

The Government's macroeconomic and public finance forecasts and their outcome.

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Executive summary

The Government's public finance forecasts play an important role in the conduct of economic policy. Macroeconomic forecasts are, moreover, an essential component of this, as growth and inflation are major determinants of general government revenue and certain expenditure.

This note thus compares the Government's macroeconomic and public finance forecasts in the initial budget bill with their outcome. Given the difficulty of anticipating the behaviour of households and businesses, and the unexpected events that can occur after a forecast has been made, differences between forecasts and their outcome are inevitable. In order to evaluate the accuracy of the Government's forecasts, it is therefore necessary to do so over a long period: the period chosen here covers the years 2004 to 2023. To assess this accuracy, it is also useful to have a basis for comparison at the time the forecast is made: the Government's forecasts are thus compared with those of the Consensus Forecasts in September of each year.

The Government's growth forecasts are, on average, slightly optimistic compared to those of the Consensus Forecasts, and even more so compared to their outcome. Over the last twenty years excluding the years 2009, 2020 and 2021, the average difference between the Government's forecasts and those of the Consensus Forecasts is 0.20 points, financial and health crises. The average difference between the Government's forecasts and actual growth is 0.40 points over the period (average forecast of 1.75% vs. actual of 1.35%). Including the three crisis years of 2009, 2020 and 2021, this difference rises to 1.05 points (average forecast of 2.0% vs. actual growth of 0.95%). In both cases, the positive difference between the Government's forecasts and their outcome is statistically significant, indicating an optimistic bias.

Since the creation of the HCFP and the initial budget bill 2014, the Government's growth forecasts have been slightly more cautious overall, particularly before the outbreak of the health crisis. The accuracy of the Government's forecasts has also improved since the

¹ Permanent Secretariat of the High Council of Public Finance. The authors express their sincere gratitude to the OFCE for providing their archives of INSEE's quarterly accounts, and to Stéphane Guéné, Axelle Lacan, and Caroline Lebrun for their comments on an earlier version of this note.

creation of the HCFP, and is now on a par with the Consensus Forecasts for the 2014-2023 period.

Household consumption and business investment forecasts have, on average, been more optimistic and less accurate over the past twenty years than those for GDP as a whole. In particular, the difference between household consumption forecasts and their outcome, which had narrowed after the creation of the HCFP, increased sharply in 2022 and 2023.

With regard to inflation, measured by the consumer price index, the Government's forecasts, like those of the Consensus Forecasts, are on average at their actual level, excluding the years 2009, 2022 and 2023, which were marked by the financial and energy crises. Over the entire 2004-2023 period, inflation forecasts are on average slightly lower than their outcome (- 0.1 percentage points). Government and Consensus inflation forecasts are equally accurate. Analysis of the differences between forecasts for the GDP deflator and their outcome yields results similar to those for the consumer price index.

With the exception of the financial and health crises in 2009, 2020 and 2021, government forecasts for both revenue and expenditure-to-GDP ratios are on average slightly lower than observed ratios. The Government's forecasts for the general government balance are thus on average at the level of the observed balance, i.e. -3.8 points of GDP. Once the crises of 2009, 2020 and 2021 are taken into account, the general government balance unsurprisingly deteriorates by 0.6 points on average (to 4.4 points of GDP), while the average Government forecast remains unchanged (at -3.8 points of GDP).

Finally, the Government's forecasts of the public debt-to-GDP ratio are optimistic compared to their outcome. Excluding the years 2009, 2020 and 2021, the Government's forecasts are on average 0.4 points of GDP lower than the observed public debt ratio, due to the difference in financial transactions and therefore debt level. Including the three crisis years, this difference reaches an average of 1.6 points of GDP.

In accordance with Article 62(V) of the amended Organic Law on Finance Laws No. 2001-692 of August 1, 2001, the High Council of Public Finance issues an opinion “at least once every four years on the differences between macroeconomic, revenue and expenditure forecasts in budget and social security financing bills, and their outcome”.

In preparation for this opinion, this study by the Permanent Secretariat of the High Council of Public Finance presents an analysis of these differences.

The High Council of Public Finance, established in early 2013, issued its first opinion on macroeconomic forecasts for the budget bill (PLF) in September 2013 (PLF 2014). Forecast differences are analysed over twenty fiscal years spanning from 2004 to 2023, i.e. ten years before the creation of the Haut Conseil (2004-2013) and ten years after (2014-2023).

Firstly, the note examines the differences for a given year between the Government's macroeconomic forecasts (growth and inflation) and those of the Consensus Forecasts in September of the previous year, when the budget bill was presented. The Consensus Forecasts provide a basis for comparison with "equivalent public information", and thus an objective reference for ex-post differences between Government forecasts and actual results.

Secondly, the Government forecast is compared with the first estimate of GDP and inflation published by INSEE in January of the following year, i.e. one year and four months after the forecast. This methodological choice aims to compare two variables that are as homogeneous as possible. Subsequent revisions in growth are not taken into account, notably because they may result from changes in the national accounting basis, which may lead to changes in the definition of the measured quantities (GDP, consumption, investment, etc.).

The Consensus Forecasts data also enable us to compare forecasts and outcomes for two components of GDP: household consumption, which accounts for just over half of GDP, and gross fixed capital formation (GFCF) by non-financial companies (NFEs), which represents around 15% of GDP.

When the Government's forecast is adjusted for working days, it is compared with data also adjusted for working days. Over the past twenty years, this has been the case for eleven PLFs for the years 2005, 2011, 2014-2018 and 2020-2023. When the Government forecast is based on annual national accounts (unadjusted data), it is compared with unadjusted data². This concerns nine PLFs for the years 2004, 2006-2010, 2012, 2013 and 2019.

Similarly, the public finance forecast (revenue, expenditure, balance and debt) in the initial PLF is compared with the first related publication by INSEE in March of the following year, i.e. a year and a half after the forecast, in order to compare two variables that are as homogeneous as possible. Nevertheless, the Government's public finance forecast is not compared with the Consensus Forecasts, as the latter mainly concerns macroeconomic indicators and does not include revenue or expenditure forecasts. The average difference between Government forecasts, Consensus Forecasts and outcome is used to analyse the

² Where this information was missing from the Economic, Social and Financial Report (RESF), it was assumed that the forecast had been achieved in the sense of the annual national accounts.

optimistic or pessimistic nature of a forecast. The absolute value of the difference between forecast and outcome is used to assess the accuracy of the forecast.

A detailed analysis for each of the years 2019 to 2023 is presented in the appendix.

I. The Government's growth forecasts are, on average, slightly optimistic when compared with the Consensus Forecasts, and even more so when compared with their outcome.

Differences in growth forecasts between the Government and the Consensus Forecasts are analysed over a twenty-year period from 2004 to 2023. However, three years are not taken into account in part of the analysis presented:

- 2009, as it was very difficult to predict the financial crisis at the beginning of September 2008 before the collapse of Lehman Brothers on September 15, 2008;
- 2020, as it was impossible in September 2019 to predict the health crisis that began in early 2020;
- 2021, as uncertainties about the recovery in activity were very high in September 2020. The standard deviation of GDP growth forecasts for 2021 by the Consensus is thus three times greater than its 20-year average.

This methodological choice has very little impact on the average difference between the Government's growth forecasts and those of the Consensus Forecasts, but much more on the difference between the Government's forecasts and their outcome.

I.1 The Government growth forecasts are, on average, more optimistic than those of the Consensus Forecasts

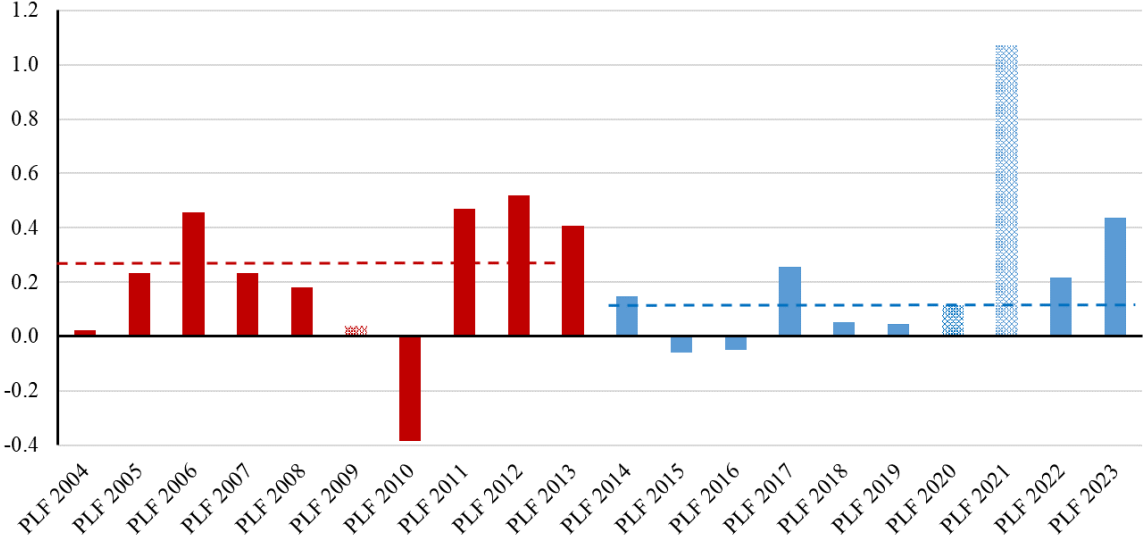
Over the past twenty years, the Government's growth forecasts have on average been slightly more optimistic than those of the Consensus Forecasts. The average difference between the Government's forecasts and those of the Consensus Forecasts is 0.2 points over the 2004-2023 period, excluding 2009, 2020 and 2021. Over these 17 years, the Government forecast was higher than the Consensus on 14 occasions. Over the entire 2004-2023 period, including crisis years, the average difference is the same at 0.2 points.

This difference was slightly higher before the creation of the HCFP in 2013: over the period 2004-2013 excluding 2009, the average difference between the Government's forecasts and those of the Consensus Forecasts was 0.25 points of GDP. The Government's forecasts were all more optimistic than those of the Consensus Forecasts, with the exception of 2010 during the post-financial crisis recovery. When the PLF 2010 was presented in September 2009, the Government forecast a weaker recovery than the Consensus.

Since the creation of the HCFP and the PLF 2014, the Government's growth forecasts have been indeed slightly more cautious overall, particularly before the outbreak of the health crisis. The average difference between the Government's forecasts and those of the Consensus Forecasts stands at 0.15 points over the 2014-2023 period, excluding 2020 and 2021. The difference was particularly small between 2014 and 2019, with an average difference of 0.05 points over the period. **Nevertheless, the Government's forecasts have**

diverged more markedly from the Consensus Forecasts since the end of the health crisis: difference of 0.20 points for 2022 and 0.45 points for 2023. In its opinions on these PLFs, the HCFP considered the growth forecast for 2022 "plausible" and that for 2023 "a little high". It should be noted that uncertainties were significant during the period. For illustration, the standard deviation of growth forecasts from the Consensus Forecasts reached 0.45 points in the PLF 2022 and 0.65 points in the PLF 2023, whereas its long-term average is 0.35 points.

Figure 1: difference between the Government's growth forecasts and those of the Consensus Forecasts
(in points)



Source: RESF and Consensus Economics. In red, PLFs prior to the creation of the HCFP, in blue, PLFs since. Note: the year indicated on the x-axis is the year covered by the forecast made in September of the previous year. The two horizontal lines indicate the average levels for the periods (excluding 2009, 2020 and 2021). Interpretation: at the time of presentation of the PLF 2005 (in September 2004), the Government's growth forecast for 2005 was 0.25 points higher than that of the Consensus Forecasts.

I.2 Government growth forecasts are, on average, significantly higher than actual growth

Over the last twenty years, the Government's growth forecasts have been on average higher than observed growth³. The average difference between Government forecasts and observed growth amounts to 0.40 points over the period 2004-2023, excluding years 2009, 2020 and 2021. Over these 17 years, the Government forecast has been higher than observed growth on 13 occasions. Over the entire 2004-2023 period, the average difference is much greater, at 1.05 points of GDP, due to the difference in 2009 (3.2 points of GDP) and especially in 2020 (9.6 points of GDP). In both cases, **the positive difference between Government forecasts and actual results is statistically significant, indicating an optimistic bias** (see Appendix 2).

This difference was higher before the creation of the HCFP in 2013: over the period 2004-2013, excluding 2009, the average difference between Government forecasts and actual

³ For convenience and to avoid overloading the text, we will refer to the growth that results from the first publication of the national accounts for the fourth quarter by INSEE as "observed growth" throughout the remainder of this document.

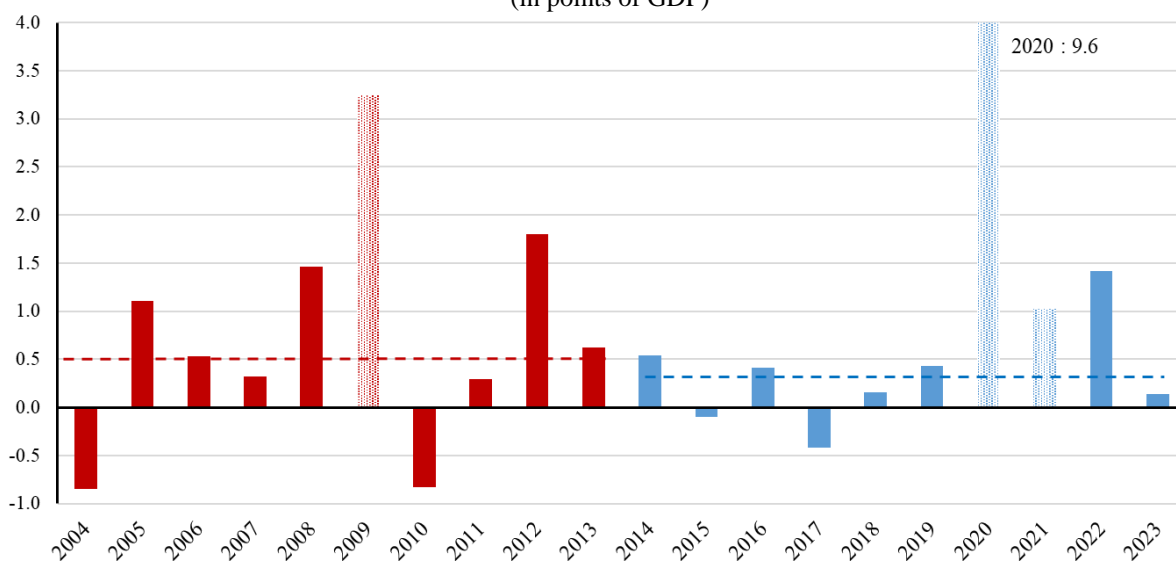
growth was 0.50 points of GDP. Government forecasts have exceeded actual growth in seven years out of nine.

Since the creation of the HCFP and the PLF 2014, the Government's growth forecasts have thus been slightly more cautious overall, particularly before the outbreak of the health crisis. The average difference between the Government's forecasts and observed growth was 0.30 points over the period 2014-2023, excluding 2020 and 2021. The difference was particularly small between 2014 and 2019, with an average difference of 0.15 points over the period. Since the health crisis, in a period of high uncertainty, the difference has been high in 2022 (1.40 points of GDP) and low in 2023 (0.15 points of GDP).

The PLF 2022 forecast was made in September 2021, when uncertainties about the evolution of the Covid-19 pandemic remained high, but were lower than a year earlier thanks to the rise in vaccination coverage. The difference between the Government's forecast and the observed growth, amounting to 1.40 percentage points, mainly arises from the forecast for household consumption (+6.9% predicted versus an actual increase of 2.7% in volume) and, to a lesser extent, from the forecast for gross fixed capital formation (+4.7% predicted versus +2.4%). The sharp rise in prices at the beginning of 2022, exacerbated by the outbreak of the war in Ukraine and the increase in interest rates have significantly impacted household consumption and investment, and consequently the growth of economic activity.

The PLF 2023 forecast was made in September 2022, at a time when uncertainties about the evolution of the energy crisis were very high, with market prices for gas and electricity soaring in August 2022. Initial results published by INSEE put growth in 2023 at 0.85%, very close to the Government's forecast of +1.0%. This small difference (0.15 points of GDP) conceals major differences in the contributions to GDP, which work in opposite directions: unfavourable contributions from changes in inventories (0.5 points below forecast) and domestic demand excluding inventories (0.2 points of GDP), partly offset by foreign trade (0.6 points above forecast).

Difference between the Government's growth forecasts and observed growth (in points of GDP)



Source: RESF and INSEE. In red, PLFs prior to the creation of the HCFP; in blue, PLFs since.

Note: the two horizontal lines indicate the average levels for the periods (excluding 2009, 2020 and 2021).

Interpretation: the difference between the Government's growth forecast for 2022 and actual growth in 2022 was 1.4 points.

While the average difference between forecast and observed growth can be used to analyse the optimistic or pessimistic nature of a forecast, the absolute value of differences between forecast and observed growth can be used to assess the accuracy of the forecast⁴. In this respect, the Consensus Forecast is more accurate than the Government's forecasts over the last twenty years (see table below). Nevertheless, **the accuracy of the Government's forecasts has improved since the creation of the HCFP**, to such an extent that they are now on a par with the Consensus Forecasts for the 2014-2023 period (excluding 2020 and 2021).

The reduction in the optimistic bias and improvement in the accuracy of the Government's economic forecasts since the creation of the HCFP has been noted by many observers, both in France (CAE) and internationally (European Commission, IMF, OECD)⁵. In its 2017 in-depth review of France, the European Commission noted that the creation of the HCFP had been accompanied by a reduction in the optimistic bias of the Government's growth forecasts over the previous period.

⁴ Measuring precision by squared difference leads to similar conclusions.

⁵ See the 2019-2022 activity report of the High Council of Public Finance.

Table 1: difference between Government forecasts, Consensus Forecasts and observed growth (in points of GDP)

	Average difference between 2004 and 2023	<i>Before the creation of the HCFP</i>	<i>After the creation of the HCFP</i>	Average absolute difference between 2004 and 2023	<i>Before the creation of the HCFP</i>	<i>After the creation of the HCFP</i>
Government vs. outcome	0.40	0.50	0.30	0.65	0.85	0.45
Consensus vs. outcome	0.25	0.25	0.20	0.50	0.60	0.45

Source: RESF, Consensus Economics and INSEE. Excluding fiscal years 2009, 2020 and 2021.

Box: optimality test for Government forecasts

A forecast will be considered optimal if it effectively utilises all available information. A biased forecast is not optimal: it is on average too optimistic. An unbiased forecast is not necessarily optimal: it may, for instance, overlook information that is neutral on average but cyclical in nature.

Since it is difficult to define the set of information actually available at the time a forecast is made, economic literature generally tests a necessary (but not sufficient) condition for optimality, proposed by Mincer and Markowitz⁶. This condition is:

$a = 0$ and $b = 1$ in the regression: $y_t = a + b y_t^*$
which is tested using a Fisher test.

The table below presents the results of this test over the period 2004-2023, excluding the years 2009, 2020, and 2021. These results indicate that for almost all the variables examined, the hypothesis of optimality is not rejected, even at the 10% significance level. However, it is rejected, even at the 1% significance level, only for GDP growth: over the period 2004-2023, the Government's forecasts associated with the PLFs would therefore not have used the available information effectively.

When the period is extended to include the years 2009, 2020 and 2021, or when the tests are carried out separately for the periods 2004-2013 and 2014-2023, the optimality hypothesis is still not rejected for the consumer price index (CPI), public revenue, expenditure and debt. It is again rejected for growth over the period 2014-2023 when the years 2020 and 2021 are excluded, but not in the other cases.

Table 2: Optimality tests over the period

Variable	Test statistics
GDP	6.47***
CPI	0.51
Revenue/GDP ratio	3.04
Expenditure/GDP ratio	1.44
Debt/GDP ratio	2.21

Note for the reader: the test statistic follows a Fisher distribution with 2 and 15 degrees of freedom. A statistic above 2.6998, 3.682 and 6.359 respectively leads to rejection of the optimality hypothesis at the 10%, 5% and 1% thresholds respectively. One, two or three stars after the statistic indicates rejection of this hypothesis at these respective thresholds.

⁶ Mincer J., Zarnowitz V. (1969). "The Evaluation of Economic Forecasts", in J. Mincer ed., Economic Forecasts and Expectations. Analysis of Forecasting Behavior and Performance, New York Columbia Press, NBER.

II. Government forecasts for household consumption and NFE investment were, on average, more optimistic than those for activity as a whole.

To understand the sources of the differences between GDP forecasts and their outcome, we focus on differences in household consumption and investment, two important determinants included in the Consensus Forecasts.

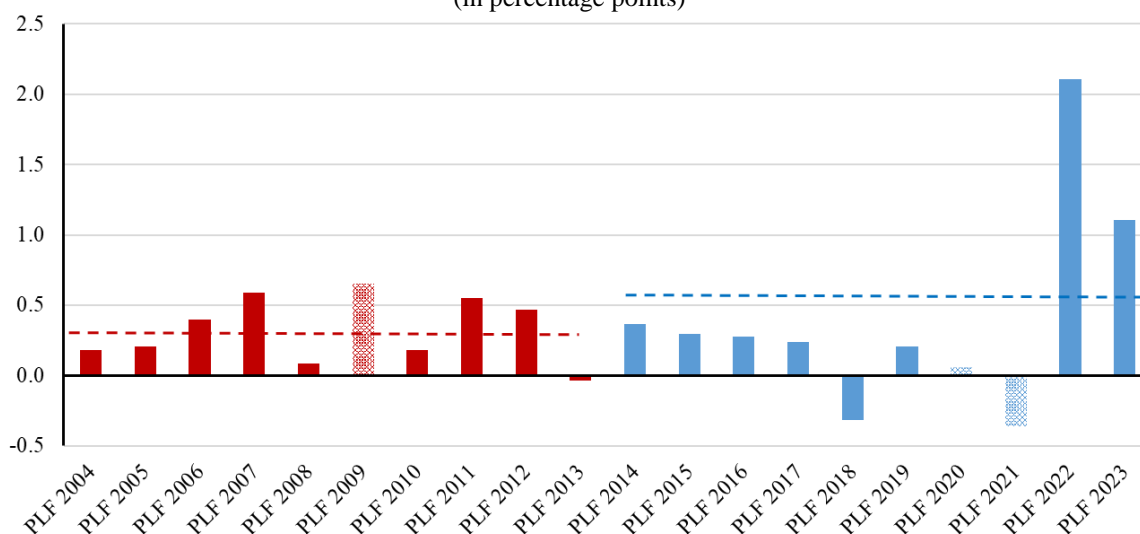
II.1 The difference between the Government's household consumption forecasts and their outcome, which had narrowed after the creation of the HCFP, increased sharply in 2022 and 2023.

The Government's forecast for household consumption, which accounts for half of GDP, is more optimistic than the Consensus Forecasts over the long term, and more so than for GDP. Between 2004 and 2023 (excluding 2009, 2020 and 2021), the average difference is 0.40 percentage points (compared with 0.20 points for growth in activity as a whole). Over these 17 years, the Government's forecast has been higher than the Consensus Forecasts on 15 occasions. Over the entire 2004-2023 period, the average difference is very close, at 0.35 percentage points.

This difference narrowed following the creation of the HCFP in 2013. It stood at 0.20 percentage points over the 2014-2019 period, compared with 0.30 percentage points between 2004 and 2013. However, **the Government's forecasts have diverged from the Consensus Forecasts since the end of the health crisis, in a period marked by high uncertainty:** a difference of 2.1 percentage points for 2022 and 1.1 percentage points for 2023. As a result, the difference between the Government's household consumption forecasts and those of the consensus has widened overall over the period 2014-2023 (to 0.55 percentage points) compared with the period 2004-2013.

Figure 3: difference between the Government's household consumption forecasts and those of the Consensus Forecasts

(in percentage points)



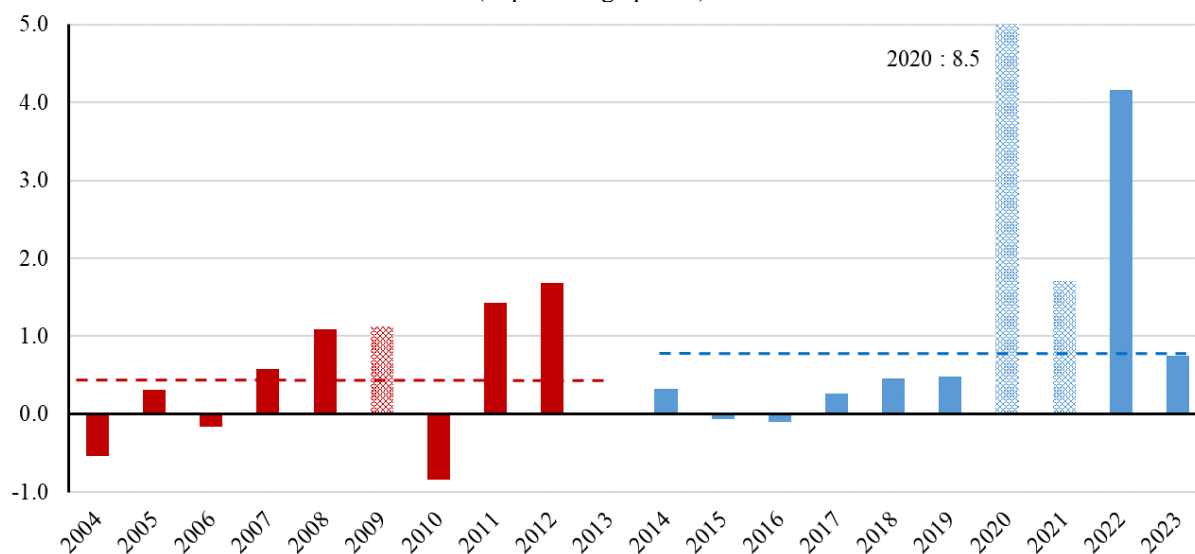
Source: RESF and Consensus Economics. In red, PLFs prior to the creation of the HCFP; in blue, since then. Note: the year indicated on the x-axis is that covered by the forecast made in September of the previous year. The two horizontal lines indicate the average levels for the periods (excluding 2009, 2020 and 2021).

Over the last twenty years, the Government's forecasts for household consumption have on average been higher than the outcome. The average difference between the Government's forecast and the outcome is 0.60 percentage points over the 2004-2023 period, excluding 2009, 2020 and 2021 (compared with 0.40 percentage points for overall activity growth). Over these 17 years, the Government's forecast has been higher than the outcome on 12 occasions. Over the 2004-2023 period as a whole, the average difference is much greater, at 1.05 percentage points, due to the difference in 2020 (8.5 percentage points).

This difference narrowed following the creation of the HCFP in 2013. It stood at 0.25 percentage points over the 2014-2019 period, compared with 0.40 percentage points between 2004 and 2013. Since the health crisis, in a period of great uncertainty, the difference has widened considerably, particularly in 2022 (4.2 percentage points), a year marked by the energy crisis. As a result, the difference between the Government's forecasts and the household consumption outcome has increased overall over the period 2014-2023 (to 0.80 percentage points) compared to the period 2004-2013.

Figure 4: difference between Government forecasts for household consumption and consumption outcome

(in percentage points)



Source: RESF and INSEE. In red, PLFs prior to the creation of the HCFP, in blue, PLFs since.

Note: the two horizontal lines indicate the average levels for the periods (excluding 2009, 2020 and 2021).

In terms of the absolute value of the differences between forecasts and outcomes, the Consensus Forecast is more accurate than the Government's forecast (see table below). The accuracy of Government household consumption forecasts has deteriorated slightly since 2014, while that of the Consensus Forecast has improved slightly.

Table 3: difference between Government forecasts, Consensus Forecasts and actual household consumption outcome

(in percentage points)

	Average difference between 2004 and 2023	Before the creation of the HCFP	After the creation of the HCFP	Average absolute difference between 2004 and 2023	Before the creation of the HCFP	After the creation of the HCFP
Government vs. outcome	0.60	0.40	0.80	0.80	0.75	0.85
Consensus vs. outcome	0.15	0.10	0.25	0.60	0.60	0.55

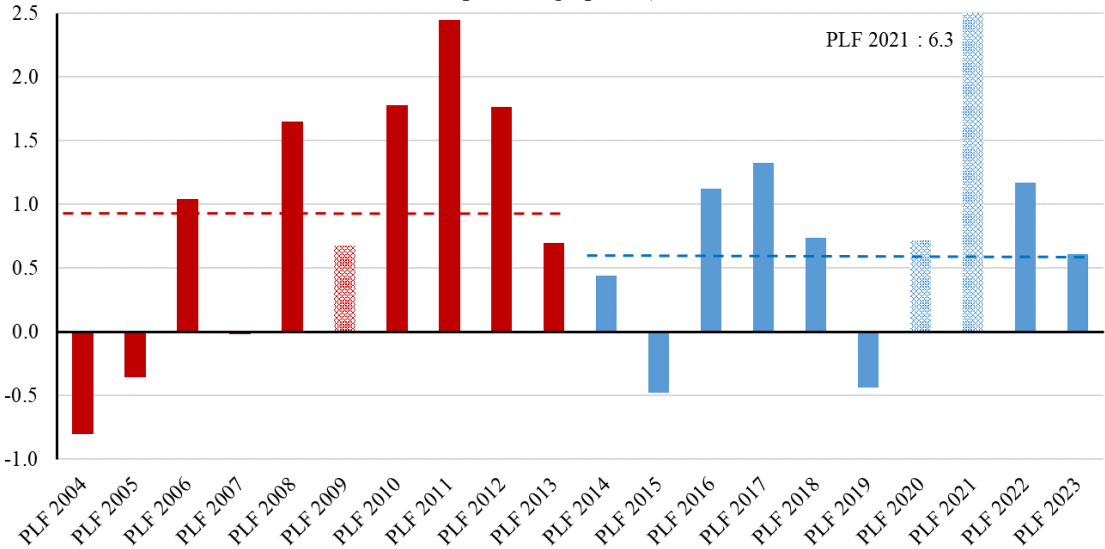
Source: RESF, Consensus Economics and INSEE. Excluding fiscal years 2009, 2020 and 2021.

II.2 The difference between Government forecasts for NFE investment and actual investment has narrowed considerably over the past twenty years.

The Government's forecast for NFE investment, which represents 15% of GDP, is more optimistic than the Consensus Forecasts over the long term. Between 2004 and 2023 (excluding 2009, 2020 and 2021), the average difference is 0.75 percentage points (compared with 0.2 GDP points for growth in activity as a whole). Over these 17 years, the Government's forecast has been higher than that of the Consensus Forecasts on 12 occasions. Over the entire period 2004-2023, the average difference is 1.0 percentage points.

This difference was higher before the creation of the HCFP in 2013: over the period 2004-2013, excluding 2009, the average difference between Government forecasts and actual NFE investment was 0.90 percentage points. Since the PLF 2014, the Government's growth forecasts have indeed been more cautious overall, particularly before the outbreak of the health crisis. The average difference between the Government's NFE investment forecasts and those of the Consensus Forecasts stands at 0.55 percentage points over the period 2014-2023 excluding 2020 and 2021.

Figure 5: difference between Government forecasts for NFE investment and those of the Consensus Forecasts
(in percentage points)

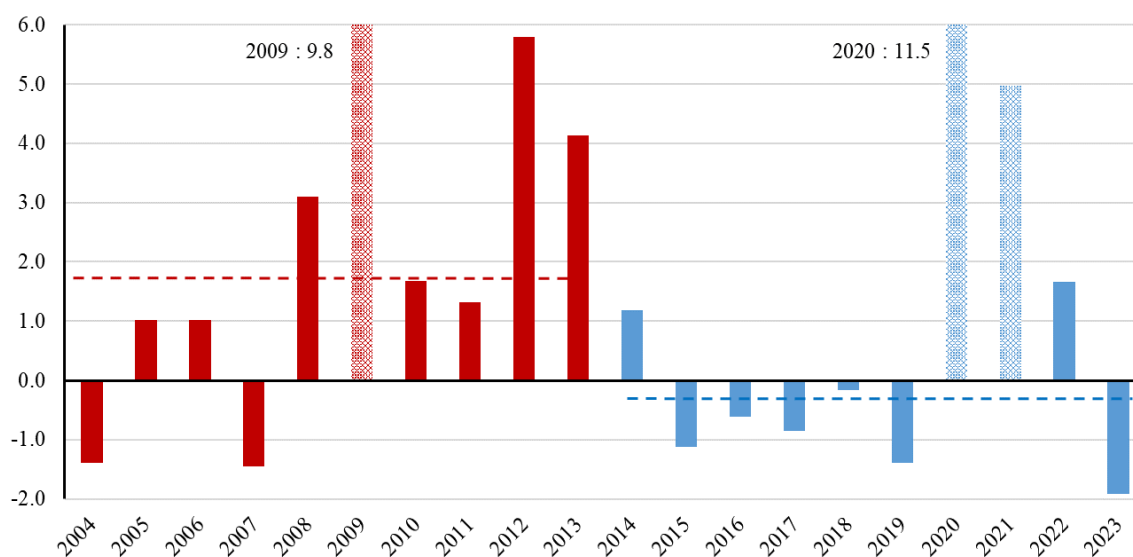


Source: RESF and Consensus Economics. In red, PLFs prior to the creation of the HCFP, in blue, PLFs since. Note: the year indicated on the x-axis is the year covered by the forecast made in September of the previous year. The two horizontal lines indicate the average levels for the periods (excluding 2009, 2020 and 2021).

Over the past twenty years, the Government's forecasts for NFE investment have been higher than the outcome. The average difference between the Government's forecasts and outcome is 0.70 percentage points over the 2004-2023 period, excluding 2009, 2020 and 2021 (compared with 0.40 points for growth in activity as a whole). Over these 17 years, the Government's forecast has been higher than the outcome on 9 occasions. Over the entire 2004-2023 period, the average difference is much higher, at 1.9 percentage points, due to the differences in 2009 (9.8 percentage points) and 2020 (11.5 percentage points).

This difference was higher before the creation of the HCFP in 2013: over the period 2004-2013 excluding 2009, the average difference between the Government's NFE investment forecasts and the Consensus Forecasts was 1.7 percentage points. Since 2014, the difference between Government forecasts and outcome in NFE investment has narrowed considerably. Government forecasts have even become lower on average than outcomes, with an average difference of -0.40 percentage points over the 2014-2023 period (excluding 2020 and 2021). In particular, investment by NFEs has risen by 2.8% in 2023, despite the uncertain international context and the rise in interest rates, when the Government forecast an increase of 0.9% and the Consensus of 0.3%.

Figure 6: difference between Government forecasts for NFE investment and outcomes
(in percentage points)



Source: RESF and INSEE. In red, PLFs prior to the creation of the HCFP, in blue, PLFs since then.
Note: the two horizontal lines indicate the average levels for the periods (excluding 2009, 2020 and 2021).

In terms of the absolute value of the differences between forecasts and outcomes, the Consensus Forecast is more accurate than the Government's forecast over twenty years (see table below). Nevertheless, the accuracy of the Government's forecast has improved significantly since the creation of the HCFP, to the point where it is better than the Consensus Forecast over the 2014-2023 period (excluding 2020 and 2021).

Table 4: difference between Government forecasts, Consensus Forecasts and observed NFE investment
(in percentage points)

	Average difference between 2004 and 2023	Before the creation of the HCFP	After the creation of the HCFP	Average absolute difference between 2004 and 2023	Before the creation of the HCFP	After the creation of the HCFP
Government vs. outcome	0.70	1.70	-0.40	1.75	2.30	1.10
Consensus vs. outcome	-0.05	0.80	-0.95	1.4	1.50	1.25

Source: economic, social and financial report. Consensus Economics and INSEE. Excluding fiscal 2009, 2020 and 2021.

Since the Government's forecast for household consumption and NFE investment has, on average over the last 20 years (excluding 2009, 2020 and 2021), been more optimistic than that for activity as a whole, this means that, over this period, it has been less optimistic overall than that for activity with regard to the other contributors to growth: Government consumption and GFCF, household GFCF, foreign trade and changes in inventories.

III. Government and the Consensus Forecasts are, on average, at the level of their outcome. However, forecast accuracy has deteriorated since 2014

Inflation forecasts also play an important role in fiscal policy, as inflation influences the level of general government revenue and expenditure.

The differences in inflation forecasts, measured by the consumer price index (CPI), between the Government and the Consensus Forecasts are analysed over twenty years between 2004 and 2023. However, three years are not taken into account in part of the analysis presented:

- 2009, as it was very difficult to predict the financial crisis at the beginning of September 2008 before the collapse of Lehman Brothers on September 15, 2008. In particular, this crisis led to a collapse in the price of oil, sharply reducing inflation;
- 2022, because it was very difficult to predict the very strong inflationary pressures that appeared during the year, linked to the consequences of the "zero Covid" strategy in China and the war in Ukraine;
- 2023, as uncertainties over the evolution of the energy crisis were very high in September 2022. The standard deviation of inflation forecasts by the Consensus was thus three times greater than its 20-year average.

This methodological choice has very little impact on the average difference between government inflation forecasts and those of the Consensus Forecasts, and relatively little on the average difference between Government forecasts and their outcome.

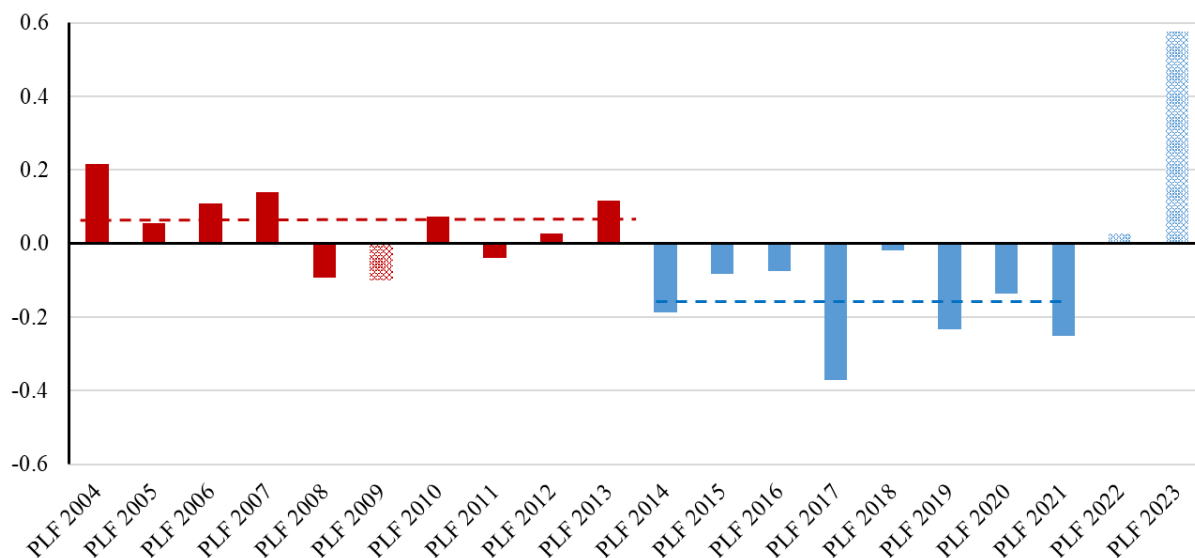
III.1 Government inflation forecasts are very close on average to those of the Consensus Forecasts

Over the past twenty years, Government inflation forecasts have been very close on average to those of the Consensus Forecasts. The average difference between the Government's forecast and the Consensus Forecasts is -0.05 percentage points over the 2004-2023 period, excluding 2009, 2022 and 2023. Over these 17 years, the Government forecast was higher than the Consensus Forecasts on 7 occasions. Over the entire 2004-2023 period, the Government's inflation forecasts are on average on a par with those of the Consensus Forecasts.

This difference was very slightly positive before the creation of the HCFP in 2013: over the period 2004-2013, excluding 2009, the average difference between Government forecasts and the Consensus Forecasts was 0.05 percentage points. 7 out of 9 government forecasts were slightly higher than the Consensus Forecasts.

Since the creation of the HCFP and the PLF 2014, the Government's inflation forecasts have been slightly below the Consensus Forecasts on average. The average difference between the Government's forecasts and those of the Consensus Forecasts is -0.15 percentage points over the 2014-2021 period. For the 8 years from 2014 to 2021, the Government's forecasts are below the consensus.

Figure 7: difference between Government inflation forecasts and those of the Consensus Forecasts
(in percentage points)



Source: RESF and Consensus Economics. In red, PLFs prior to the creation of the HCFP, in blue, PLFs since. Note: the year indicated on the x-axis is the year covered by the forecast made in September of the previous year. The two horizontal lines indicate the average levels for the periods (excluding 2009, 2022 and 2023).

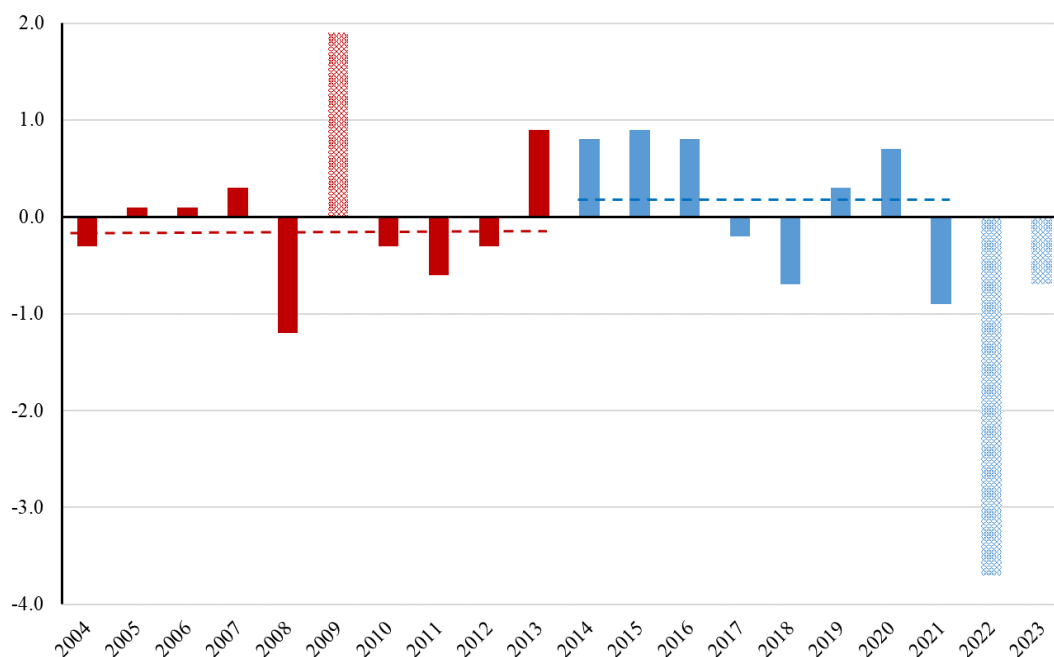
III.2 Government inflation forecasts are, on average, at the same level as their outcomes

Over the last twenty years, excluding 2009, 2022 and 2023, government inflation forecasts have averaged the same level as observed inflation. Over these 17 years, the Government forecast was higher than observed inflation on 9 occasions. Over the entire 2004-2023 period, the Government's forecasts were on average slightly lower than observed inflation, due to the significant negative difference in 2022 (-3.7 percentage points): the average difference was -0.10 percentage points over the period.

The Government's inflation forecast was on average slightly lower than the inflation observed prior to the creation of the HCFP in 2013: over the period 2004-2013, excluding 2009, the average difference between Government forecasts and actual inflation was -0.15 percentage points. In five out of nine years, the difference was negative.

Since the creation of the HCFP and the PLF 2014, the Government's inflation forecasts have been on average slightly higher than observed inflation. The average difference between Government forecasts and actual inflation is 0.20 percentage points over the 2014-2021 period. The difference is positive in five out of eight years.

Figure 8: difference between Government inflation forecasts and actual inflation
(in percentage points)



Source: RESF and INSEE. In red, PLFs prior to the creation of the HCFP, in blue, PLFs since then.
Note: the two horizontal lines indicate average levels for the periods (excluding 2009, 2022 and 2023).

In terms of the absolute value of differences between forecasts and observed inflation, the accuracy of the Government's forecast is identical to that of the Consensus Forecasts over twenty years (see table below). Both the accuracy of the Government's forecast and that of the Consensus Forecasts have deteriorated since 2014 (excluding 2022 and 2023).

Table 5: difference between Government forecasts, Consensus Forecasts and observed inflation
(in percentage points)

	Average difference between 2004 and 2021	Before the creation of the HCFP	After the creation of the HCFP	Average absolute difference between 2004 and 2023	Before the creation of the HCFP	After the creation of the HCFP
Government vs. outcome	0.00	-0.15	0.20	0.55	0.45	0.65
Consensus vs. outcome	0.05	-0.20	0.40	0.55	0.45	0.70

Source: Economic, Social and Financial Report, Consensus Economics and INSEE. Excluding fiscal 2009.

It is also useful to analyse the differences between the forecasted and actual **GDP deflator**, as the deflator is factored into the calculation of public finance ratios. **The results are similar to those concerning inflation.** Over the past twenty years, excluding the years 2009, 2022, and 2023, the Government's forecasts for the GDP deflator have aligned on average with the observed deflator. Throughout the 2004-2023 period, the Government's forecasts have been

on average slightly lower than their outcome due to significant negative differences in 2022 (-1.7 percentage points) and in 2023 (-1.8 percentage points): the average difference over the period stands at -0.15 percentage point.

IV. Excluding the financial and health crises in 2009 and 2020, the Government's forecasts for the general government balance have, on average, aligned with the observed balance.

The mandate of the HCFP was strengthened and expanded at the end of 2021. Since then, the HCFP has also assessed:

- the realism of public finance forecasts (revenues and expenditures) in finance laws;
- the compliance of public expenditure targets of Government administrations with the multi-year targets defined in the public finance programming law;
- the consistency of multi-year programming bills for certain sectors of public action (such as defence and justice) with the public expenditure objectives set out in the current public finance programming law.

Since the mandate was recently expanded, this section does not, unlike the previous sections, offer a differentiated analysis of differences before and after the creation of the HCFP.

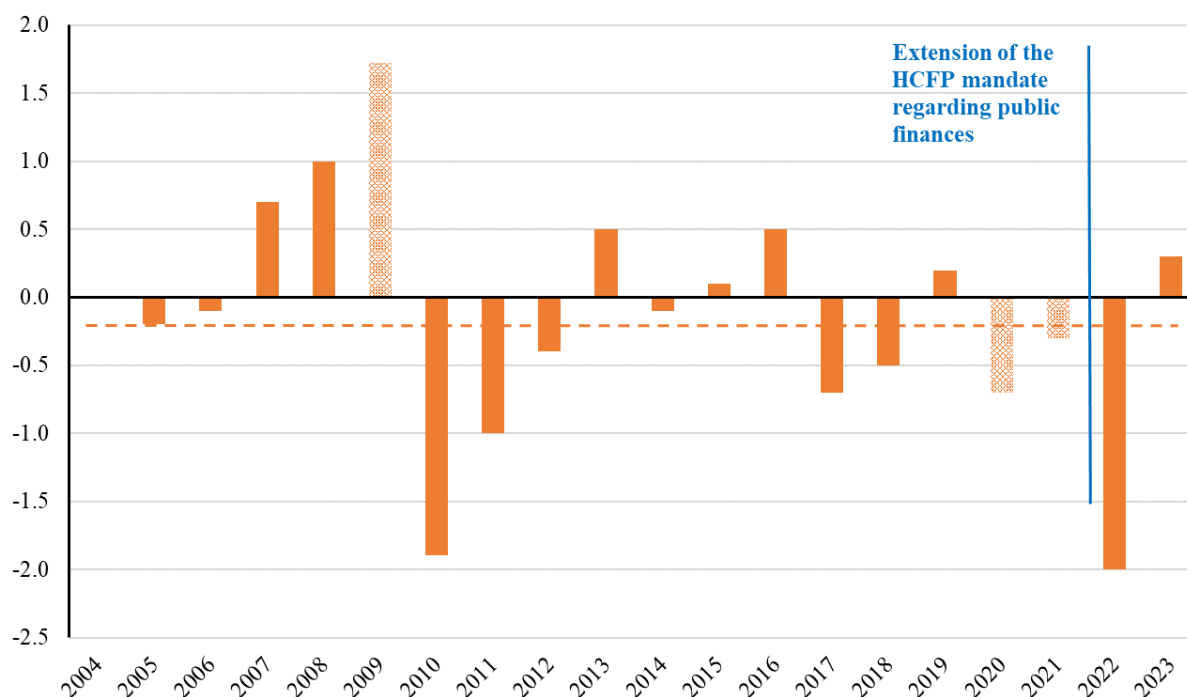
Furthermore, the ratios of revenues and expenditures relative to GDP, rather than the growth of revenues and expenditures, are analysed in sections IV.1 and IV.2 because the general government balance relative to GDP, studied in section IV.3, which is one of the indicators of the Stability and Growth Pact, is directly comparable to these two ratios, as it constitutes the difference between them.

IV.1 The Government's forecasts for revenue ratios have, on average, been slightly lower than the observed revenue ratios.

Over the past twenty years, the Government's forecasts for revenue ratios have, on average, been slightly lower than the observed revenue ratios. The average difference between the Government's forecasts and the observed ratios amounts to -0.2 percentage points of GDP over the period from 2004 to 2023, excluding the years 2009, 2020, and 2021⁷. During these 17 years, the Government's forecast was lower than the observed ratio on 9 occasions. Over the entire period from 2004 to 2023, the average difference is smaller in absolute terms, mainly due to the difference in 2009 (1.7 percentage points of GDP), resulting in an average of -0.1 percentage points of GDP.

⁷ These are the three years not included in the growth analysis.

Figure 9: difference between Government's forecasted revenue ratio and observed ratio
(in points of GDP)



Source: RESF and INSEE.

Note: The horizontal line represents the average level over 20 years (excluding 2009, 2020, and 2021).

Furthermore, the accuracy of the Government's revenue ratio forecast has increased slightly since 2014: the average difference in absolute terms between forecasts and observed ratios stands at 0.55 points of GDP between 2014 and 2023, compared with 0.65 points of GDP between 2004 and 2013⁸.

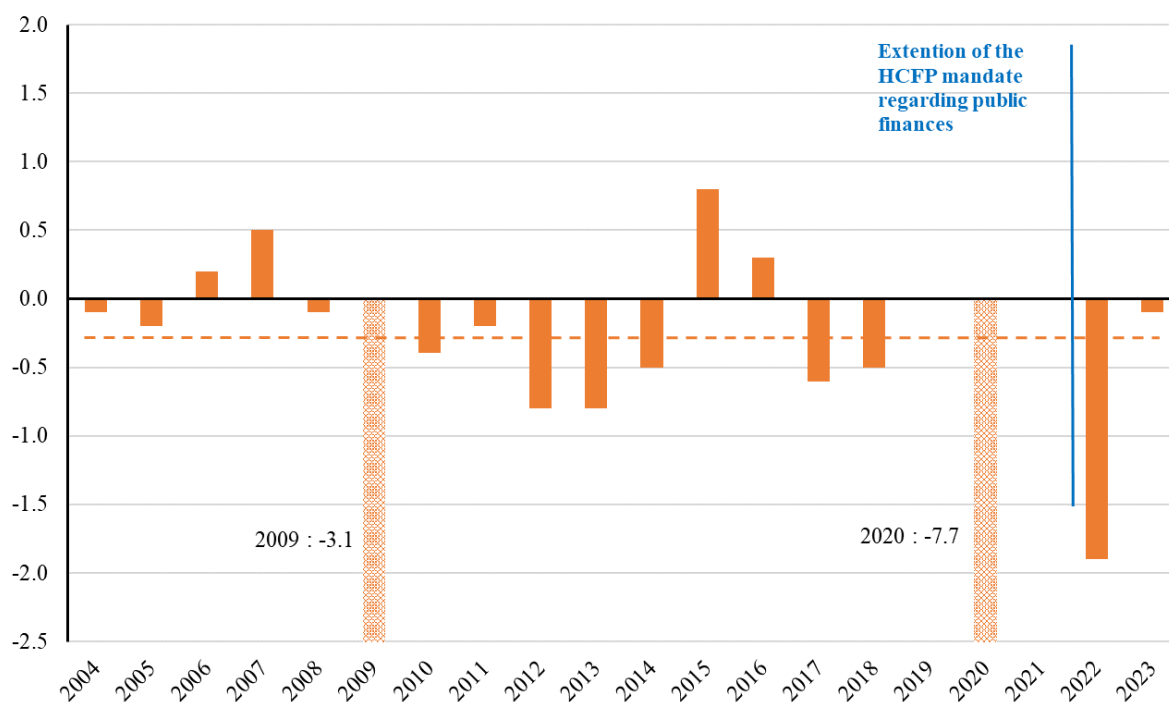
IV.2 The Government's forecasts for expenditure ratios have also, on average, been slightly lower than their outcome.

Over the past twenty years, the Government's forecasts for expenditure ratios (including tax credits) have also, on average, been slightly lower than the observed expenditure ratios. The average difference between the Government's forecasts and the observed expenditure ratios amounts to -0.25 percentage points of GDP over the period 2004-2023, excluding the years 2009, 2020, and 2021. During these 17 years, the Government's forecast was lower than the observed expenditure ratio on 12 occasions. Over the entire period from 2004 to 2023, the average difference is larger in absolute terms due to the difference in 2009 (-3.1 percentage points of GDP) and especially in 2020 (-7.7 percentage points of GDP), resulting in an average of -0.8 percentage points of GDP.

⁸ The average absolute difference stands at 0.60 percentage points of GDP over the period 2004-2023, excluding 2009, 2020, and 2021.

Figure 10: difference between Government's forecasted expenditure ratio and observed ratio

(in points of GDP)



Source: RESF and INSEE.

Note: The horizontal line represents the average level over 20 years (excluding 2009, 2020, and 2021).

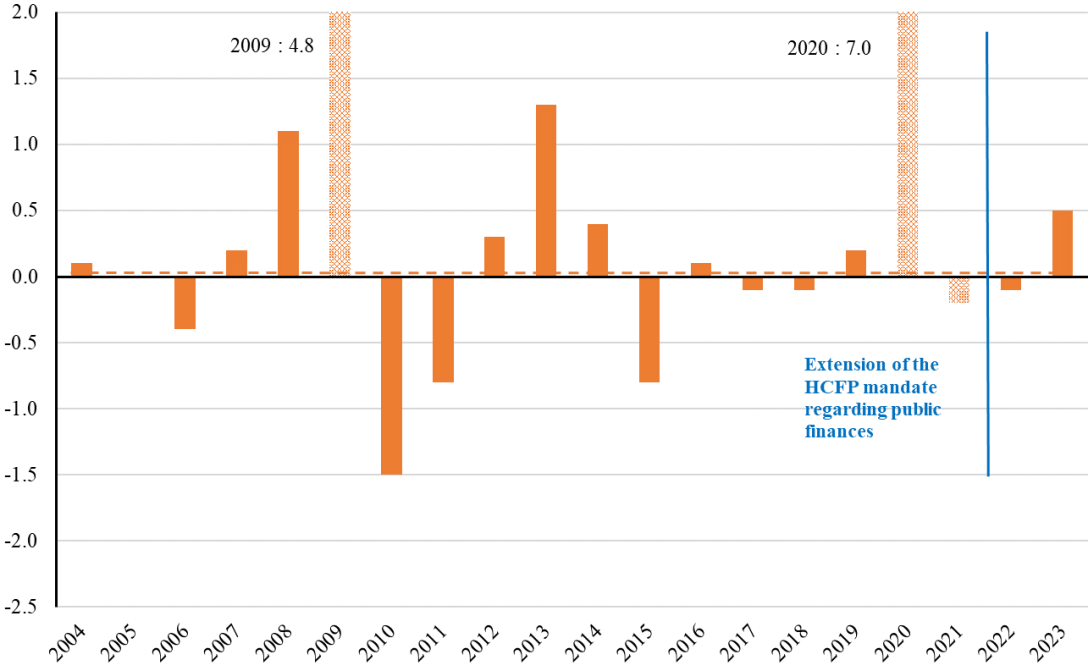
Furthermore, the accuracy of Government forecasts for expenditure ratios has decreased since 2014: the average absolute difference between forecasts and observed ratios stands at 0.60 percentage points of GDP between 2014 and 2023, compared to 0.35 percentage points of GDP between 2004 and 2013⁹.

IV.3 Excluding the years 2009 and 2020, the Government's forecasts for the general government balance align, on average, with the observed balance.

Over the past twenty years excluding the years 2009, 2020, and 2021, the Government's forecasts for the general government balance align, on average, with the observed balance. During these 17 fiscal years, the Government's forecast was more optimistic (i.e. a lower deficit) than the observed balance on 9 occasions. Over the entire period from 2004 to 2023, the Government's forecasts have been, on average, more optimistic than the observed balance primarily due to the difference in 2009 (4.8 percentage points of GDP) and especially in 2020 (7.0 percentage points of GDP): the difference stands at 0.6 percentage points of GDP.

⁹ The average absolute difference stands at 0.45 percentage points of GDP over the period 2004-2023, excluding 2009, 2020, and 2021.

Figure 11: difference between Government's forecasted general government balance and observed ratio.
(in points of GDP)



Source: RESF and INSEE.
Note: The horizontal line represents the average level over 20 years (excluding 2009, 2020, and 2021).

Furthermore, the accuracy of Government forecasts for the general government balance has improved overall since 2014: the average absolute difference between forecasts and observed balances stands at 0.3 percentage points of GDP between 2014 and 2023, compared to 0.65 percentage points of GDP between 2004 and 2013¹⁰.

As for the year 2022, the initial forecast for the general government balance in the PLF 2022 (-4.8 percentage points of GDP) was very close to the balance reported in March 2023 (-4.7 percentage points of GDP). However, there were significant differences between forecasts and observed ratios regarding revenues and expenditures, which offset each other. Actual public revenues exceeded the Government's forecast by 2 percentage points of GDP, reaching 53.4 percentage points of GDP. Due in part to the weak initial reaction of the GDP deflator to the inflationary shock, certain tax bases (such as payroll and corporate profits) showed stronger growth than GDP in value terms. Meanwhile, the ratio of public expenditures to GDP surpassed the Government's forecast by 1.9 percentage points of GDP, reaching 58.1 percentage points of GDP, driven by measures taken in response to the energy crisis and the substantial increase in debt burden.

For the year 2023, the observed general government balance (-5.5 percentage points of GDP) was deeper than forecasted in the PLF 2023 (-5.0 percentage points of GDP). Specifically, the ratio of public revenues to GDP was lower than the Government's forecast (51.9 percentage points of GDP compared to 52.2 percentage points of GDP). Revenues,

¹⁰ The average absolute difference stands at 0.45 percentage points of GDP over the period 2004-2023, excluding 2009, 2020, and 2021.

particularly taxes, decelerated significantly compared to 2022 (+2.0%), while GDP in value terms increased by 6.3%. Additionally, the observed ratio of expenditures in 2023 was slightly higher than the Government's forecast (57.3 percentage points of GDP compared to 57.2 percentage points of GDP).

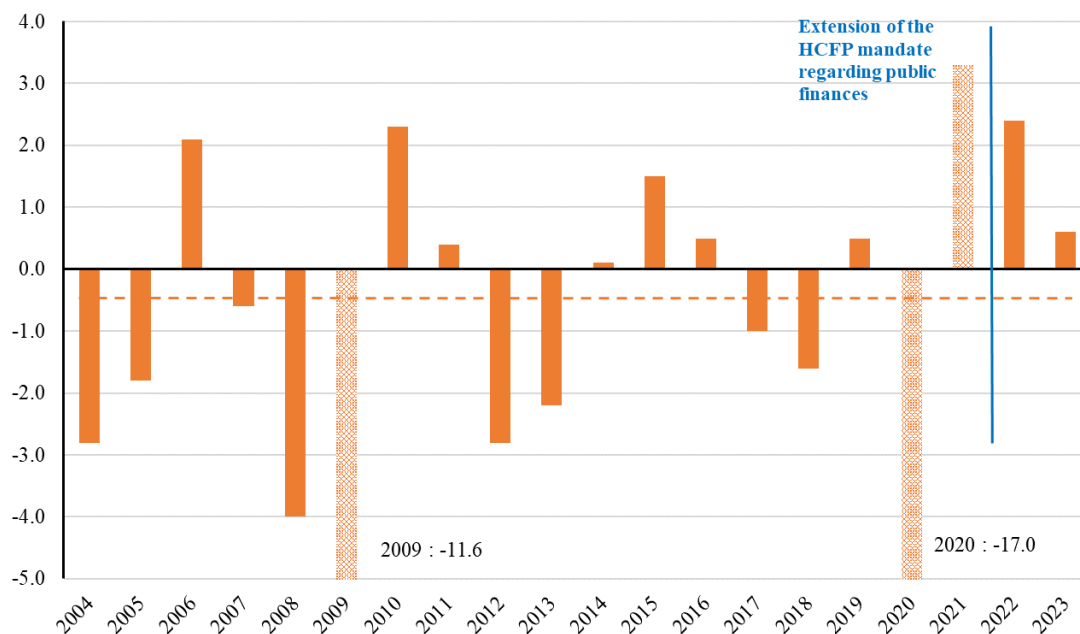
IV.4 The Government's forecasts for public debt are optimistic compared to the observed level.

Over the past twenty years, the Government's forecasts for public debt have been optimistic compared to the observed ratio, excluding the years 2009, 2020, and 2021. While Government forecasts for the general government balance average out to the observed balance, the difference between forecasts for public debt and their outcome is explained by the **difference between forecast and outcome of financial transactions**, neutral to the general government balance but impacting the debt level.

The average difference between Government forecasts and observed ratios amounts to -0.4 percentage points of GDP over the period 2004-2023, excluding 2009, 2020, and 2021. During these 17 fiscal years, the Government's forecast was more optimistic (i.e. forecasted a lower debt) than the observed balance on 8 occasions.

Over the period 2004-2023, Government forecasts have been on average significantly more optimistic than the observed ratio, primarily due to the difference in 2009 (11.6 percentage points of GDP) and 2020 (17.0 percentage points of GDP): the average difference stands at - 1.6 percentage points of GDP.

Figure 12: difference between Government's forecasts for public debt and the observed ratio
(in points of GDP)



Source: RESF and INSEE.

Note: The horizontal line represents the average level over 20 years (excluding 2009, 2020, and 2021).

Reading: During the PLF 2022, the Government anticipated a public debt 2.4 percentage points of GDP higher than the observed ratio reported in March 2023.

Furthermore, the accuracy of Government forecasts for public debt has improved since 2014: the average absolute difference between forecasts and observed ratios stands at 1.0 percentage points of GDP between 2014 and 2023, compared to 2.1 percentage points of GDP between 2004 and 2013¹¹.

As for 2022, the forecast for the ratio of public debt to GDP (114.0 points in the PLF 2022) was higher than its outcome (111.6 points). This mainly stems from the difference in the public debt ratio at the end of 2021 (115.6 points of GDP forecasted in September 2021 versus 112.9 points realised). In particular, the increase in GDP in value terms in 2021 was greater than anticipated by the Government, and the public deficit was less pronounced. The decrease in the ratio of public debt in 2022 compared to 2021, as anticipated by the Government, was relatively close to the observed decrease (forecasted -1.6 percentage points of GDP versus observed -1.3 percentage points). However, in the denominator, the growth in GDP in value terms in 2022 was more influenced by price changes than by economic activity growth.

For 2023, while the public deficit was deeper than anticipated, the ratio of public debt to GDP was lower than expected (110.6 points compared to 111.2). This is mainly due to the GDP value dynamics (+6.3% versus a forecast of 4.6%), driven by the GDP deflator¹² (+5.4% versus a forecast of 3.6%).

¹¹ The average absolute difference stands at 1.6 percentage points of GDP over the period 2004-2023, excluding 2009, 2020, and 2021.

¹² The GDP deflator was more dynamic in 2023 compared to the CPI. See Box on page 47 of the INSEE economic outlook note from June 2023.

Appendix 1: Yearly analyses for the period 2019-2023

2023

The forecast from the PLF 2023 is compared to the average forecast of Consensus Forecasts in September 2022 on one hand, and to the GDP realised in 2023 (based on initial results published in January 2024) on the other hand.

The PLF 2023 forecast is made in September 2022, at a time when **uncertainties about the evolution of the energy crisis are very high**, with market prices for gas and electricity soaring in August 2022. The standard deviation of growth forecasts for 2023 from the Consensus Forecasts panel (0.6 percentage points of GDP) ranks as the third highest in the last twenty years, following the forecasts for 2021 (during the health crisis) and for 2010 (post-financial crisis of 2008-2009).

The Government's growth forecast, set at 1.0% for 2023, was more optimistic than the Consensus Forecasts average in September (+0.6%), driven by differences in forecasts regarding household consumption (+1.4% versus +0.3%). Growth in 2023 was reported at 0.85% according to initial results published by INSEE, which closely aligned with the Government's forecast. However, this small difference (0.15 percentage points of GDP) masks significant differences in contributions to GDP moving in opposite directions. It stems from variations in inventories (0.5 point difference between forecast and outcome), domestic demand excluding inventories (0.2 point difference), and foreign trade (negative 0.6 point difference). The Government's forecast notably exceeded their outcome for household consumption (+1.4% versus +0.7%), but fell short regarding gross fixed capital formation (GFCF) (+0.1% versus +1.2%). Persistent inflation weighed on household consumption. Conversely, business and public administration GFCF exceeded expectations, while household investment declined sharply due to tighter financing conditions.

Regarding inflation, the Government's forecast was higher than the Consensus Forecasts average in September 2022 (4.2% versus 3.6%). There were significant uncertainties about price developments during the preparation of the PLF 2023. The standard deviation of inflation forecasts from Consensus Forecasts was the highest in the last twenty years at 0.75 percentage points, compared to a long-term average of 0.25 percentage points. Inflation ultimately reached an average of 4.9% in 2023. While the increase in energy prices moderated, food prices saw stronger growth compared to 2022, keeping inflation at a high level.

In terms of the 2023 fiscal year, the actual public deficit (-5.5% of GDP) was larger than forecasted in the PLF 2023 (-5.0% of GDP). Particularly, the ratio of public revenues to GDP was lower than the Government's forecast (51.9% of GDP versus 52.2% of GDP). Revenues, especially taxes, decelerated significantly compared to 2022 (+2.0%), despite a 6.3% increase in nominal GDP. Additionally, the observed ratio of expenditures in 2023 slightly exceeded the Government's forecast (57.3% of GDP versus 57.2% of GDP).

While the public deficit was deeper than anticipated, the ratio of public debt to GDP ended up lower than expected (110.6% versus 111.2%). This was primarily due to the dynamics of

nominal GDP (+6.3% versus a forecast of 4.6%), driven by the GDP deflator (+5.4% versus +3.6% forecasted).

2022

The forecast of the PLF 2022 is compared to the average forecast of the Consensus Forecasts panel in September 2021 on the one hand, and to the growth realised in 2022 (according to the initial results published in January 2023) on the other hand.

The forecast of the PLF 2022 was made in September 2021, while uncertainties about the evolution of the Covid-19 pandemic remained high but were lower than a year earlier thanks to the increasing vaccination coverage. The standard deviation of growth forecasts for 2022 from the Consensus Forecasts panel (0.4 percentage points) is thus three times smaller than for 2021 (1.2 percentage points).

The Government's growth forecast, which stands at 4.0% for 2022, is slightly more optimistic than that of the Consensus Forecasts in September (+3.8%), driven by the difference in forecasts regarding household consumption (+6.9% versus +4.8%). Growth in 2022 was 2.6% according to initial results published by INSEE. The difference between the Government's forecast and the outcome, at 1.4 percentage points of GDP, comes particularly from the forecast for household consumption (+6.9% versus an actual increase of 2.7% in volume) and to a lesser extent from that of investment measured by gross fixed capital formation (GFCF) (+4.7% versus +2.4%). The sharp rise in prices and interest rates from early 2022 weighed heavily on household consumption and investment, and therefore on economic growth. The forecast for growth in public administration consumption was lower than the actual result. Finally, the positive difference between the Government's forecast and the outcome concerning the contribution of external trade (+0.4 percentage points of GDP) was offset by a negative difference concerning the contribution of changes in inventories (-0.5 percentage points of GDP).

Regarding inflation, the Government's forecast was the same as the Consensus Forecasts in September 2021 at 1.5%. Inflation ultimately reached 5.2% on average in 2022: the year 2022 was marked by very strong inflationary pressures, linked to the consequences of the "zero-Covid" strategy in China and, above all, the war in Ukraine.

The forecast for the public deficit in the PLF 2022 (-4.8% of GDP) was very close to the deficit reported for 2022 in March 2023 (-4.7% of GDP). However, there were significant differences between forecast and outcome regarding revenues and expenditures, but these balanced each other out. Public revenues as a percentage of GDP thus exceeded the Government's forecast by 2 percentage points of GDP, reaching 53.4% of GDP. Following the inflation shock, certain tax revenue bases (such as payroll and business profits) showed more dynamism than nominal GDP. Meanwhile, the ratio of public expenditures to GDP exceeded the Government's forecast by 1.9 percentage points of GDP, reaching 58.1% of GDP, mainly

due to measures taken in response to the energy crisis and the sharp increase in debt servicing costs.

The forecast for the ratio of public debt to GDP (114.0% in 2022) was higher than the outcome (111.6%). This was mainly due to the difference concerning the public debt ratio at the end of 2021 (115.6% forecasted in September 2021 versus 112.9% realised). In particular, the increase in nominal GDP in 2021 was larger than anticipated by the Government, and the public deficit was less severe. The decrease in the public debt ratio in 2022 compared to 2021 anticipated by the Government was relatively close to the observed decrease (-1.6 percentage points of GDP forecasted versus -1.3 percentage points observed). However, it should be noted that in the denominator, the increase in nominal GDP was driven more by price changes than by economic growth.

2021

The forecast was made in September 2020 during a period of great uncertainty about the economic recovery as the Covid-19 epidemic receded after a significant first wave in the spring but showed signs of resurgence during the summer. The standard deviation of growth forecasts for 2021 from the Consensus Forecasts panel is thus very high (at 1.2 percentage points), with forecasts ranging between +4.3% and +8.9%.

The Government's growth forecast, which stands at 8.0% for 2021, is more optimistic than that of the Consensus Forecasts in September (+6.9%), coming in particular from a very high forecast for gross fixed capital formation (GFCF) (+17.2% versus +10.9%). However, it should be noted that, in this period of significant economic fluctuations, the Government's scenario is more pessimistic than that of the Consensus Forecasts for the current year (-10.0% versus -9.5% for growth and -17.0% versus -13.4% for GFCF), so the difference between the two forecasts is narrower when comparing 2021 to 2019.

Growth in 2021 reached +7.0% according to initial results published by INSEE. The difference between the Government's forecast and the outcome, at 1.0 percentage point of GDP, comes from the contribution of domestic demand excluding inventories (0.9 percentage points difference between forecast and outcome driven by both household consumption and GFCF¹³), the contribution of external trade (positive difference of 0.8 percentage points of GDP), and the contribution of changes in inventories (negative difference of -0.6 percentage points).

Regarding inflation, the Government's forecast is lower than the average forecast of the Consensus Forecasts in September 2020 (0.7% versus 1.0%). Inflation ultimately reached 1.6% on average in 2021, increasing throughout the year, driven by energy prices, in a context of gradual lifting of travel restrictions and strong global economic recovery.

¹³ Conversely, the forecast for growth in general government consumption was lower than the outcome.

While responding to epidemic rebounds required an emergency decree and two amending finance laws during the year, the forecast for the public deficit in the PLF 2021 (-6.7% of GDP) ultimately closely matched the very high actual deficit (-6.5% of GDP reported in March 2022). The ratio of public revenues to GDP was slightly higher than the Government's forecast (52.8% of GDP versus 52.5% of GDP), while the ratio of public expenditures to GDP was as anticipated, at 59.2% of GDP.

The forecast for the ratio of public debt to GDP (116.2% in 2021) was higher than its outcome (112.9%). This was mainly due to the difference concerning the public debt ratio at the end of 2020 (117.5% forecasted in September 2020 versus 114.6% realised). In particular, the economic contraction in 2020 was less severe than anticipated by the Government, and the public deficit was less pronounced.

2020

The year 2020 was marked by the development of a pandemic without recent precedent. The forecast for the PLF 2022 was made in September 2019, when the upcoming pandemic was not foreseeable. With the information available at that time, the Government's growth forecast, which stood at 1.3% for 2020, was very close to the Consensus Forecasts average in September (+1.2%). Economic activity ultimately contracted by 8.3% in 2020 according to initial results published by INSEE.

Regarding inflation, the Government's forecast was slightly lower than the average of the Consensus Forecasts constructed with information available in September 2021 (1.2% versus 1.3%). Inflation ultimately averaged 0.5% in 2020, thanks to reduced economic activity and declining energy prices.

Concerning public finances, in September 2019, the Government projected a deficit of -2.2 percentage points of GDP for 2020. The health crisis had a major impact on public finances. The Government enacted four amending finance laws to provide the necessary funds for emergency measures. The deficit stood at -9.2 percentage points of GDP in 2020 according to the notification in March 2021. In particular, the ratio of public expenditures to GDP reached 62.1% of GDP (compared to 54.4% of GDP projected in the PLF). The decline in revenues, however, was less pronounced than the drop in GDP in value terms, resulting in revenues as a percentage of GDP reaching 52.9%, 0.7 percentage points above the Government's forecast of 52.2% of GDP.

Due to the severe economic contraction and significantly widened deficit, the ratio of public debt to GDP saw an unprecedented increase, reaching 115.7%, which was 17.0 percentage points of GDP higher than the forecast made in September 2019.

2019

The forecast for the PLF 2019 was made in September 2018, at a time when uncertainties about economic activity appeared to be similar to previous years, much lower than in recent years marked by health and energy crises. The standard deviation of growth forecasts for 2019 from the Consensus Forecasts panel stood at 0.2 percentage points of GDP, compared to an average of 0.4 over twenty years.

The Government's growth forecast was aligned with the Consensus Forecasts average in September 2018, at 1.7% for 2019. The Government's forecast was more optimistic than the Consensus regarding household consumption (+1.7% versus +1.5%), but less optimistic regarding NFE investment (+2.7% versus +3.1%).

The growth rate in 2019 was 1.3% according to initial results published by INSEE¹⁴. The difference between the Government's forecast and the outcome, at 0.4 percentage points of GDP, stemmed from the contribution of inventory changes (0.4 percentage points difference between forecast and outcome), the contribution of foreign trade (0.2 percentage points difference), and domestic demand excluding inventories (negative 0.2 percentage points difference). The forecast was particularly higher than the outcome for household consumption (+1.7% versus +1.2%), but lower for gross fixed capital formation (+2.1% versus +3.6%).

Regarding inflation, the Government's forecast was lower than the average of the Consensus Forecasts in September 2018 (1.4% versus 1.6%). Inflation ultimately averaged 1.1% in 2019, due to a lower increase in energy prices and a decline in prices of manufactured goods.

In a context marked by measures taken following social movements in autumn 2018, the public deficit in 2019 (-3.0 percentage points of GDP) was slightly deeper than anticipated in the PLF 2019 (-2.8 percentage points of GDP). The ratio of public revenues to GDP was slightly lower than the Government's forecast (52.6% of GDP versus 52.8% of GDP), while the ratio of public expenditures to GDP stood at the anticipated level of 55.6% of GDP.

The forecast for the ratio of public debt to GDP (98.6% of GDP in 2019 after 98.7% in 2018) was higher than the outcome (98.1% of GDP).

Appendix 2: Significance tests for differences

¹⁴ Unadjusted data (i.e. not adjusted for working days) in the sense of the annual national accounts, as forecast in the PLF 2019.

1. Estimated difference between actual growth and growth forecast by the Government

The aim is to check whether the bias is statistically significant, i.e. whether the difference is significantly different from 0.

Table 7: significance of the difference between observed growth and growth forecast by the Government

	2004-2023	2004-2013	2014-2023
Student's statistics	-2.11**	-1.99*	-1.41
	2004-2023 excluding 2009, 2020 and 2021	2004-2013 excluding 2009	2014-2023 excluding 2020 and 2021
Student's statistics	-2.30**	-1.63	-1.68

Reading: ** denotes a significant value at the 5% level (i.e. less than 5% chance of being zero). * denotes a significant value at the 10% level.

The difference between observed growth and growth forecast by the Government is significant over the entire 2004-2023 period (at the 5% threshold), whether or not the three crisis years of 2009, 2020 and 2021 are taken into account. The difference is not significant for the sub-periods (except for the period 2004-2013 at the 10% threshold).

2. Estimate of the difference between the actual revenue-to-GDP ratio and the revenue ratio forecast by the Government

Table 8: significance of the difference between the observed revenue-to-GDP ratio and the ratio forecast by the Government

	2004-2023	2004-2013	2014-2023
Student's statistics	0.73	-0.10	0.72
	2004-2023 excluding 2009, 2020 and 2021	2004-2013 excluding 2009	2014-2023 excluding 2020 and 2021
Student's statistics	1.06	0.52	0.97

Reading: ** denotes a significant value at the 5% threshold (i.e. less than 5% chance of being zero). * denotes a significant value at the 10% level.

The difference between the observed revenue-to-GDP ratio and the ratio forecast by the Government is not significant.

3. Estimate of the difference between the actual expenditure-to-GDP ratio and the expenditure ratio forecast by the Government

Table 9: significance of the difference between the observed expenditure-to-GDP ratio and the ratio forecast by the Government

	2004-2023	2004-2013	2014-2023
Student's statistics	1.46	1.68	1.07
	2004-2023 excluding 2009, 2020 and 2021	2004-2013 excluding 2009	2014-2023 excluding 2020 and 2021
Student's statistics	0.80	1.40	-0.83

*Reading: ** denotes a significant value at the 5% level (i.e. less than 5% chance of being zero).*

** denotes a significant value at the 10% level.*

The difference between the observed expenditure-to-GDP ratio and the ratio forecast by the Government is not significant, even at the 10% threshold.

4. Estimation of the difference between the actual public debt-to-GDP ratio and the public debt ratio forecast by the Government

Table 10: significance of the difference between the observed public debt-to-GDP ratio and the ratio forecast by the Government

	2004-2023	2004-2013	2014-2023
Student's statistics	1.50	1.68	0.62
	2004-2023 excluding 2009, 2020 and 2021	2004-2013 excluding 2009	2014-2023 excluding 2020 and 2021
Student's statistics	0.88	1.40	-0.66

*Reading: ** denotes a significant value at the 5% level (i.e. less than 5% chance of being zero).*

** denotes a significant value at the 10% level.*

The difference between the observed ratio of public debt to GDP and the ratio forecast by the Government is not significant.

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