

What do the fiscal stimulus strategies in the United States and Europe reveal?

By [Christophe Blot](#) and [Xavier Timbeau](#)

In parallel with the decisions taken by the [US Federal Reserve](#) and the [European Central Bank](#) (ECB), governments are stepping up announcements of stimulus packages to try to cushion the economic impact of the Covid-19 health crisis, which has triggered a recession on an unprecedented scale and pace. The confinement of the population and the closure of non-essential businesses is leading to a reduction in hours worked and in consumption and investment, combining a supply shock and demand shock.

The responses to the crisis in both the US and Europe are unfolding over time, but the choices already made on either side of the Atlantic have lessons about their ideologies, the fundamental characteristics of their economies and the functioning of their institutions.

Federal budget: whether or not to have one

After several days of negotiations between Democrats and Republicans, the US Congress approved a plan to support the economy worth 2,000 billion dollars (9.3 points of GDP) [\[1\]](#). It provides, in particular, for transfers to households, loans to SMEs and measures to support sectors in difficulty in the form of deadline extensions. On the other side of the pond, the European Commission has proposed the creation of a 37-billion euro fund as part of an investment initiative. The EU will also reallocate one billion euros “as a guarantee to the

European Investment Fund to incentivise banks to provide liquidity to SMEs and midcaps” [2]. EU-wide, these sums represent 0.2 percentage point of GDP, which may seem all the more derisory since this does not involve allocating additional funds but rather reallocating funds within the budget.

These major differences point out in the first place that, by construction, the European budget is limited, and that it is not set up to respond to an economic slowdown affecting all the Member States. Within the EU, fiscal prerogatives are the responsibility of the Member States, as are the main sovereign instruments for responding to a crisis.

It is the national budgets that are used to prop up economic activity. So turning to these and bringing together announcements made at the level of the EU’s five largest countries, the total sum allocated exceeds 430 billion euros (3.3% of GDP), to which must be added guarantees, which could come to more than 2,700 billion euros, or more than 20 points of EU GDP [3]. The measures taken by the US and by European countries are thus on a comparable order of magnitude and are distinguished by the level at which they are taken as well as by the way in which the sums are allocated. In the United States, the federal budget represents 33% of GDP, which makes it possible to carry out a common, centralized action that benefits all households and businesses, based on decisions approved by Congress, in a way that implicitly ensures stabilization between the different States. In practice, the taxes paid by households and businesses in the States hit hardest will fall relatively, and these same States will also be able to benefit more from certain federal measures. Moreover, the US Congress can vote a deficit budget, which can be used to implement intertemporal stabilization measures [4].

In contrast, the EU does not have the capacity to go into debt, whereas the Member States can. Their stabilization capacity can be constrained by the difficulty of self-

financing, which initially leads to a rise in interest rates or subsequently to the drying up of markets. The different Member States are not on an equal footing in the markets, due to their macroeconomic situation or to the level of their debt, as in the case of Italy. But beyond these differences, the main issue is that savers, through the financial markets, can make trade-offs between the debts of different countries within a legal space (the EU) that guarantees the free movement of capital, so interest rate movements can amplify small macroeconomic differences and fuel self-actuating dynamics. The 2012 sovereign debt crisis showed that a contagion by sovereign rates, which, after Greece, sucked Italy and Spain into a whirlpool of doubt in the financial markets, could lead to substantial transfers from countries in difficulty to countries considered virtuous. The counterpart of the trade-off was the lowering of rates for Germany and France. These transfers can amount to several points of GDP, a level that is creating a risk of the break-up of the euro zone: it might be preferable to end the free movement of capital, so as to capture national savings to finance the public debt (and therefore monetize the public deficit) rather than letting the debt load soar and having to submit to a humiliating recovery plan in exchange for European aid.

The surge in Italian sovereign rates, prior to the clarification by the ECB's announcement, then logically enough relaunched the debate about the possibility of issuing euro-bonds (called "corona-bonds"), which would make it possible to pool part of the budgetary expenditures of the euro zone States so as to avoid this wholly unjustified spiral of trade-offs between sovereign debts, whose impact could be sufficient to lead to the break-up of the euro zone.

As long as these common debt securities are not set up or the ECB is reluctant to intervene to buy back this or that European public debt, the role of Europe's institutions will be on another scale. First of all, what is needed is to

promote the coordination of decisions taken by the Member States and to encourage governments to take strong measures to avoid stowaways who expect to benefit from measures taken by their neighbours [5]. These effects are likely to be limited, however, and it is hard to imagine that a country will not take the steps necessary to directly help households and businesses cope with the shock.

More than coordination, it is essential to soften the fiscal rules announced and in force in order to give the Member States the manoeuvring room they need by invoking the exceptional circumstances clause. Furthermore, beyond a short-term response, it is important that the crisis does not provide an opportunity to exert pressure for greater fiscal discipline. The legitimacy of the Member States in the crisis and the relevance of their responses will be closely scrutinized after the crisis. The EU must not engage in an untimely debate that could lead only to compromising its political legitimacy definitively.

Since there is no tool for pooling debt, the ECB plays a crucial role in maintaining a low level of interest rates for all the States of the Union, both today and tomorrow.

Adapting plans to the way the labour market function

Beyond the sums committed and the institutional level at which decisions are taken, the content of the respective plans is a reminder that the labour markets function very differently on the two sides of the Atlantic. The euro zone Member States have favoured the use of short-time working, or partial unemployment, which keeps workers employed and socializes the loss of income at source. The productive fabric is preserved because there is no breach of the employment contract, and the States offer, based on existing mechanisms, partially to make up lost wages in order to maintain consumer purchasing power. These mechanisms, already in wide use in Germany and Italy, have recently been expanded in France and developed in Spain.

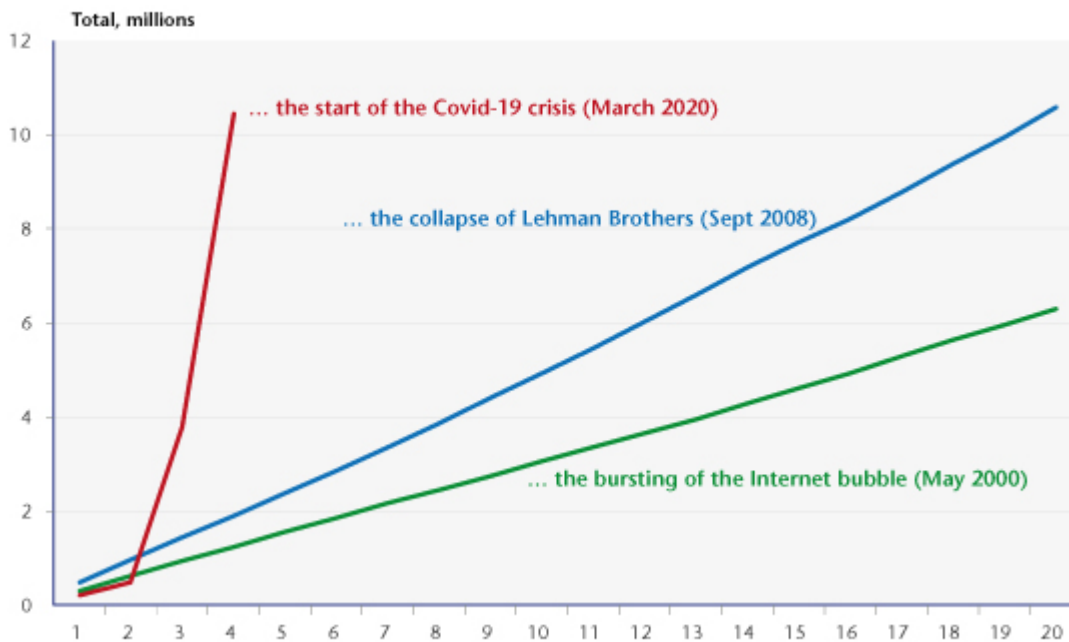
This approach should provide better conditions for the economy to re-start once the recession is over, since companies will already have a workforce, thus avoiding the costs of recruitment and training.

In the United States, these mechanisms are not widespread, and the American labour market is very flexible. Notice times for dismissing employees are very short, so that companies can quickly adjust their demand for work. The drop-off in activity will quickly translate into a higher unemployment rate, as is indicated by the initial increases recorded by the federal employment agency (see the figure). In two weeks, the cumulative number of registered unemployed exceeded 10 million, much more than what was observed after the bankruptcy of Lehman Brothers in September 2008 or following the burst of the Internet bubble in 2000. Furthermore, the duration of unemployment benefits, set at the State level [\[6\]](#), is generally shorter, which quickly puts households at risk of a loss of income. This is why a large part of the measures enacted in the aid plan approved by Congress provide for direct support to households through transfers or tax cuts, based on their income level. The measures also provide for the extension of benefit periods and additional assistance to laid-off workers, which may be added to the benefits received under standard unemployment insurance. But rather than directly targeting those losing their jobs, these are broad spectrum measures. A vigorous recovery plan will no doubt be necessary after the health crisis. But here, too, the windfall effects will consume a large part of the stimulus, and it will be very expensive to get the economy back on its pre-crisis footing.

As the November elections approach, these choices also probably explain why Donald Trump sometimes seems reluctant to prolong the confinement of Americans, arguing that the economic crisis could do more damage than the health crisis [\[7\]](#). But by letting the virus spread, the number of people

infected with a serious illness risks exploding and exposing the United States to a major health crisis. It is not certain that the US President's record will prove to be more favourable, or the US strategy more effective, whether in terms of health or economics.

Figure. Weekly registrations for unemployment benefits in the US after ...



Source: U.S. Employment and Training Administration.

[1] This plan builds on previous measures, whose value totalled just over USD 100 billion. This includes all measures for households and businesses (loans and liquidity support).

[2] See https://ec.europa.eu/commission/presscorner/detail/en/IP_20_459

[3] It should also be noted that certain measures were taken based on an assumed duration of confinement, and that these could therefore be recalibrated depending on how the situation evolves.

[4] The vast majority of States, however, have deficit or debt constraints. Faced with the scale of the crisis, some of them are also

freeing up spending which can therefore be adjusted to the federal support plan.

[5] If country A decides to increase its spending, country B can hope to partially benefit by the increase induced in country A's imports from B, particularly if B is small compared to A.

[6] The US unemployment insurance system is specific to each of the States. The federal government plays its role in managing the costs of the system as a whole. See Stéphane Auray and David L. Fuller (2015): "[L'assurance chômage aux Etats-Unis](#)".

[7] See [here](#) for an analysis of the economic and health risks.

The transmission of monetary policy: The constraints on real estate loans are significant!

By Fergus Cumming (Bank of England) and Paul Hubert (Sciences Po – OFCE, France)

Does the transmission of monetary policy depend on the state of consumers' debt? In this post, we show that changes in interest rates have a greater impact when a large share of households face financial constraints, i.e. when households

are close to their borrowing limits. We also find that the overall impact of monetary policy depends in part on the dynamics of real estate prices and may not be symmetrical for increases and decreases in interest rates.

From the micro to the macro

In a [recent article](#), we use home loan data from the United Kingdom to build a detailed measure of the proportion of households that are close to their borrowing limits based on the ratio of mortgage levels to incomes. This mortgage data allows us to obtain a clear picture of the various factors that motivated people's decisions about real estate loans between 2005 and 2017. After eliminating effects due to regulation, bank behaviour, geography and other macroeconomic developments, we estimate the relative share of highly indebted households to build a measure that can be compared over time. To do this, we combine the information gathered for 11 million mortgages into a single time series, thus allowing us to explore the issue of the transmission of monetary policy.

We use the time variation in this debt variable to explore whether and how the effects of

monetary policy depend on the share of people who are financially constrained. We focus on the response of consumption in particular. Intuitively, we know that a restrictive monetary policy leads to a decline in consumption in the short to medium term, which is why central banks raise interest rates when the economy is overheating. The point is to understand whether this result changes according to the share of households that are financially constrained.

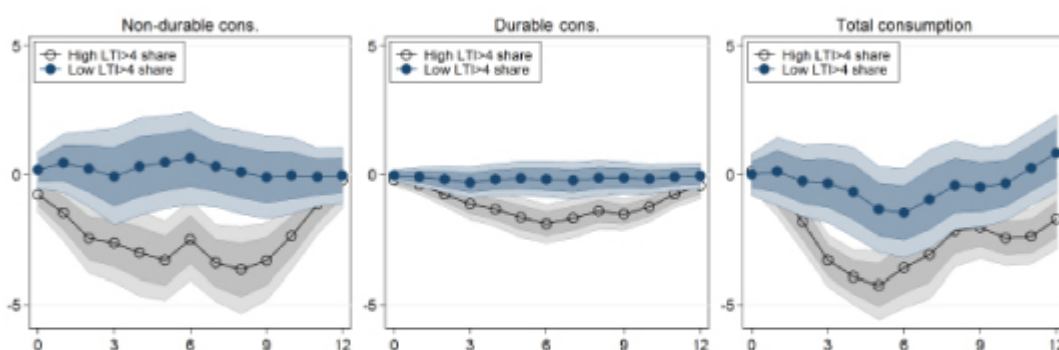
Monetary policy contingent on credit constraints

We find that monetary policy is more effective when a large portion of households have taken on high levels of debt. In the graph below, we show how the consumption of non-durable goods, durable goods and total goods responds to raising the key interest rate by one percentage point. The grey bands (or blue, respectively) represent the response of consumption when there is a large (small) proportion of people close to their borrowing limits. The differences between the blue and grey bands suggest that monetary policy has greater strength when the share of heavily indebted households is high.

It is likely that there are at least two mechanisms behind this differentiated effect: first, in an economy where the rates are partly variable^[1], when the amount borrowed by households increases relative to their income, the mechanical effect of monetary policy on disposable income is amplified.

People with large loans are penalized by the increase in their monthly loan payments in the event of a rate hike, which reduces their purchasing power and thus their consumption! As a result, the greater the share of heavily indebted agents, the greater the aggregate impact on consumption. Second, households close to their borrowing limits are likely to spend a greater proportion of their income (they have a higher marginal propensity to consume). Put another way, the greater the portion of your income you have to spend on paying down your debt, the more your consumption depends on your income. The change in income related to monetary policy will then have a greater impact on your consumption. Interestingly, we find that our results are due more to the distribution of highly indebted households than to an overall increase in borrowing.

Figure. The impact of monetary policy on consumption



Note: The grey line represents the response of the consumption of non-durable goods (on the left) and durable goods (in the centre) as well as of total consumption (on the right) to a one percentage point hike in the central bank's key interest rate when the share of households having a loan to income ratio (LTI) above 4 is high. The blue line represents the same response when the share of households with a loan to income ratio above 4 is low.

Source: Authors' calculations.

Our results also indicate some asymmetry in the transmission of monetary policy. When the share of constrained households is large, interest rate increases have a greater impact (in absolute terms) than interest rate cuts. This is not completely surprising. When your income comes very close to your spending, running out of money is very different from receiving a small additional windfall.

Our results also suggest that changes in real estate prices have significant effects. When house prices rise, homeowners feel richer and are able to refinance their loans more easily in order to free up funds for other spending. This may offset some of the amortization effects of an interest rate rise. On the other hand, when house prices fall, an interest rate hike exacerbates the contractionary impact on the economy, rendering monetary policy very powerful.

Implications for economic policy

We show that the state of consumers' debt may account for some of the change in the effectiveness of monetary policy during the economic cycle. However, it should be kept in mind that macro-prudential policy makers can influence the distribution of debt in the economy. Our results thus suggest that there is a strong interaction between monetary policy and macro-prudential policy.

[\[1\]](#)

Which is the case in the United Kingdom.

Time for Climate Justice

By Eloi Laurent

On September 18th 2019, 16 years old climate activist Greta Thunberg appeared before the United States House of Representatives. When asked to submit a formal version of her inaugural statement, she replied that she would be giving lawmakers a copy of the IPCC special report on the impacts of global warming of 1.5 °C, the so-called "[SR 1.5](#)". "I am submitting this report as my testimony because I don't want you to listen to me, I want you to listen to the scientists", she said eloquently.

By the same token, when asked what words she wanted to be printed on the sails of the boat carrying her across the Atlantic Ocean from Sweden to the US, she asked for a blunt message urging citizens and policymakers to act upon climate knowledge: "Unite behind Science". Greta Thunberg deserves considerable praise for her intelligence, courage and determination in the face of ignorance, skepticism and animosity. But she is wrong on one important point: nations and people around the world won't unite behind science. They will only unite behind justice.

Any meaningful conversation among humans about reform, change and progress starts with debating justice principles at play and imagining institutions able to embody these principles. This is especially true of the titanic shift in attitudes and behaviors required by the climate transition, which goal is nothing short of saving the hospitality of the planet for humans.

Climate injustice is obvious in our world. On the one hand, a

handful of countries, about ten percent (and a handful of people and industries within these countries) are responsible for 80% of human greenhouse gas emissions, causing climate change that is increasingly destroying the well-being of a considerable part of humanity around the world, but mostly in poor and developing nations. On the other hand, the vast majority of the people most affected by climate change (in Africa and Asia), numbering in the billions, live in countries that represent almost nothing in terms of responsibility but are highly vulnerable to the disastrous consequences of climate change (heat waves, hurricanes, flooding) triggered by the lifestyle of others, thousands of miles away.

Why is climate change still not mitigated and actually worsening before our eyes, while we have all the science, technology, economics, and policy tools we need to fix it? Largely because [the most responsible are not the most vulnerable, and vice-versa.](#)

And yet, the time may be ripe for climate justice to take center stage in international negotiations. Data compiled by the [Global Carbon Project](#) released last week show that top emitters are converging in terms of climate responsibility (table 1).

Table 1. Share in % for each country or region (responsibility in terms of emissions per capita is calculated in percentage of the world average)

	Emissions in 2018	Emissions per capita in 2018	Consumption emissions in 2017	Historical responsibility emissions (1870-2018)	Historical responsibility emissions (1990-2018)
United States	15	345	16	25	20
China	28	145	24	13	20
European Union	9	139	12	22	14
India	7	41	6	3	5
Russia	5	243	4	7	6
Japan	3	189	3	4	4

Source: Global Carbon Project.

Of course, China remains by far the first polluter: the country has emitted in 2018 roughly twice the volume of CO2 than the US, thrice the amount of the EU, four times the

amount of India, five times the amount of Russia. Consider the amount per capita, and the picture changes dramatically: a citizen of the United States emits more than twice CO₂ than a Chinese. And yet, for the first time, a European is (slightly) less responsible than a Chinese in terms of per capita emissions. Conversely, it is well established that historical responsibility for greenhouse gas emissions falls largely on the shoulders of Western countries, with the US and the EU jointly responsible for half of emissions since the industrial revolution, while China only accounts for less than 15%. And yet, for the first time, China is as responsible as the US when emissions are counted since 1990 onwards (both countries accounting for 20% each of emissions over the 1990-2018 period).

It is thus the right time to devise actionable equity criteria, commonly agreed upon top emitters, as to how distributing the remaining “carbon budget” (the overall amount of emissions remaining before the Earth’s climate reaches a catastrophic tipping point, approximately 1200 billion tons of carbon that remain to be emitted over the next three decades so as to limit the rise of ground temperatures to around 2 degrees by the end of the 21st century).

But as incredible as it may seem, the formal global conversation has not yet started on climate justice: as the COP 25 ends in Madrid and all eyes turn to COP 26 for a renewed climate ambition, countries are still negotiating at the UN on volumes of emissions that do not take into account current and projected population, human development level, geographic basis (production vs. consumption emissions), historical responsibility, etc. By the same token, [The Paris Agreement](#) (2015) mentions the term “justice” only a single time, to affirm that signatories recognize “the importance for some of the concept of ‘climate justice’”. This is clearly a misinterpretation. The whole point of climate justice is precisely that it is not confined to a few nations or

important for a few people: it should be the concern of all involved in climate negotiations.

It can be shown that the application of a hybrid but relatively simple model of climate justice based on five criteria would lead to substantially cutting global emissions in addition to the carbon budget (by 36%) over the next three decades which would ensure meeting the goal of 2 degrees, and even targeting 1.5 degrees, thereby enhancing the fairness of this common rule with respect to the most vulnerable countries and social groups (see table 2).

Table 2. A simple model of fair and efficient climate justice

Top 20 CO2 emitters: 76% of global emissions	% of the global average of consumption emissions per capita, averaged over 1990-2012	% of the global average of HDI, averaged over 1990-2012	Average distance to 100 of (1) and (2)	Projected population increase until 2050	Equal distribution of 75% of 1200bn tons of CO2	Carbon budget per country : = (5) + or - (3) + or - (4)
			(in %)	(in %)	(in bn tons)	(in bn of tons)
	(1)	(2)	(3)	(4)	(5)	
India	27	75	49	24	45	78
Indonesia	30	95	38	22	45	72
Brazil	43	106	26	12	45	62
Thailand	70	102	14	-5	45	49
China	85	97	9	-2	45	48
Mexico	83	108	5	27	45	59
Turkey	96	104	0	20	45	54
Iran	123	103	-13	17	45	47
South Africa	137	94	-15	28	45	51
France	187	122	-55	9	45	24
Italy	210	121	-65	-8	45	12
UK	232	123	-78	14	45	16
South Korea	233	121	-77	0	45	10
Russia	253	112	-82	-8	45	5
Japan	249	123	-86	-16	45	-1
Germany	280	124	-102	-3	45	-2
Saudi Arabia	296	114	-105	36	45	14
Australia	319	127	-123	33	45	5
Canada	361	125	-143	22	45	-9
US	391	125	-158	20	45	-17
Total					900	576

Reading: The 1990-2012 average of per capita consumption emissions can be compared with the average level of the human development index for this period, relying on the idea of the carbon budget as a development budget. Two global average deviations are calculated for each of the twenty largest emitters: the emissions gap and the human development gap, the average of which determines the national carbon budget (either positive or negative) to be used until 2050 (countries with a negative carbon budget may have to pay by investing in carbon sinks or by transferring technology and / or financing to accelerate emission reductions in carbon positive carbon budget countries). Countries receive the same carbon endowment up to 2050 regardless of population size, this equal endowment corresponding to an equal sovereign right to develop. But this initial equal endowment is adjusted by the projected increase of population until 2050 for each country (notice that population size has already been taken into account with per capita emissions in column 1). India for instance has emitted 27% of the world average from 1990 to 2012 and reached 75% of the world average level of human development over the same period. Its population will increase by 24% until 2050, it is therefore allocated 78 billion tons of CO2 to be emitted by 2050. In contrast, the United States owes 17 billion tons of CO2 to the rest of the world. Applying these criteria (and justice principles) makes it possible to determine the carbon budget of each state, and leads to a reduction of 36% global emissions, from 900 billion tons to 576 billion tons.

Source: Laurent 2019.

As available data make clear, we are collectively missing the wrong targets on climate. Even if all countries fulfilled their pledges and reach their targets, the increase in temperatures would [still be of 3 degrees by the end of the 21st century](#) (or twice the target agreed upon at the Paris Agreement in 2015). In other words, what is lacking is not just the political will but also the imagination. Climate justice is the way out of this impasse. Climate justice is the key to understanding and eventually solving the urgent climate crisis. Climate justice is the solution to climate change.

Are our inequality indicators biased?

By [Guillaume Allègre](#)

The issue of inequality is once again at the heart of economists' concerns. Trends in inequality and its causes and consequences are being amply discussed and debated. Strangely, there seems to be a relative consensus about how to measure it [\[1\]](#). Economists working on inequality use in turn the Gini index of disposable income, the share of income held by the richest 10%, the inter-decile ratio, and so on. All these measures are relative in character: If the income of the population as a whole is multiplied by 10, the indicator doesn't change. What counts is the income ratio between the

better off and the less well off. But could inequality and the way it changes be measured differently?

France's [inequality](#)

[monitoring body](#) is currently discussing not only trends in the income ratio between the more and less well-off, but also changes in the income

gap: "In one year, the richest 10% receive on average about 57,000 euros, and

the poorest 10% 8,400 euros: a difference of 48,800 euros, equivalent to just

over 3.5 years of work paid at the minimum wage (*Smic*). This gap rose from 38,000 euros in 1996 to 53,000 euros in 2011, then fell to 48,800 euros in 2017." Measuring changes in the income

gap does not seem relevant. Let's take two people with incomes of 500 and 1,000

euros, then multiply their incomes by 10: the income ratio is stable, but the

income gap is multiplied by 10. Has inequality increased, is it stable or has

it decreased? Using the income gap as a measure, it has increased, but it is

stable according to the ratio. We believe it may have actually decreased.

Indeed, in France

today, the differences in living conditions, lifestyles and well-being are perhaps

greater between someone with an income of 500 euros, which leaves them in dire poverty,

and someone with an income of 1,000 euros, which puts them at the poverty line,

than between a person with an income of 5,000 euros, who can be described as

well-off, and a person earning 10,000 euros, who can be described as very well-off. These last two people share similar lifestyles, even if the latter probably lives in a slightly larger and better-situated home, and frequents more luxurious restaurants. In other words, subtracting 10% of income from a very wealthy person probably has less impact than subtracting 10% from someone at the poverty line. There is abundant literature on risk aversion showing that people are willing to pay more than 10% of their income when it is high to protect against a 10% drop in income when it is low. This is, moreover, *one* of the justifications for a progressive tax: a greater percentage is taken from the better off, but the sacrifice is supposed to be equal because, according to marginalist theory, contributive capacity grows faster than income (or utility increases less than proportionately compared to income).

If this argument is accepted, we could conclude that at a constant level of relative inequality (Gini index, income ratio between the richest and poorest), *all other things being equal*, a richer society would in practice be more egalitarian, in the sense that its citizens share a more comparable way of life or well-being. Intuition tells us that this is true for large gaps in wealth (such as the 10-fold increase in earnings in the example above). If this is true, then comparisons of relative inequality made over very

long periods of time or between developed and developing countries need to be kept in perspective. When [Thomas Piketty](#) shows that the richest 10% captured 50% of income between 1780 and 1910, we could then conclude that inequality has decreased over that period!

[Milanovic](#) and [Milanovic, Lindert and Williamson](#)

have developed concepts that take into account this wealth effect over a very long-term historical perspective: the “inequality frontier” is the maximum inequality possible in a society taking into account the fact that the society must guarantee the livelihoods of its poorest members (the minimum income to live): in an economy with very little surplus (where the average discretionary income is low), the maximum possible inequality will be low [\[2\]](#); in a very well-off economy, the maximum possible Gini coefficient will be close to 100 percent [\[3\]](#). The “extraction ratio” is the current Gini divided by the maximum possible Gini. The wealthier a country is, the lower the maximum possible Gini coefficient, and the more – at equal Ginis – the extraction ratio will be low. One could also calculate a “discretionary income Gini” (in the sense of disposable income minus the minimum subsistence income) [\[4\]](#).

It can be argued that when comparing inequality in two societies at different levels of development,

the extraction ratio is a better indicator of inequality than the available income Gini [5] or other indicators of relative inequality. One conclusion reached by Milanovic et al.: "Thus, although inequality in historic preindustrial societies is *equivalent* to that of industrial societies today, ancient inequality was much larger when expressed in terms of maximum feasible inequality. Compared to the maximum feasible inequality, current inequality is much lower than that in ancient societies". According to the authors, in the early 2000s, the maximum possible Gini was 55.7 in Nigeria and 98.2 in the US: the comparison of inequality between the two countries will then be very different depending on whether the indicator chosen is the income Gini or the extraction ratio. On the other hand, there will be little difference between the United States and Sweden (maximum achievable Gini of 97.3) despite an average income difference of 45%. The effect is in fact saturated since the Swedish income is already 40 times the subsistence minimum (400 dollars per year in purchasing power parity) and the American, 58 times. In the authors' approach, the subsistence minimum is set in purchasing power parity and is fixed between countries and over time. But is the subsistence minimum really 400 dollars a year in Sweden today? When comparing inequality in the United States and Sweden today, is this subsistence minimum relevant? Taking a significantly higher minimum level

of subsistence

could change the comparison of inequality, even in developed countries (for a comparable

living standards Gini, is Switzerland really more egalitarian than France?).

The problem then is to establish a minimum subsistence income amount [\[6\]](#).

The choice of an

inequality indicator depends on the objective pursued. If the idea is to

compare inequalities in living conditions across time or between countries, the

discretionary income Gini might be relevant. On the other hand, if there is concern

that excessively high incomes present a danger for democracy (a position

developed in particular by Stiglitz in [The Price of Inequality](#)), the measure of relative inequality as calculated by

the share of income captured by the wealthiest 1% seems more relevant.

When comparing countries

that are closely related in terms of development, there are other, perhaps more

important, limitations to comparing living standard Ginis. Given the same

income inequality, a country where public spending on health, housing, education,

culture, etc. is higher will (probably) be more egalitarian (unless public

spending goes disproportionately to the better off). The issue of housing is

also important, as it weighs heavily in household budgets: all other things being

equal, high rents due to a constrained housing supply will

increase inequality (tenants are poorer on average today). But it is difficult to take into account this effect in comparisons or trends, because the price of housing may reflect an improvement in quality or better amenities. In addition, inequality between landlords and tenants is not taken into account in the usual calculation of the standard of living: with equal income, an owner who has finished repaying the mortgage is better off than a tenant, but the fictitious rent that the owner receives does not enter the calculation of their standard of living. Finally, and without being exhaustive, the issue of hours of work and household production also complicates the equation: a difference in income can be linked to a difference in working hours, especially if one of the spouses in a couple (most often the woman) is inactive or works part-time. However, the inactive spouse can engage in household production (including childcare) that is not taken into account in statistics: the difference in standard of living with the bi-active couple is less than what is implied by the difference in incomes. Statistics do not usually take this effect into account because it is difficult to assign a value to household production.

It can be seen that the measurement of income and the standard of living, and therefore inequality, is imperfect. The wealth effect (at an equal standard of

living Gini, a richer society is probably more egalitarian, all things being equal) is a limit, among others, some of which are probably more important when comparing developed economies. On the other hand, this wealth effect could be relatively significant if one wants to compare inequalities in living conditions between the France of 1780 and that of 1910 and a fortiori of today.

[1] Whereas it was prominent from the early 1970s to the end of the 1990s: see in particular the work of Atkinson, Bourguignon, Fleurbaey and Sen.

[2] Milanovic et al. give the following example: consider a society of 100 individuals, 99 of whom are in the lower class. The subsistence minimum in this society is 10 units and the total income 1,050 units. The sole member of the upper class receives 60 units. The Gini coefficient associated with this distribution (the maximum possible Gini) is only 4.7 percent.

[3] In fact, the maximum possible Gini rises quickly: if in the previous country, the income increases to 2,000 units and the dictator extracts all the surplus (1,010 units), the Gini leaps to 49.5.

[4] The disposable income Gini, or the extraction ratio, shares some of the

characteristics of the

[Atkinson](#)

[index](#), including the idea of differentiating among the wealthiest

and the poorest. Nevertheless, the Atkinson index remains a relative indicator

of inequality: if all incomes are multiplied by 10, the indicator remains

constant. The index satisfies average independence, which is generally sought

among inequality indicators, but which we seek to go beyond here.

[\[5\]](#) The two indicators

do not measure the same concepts. First, it may be interesting to use several

indicators, but multiplying the number of indicators raises the problem of

readability, so one must choose. The choice of an indicator is based on a

normative judgment since, at least implicitly, the idea is to reduce inequality

according to the measure chosen (there is a consensus among economists that,

all else being equal, less inequality is preferable).

[\[6\]](#) Especially since

this income must be consistent over time or between countries if the objective

is to capture a trend or make a comparison.

Negative interest rates: Challenge or opportunity for Europe's banks?

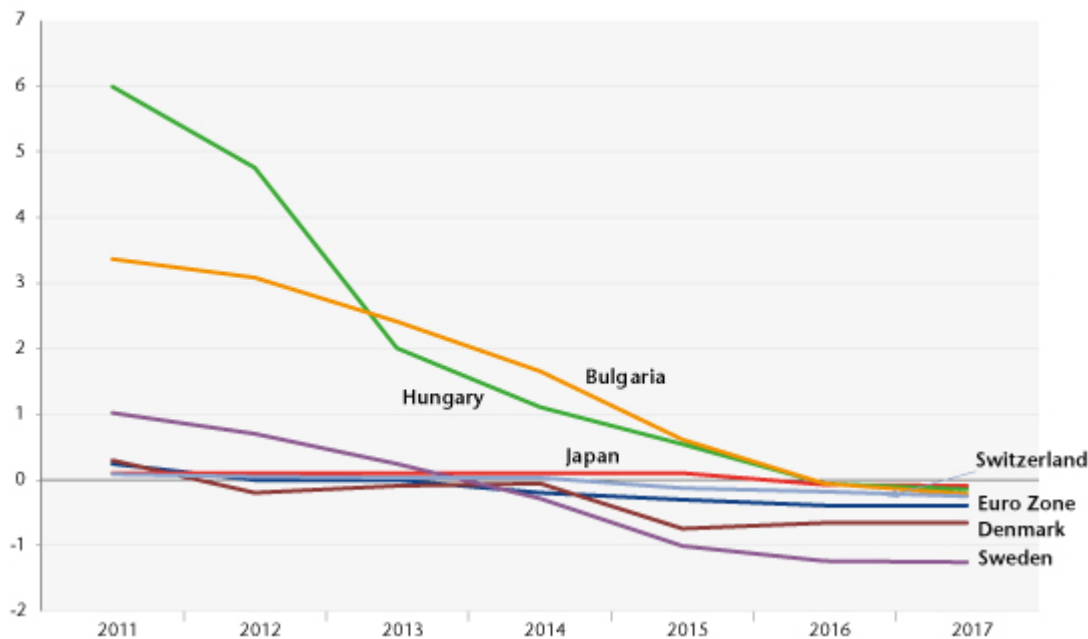
By [Whelsy Boungou](#)

It has been five years since commercial banks, in particular those in the euro zone, have faced a new challenge, that of continuing to generate profit in an environment marked by negative interest rates.

At the onset of the 2007-2008 global financial crisis, several central banks implemented new "unconventional" monetary policies. These consisted mainly of massive asset purchase programmes (commonly known as Quantitative Easing, QE) and forward guidance on interest rates. They aimed to lift the economies out of crisis by promoting better economic growth while avoiding a low level of inflation (or even deflation). Since 2012, six central banks in Europe (Bulgaria, Denmark, Hungary, Sweden, Switzerland and the European Central Bank) and the Bank of Japan have gradually introduced negative interest rates on bank deposits and reserves, in addition to the unconventional measures already in force. For example, the ECB's deposit facility rate now stands at -0.40% (see Figure 1). Indeed, as indicated by Benoît Cœuré [1], the implementation of negative rates aim to tax banks' excess reserves to encourage

them to use these to boost the credit supply.

Figure 1. Changes in central bank deposit rates



However, the implementation of negative rates has raised at least two concerns about the potential effects on bank profitability and risk-taking. First, the introduction of negative rates could hinder the transmission of monetary policy if this reduces banks' interest margins and thus bank profitability. In addition, the lowering of credit rates for new loans and the revaluation of outstanding loans (mainly at variable rates) reduces banks' net interest margin when the deposit rate cannot fall below the Zero Lower Bound. Second, in response to the impact on margins, the banks could either reduce the share of nonperforming loans on their balance sheets or look for other assets that are more profitable than loans ("Search-for-yield").

[In a recent article](#)

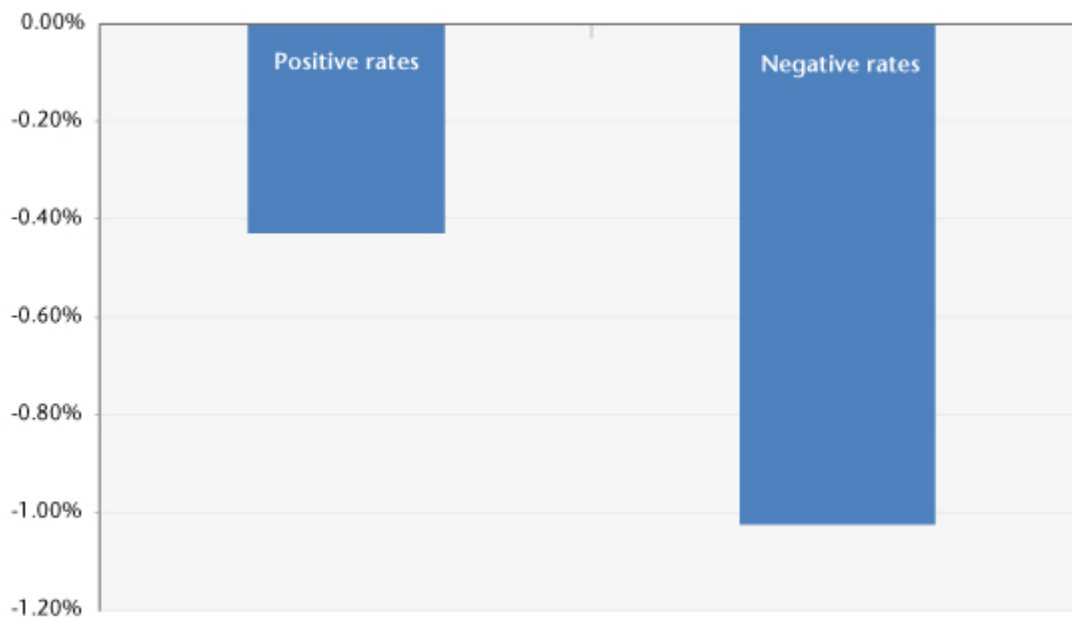
[2], we used panel data from 2442 banks from the 28 member countries of the European Union over the period 2011-2017 to analyse the effects of negative rates on bank behaviour with respect to profitability and risk-taking.

Specifically, we asked ourselves three questions: (1) What is the impact of negative rates on banks' profitability? (2) Would negative rates encourage banks to take more risks? (3) Would the pressure on net interest margins from negative rates encourage banks to take more risk?

At the conclusion of our analysis, we highlight the presence of a threshold effect when interest rates fall below the zero bar. As can be seen in Figure 2, a 1% reduction in the central bank deposit rate reduced banks' net interest margins by 0.429% when rates are positive, and by 1.023% when they are negative. Thus, negative rates have a greater impact on banks' net interest margins than do positive rates. This result points to the presence of a threshold effect at zero. In addition, in response to this negative effect on margins (and in order to offset losses), the banks responded by expanding their non-interest rate activities (account management fees, commissions, etc.). As a result, in the short and medium term there was no indication that the banks resorted to riskier positions. However, the issue of risk-taking may eventually arise if negative rates persist for a long time and the banks

continue to suffer losses on net interest margins.

Figure 2. The impact of central bank deposit rates on banks' interest margins



Note: This figure presents the results of our analysis of the impact of interest rates on the margins of 2442 banks operating in the European Union over the period 2011-2017. The element "positive rates" refers to the impact on the banks' interest margins of a reduction in the central bank deposit rate when this is positive. "Negative rates" refers to the impact on the banks' interest margins of a reduction in the central bank deposit rate when it is negative.

[1] Coeuré B. (2016). Assessing the implication of negative interest rates. Speech at the Yale Financial Crisis Forum in New Haven. July 28, 2016.

[2] Boungou W. (2019). [Negative Interest Rates, Bank Profitability and Risk-taking](#). Sciences Po OFCE Working Paper no. 10/2019.

The impact on redistribution of the ECB's monetary policy

By [Jérôme Creel](#) and [Mehdi El Herradi](#)

A few weeks before Christine Lagarde assumes the

presidency of the European Central Bank (ECB), it may be useful to examine the balance sheet of her predecessors, not only on macroeconomic and financial matters but also with respect to inequality. In recent years, the problem of the redistributive effects of monetary policy has become an important issue, both academically and at the level of economic policy discussions.

Interest in this subject has grown in a context marked by the conjunction of two factors. First there has been a [persistent level of inequality in wealth and income](#), which has been hard to reduce. Then there are the activities of the central banks in the advanced economies following the 2008 crisis to support growth, particularly through the implementation of so-called “unconventional” measures [\[1\]](#). These measures, mainly manifested in quantitative easing (QE) programmes, are suspected to have increased the prices of financial assets and, as a result, favoured wealthier households. At the same time, the low interest rate policy could have resulted in a reduction in interest income on assets with fixed yields, most of which are held by low-income households. On the other hand, the real effects of monetary policy, particularly on changes in the unemployment rate, could help keep low-income households in employment. The ensuing debate, which initially broke out in the United States, also erupted at the level of the [euro](#)

[zone](#) after the ECB launched its QE programme.

In a [recent study](#) focusing on 10 euro zone countries between 2000 and 2015, we analysed the impact of the ECB's monetary policy measures – both conventional and unconventional – on income inequality. To do this, we drew on three key indicators: the Gini coefficient, both before and after redistribution, and an interdecile ratio (the ratio between the richest 20% and the poorest 20%).

Three main results emerge from our study. On the one hand, a restrictive monetary policy has a modest impact on income inequality, regardless of the indicator of inequality used. On the other hand, this effect is mainly due to the southern European countries, especially in the period of conventional monetary policy. Finally, we found that the redistributive effects of conventional and unconventional monetary policies do not differ significantly.

These results thus suggest that the monetary policies pursued by the ECB since the crisis have probably had an insignificant and possibly even favourable impact on income inequality. The forthcoming normalization of the euro zone's monetary policy could, on the contrary, increase inequality. Although this increase may be limited, it is important that decision-makers anticipate it.

[1] For an analysis of the expected impact of the ECB's unconventional policies, see [Blot et al. \(2015\)](#).

The OFCE optimistic about growth – “As usual”?

By [Magali Dauvin](#) and [Hervé Péléraux](#)

In the spring of 2019, the OFCE forecast real GDP growth of 1.5% for 2019 and 1.4% for 2020 (i.e. cumulative growth of 2.9%). At the same time, the average forecast for the two years compiled by Consensus Forecasts[1] was 1.3% each year (i.e. 2.6% cumulative), with a standard deviation around the average of 0.2 points. This difference has led some observers to describe the OFCE forecasts as “optimistic as usual”, with the forecasts of the Consensus or institutes with less favourable projections being considered more “realistic” in the current economic cycle.

A growth forecast is the result of a research exercise and is based on an assessment of general trends in the economy together with the impact of economic policies (including budget, fiscal and monetary policies) and exogenous shocks (such as changes in oil prices, social disturbances, poor weather, geopolitical tensions, etc.). These evaluations are themselves based on econometric estimations of the behaviour of economic agents that are used to quantify their response to these shocks. It is therefore difficult to comment on or compare the growth figures issued by different institutes without clearly presenting their analytical underpinnings or going into the main assumptions about the trends and

mechanisms at work in the economy.

However, even if the rigour of the approach underlying the OFCE's forecasts cannot be called into question, it is legitimate to ask whether the OFCE has indeed produced chronic overestimations in its evaluations. If such were the case, the forecasts published in spring 2019 would be tainted by an optimistic bias that needs to be tempered, and the OFCE should readjust its tools to a new context in order to regain precision in its forecasts.

No systematic overestimation

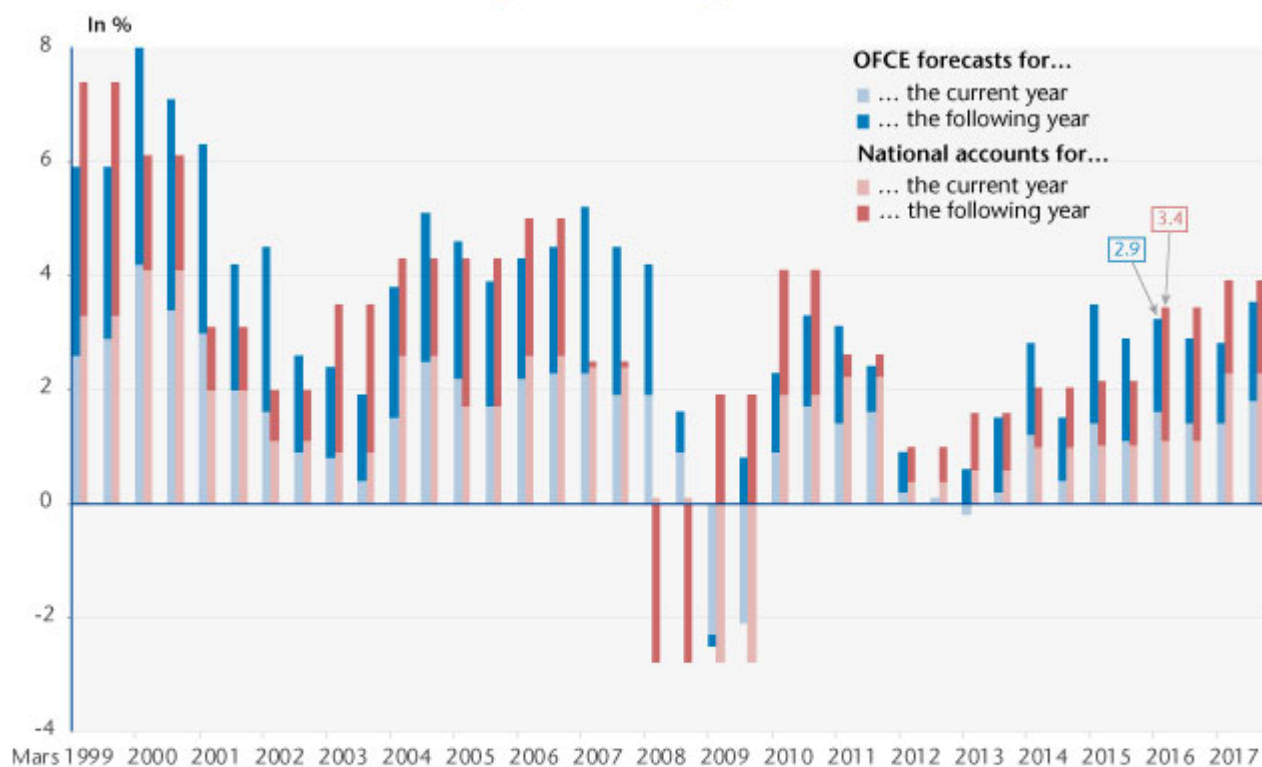
Figure 1 shows the cumulative forecasts of French GDP by the OFCE for the current year and the following year and then compares these with the cumulative results of the national accounts for the two years. In light of these results, it can be seen that the OFCE's forecasts do not suffer from a systematic bias of optimism. For the forecasts conducted in 2016 and 2017, the growth measured by the national accounts is higher than that anticipated by the OFCE, which, while revealing an error in forecasting, does not constitute an overly optimistic view of the recovery.

The opposite can be seen in the forecasts in 2015 for 2015 and 2016; the favourable impact of the oil counter-shock and of the euro's depreciation against the dollar during the second half of 2014 was indeed slower to materialize than the OFCE expected. The year 2016 was also marked by one-off factors such as spring floods, strikes in refineries, the tense environment created by the wave of terrorist attacks and the announcement that certain tax depreciation allowances for industrial investments would end.

In general, there is no systematic overestimation of growth by the OFCE, although some periods are worth noting, such as the years 2007 and 2008 when the negative repercussions of the financial crisis on real activity were not anticipated by our

models during four consecutive forecasts. Ultimately, of the 38 forecasts conducted since March 1999, 16 show an overestimate, or 40% of the total, with the others resulting in an underestimation of growth.

Figure. The OFCE's growth forecasts for the current year and the following year and actual growth



Note: This figure shows the OFCE's forecasts for the current year and the following year, cumulated over two years, with respect to the actual figures published by the national accounts. In October 2016, for example, the OFCE forecast cumulative GDP growth of 2.9% from 2015 to 2017, which broke down into growth of 1.4% from 2015 to 2016 and 1.5% from 2016 to 2017. The latest version available of the national accounts on 29 May 2019 shows economic growth of 1% from 2015 to 2016 and 2.4% from 2016 to 2017, i.e. cumulative growth of 3.4% over the two years, which was 0.4 point higher than the OFCE forecast. Hence, a red bar (national accounts) rising higher than the blue bar (OFCE forecast) reflects an "overly pessimistic" GDP growth forecast on the part of the OFCE, and vice versa.

Sources: INSEE, OFCE calculations and forecasts.

Forecasts relatively in line with the final accounts

Furthermore, the accuracy of the forecasts should not be evaluated solely in relation to the provisional national accounts, as INSEE's initial estimates are based on a partial knowledge of the real economic situation. They are revised as and when the annual accounts and tax and social information updates are constructed, which leads to a final, and therefore definitive, version of the accounts two-and-a-half years after the end of the year [2].

Table 1 compares the forecasts made by the OFCE and the participating institutions in the spring of each year for the current year and assesses their respective errors first vis-à-vis the provisional accounts and then vis-à-vis the revised accounts. On average since 1999, the OFCE's forecasts have overestimated the provisional accounts by 0.25 points. The forecasts from the Consensus appear more precise, with an error of 0.15 point vis-à-vis the provisional accounts. On the other hand, compared to the definitive accounts, the OFCE's forecasts appear to be right on target (the overestimation disappears), while those from the Consensus ultimately underestimate growth by an average of 0.1 points.

Statistical analysis conducted over a long period thus shows that, while there is room for improvement, the OFCE's forecasts are not affected by an overestimation bias when assessing their accuracy with respect to the final accounts.

Table. OFCE / Consensus forecasts in the spring of the current year and the provisional and revised national accounts

					OFCE error on...		Consensus error on...	
	OFCE	Consensus	Provisional account	Revised account	... Provisional account	... Revised account	... Provisional account	... Revised account
1999	2.6	2.3	2.7	3.3	-0.14	-0.69	-0.44	-0.99
2000	4.2	3.7	3.2	4.1	1.01	0.14	0.51	-0.36
2001	3.0	2.8	2.0	2.0	0.97	0.99	0.77	0.79
2002	1.6	1.4	1.2	1.1	0.44	0.49	0.24	0.29
2003	0.8	1.2	0.2	0.8	0.63	-0.04	1.03	0.36
2004	1.5	1.7	2.3	2.6	-0.82	-1.12	-0.62	-0.92
2005	2.2	1.9	1.4	1.7	0.81	0.49	0.51	0.19
2006	2.2	1.9	2.0	2.6	0.24	-0.41	-0.06	-0.71
2007	2.3	2.0	1.9	2.4	0.42	-0.12	0.12	-0.42
2008	1.9	1.5	0.7	0.1	1.18	1.78	0.78	1.38
2009	-2.3	-2.5	-2.2	-2.8	-0.11	0.48	-0.28	0.31
2010	0.9	1.4	1.5	1.8	-0.59	-0.94	-0.07	-0.42
2011	1.4	1.7	1.7	2.2	-0.31	-0.84	-0.06	-0.59
2012	0.2	0.3	0.0	0.4	0.21	-0.17	0.33	-0.05
2013	-0.2	-0.1	0.3	0.6	-0.47	-0.80	-0.37	-0.70
2014	1.2	0.9	0.4	1.0	0.84	0.21	0.58	-0.05
2015	1.4	1.1	1.1	1.0	0.30	0.36	0.00	0.06
2016	1.6	1.3	1.1	1.0	0.51	0.56	0.22	0.26
2017*	1.4	1.3	1.9	2.4	-0.52	-0.98	-0.61	-1.07
2018*	2.0	2.1	1.6	1.7	0.42	0.28	0.52	0.38
				1999-2018 Average	0.25	-0.02	0.15	-0.11

* : the latest definitive accounts are those for 2016. The national accounts for 2017 and 2018 are, respectively, semi-definitive and provisional. The "provisional account" column shows the GDP growth rate as an annual average as it is calculated from knowledge of the quarterly growth rates once they are published in the fourth quarter of every year. Compared with this version, the 2018 account has already been subject to a first adjustment on the annual provisional account published in mid-May 2019, with an upwards revision of growth from 1.6% to 1.7%.

Sources: INSEE, OFCE calculations and forecasts.

[1] The Consensus Forecast is a publication of Consensus Economics that compiles the forecasts of the world's leading forecasters on a large number of economic variables in about 100 countries. About 20 institutes participate for France.

[2] At the end of January 2019, the INSEE published the accounts for the 4th quarter of 2018, which provided a first assessment of growth for 2018 as a whole. At the end of May 2019, the accounts for the year 2018, calculated based on the provisional annual accounts published mid-May 2019, were revised a first time. A new revision of the 2018 accounts will take place in May 2020, and then a final one in 2021 with the

publication of the definitive accounts. For more details on the National Accounts revision process, see Péléraux H., « [Comptes nationaux : du provisoire qui ne dure pas](#) », [The national accounts : provisional accounts that don't last], *Blog de l'OFCE*, 28 June 2018.

Europe's fiscal rules – up for debate

By [Pierre Aldama](#) and [Jérôme Creel](#)

At the euro zone summit in December 2018, the heads of state and government hit the brakes hard on the reform of fiscal governance: among the objectives assigned to the euro zone's common budget that they are wishing for, the function of economic stabilization has disappeared. This is unfortunate, since this function is the weak point of the fiscal rules being pursued by the Member States.

In a [recent article](#), we assessed how governments use the fiscal tools at their disposal to respond to information about trends in the public debt or the economic cycle that is at their disposal when they make their budgetary decisions. Thus, instead of evaluating the properties of fiscal rules using data that may well be revised retrospectively, we evaluated them “in real time”.[\[1\]](#)

Three main results emerged from our study. On the one hand, European governments ensure that their public debts are sustainable by improving their fiscal balance when the public debt increases. On the other hand, we found a trend towards

fiscal consolidation at the bottom of the cycle in the euro area: fiscal policy is then rather destabilizing. Finally, euro area Member states have adopted a behaviour that was not found in the non-European countries in our sample: the euro zone Member states, unlike the others, continued to stabilize their public debts at the bottom of the cycle and during the crisis years. Thus the fiscal policy in the euro zone countries appears rather clearly to be untimely and inappropriate.

The results obtained as a whole for the euro area argue for a reform of Europe's fiscal rules, but not necessarily in the sense most commonly accepted. The issue of stabilizing the public debt does not seem to be essential in so far as this is already being taken care of by the fiscal policies being implemented. Rather, what is needed is to rebalance these fiscal policies in favour of macroeconomic stabilization, especially if no common mechanism – such as a euro zone budget – has been set up for this purpose. European fiscal policies need to be more flexible and less prescriptive, with a focus on the dynamics of macroeconomic stabilization. Since no progress is envisaged at the European level, national automatic stabilizers need to be reinforced, increasing tax progressivity and the responsiveness of social spending to changes in economic activity in order to deal with the next cyclical downturn, both individually and collectively.

[1] One of if not the first article that focuses on evaluating fiscal policy using “real-time” data is by Golinelli and Momigliano ([Journal of Policy Modeling, 2006](#)). This literature is summarized in Cimadomo ([Journal of Economic Surveys, 2016](#)).

The euro-isation of Europe

By Guillaume Sacriste, Paris 1-Sorbonne and Antoine Vauchez, CNRS and Paris 1-Sorbonne

In the latest article in [*La Revue de l'OFCE \(no. 165, 2019\)*](#), [*accessible here in French*](#), the authors analyze the emergence of a new European government, that of the euro, built to a great extent on the margins of the EU's existing framework. In noting this, the article takes stock of a process of the transformation of Europe (the European Union and Member States), which we call here the "Euro-isation of Europe", in three dimensions: 1) the creation at its core of a powerful pole of Treasuries, central banks and national and European financial bureaucracies; 2) the consolidation of a European system of surveillance of the economic policies of the Member States; 3) the gradual re-hierarchisation of the political priorities and public policies of the European Union and the Member States around the priority given to financial stability, balanced budgets and structural reforms. The article thus makes it possible to redefine the nature of the "constraints" that the management of the single currency is imposing on the economies of the Member States, constraints that are less legal than socio-political, less external and overarching than pervasive and diffuse, and ultimately closely linked to the key position now occupied by the transnational network of financial bureaucracies in defining European issues and policies.

The imperative of sustainability economic, social, environmental

OFCE[\[1\]](#), ECLM[\[2\]](#), IMK[\[3\]](#), AKW[\[4\]](#)

It was during the climax of the so-called Eurozone sovereign debt crisis that we engaged into the independent Annual Growth Survey – [the project](#) was first discussed at the end of the year 2011 and the [first report](#) was published in November 2011. Our aim, in collaboration with the [S&D group](#) at the European Parliament, has been to challenge and question the European Commission contribution to the European Semester, and to push it toward a more realistic macroeconomic policy, that is to say less focused on the short term reduction of public debt and more aware of the social consequences of the crisis and the austerity bias. For 7 years, we argued against a brutal austerity failing to deliver public debt control, we warned against the catastrophic risk of deflation. We also alerted on the social consequences of the deadly combination of economic crisis, increased labor market flexibility and austerity on inequalities, especially at the lower part of the income distribution. We cannot claim to have changed alone the policies of the Union, but we acknowledge some influence, although insufficient and too late to prevent the scars let by the crisis.

Today, there is a need to take this initiative a major step forward. The adoption of the [UNSDGs](#) calls for a new approach to economic governance and to economic growth. The measurement of economic performance needs to evolve into the measurement of well-being on all three accounts of sustainable development

– economic, social and environmental. A broad range of policies have to be mobilized coherently to this effect, which must move fiscal policy from a dominant to an enabling and supportive role. Moreover, those policies need to be anchored on a consistent and inclusive long-term strategy, and should be monitored closely to check that they deliver sustainability.

So far, the EU has not properly embraced this agenda, and the still prevailing European Semester process is an inadequate process to lead the EU towards achieving the UNSDGs. In the same way as the iAGS challenged the dominant orthodoxy in the macroeconomic field, the [iASES 2019 – independent Annual Sustainable Economy Survey](#), the new name of the iAGS – is our contribution to support a strategy towards sustainability and show the way.

The iASES 2019 scrutinizes the general outlook of the EU economy. The coming slowdown largely results from the gradual attenuation of the post-Great Recession recovery momentum and the convergence of growth rates towards a lower potential growth path. The slowdown of growth coincides with a revival of political turmoil – *Brexit*, Italy's public finances, the trade war and turbulences in some emerging countries. [The upturn will come to an end at some point, and the euro area is not yet prepared for that, as imbalances persist and the institutional framework remains incomplete](#)[5]. The euro area has moved into a large trade surplus, which may not be sustainable. Nominal convergence remains an important issue that should be addressed by political willingness to coordinate wage development more actively, beginning with surplus countries. Moreover, the incomplete adoption of a Banking Union may be insufficient to ensure banking stability in case of adverse shocks. The ECB could have to come to the rescue with extended unconventional policies, complemented with automatic stabilisation measures working across borders within EMU.

The social situation has slightly improved in the EU since the worse of the crisis and, on average, the unemployment rates across European countries are back at their pre-crisis levels. However, differences across countries and sections of the population are still huge. [Policy makers need to be aware of possible trade-offs and synergies between economic, social and environmental goals in general and the Sustainable Development Goals \(SDGs\) in particular\[6\]](#). In line with the SDGs and intended goals of the European Pillar of Social rights iASES aims at promoting policies – expanding social investments, pro-active industrial policies, reducing working time, increasing collective bargaining to limit primary formation of inequalities – that address these goals and overcome the direct and indirect negative consequences of unemployment.

Climate change is arguably the most serious challenge that we collectively face. Computing carbon budgets can be useful to warn policy-makers about the effort to be delivered in order to put society on the road to environmental sustainability. The iASES evaluates the “climate debt” which is the amount of money that will have to be invested or paid by countries for them not to exceed their carbon budget, leading to three key policy insights. There are few years left for major European countries before exhausting their carbon budget under the +2°C target. [Consequently, the carbon debt should be considered as one of the major issues of the decades to come since in the baseline scenario it represents about 50% of the EU GDP to stay below +2°C\[7\]](#). Framing the climate question in the words of debt is deliberate as the concept of excessive deficit applies today totally to the procrastination we demonstrate there.

[\[1\]](#) Directed by Xavier Timbeau with Guillaume Allègre, Christophe Blot, Jérôme Creel, Magali Dauvin, Bruno Ducoudré, Adeline Gueret, Lorenzo Kaaks, Paul Malliet, Hélène Périvier, Raul Sampognaro, Aurélien Saussay, Xavier Timbeau.

[\[2\]](#) Jon Nielsen, Andreas Gorud Christiansen.

[3] Peter Hohlfeld, Andrew Watt.

[4] Michael Ertl, Georg Feigl, Pia Kranawetter, Markus Marterbauer, Sepp Zuckerstätter.

[5] See « [Some Challenges Ahead for the EU](#) », *OFCE Policy Brief*, n°49, February 5, 2019.

[6] See « [Social Sustainability: From SDGs to Policies](#) », *OFCE Policy Brief*, n° 50, February 5, 2019.

[7] See “[An explorative evaluation of climate debt](#)”, *OFCE Policy Brief*, n° 45, December 11, 2018.