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AN ANALYSIS OF THE REVISIONS OF FIRST (FLASH) QUARTERLY NATIONAL ACCOUNT DATA RELEASES FOR GREECE*

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I INTRODUCTION-SYNOPSIS

This study examines the reliability of the first (flash) quarterly national account data estimates compiled and released by the NSSG. In particular, it attempts to quantify the revisions using several indicators to assess the size, the direction and the volatility of revisions with a view to evaluating the reliability of the first (flash) quarterly national account estimates. This revisions analysis is considered informative for the following reasons:

(a) Flash estimates, owing to their nature and their relatively timely release, shape the views of policy makers and provide them with the most comprehensive information for the assessment of the current state of the economy.

(b) First (flash) estimates are considered as the most up-to-date available information for total macroeconomic aggregates and therefore usually represent the initial conditions of macroeconomic projections. As a result, even small national account data revisions can significantly affect the profile of macroeconomic projections throughout the forecast horizon.

Taking into account that policy makers should be aware of the data reliability, as well as of the extent and frequency of possible revisions, the Bank for International Settlements (BIS) and the European Central Bank (ECB) have carried out studies on the revisions of the first quarterly GDP estimates. The BIS study —Wood (2008)— covers a large sample from the Bank's member states, while the ECB study —ECB (2009)— is carried out for the 6 major euro area countries and the euro area as a whole. The BIS study focuses exclusively on the examination of total GDP revisions without going into revisions to individual elements of demand, whereas the ECB study also examines revisions to demand components. Greece is among the countries examined in the BIS study.[1] It is worth noting that even if quarterly GDP growth rates in Greece are among the highest in the group of countries examined, the revision indices calculated with respect to size, direction and volatility record exceptionally low values compared to those of other countries.

Small revisions are not necessarily a proof of accurate measurement, as this can be attributed to the fact that the latest estimates do not incorporate up-to-date information, changes in seasonal adjustment parameters, base effects, methodological improvement etc., or it can be considered that limited revisions of total GDP result from counterbalancing revisions of its components.

The present study, as also the recently published ECB study (ECB 2009), is not confined only to the examination of total quarterly GDP revisions, but also evaluates revisions to all the components of demand. The main conclusions drawn by the study are the following: (1) revisions of year-on-year ("y-o-y", i.e. quarter on the same quarter in the previous year) GDP growth rates with respect to size, direction and volatility are very limited, despite the two large revisions of the national account statistics in

* The views expressed in this study do not necessarily reflect those of the Bank of Greece. The authors assume responsibility for any errors.

1 An earlier unpublished ECB study (Haine and Labhard 2008) covered 11 euro area countries, including Greece.

2006 and 2007;[2] (2) revisions of quarterly ("q-o-q", i.e. quarter on previous quarter) GDP growth are also small, though the size of revisions is significant in absolute terms only between the flash and the current estimate;[3] and (3) flash estimates of demand components, and in particular flash estimates of foreign trade aggregates in real terms as well as of investment are revised significantly in the subsequent national account releases. The estimate of the rate of change in GDP (on annual and quarterly basis) can be considered as an unbiased estimate of GDP growth rate. The real external balance is systematically overestimated in the first (flash) estimate, and this overestimation is counterbalanced by the systematic underestimation of domestic demand (mainly total consumption). Revisions are higher when the rates of change are calculated on a quarterly basis.

The study of the revisions refers to the period from the first quarter of 2001 up to the first quarter of 2008. It should be noted that the National Accounts Department of the General Secretariat of the NSSG completed in November 2008 the compilation of a detailed system of quarterly national accounts and released the first estimate of quarterly GDP for the third and the fourth quarters of 2008 based on the new methodology. According to the former system of compilation of quarterly national accounts, the estimates of quarterly GDP were based on the method of expenditure, while the new detailed system calculates quarterly, as well as annual GDP using all three methods for its calculation, i.e. output, expenditure and income. These methods are combined, making best use of all the available statistical sources and data for the production of the quarterly results. According to the new system of compilation of quarterly national accounts, the first announcement of results (estimates) in each quarter releases exclusively the estimate for GDP at current and constant prices, with 2000 as the base year. The data are made available both seasonally adjusted and unadjusted. According to the former system, the announcement of the first (flash) estimate included estimates of both GDP and its components. According to the new system, with the second announcement of results in each quarter (provisional data) along with GDP, estimates for the components of demand are released as well.

2 REVISION INDICES AND THE RESULTS

The NSSG periodically revises its estimates of the quarterly national accounts. It releases the first flash estimate for a specific quarter approximately six weeks after the end of that quarter. Roughly 15 days after the release of the first flash estimate, the provisional estimate follows. The second estimate is available with the release of the first flash estimate for the next quarter. For analysis purposes, three categories of revisions are calculated: (1) those between the first (flash) estimate and the preliminary estimate, available roughly 15 days after the release of the first estimate; (2) those between the first estimate and the"second" estimate, i.e. the one available one quarter later; and, finally, (3) those between the first estimate and the latest available vintage of data (the "current estimate"). Revisions to the first estimates were calculated in both y-o-y (quarter on the same quarter in the previous year) and q-o-q (quarter on the previous quarter) terms.

Thereafter, the analysis of the revisions uses simple descriptive statistics that record size, direction (positive or negative revision), and volatility. These statistics were calculated for all three aforementioned types of revision in both annual and quarterly terms. The annex explores the possibility of any bias in flash estimates, using formal statistical methods.

2.1 SIZE OF THE REVISION

In order to assess the size of revisions we use the mean absolute revision (MAR), calculated

2 It should be noted that the BIS and ECB studies take no account of the substantial revision to Greek GDP in 2007.
3 This finding runs contrary to the results of the study by Haine and Labhard (2008).

as the absolute value of the revisions on average across all revisions, using the formula:

$$MAR = \frac{1}{n}\sum_{j=1}^{n} |g_j - g_i| \qquad (1)$$

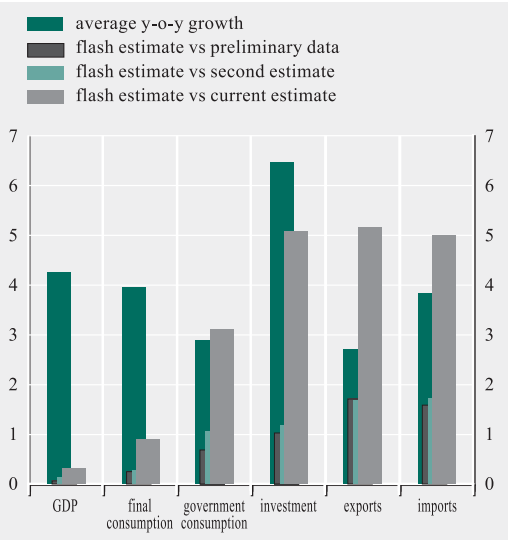
where n is the number of revisions considered, g_j is the rate of change of GDP and its components in the period j in both an annual and a quarterly basis, so that the absolute revision between first and preliminary, first and second and first and current estimate is $|g_j - g_i|$ respectively. By using absolute values, this measure focuses on the size of the revisions, regardless the sign. The results of these calculations are presented in Tables 1 and 4 for y-o-y and q-o-q national accounts data rates of change respectively. The results are presented in the tables in relative terms, i.e. the average absolute revisions of GDP (and demand components) are divided by the average GDP growth rate (and demand components) for the period under study. This presentation gives an immediate feeling of revision size. For instance, a value equal to 1 shows that the initial estimate is revised on average as much as the average rate of change in the relevant variable. Charts 1 and 2 display absolute aggregates calculated by formula (1).

The assessment of revisions results as presented in the aforementioned Tables and Charts concludes that the size of revisions of total GDP growth rate (in both y-o-y and q-o-q terms) is clearly very limited. The size of revisions is significant just between first and current estimate of total GDP in q-o-q terms, while it is much smaller when the quarterly rates of change are calculated on an annual basis. Consequently, the first estimate of quarterly total GDP at annual rates of change constitutes a more reliable measure for assessing current total economic activity than the first quarterly estimate. This may be attributed to the fact that estimates at annual rates of change have already incorporated the revisions of three quarters, which is not the case for estimates on a quarterly basis.

Furthermore, it is observed that domestic demand components are revised significantly. In particular, flash estimates of the real external balance are clearly updated in subsequent national accounts releases. For instance, on average, the revisions to exports and imports between flash estimate and current estimate

Chart 1 Average absolute revisions (2001Q1-2008Q1)

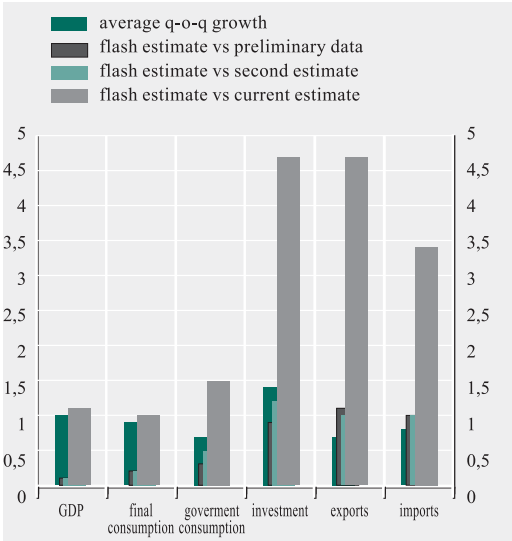
(y-o-y growth rates)



Sources: NSSG and Bank of Greece calculations.

Chart 2 Average absolute revisions (2001Q1-2008Q1)

(q-o-q growth rates)



Sources: NSSG and Bank of Greece calculations.

Table 1 Average absolute revisions relative to the average y-o-y growth rate of GDP and its components, 2001 Q1-2008 Q1

	GDP	Final consumption	Government consumption	Investment	Exports	Imports
Flash estimate vs preliminary data	0.02	0.06	0.23	0.16	0.64	0.41
Flash estimate vs second estimate	0.03	0.07	0.37	0.18	0.62	0.45
Flash estimate vs current estimate	0.08	0.22	1.08	0.78	1.91	1.30
Average y-o-y growth	*4.27*	*3.95*	*2.89*	*6.47*	*2.70*	*3.84*

Table 2 Average revisions relative to the average y-o-y growth rate of GDP and its components, 2001 Q1-2008 Q1

	GDP	Final consumption	Government consumption	Investment	Exports	Imports
Flash estimate vs preliminary data	-0.01	-0.04	-0.20	0.01	-0.01	-0.10
Flash estimate vs second estimate	0.01	-0.04	0.04	-0.04	0.23	-0.11
Flash estimate vs current estimate	-0.03	-0.19	0.04	0.00	0.54	-0.05
Average y-o-y growth	*4.27*	*3.95*	*2.89*	*6.47*	*2.70*	*3.84*

Table 3 Average dispersion of revisions relative to the average y-o-y growth rate of GDP and its components, 2001 Q1-2008 Q1

	GDP	Final consumption	Government consumption	Investment	Exports	Imports
Flash estimate vs preliminary data	0.02	0.07	0.49	0.26	0.87	0.56
Flash estimate vs second estimate	0.06	0.11	0.66	0.27	0.87	0.61
Flash estimate vs current estimate	0.10	0.23	1.32	1.02	2.42	1.69
Average y-o-y growth	*4.27*	*3.95*	*2.89*	*6.47*	*2.70*	*3.84*

Table 4 Average absolute revisions relative to the average q-o-q growth rate of GDP and its components, 2001 Q1-2008 Q1

	GDP	Final consumption	Government consumption	Investment	Exports	Imports
Flash estimate vs preliminary data	0.10	0.22	0.43	0.64	1.57	1.25
Flash estimate vs second estimate	0.10	0.22	0.71	0.86	1.43	1.25
Flash estimate vs current estimate	1.10	1.11	2.14	3.36	6.71	4.25
Average q-o-q growth	*1.00*	*0.90*	*0.70*	*1.40*	*0.70*	*0.80*

Table 5 Average revisions relative to the average q-o-q growth rate of GDP and its components, 2001 Q1-2008 Q1

	GDP	Final consumption	Government consumption	Investment	Exports	Imports
Flash estimate vs preliminary data	0.00	-0.11	-0.43	0.14	0.00	-0.13
Flash estimate vs second estimate	-0.10	-0.11	-0.57	-0.36	0.57	-0.50
Flash estimate vs current estimate	-0.10	-0.33	-0.29	0.07	0.86	-0.25
Average q-o-q growth	*1.00*	*0.90*	*0.70*	*1.40*	*0.70*	*0.80*

Table 6 Average dispersion of revisions relative to the average q-o-q growth rate of GDP and its components, 2001 Q1-2008 Q1

	GDP	Final consumption	Government consumption	Investment	Exports	Imports
Flash estimate vs preliminary data	0.10	0.22	0.86	1.07	2.14	1.88
Flash estimate vs second estimate	0.40	0.33	1.29	2.07	2.71	2.50
Flash estimate vs current estimate	1.20	1.33	2.86	4.50	8.29	5.75
Average q-o-q growth	*1.00*	*0.90*	*0.70*	*1.40*	*0.70*	*0.80*

clearly exceed the corresponding average growth rate in these aggregates.

Besides, as expected (and highlighted in the BIS's and ECB's studies), the further apart the national accounts release is from the first estimate, the higher the average absolute revision becomes. Small revisions to the first estimate of real GDP growth rate for the Greek economy is also the finding of ECB's and the BIS studies, even if these studies have not taken into account the large revision to national account levels in 2007.

Thus far, it was concluded that y-o-y real GDP revisions are minor and somewhat more pronounced in q-o-q terms, whereas generally large revisions are registered in demand components. Thus, an issue arises as to whether there is a systematic compensation of demand components' revisions leading to minor GDP revisions. This is dealt with in what follows.

2.2 DIRECTION OF THE REVISION

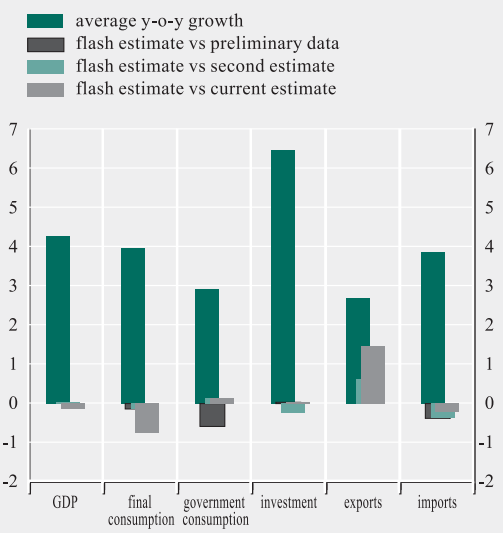
Revisions to first estimates of national accounts should be unbiased, that is they are not supposed to systematically underestimate or overestimate "final" data. In order to assess the direction or sign of revisions, we compute the mean revision for the period under consideration according to the formula:

$$\mathrm{MA}=\frac{1}{\mathrm{n}}\sum_{j=1}^{n}(g_j-g_i) \qquad (2)$$

where (as above) n is the number of revisions considered, g_j is the rate of change of GDP and its components in period j in both an annual and a quarterly basis, so that the revision between first and preliminary, first and second and first and current estimate is $(g_j - g_i)$ respectively. The average revision negative/positive sign implies an under/overestimation of the first (flash) estimate of the relevant aggregate.

Chart 3 Average revisions (2001Q1-2008Q1)

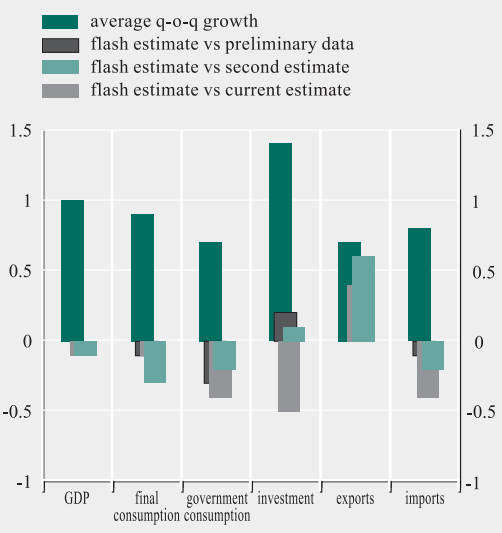
(y-o-y growth rates)



Sources: NSSG and Bank of Greece calculations.

Chart 4 Average revisions (2001Q1-2008Q1)

(q-o-q growth rates)



Sources: NSSG and Bank of Greece calculations.

The results of the average revisions with respect to average annual and quarterly rates of change in GDP and its components are presented in Tables 2 and 5, while Charts 3 and 4 display average revisions calculated according to formula (2). These tables and charts convey that in general average revisions to the rate of change in total GDP are very limited. Overall, there is no bias in the estimation of the rate of change in quarterly GDP. There is though an offsetting bias in the estimate of external sector figures and domestic demand aggregates leading to unbiased GDP estimates.

Specifically, there is a systematic, though minor, underestimation of the first (flash) estimate of total GDP resulting from a compensation between a relatively significant overestimation of external demand aggregates and a fairly considerable underestimation of domestic demand components. This result is valid for all three measures of revisions in both y-o-y and q-o-q terms.

The annex of the study presents the results of some additional tests for a possible bias existing in the revisions of GDP and its components, based on formal statistical methods according to the methodology suggested by Mankiw, Runkle and Shapiro (1984).[4] The results of these tests show that there is no bias in the estimation of total GDP, at both annual and quarterly rates of change. However, there is some bias in the components of GDP, more pronounced in y-o-y terms. In addition, when calculations are on a q-o-q basis, in most cases unbiasedness cannot be rejected.

Finally, we examined the extent to which the size and the direction of the revisions' change between first and current estimate depend on the quarter of estimation. The average revisions often have opposite signs between quarters (in both y-o-y and q-o-q terms). The mean absolute revisions exhibit a small fluctuation between the quarters. Thus, the size and the direction of the revisions do not seem to depend on the quarter of estimation (see Charts 7 to 10).

4 However, it should be noted that unbiased estimates do not necessarily also imply efficient first (flash) estimates (i.e. that first estimates contain all the available information). Therefore, as first (flash) estimates do not include all the available information, revisions are not predictable.

2.3 VOLATILITY OF THE REVISION

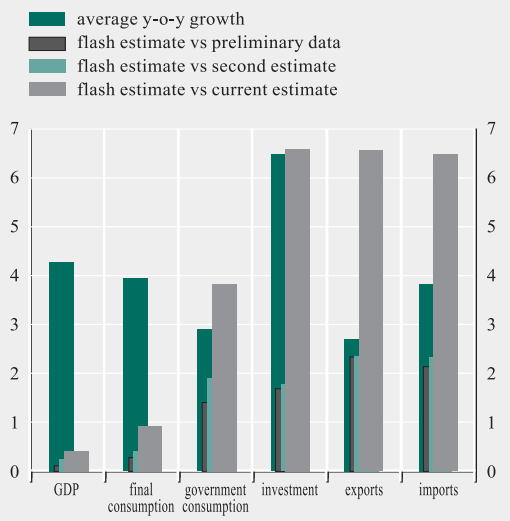
This section examines whether the size of the revisions changes. This could be helpful in providing an indication of the size of a possible revision upon the release of flash estimates.

In order to assess the volatility of revisions, we use the standard deviation of the revisions, computed according to the following formula:

$$\sigma = \sqrt{\frac{1}{n}\sum_{j=1}^{n}(g_j - g_i - MAR_{j,i})^2} \qquad (3)$$

Chart 5 Average dispersion of revisions (2001Q1-2008Q1)

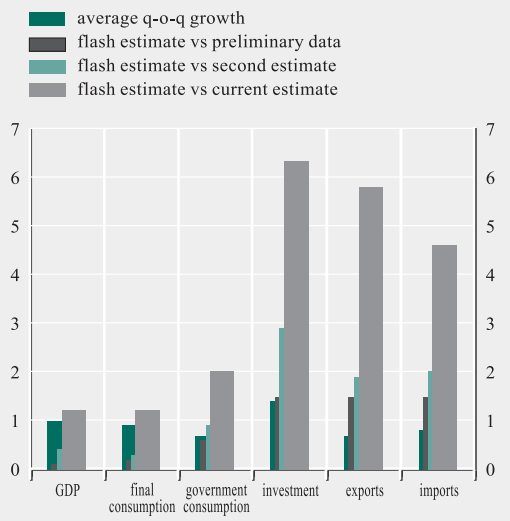
(y-o-y growth rates)



Sources: NSSG and Bank of Greece calculations.

Chart 6 Average dispersion of revisions (2001Q1-2008Q1)

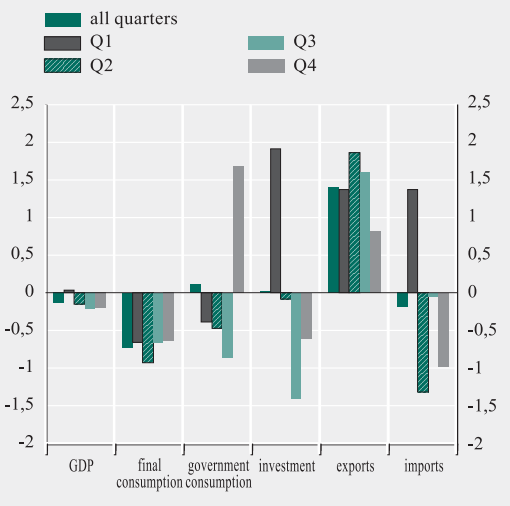
(q-o-q growth rates)



Sources: NSSG and Bank of Greece calculations.

Chart 7 Average revision, first vs current estimate (2001Q1-2008Q1)

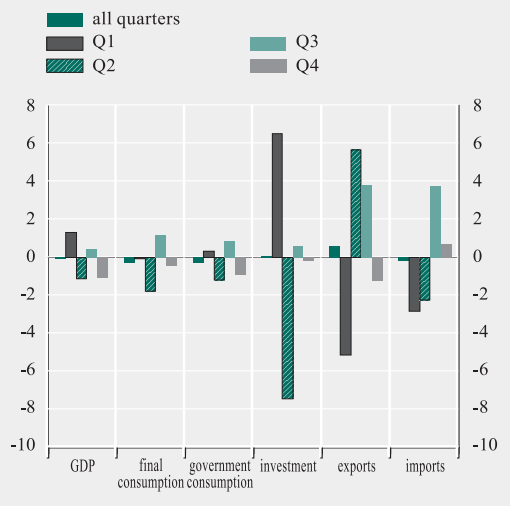
(y-o-y growth rates)



Sources: NSSG and Bank of Greece calculations.

Chart 8 Average revision, first vs current estimate (2001Q1-2008Q1)

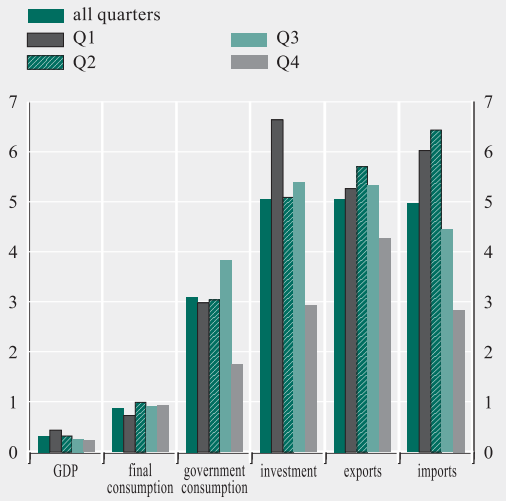
(q-o-q growth rates)



Sources: NSSG and Bank of Greece calculations.

Chart 9 Average absolute revision, first vs current estimate (2001Q1-2008Q1)

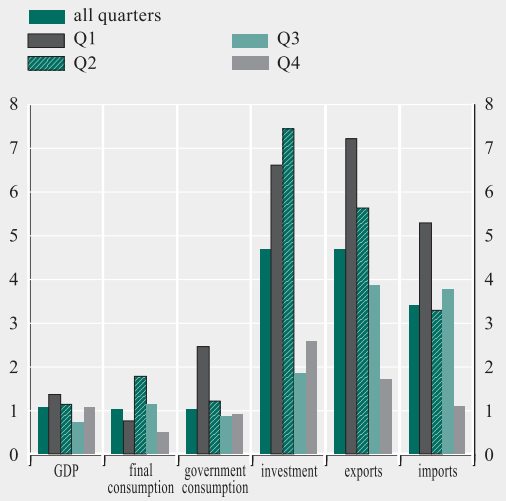
(y-o-y growth rates)



Sources: NSSG and Bank of Greece calculations.

Chart 10 Average absolute revision, first vs current estimate (2001Q1-2008Q1)

(q-o-q growth rates)



Sources: NSSG and Bank of Greece calculations.

where g_j is the GDP (and its components') rate of change in the period j and $MAR_{j,i}$ denotes the average revision between the first estimate g_j and the preliminary, the second and the current estimate.

The results of calculations as a ratio of average growth rates of corresponding aggregates are shown in Tables 3 and 6 in y-o-y and q-o-q terms accordingly.

Charts 5 and 6 display results as computed according to formula (3). Results show that the volatility of revisions increases over time: i.e. the least volatile revisions are those between first and second estimate, whereas the most volatile revisions are those between first and current estimate. Moreover, while the volatility of revisions to total annual GDP rate of change is relatively limited, higher volatility is observed in the revisions to demand components and mainly in foreign trade aggregates. Volatility is clearly higher in q-o-q terms. The rate of change of domestic demand components and especially of foreign trade aggregates appears to be extremely volatile.

3 CONCLUSIONS

This study mainly focuses on exploring the reliability of the first (flash) estimates of the national accounts, while in parallel it aims at providing to users of flash estimates a guide that will allow them not only to shape their views on the current economic situation but also to forecast relatively accurately the 'final' national accounts outcome.

It also seeks to assist those making projections of national accounts aggregates to incorporate relatively accurately the initial conditions that are so decisive for the forecasting process.

Results can be summarised as follows: the first (flash) y-o-y estimate of total GDP is barely revised in prospective NSSG releases when the GDP rate of change is calculated on an annual basis. The revision of first quarterly GDP estimate (in y-o-y terms) from the current/final estimate does not exceed on average 0.3 percentage point. There is a marginal bias (underestimation) in the first quarterly GDP estimate (in y-o-y terms) of 0.1 percentage point. The volatility of the flash estimate is also very low.

Revisions to first GDP estimates (in q-o-q terms) are quite limited as well, with the exception of the absolute revisions between the first and current estimate calculated to 1.1 percentage points on average.

The flash annual rate of change in exports of goods and services is revised (in absolute terms) considerably; in fact, compared with the current —final— estimate the mean absolute revision exceeds the average growth rate in exports in the period under study. The flash annual (or quarterly) rate of change in exports of goods and services systematically overestimates by 1.5 percentage points (0.6 pp in q-o-q terms) the final rate, and deviates by 5.2 percentage points (4.7 pp in q-o-q terms) from the final estimate. On the contrary, the annual rate of change in imports of goods and services systematically underestimates by 0.2 percentage point the final rate, while it deviates by 5 percentage points from the final estimate. Total consumption (public and private) in absolute terms is revised by 0.9 percentage point in the annual estimates of the rates and by 1 percentage point in the quarterly ones (again on average). Total consumption systematically underestimates the final estimate by 0.8 percentage point when the rates are calculated on an annual basis and by 0.3 percentage point when on a quarterly basis. On average, the growth rate in investment is revised in absolute terms significantly, by 5.1 and 4.7 percentage points on an annual and a quarterly basis, respectively. Revisions are highly volatile, still unbiased.

ANNEX

BIAS TEST OF THE REVISIONS TO GDP AND ITS COMPONENTS

This part of the study presents the results of a series of statistical tests which assess the reliability of the revisions to both total GDP and its individual components. In more detail, according to the methodology of Mankiw, Runkle and Shapiro (1984), but also in line with the more recent papers by Garrat and Vahey (2004) and Sleeman (2006), we estimate the following equation:

$$Y_t^k = \alpha + \beta X_t^f + \varepsilon_t^k, \qquad t=1,...,T \qquad (1)$$

where $Y_t^k = X_t^f - X_t^k$ is defined as the total revision in the period t; X_t^f is defined as the latest available (final) estimate released each time (provisional, second, or current) for the rate of change in the variable under examination; and X_t^k is defined respectively as the flash estimate of the variable under examination. This means that model (1) uses as explanatory variable the latest available estimate.

We thereafter test the validity of the hypothesis: H_0: $\alpha=\beta=0$. The H_0: $\alpha=\beta=0$ hypothesis is tested using the Wald statistic, asymptotically distributed as $\chi^2(q)$ with q degrees of freedom. Non rejection of the H_0 hypothesis provides evidence of unbiased revisions to the rates of change in GDP and its components.

The results of the estimates are presented in Tables T1 and T2. Table T1 displays the estimates of revisions in y-o-y terms and Table T2 the estimates of revisions in q-o-q terms.

The test results show that in general there is no bias in the GDP estimate, both in y-o-y and q-o-q terms. There is though an offsetting bias (more pronounced in y-o-y terms) between the estimates of the variables of the external sector and the domestic demand aggregates, possibly leading to unbiased GDP estimates.

Table T1 Test for bias in the revisions of GDP and its components

Annual rate of change		(1)	(2)	(3)
Variable	Sample	α	β	Pr(α=β=0)
GDP	**2002 Q3 - 2008 Q1**			
Flash estimate vs preliminary data		0.020 (0.127)	0.002 (0.073)	0.1854
Flash estimate vs second estimate		0.309 (0.739)	-0.073 (-0.659)	0.4231
Flash estimate vs current estimate		-0.980 (2.270)	0.292 (2.707)	0.0020*
Final consumption	**2002 Q3 - 2008 Q1**			
Flash estimate vs preliminary data		0.038 (0.095)	0.029 (0.255)	0.0094*
Flash estimate vs second estimate		-0.581 (-0.666)	0.233 (0.907)	0.0243*
Flash estimate vs current estimate		-3.378 (-3.393)	1.026 (3.903)	0.0000*
Public consumption	**2002 Q3 - 2008 Q1**			
Flash estimate vs preliminary data		-2.267 (-4.661)	0.946 (5.736)	0.0000*
Flash estimate vs second estimate		-2.576 (-6.841)	1.048 (10.451)	0.0000*
Flash estimate vs current estimate		-2.258 (-8.332)	0.936 (30.336)	0.0000*
Investment	**2002 Q3 - 2008 Q1**			
Flash estimate vs preliminary data		-0.883 (-1.759)	0.163 (2.650)	0.0195*
Flash estimate vs second estimate		-0.444 (-1.315)	0.144 (3.773)	0.0006*
Flash estimate vs current estimate		-0.197 (-0.225)	0.332 (3.510)	0.0000*
Exports	**2002 Q3 - 2008 Q1**			
Flash estimate vs preliminary data		-0.787 (-1.976)	0.210 (1.586)	0.1181
Flash estimate vs second estimate		-1.176 (-2.586)	0.226 (1.636)	0.0294*
Flash estimate vs current estimate		-2.181 (-2.565)	0.644 (6.128)	0.0000*
Imports	**2002 Q3 - 2008 Q1**			
Flash estimate vs preliminary data		-0.491 (-1.382)	0.269 (3.144)	0.0016*
Flash estimate vs second estimate		-0.450 (-0.880)	0.294 (3.307)	0.0032*
Flash estimate vs current estimate		0.197 (0.423)	0.463 (3.214)	0.0041*

Notes: The numbers in parentheses are the t-statistics values.
The numbers in column 3 are the p-values of Wald statistics under the null hupothesis H_0: $\alpha=\beta=0$.
* Asterisks indicate rejection of the null hypothesis H_0:$\alpha=\beta=0$ at significance level $\alpha=5\%$.

Table T2 Test for bias in the revisions of GDP and its components

Quarterly rate of change		(1)	(2)	(3)
Variable	Sample	α	β	Pr(α=β=0)
GDP	**2002 Q3 - 2008 Q1**			
Flash estimate vs preliminary data		-0.0009 (-0.030)	0.010 (0.589)	0.6738
Flash estimate vs second estimate		0.107 (1.143)	-0.0002 (-0.093)	0.4052
Flash estimate vs current estimate		1.468 (1.030)	-1.327 (-1.008)	0.583
Final consumption	**2002 Q3 - 2008 Q1**			
Flash estimate vs preliminary data		0.142 (3.593)	-0.011 (-0.339)	0.0016*
Flash estimate vs second estimate		0.232 (2.792)	-0.024 (-0.708)	0.0202*
Flash estimate vs current estimate		-0.1029 (-0.379)	0.399 (1.802)	0.0851
Public consumption	**2002 Q3 - 2008 Q1**			
Flash estimate vs preliminary data		0.295 (1.554)	-0.115 (-2.057)	0.0559
Flash estimate vs second estimate		0.690 (2.167)	-0.223 (-1.863)	0.0937
Flash estimate vs current estimate		-0.102 (-0.244)	0.623 (6.693)	0.0000*
Investment	**2002 Q3 - 2008 Q1**			
Flash estimate vs preliminary data		-0.191 (-0.607)	0.0136 (0.501)	0.7528
Flash estimate vs second estimate		0.495 (0.586)	0.007 (0.153)	0.5718
Flash estimate vs current estimate		0.200 (0.202)	0.186 (0.681)	0.6813
Exports	**2002 Q3 - 2008 Q1**			
Flash estimate vs preliminary data		0.0007 (0.002)	-0.024 (-0.452)	0.8952
Flash estimate vs second estimate		-0.501 (-1.009)	0.050 (1.008)	0.2059
Flash estimate vs current estimate		-0.107 (-0.119)	0.305 (0.538)	0.8607
Imports	**2002 Q3 - 2008 Q1**			
Flash estimate vs preliminary data		0.066 (0.171)	0.006 (0.108)	0.9813
Flash estimate vs second estimate		0.720 (1.324)	-0.050 (-0.878)	0.3058
Flash estimate vs current estimate		0.823 (0.994)	0.226 (0.746)	0.491

Notes: The numbers in parentheses are the t-statistics values.
The numbers in column 3 are the p-values of Wald statistics under the null hupothesis H_0: $\alpha=\beta=0$.
* Asterisks indicate rejection of the null hypothesis H_0:$\alpha=\beta=0$ at significance level $\alpha=5\%$.

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