	1.7	1.8	n.a.	n.a.	5.9	4.6	0.4	0.9
New Zealand	1.3	1.3	1.1	0.1	0.1	0.0	0.0	0.0	0.0
Norway*	1.5	1.6	1.4	0.2	0.0	-0.1	n.a.	n.a.	n.a.
Poland	1.5	1.2	0.5	0.2	n.a.	0.2	n.a.	0.7	n.a.
Portugal	4.1	2.1	1.3	0.1	0.8	2.0	1.4	0.4	0.3
Slovak Republic	1.9	1.8	0.6	0.1	1.1	0.1	0.2	0.0	-0.1
Slovenia	2.1	2.0	1.9	0.1	0.0	0.1	0.3	0.0	-0.2
Spain	3.3	1.6	1.2	0.2	0.2	1.7	0.0	0.9	0.8
Sweden	5.5	4.4	4.0	0.4	0.0	1.1	1.1	0.0	0.0
Switzerland	5.9	3.5	n.a.	n.a.	n.a.	2.3	n.a.	n.a.	n.a.
Turkey	-	-	-	-	-	-	-	-	-
United Kingdom	4.9	2.3	1.6	0.2	0.4	2.6	2.0	0.6	0.0
United States ^d	3.7	4.0	2.5	0.5	0.9	-0.3	-0.4	0.0	0.1
OECD Total**	3.8	3.1	2.2	0.3	0.6	0.7	0.3	0.2	0.1

Source: OECD (<https://www.oecd.org/sdd/na/new-standards-for-compiling-national-accounts-SNA2008-OECDSD20.pdf>)

Turkey (2016)

Farklılıkların Kaynakları		Fark (%)
KAYNAK		
FISIM		0,21%
General Government Accounts		2,87%
ESA 2010		
	R&D	0,40%
	Own Account Software	0,29%
	Adjusted Claims	0,04%
	Total	0,72%
Tax On Production (D21)		0,60%
Agriculture		0,74%
Imputed Rents		-0,88%
Fixed input output ratio		-1,44%
Other		7,97%
Total impact		10,79%

Source: Turkstat (http://www.turkstat.gov.tr/HbGetir.do?id=24921&tb_id=11)

Japan (2016)

Revisions to Nominal GDP Level

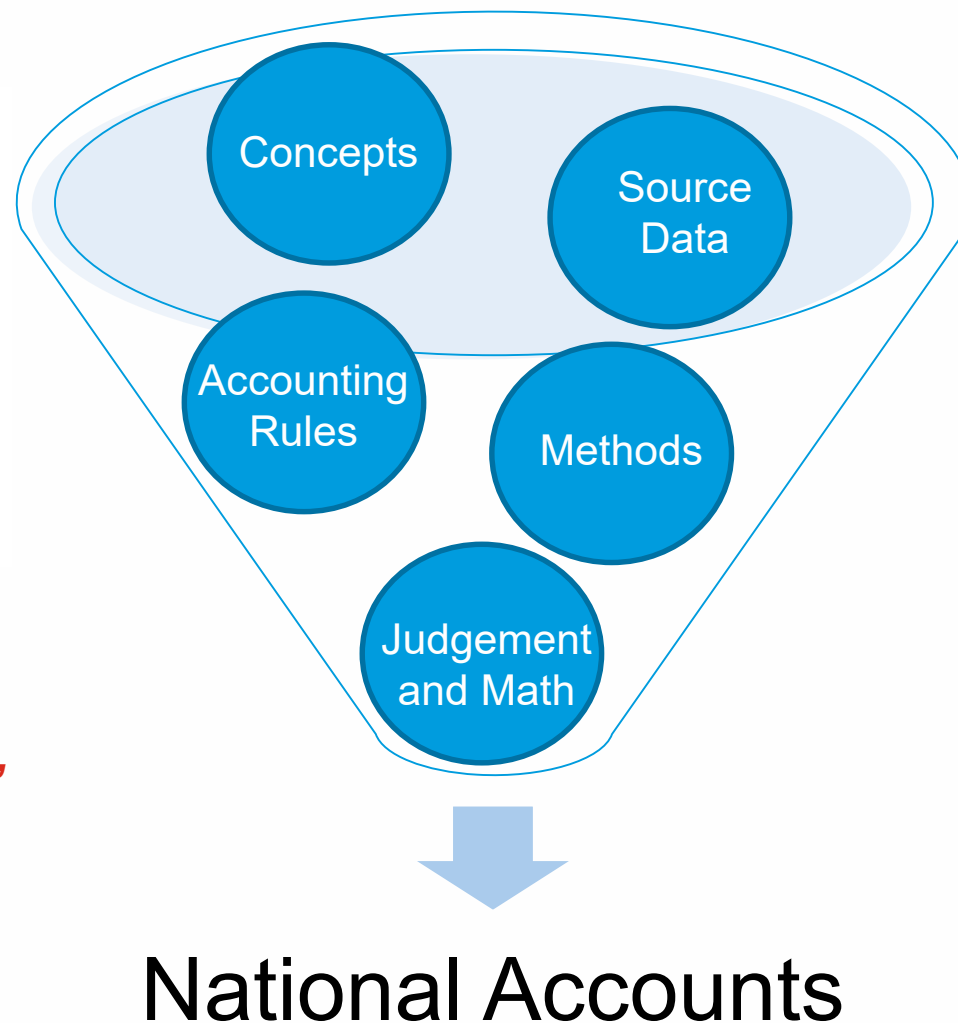
Fiscal year	(Trillion yen)										
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
After the Revision (Benchmark Year: 2011)	525.8	529.3	531.0	509.4	492.1	499.2	493.9	494.7	507.4	517.9	532.2
Before the Revision (Benchmark Year: 2005)	505.3	509.1	513.0	489.5	474.0	480.5	474.2	474.4	482.4	489.6	500.6
Revision to nominal GDP	20.5	20.1	18.0	19.9	18.1	18.7	19.7	20.3	25.0	28.3	31.6
SNA2008 Factor	19.8	20.7	21.4	21.1	19.2	19.4	19.8	19.6	21.0	23.0	24.1
Capitalization of R&D	16.9	17.7	18.3	18.1	16.4	16.4	16.6	16.6	17.3	18.5	19.2
Market Producers	13.6	14.3	14.9	14.7	13.1	13.1	13.3	13.3	14.0	15.1	15.8
Non-Market Producers	3.3	3.3	3.4	3.4	3.3	3.3	3.3	3.3	3.3	3.4	3.4
Change in the Treatment of Patent Royalties	0.9	1.1	1.3	1.2	1.1	1.3	1.5	1.4	2.1	2.8	3.1
Capitalization of Defense Equipment	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
Elaboration of Ownership Transfer Cost	1.1	1.1	1.0	1.0	0.9	0.9	0.9	0.8	0.8	1.0	0.9
Clarification of Central Bank Output	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Other Statistical Factor	0.7	-0.6	-3.4	-1.2	-1.1	-0.8	-0.1	0.6	4.0	5.3	7.5

Source: Cabinet Office, Government of Japan (<https://www.esri.cao.go.jp/en/sna/data/kakuhou/files/2015/pdf/point20161222e.pdf>)

The existential question: What is the SNA?

The System of National Accounts (SNA) is the internationally agreed standard set of recommendations on how to compile measures of economic activity in accordance with strict accounting conventions based on economic principles. The recommendations are expressed in terms of a set of concepts, definitions, classifications and accounting rules that comprise the internationally agreed standard for measuring such items as gross domestic

- ***If national accounts are constructed using concepts, source data, accounting rules, statistical methods and judgement and a change in any of these could trigger a revision – then this may be a good framework to codify and present revisions.***



A common taxonomy

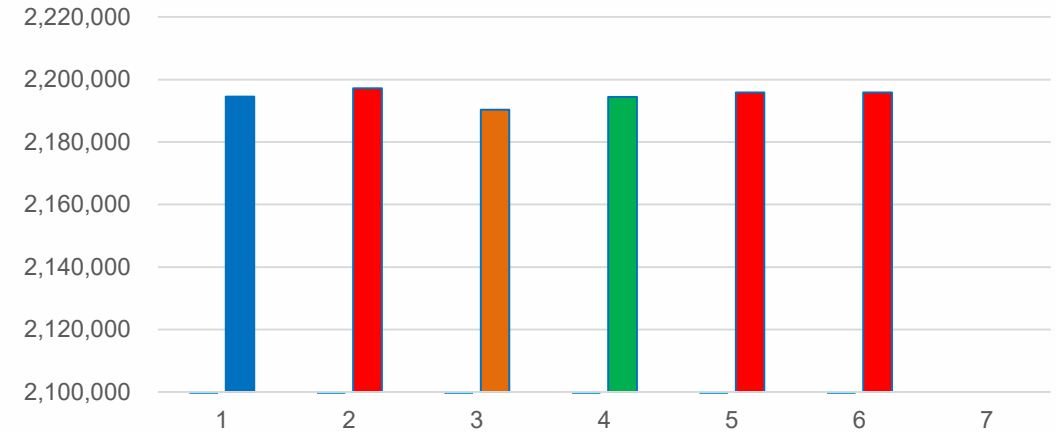
Term	Definition
Conceptual Revisions	<ul style="list-style-type: none"> Reflect changes in what is being measured
Source Data Revisions	<ul style="list-style-type: none"> Reflect changes in the underlying data sources
Accounting Revisions	<ul style="list-style-type: none"> Reflect changes in how things are measured
Methodological Revisions	<ul style="list-style-type: none"> Reflect changes in the techniques used by the compiler
Computational Revisions	<ul style="list-style-type: none"> Reflect changes in judgement, interpretation, and application
Presentational Revisions	<ul style="list-style-type: none"> Reflect changes in the way the data are presented

Category	Revision	Notes
Conceptual Revision	\$5	Incorporated estimates of Financial Intermediation Services Indirectly Measured
Accounting Revision	\$1	Recording consumption of fixed capital at replacement cost
Methodological Revision	\$2	Improved method used to calculate imputed rental income
Statistical Revision	\$2	Incorporated new estimates from the latest household budget survey.
Computational Revision		No computational changes were made
Presentational Revision		Presentational changes were made but they did not result in any revisions.
	\$10	

How a common taxonomy and language can be useful to our users

		Current prices					
		Seasonally adjusted at annual rates					
		Canada					
Estimates	Release	Q1 2018	Q2 2018	Q3 2018	Q4 2018	Q1 2019	Q2 2019
Gross domestic product at market prices	August 30, 2019	2,195,864	2,217,196	2,240,456	2,222,728	2,253,576	2,298,972
	May 31, 2019	2,195,864	2,217,196	2,240,456	2,222,728	2,250,080	..
	March 01, 2019	2,194,432	2,214,392	2,238,188	2,223,144	..	..
	November 30, 2018	2,190,328	2,215,032	2,242,096	..	..	..
	August 30, 2018	2,197,204	2,224,816	..	..	..	..
	May 31, 2018	2,194,484	..	..	..	..	..
	March 02, 2018	..	..	..	..	..	..
	December 01, 2017	..	..	..	..	..	..

Vintages - Real Quarterly GDP First Quarter 2018
Canada

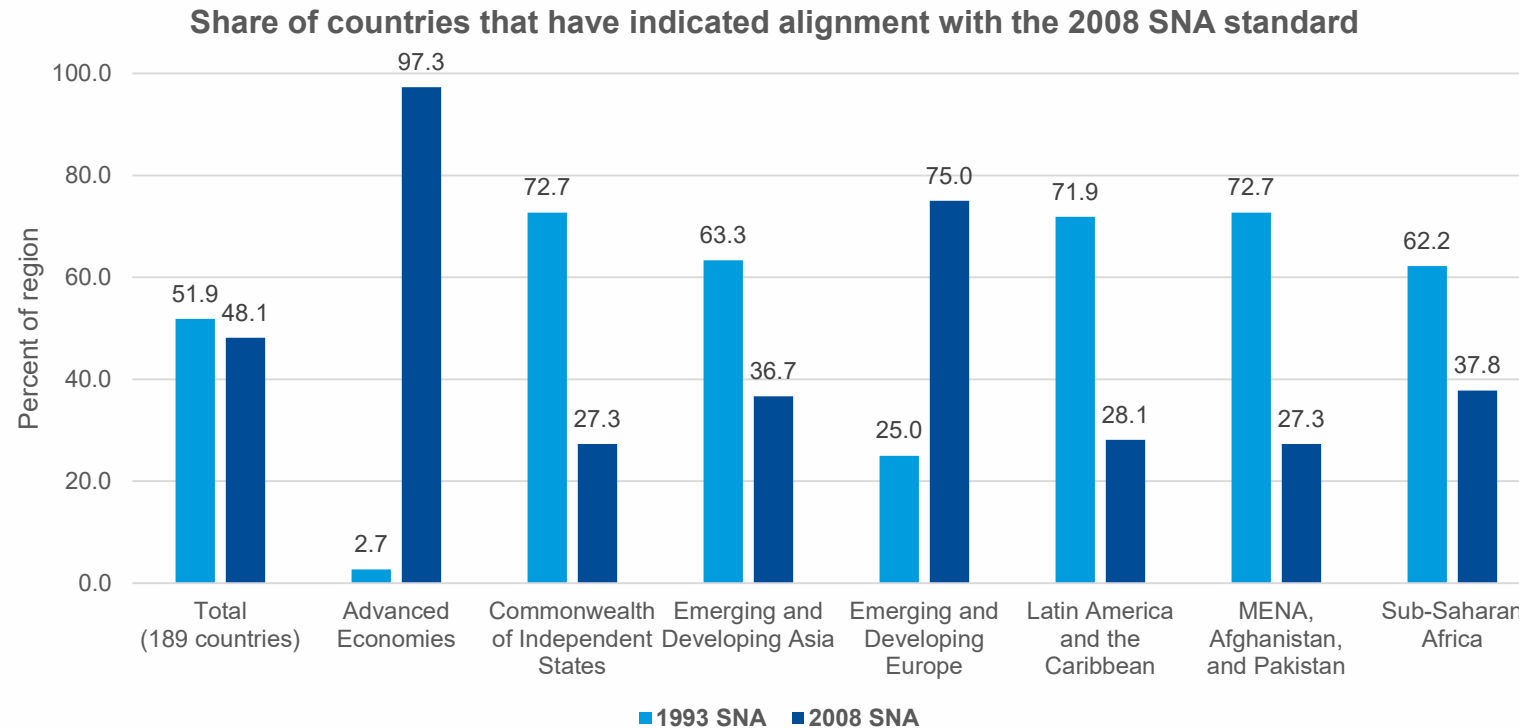


Initial Estimate, Routine Revisions, Annual Revision, Comprehensive Revision

- That addition of a classification system for revisions significantly increases the interpretability of the data.
- A common taxonomy will better enable countries to study revision patterns and address data accuracy issues in real-time.

	Source Data Revision	Accounting revision	Conceptual Revision
2 nd Vintage – Routine Revisions	2,720	0	0
3 rd Vintage – Annual Revision	-6,876	0	0
4 th Vintage – Comprehensive Revision	0	0	4,104

(3) A common way to measure implementation

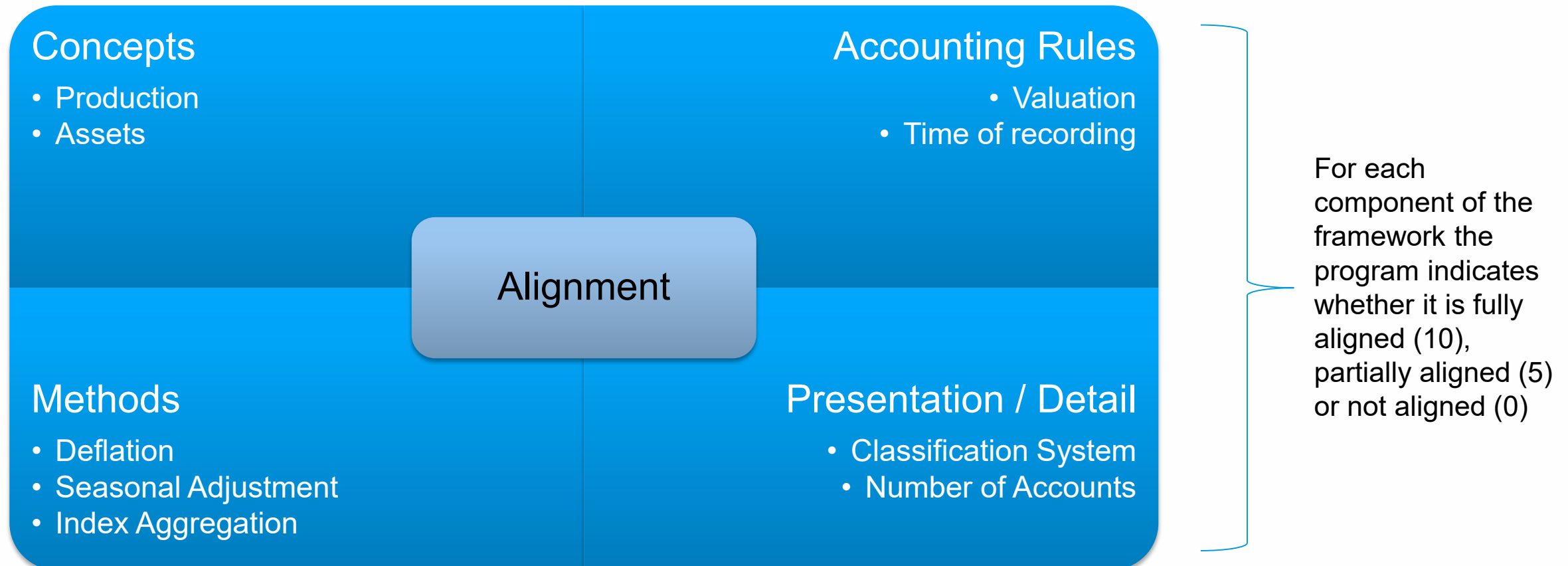


Source: IMF staff

“It could be argued that international macroeconomic accounting systems have two main objectives. The first is to inform users about the performance and structure of the national economy and its interaction with the rest of the world and increasingly the environment. The second, and equally important, is to inform the user about the performance and structure of the national economy **relative to all other economies.**”

“Measuring” alignment with standards

Could we envision a scorecard that assesses a given country’s alignment with the key concepts, accounting rules, and recommended presentational detail associated with the framework. The structure of the scorecard could be based on existing data quality assessment frameworks such as the IMF’s data quality assessment framework (DQAF) for national account statistics.



“Measuring” alignment with standards

Would countries be willing to create a “metric” where they score themselves against a grid which signals a “degree” of alignment for themselves and their users.

- ✓ We could restrict scoring to only those aspects that can be accurately and objectively quantified.
- ✓ The compiler would ‘grade’ its alignment (e.g. fully, partially or not aligned).
- ✓ The compiler would pre-weight the categories or there would exist some form of generic international weights so the individual categories can be aggregated.
- ✓ The weighted score would provide an **indication** of alignment.

Sub-Category	Fully Aligned	Partially Aligned	Not Aligned	Weight	Weighted Score
Production					
Observed market output	10			50	50
Non-observed market output.			0	10	0
Non-market output		5		20	10
Output for own final use.		5		5	2.5
Imputed Services		5		15	7.5
				100	70
Assets					
Dwellings	10			30	30
Other buildings and structures	10			20	20
Machinery and Equipment	10			20	20
Weapons Systems			0	5	0
Cultivated biological resources			0	10	0
Intellectual Property Products	10			10	10
Valuables			0	5	0
				100	80

Uses – Cross Country Comparisons

Criteria	Country A	Country B
Production		
Market Output	●	●
Non-Market Output	●	●
Output for Own Final Use	●	●
Imputed Services		●
.....		
Assets		
Machinery and Equipment	●	●
Cultivated Biological Assets	●	
...		
Accounting Rules		
Market Value	●	
Accrual Basis		

Uses – “Potential Future Revisions”

Criteria	Own Account Child Care Services	Data (Digitized Observations)
Production			
Market Output		●	
Non-Market Output			
Output for Own Final Use		●	
Imputed Services	●		
.....			
Assets			
Machinery and Equipment			
Cultivated Biological Assets			
Data (Digitized observations)		●	

This could be used as a framework to communicate with users about the impact of the proposed changes to the SNA

Uses – “Potential Future Revisions”

Criteria	Country	Weight	Score
Production			
Market Output	●	50	50
Non-Market Output	●	20	20
Output for Own Final Use	●	10	10
Imputed Services		20	0

Given the above framework – users could expect that if the country fully aligned with the current macroeconomic standards its measure of output would increase by approximately 20%

Questions for the AEG

1. Should the NSOs and International Agencies adopt a common set of terms and recommendations related to the presentation and communication of revisions?
2. Should we provide guidance and a set of recommendations regarding the classification of revisions that would enhance cross-country and temporal comparisons?
3. Should we go as far as developing an implementation measurement framework that countries and agencies can use to “score” and “quantify” their alignment to the standards.