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Energy tariff shield in France: what is the outcome?

This article examines the effect of the tariff shield on energy prices in France using simulations carried out with the FR-BDF model. The simulations show that the shield helped to lower inflation by a cumulative 2.2 percentage points over 2022-23. It also boosted GDP growth by 0.3 percentage point over the period, compared with a scenario with no government measures to offset the energy price shock. In addition, the measure had a stronger impact on purchasing power for wages with a low degree of indexation. This positive assessment of the tariff shield relative to other purchasing power support measures is nonetheless contingent on the temporary nature of the energy price shock: in the event of a more persistent shock, a tariff shield would only delay the inevitable rise in inflation, unless it were kept in place over the longer term at a prohibitive fiscal cost.

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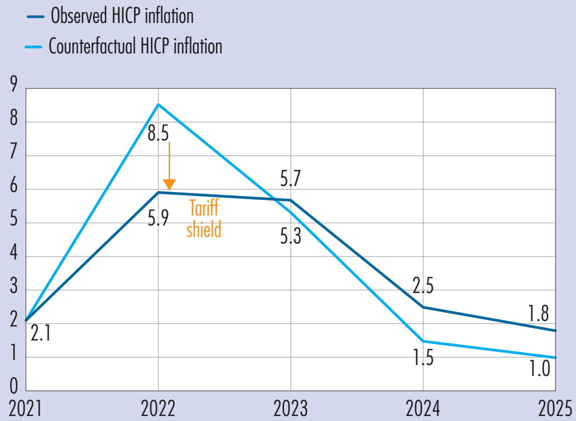
EUR 60 billion
French government spending in 2022-23 on all tariff-shield-type measures, representing around 1.1% of France's GDP per year

-2.2 percentage points
estimate of the cumulative impact of tariff-shield-type measures on HICP inflation in 2022-23, according to FR-BDF simulations

Effect of the tariff shield on HICP inflation in France
(year-on-year % change)



Sources: INSEE data for 2021 and 2022, Banque de France *Macroeconomic projections – France*, December 2023 for 2023 onwards.
Notes: HICP, Harmonised Index of Consumer Prices. Counterfactual HICP inflation is calculated using the FR-BDF model.

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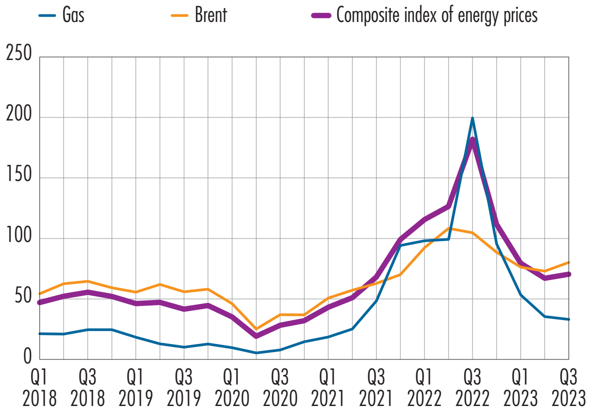
In 2022, the euro area experienced one of its steepest ever rises in energy prices, comparable in scale to the 1970s oil shock. At its peak in the third quarter of 2022, the composite index of energy prices (oil and gas) was 84% higher than at the end of 2021, which is when prices first began to rise (see Chart 1).[1] To preserve household purchasing power, the French government chose to act directly on energy prices via a "tariff shield", rather than on income via compensatory transfers (the latter were indeed used, but played a smaller role; see box). In France, therefore, the tariff shield accounted for around three-quarters of total fiscal spending on inflation protection in 2022-23.

To evaluate the macroeconomic impact of the tariff shield, we use two complementary exercises. In the first, we look

C1 Composite index of energy prices

(EUR per barrel)



Sources: Eurosystem, authors' calculations.
Note: The index is calculated as the average of the price of gas (in EUR/barrel equivalent) and the price of a barrel of Brent oil (in EUR), where each is given a respective weighting of 0.36 and 0.64.

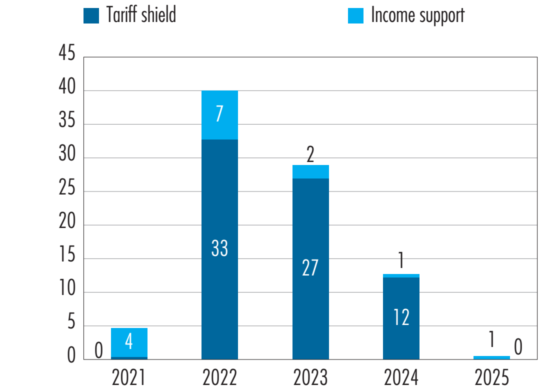
BOX

The tariff shield deployed in France in 2022-23

The "tariff shield" is an energy price cap for households introduced by the French government in 2022. Specifically, the government froze regulated gas tariffs (TRVg) at their October 2021 level for the whole of 2022, and then limited their rise to 15% in 2023. Regulated electricity prices (TRVe) were in turn raised by just 4% in February 2022, then by 15% in 2023. In addition, the government introduced a fuel rebate of 18 cents per litre in 2022. The tariff shield was thus calibrated to neutralise nearly all of the energy price rises witnessed in 2022, a year marked by a rapid spike in wholesale prices and a peak in the third quarter.

Fiscal cost of the energy-related compensation measures for households in France

(EUR billions)



Source: Banque de France, *Macroeconomic projections – France*, December 2023.

The measures were implemented via reductions in energy taxes (the TIFCE[1] and TCCFE[2]) and the payment of subsidies to gas and electricity suppliers. They were complemented with income support measures for households, such as the inflation subsidy, which together cost a cumulative total of EUR 13 billion over 2021-23.

…/…

1 For further detail on the transmission of the wholesale energy price shock to retail prices and the factors influencing its propagation, see Baget et al. (2024).

According to estimates from the Banque de France's December 2023 projections, government expenditure on tariff-shield-type measures for households was concentrated in 2022-23 and should be fairly limited in 2024 and 2025 (see chart):[3] an average of around 1.1% of GDP per year in 2022 and 2023, then 0.5% in 2024, and zero in 2025 after the withdrawal of the shield (see chart).[4] In total, the tariff shield is expected to cost some 2.6% of GDP over 2022-24.

1 *Taxe intérieure sur la consommation finale d'électricité* (domestic tax on final electricity consumption).

2 *Taxe communale sur la consommation finale d'électricité* (local tax on final electricity consumption).

3 These figures on government expenditure on the tariff shield are consistent with those in the 2024 budget law and set out in Table 6 of the *Rapport économique, social et financier* (RESF).

4 The French government withdrew the "gas shield" at the end of June 2023. Concerning the tariff shield on electricity, the partial rise of the TICFE in February 2024 implied an increase in electricity HICP of almost 10% at that time, which is bigger than the short-term rise factored into our analysis based on the initial budget law. At that time, the Ministry of the Economy and Finance announced that the tax would return completely to its pre-crisis level in February 2025, which is in line with our assumptions. However, the evolution of the TICFE in 2025 will ultimately depend on 2025 budget law, which will be discussed in the autumn of 2024.

at the effect of the tariff shield implemented in France and set out in the initial budget law for 2024, and compare it with a counterfactual scenario of the observed rise in wholesale energy prices between 2021 and 2023, but excluding all government compensation measures. Then, using simulations based on a standardised shock, i.e. a 100% shock to energy prices lasting two years, we analyse the tariff shield in greater detail to see how the effects break down across economic agents. In both exercises, the tariff shield is represented as an equivalent, unfunded reduction in indirect taxes on households (similar to a value added tax – VAT – on energy products), which reflects the fact that final energy prices are lower than if they had been allowed to rise freely and that, in exchange, the government transfers public money to energy suppliers. We perform these analyses with a large-scale, semi-structural model developed by the Banque de France, FR–BDF, which is used for medium-term projection exercises and economic policy analysis (for further details on the model, see Appendix 1).

The main results are as follows:

- According to our analyses, the tariff shield deployed as of 2022 represented a cumulative fiscal cost of 2.2% of GDP[2] over 2022-23, and helped to smooth harmonised (HICP) inflation in France, with an impact of -2.6 percentage points in 2022, and then +2.2 percentage points over 2023-25 related to the phasing out of the shield. It thus helped to cushion the drop in household purchasing power and boosted GDP growth by a cumulative 0.3 percentage point in 2022-23, without generating any significant inflationary pressures at its withdrawal.
- According to stylised simulations,[3] the tariff shield offset 80% of the household purchasing power losses and 60% of the fall in corporate margins. However, its fiscal cost more than doubled the government deficit linked to the rise in energy prices (1.1 percentage point rise in the deficit-to-GDP ratio in the first year). A higher degree of wage indexation would have resulted in smaller losses in real household income, but a much greater decline in corporate margins.
- In response to the same energy shock, a rise in social benefits, at an equivalent ex ante fiscal cost, would have had a similar impact on real household income but would have generated more inflation.

2 The cost of public policy measures, both in absolute terms and as a percentage of GDP, is calculated based on the information available in the 2024 budget law published on 23 November 2023, which is the cut-off date for the data used in the Banque de France's December 2023 macroeconomic projections.

3 In these stylised simulations, the shock is standardised as a 100% rise in wholesale energy prices remaining constant for two years and then nil thereafter, with or without a tariff shield for the entire two-year period, calibrated to neutralise entirely the impact of the shock on the energy component in the final prices.

- In the event of a more persistent shock to energy prices, the tariff shield would merely have delayed the rise in inflation, and would not have limited the rise in overall prices over the medium term as it would have been too fiscally costly to maintain.

1 Energy tariff shield in France: what costs and what effects?

A compensation policy aimed specifically at limiting the rise in energy prices

In response to the surge in energy prices, euro area countries introduced ambitious measures to support households and businesses. According to the Organisation for Economic Co-operation and Development (OECD; Hemmerlé et al., 2023), Greece, Lithuania and Italy, which all have energy import dependency ratios of over 80%, spent the most on these measures (over 3.8% of GDP in 2022-23). France was close behind, spending around 3% of GDP on all measures combined in 2022-23,[4] of which some 2% was related to the tariff shield. The record number of shutdowns at French nuclear reactors in 2022 made the country more reliant on liquefied natural gas imports and increased its vulnerability to the energy crisis. This led wholesale electricity prices to soar throughout 2022. If the rises had been fully passed on to consumers, they would have significantly lowered the purchasing power of a large segment of the population.

Difficulties finding alternative energy sources, coupled with a lack of comprehensive data linking income and energy use prompted countries to introduce rapid, large-scale and untargeted measures. The increase in geopolitical uncertainty led to the extension of these measures at least until the end of 2023.

On average, across OECD countries, untargeted measures accounted for around 77% of total announced spending in 2022-23, with energy price caps accounting for over 52%. France devoted a particularly high share of its spending on energy inflation relief to untargeted, tariff-shield-type measures – around 80% on average over 2022-23 (see box).

Slower, lower, weaker: the tariff shield is estimated to have slowed the rise in prices in 2022-23, limiting the erosion of household purchasing power

To assess the impact of the tariff-shield-type measures described previously compared with a counterfactual with no government compensation measures, we simulate the tariff shield using the FR-BDF model. The model allows us to analyse the dynamics of the macroeconomic transmission of the shocks, taking into account factors such as the indexation of social transfers and the (partial) indexation of wages to consumer prices. The tariff shield measures take the form of annual spending shocks in the simulation, amounting to 1.2%, 1.0%, 0.5% and 0.1% of GDP in 2022, 2023, 2024 and 2025 respectively (see box for more details).

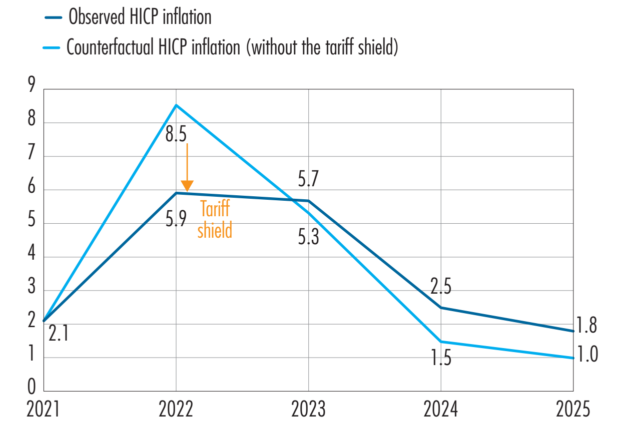
According to our assessments, the tariff shield helped to smooth the impact of soaring energy prices on HICP inflation in 2022 (see Chart 2 and table below). Without the tariff shield, inflation would have been 2.6 percentage points higher in 2022. In 2023, with the stabilisation of energy markets, spending on the tariff shield was lower than in 2022. This start of the phasing out of the measure had a slight positive impact on inflation (+0.4 percentage point) compared with a counterfactual scenario without the shield. In 2024 and 2025, the upward impact of the tariff shield on inflation should become slightly stronger,

4 The OECD study, published in June 2023, evaluates this expenditure at around 3.3% of GDP. Our study, which is more recent (December 2023), estimates it at around 2.8% of GDP. The two evaluations of spending on the tariff shield are very similar (2.3% for the OECD and 2.2% according to our study). However, it is important to note that this estimate is based on assumptions regarding the trajectory of market prices for energy inputs, and on the choice of scope for the energy-related measures, and may therefore differ from alternative evaluations.

at 1.0 percentage point and 0.8 percentage point respectively, due to the complete withdrawal of the measure over this horizon. In our projections, these upward effects do not translate into a jump in inflation. They in part reflect a decline in counterfactual energy prices linked to the fall in wholesale prices. They also stem from the rise in regulated electricity prices decided by the government, but which is hidden by the decline in the other components of inflation. Over 2022-25, the tariff shield has a cumulative impact of -0.4 percentage point, which shows that it mainly modifies the trajectory of inflation by smoothing it and lowering it slightly. With the expiry of the measure in 2025, the lower level of the HICP compared with our counterfactual scenario stems from lower wages: the impact of indexation outweighs the upward effect of the temporary boost to activity in 2022-23, which is itself linked to the smaller purchasing power losses (see table). It is difficult to compare the results of this analysis directly with those of other studies due to differences in the underlying assumptions on fiscal costs. However, despite variations in their assumptions and methodological approaches, the studies all converge in finding that the tariff shield had a moderating impact on inflation (see Appendix 2).

C2 Impact of the tariff shield on HICP inflation in France

(year-on-year % change)



Sources: INSEE data for 2021 and 2022, Banque de France *Macroeconomic projections – France*, December 2023 for 2023 onwards.
Notes: HICP, Harmonised Index of Consumer Prices. Counterfactual HICP inflation is calculated using the FR-BDF model.

2 Stylised analysis of the impact of the tariff shield on the distribution of losses linked to the energy price shock

To better understand the impact of the tariff shield on the distribution of the losses in real national income linked to the energy price shock, and compare it with the impact of alternative policies, we carry out a series of simulations of standardised shocks over four years. We look at a 100% shock to energy prices which is either temporary (two years) or persistent (four years). Depending on the case, the shock is accompanied by different fiscal responses (no compensation measures, a tariff shield or a rise in social transfers). In some simulations, we also modify the degree of wage indexation to study how it affects the transmission of shocks to energy prices and the fiscal responses. All our simulations assume that the compensation measures (tariff shield or social transfers) are financed by an increase in government debt, without recourse to additional fiscal resources.[5]

Impact of tariff-shield-type compensation measures targeted at households, in France

(percentage points)

	2022	2023	2024	2025	Cumulative impact 2022-25
GDP growth	0.1	0.2	0.0	0.0	0.3
HICP inflation	-2.6	0.4	1.0	0.8	-0.4

Source: Banque de France, *Macroeconomic projections – France*, December 2023.
Notes: HICP, Harmonised Index of Consumer Prices.
The macroeconomic impact is calculated for tariff-shield-type compensation measures, compared with a counterfactual scenario without any government measures to offset the energy price shock.
The measures include the cut in energy taxes (TICFE and TCCFE), subsidies for gas and electricity suppliers, and the 18 cents rebate on fuel prices ("pump price rebate"). The fiscal cost of the measures is taken into account from 2022 onwards.

5 In reality, a number of financing measures were in fact introduced, such as the *contribution au service public de l'électricité* (CSPE – contribution to public electricity services), but these only partially covered the cost of the tariff shield.

Breakdown of losses associated with the energy shock

In our first scenario, with no government compensation measures, a 100% rise in energy prices lasting two years increases the HICP by 4.5% in the first year, pushing down household gross disposable income (GDI) and the corporate margin rate, which bottom out respectively in the second year at -3.2% and -2.2%. With the drop in demand caused by higher energy prices, the government deficit rises, with the biggest increase also occurring in the second year (+1.6 percentage points of GDP; see Chart 3).

Compared with this scenario, a tariff shield costing 2% of GDP per year ex ante, calibrated to neutralise solely and entirely the direct effects of the energy price rise, offsets around 90% of the increase in headline inflation,[6] 80% of the household purchasing power losses and 60% of the fall in the corporate margin rate. However, the fiscal cost of the measure leads to a near-doubling of the rise in the government deficit.

These results are contingent on the current characteristics of the French economy, especially the partial indexation of wages to prices. The distribution of losses and effects of the tariff shield on different economic agents would have been very different with high wage indexation, as seen in the 1970s. The following sub-section shows how the effects change with full indexation.

The tariff shield protects household purchasing power better than full wage indexation

Wage indexation influences the impact of price fluctuations on household purchasing power. It therefore plays an important role in the propagation of price shocks, and in the effectiveness of government policies such as the tariff shield. By analysing variants with different degrees of wage indexation, we are able to identify the role of the underlying mechanisms.

We simulate two additional variants of the shock to energy prices, with and without the tariff shield, each with full wage indexation to consumer prices (our baseline variants incorporate only partial indexation).[7] As in our baseline variants, the tariff shield in the new simulations is calibrated to offset only the increase in the energy component of headline HICP.

When the tariff shield fully neutralises the increase in inflation caused by the energy shock, the impact of indexation on the cost and result of the policy is negligible. As shown in Chart 3, the HICP, the government deficit, real GDI and the non-financial corporation (NFC) margin rate follow very similar trajectories in the variants with tariff shield, both with full indexation ("NRJ + TS (FI)" curves) and partial indexation ("NRJ +TS" curves). As inflation is nearly non-existent with the tariff shield, the degree of indexation is unimportant.

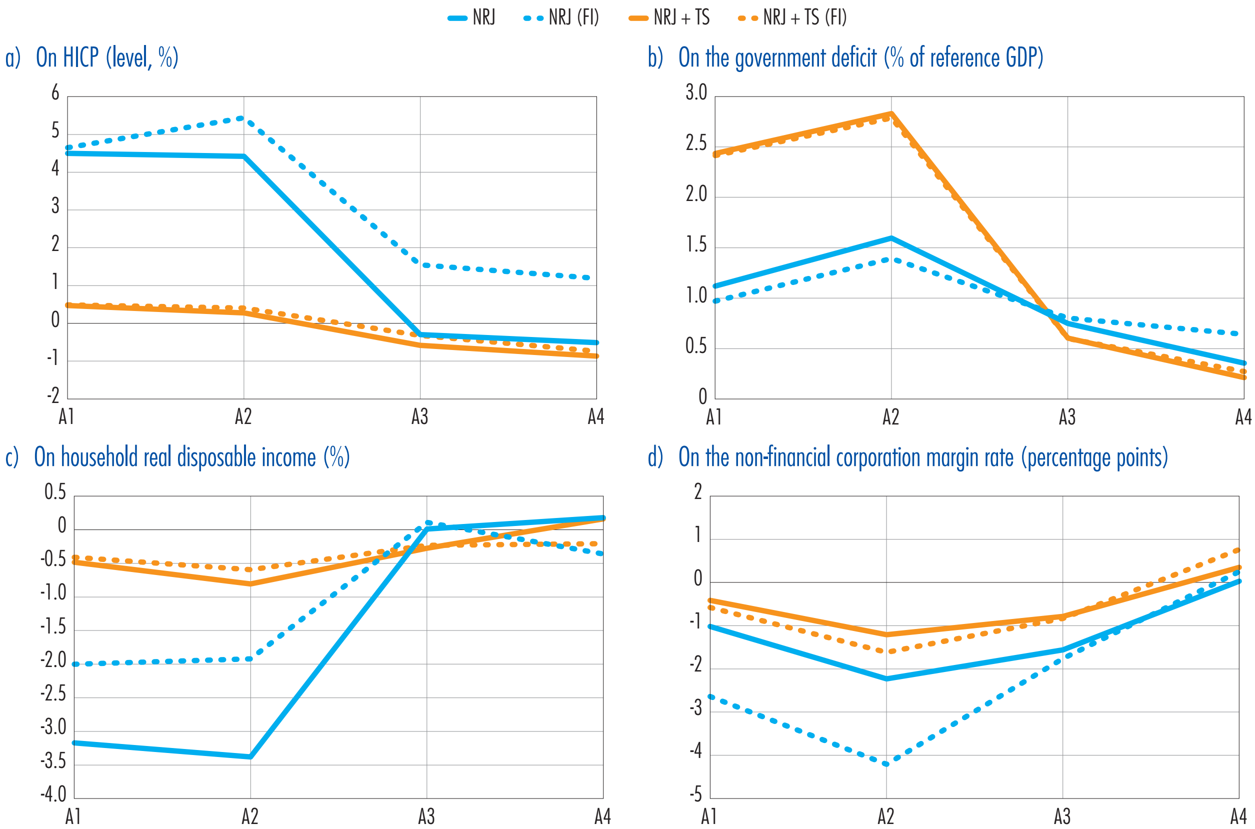
The results are very different for a partial tariff shield, which allows some inflation to persist, and hence an indexation effect. The closer we get to an extreme case where the government takes no action after the energy shock, the greater the impact of wage indexation on the economy. This point is illustrated in Chart 3 by comparing the **baseline variant "NRJ + TS"** with, on the one hand, a shock solely to energy prices ("NRJ"), without a tariff shield, and, on the other hand, an alternative variant of the same shock with full wage indexation ("NRJ (FI)"). The degree of wage indexation plays an important role in determining the distribution of the energy shock across households, businesses and government. Full wage indexation cushions the fall in household real income, but amplifies the fall in the NFC margin rate. The degree of wage indexation has little effect on government finances.[8]

6 We assume that the tariff shield only protects from the direct effects of the energy price shock and not from the indirect effects of energy prices on underlying inflation, which capture the transmission of energy prices to production costs and wages.

7 **Baseline variants** refers to variants carried out using a version of the model with the most likely parameters (i.e. based on historical data). For example, in the baseline variants, wage indexation is set at 22%, which is the value estimated using French data.

8 Social transfers are fully indexed in all scenarios, as this is generally the case in France. If we had modified the degree of indexation of social transfers, it could have affected the change in the budget balance.

C3 Aggregate effects of the energy shock and tariff shield by degree of indexation



Source: Authors' calculations.
Note: HICP – Harmonised Index of Consumer Prices, NRJ – 100% energy price shock, TS – tariff shield, FI – full indexation of wages.

Finally, we find that in the case of high wage indexation, the tariff shield still cushions the fall in real income: real income is higher in the "NRJ +TS (FI)" variant than in the "NRJ (FI)" variant; however the cushioning effect is smaller than in the baseline case with partial wage indexation ("NRJ +TS" variant), bearing in mind that the fall in real income is much larger without the tariff shield ("NRJ" variant). As for firms, the tariff shield proves to be more advantageous in the case of full wage indexation, as it neutralises a bigger part of decline in the corporate margin rate.

Wage indexation alone, even if it is complete, does not protect household income as much as the tariff shield. In particular, it does not protect property income from inflation. The tariff shield proves to be a more effective measure, which explains the differences in impact between the 1970s oil shock and today's energy price shock.

An alternative policy of raising transfers to households is relatively less favourable

What would the impact have been if France had concentrated its energy compensation measures on transfers to households (also financed with government debt), in the form of social benefits, instead of capping energy prices? This question can be answered by simulating an alternative policy where the government provides untargeted aid to preserve household purchasing power. In these simulations, the aid is calibrated such that the transfer represents the same ex ante fiscal cost as the tariff shield.

According to our simulations, such a policy, with the same degree of wage indexation as in our baseline scenario, would have a similar impact on real household income (see Chart A1 in Appendix 3). However, it would almost halve the attenuation of the reduction in the NFC margin rate, as it would not have the same moderating impact as the tariff shield on wage inflation via indexation. It would also weigh slightly more ex post on the government deficit, as social benefits would be indexed to a higher rate of HICP inflation than in the tariff shield scenario. Moreover, as the transfer policy is not an anti-inflation policy, it would not dampen inflation and in fact would place slight upward pressure on prices (average 0.35 percentage-point rise in HICP inflation over years 3 and 4) by boosting household demand.

This favourable assessment of the tariff shield is contingent on the temporary nature of the energy price shock

If energy prices remain at a high level for four years and the tariff shield is only maintained for two in order to limit the rise in government debt, a resurgence in inflation is observed when the shield is removed (see Chart A2 in Appendix 3). However, due to its influence on wages, the shield slightly limits the cumulative impact on the level of prices over the medium term. In this scenario, the HICP rises by 3.8% over a four-year horizon with the tariff shield, versus 4.1% without the shield, compared in both cases with a scenario without an energy price shock. Despite its impact on prices and wages, the shield does not affect real GDI over this horizon.

This new variant underlines the fact that the favourable impact of the shield depends on the transitory nature of the energy price shock. In the event of a permanent energy shock, the policy would become financially unsustainable and, strictly speaking, would only delay the inevitable rise in prices. However, even with a permanent shock, the tariff shield could have been phased out gradually, smoothing inflation and its impact on purchasing power and allowing households gradually to adjust their consumption behaviour.

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Overall, the tariff shield is found to be a fiscal policy with conditional effectiveness. This article finds that, after the recent rise in energy prices, the shield contributed significantly to limiting inflation and its impact on households and businesses, without generating any marked resurgence in inflation at its withdrawal. However, the measure led to a notable rise in government debt. Above all, the burden on government finances would have rapidly become unsustainable if the energy price rises had proved more lasting and the shield had been maintained.

That said, these simulations only provide information on the macroeconomic effects of different policies and give no indication of the best policy to adopt. First, the study does not look at how the measures interact with monetary policy, the effectiveness of which can be undermined if the measures are maintained for too long or are insufficiently calibrated and targeted. Second, our assessment does not take account of the microeconomic effects of the tariff shield, such as its impact on demand for energy via a distortion of the price signal, and hence on the environment. Lastly, our study does not examine the issue of inequality, which is an important aspect for comparing the tariff shield with other, more targeted policies.

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Appendix 1

Presentation of the FR-BDF model and description of the exercise

The analyses discussed in this *Bulletin* were performed using the FR-BDF forecasting model, which was developed to carry out medium-term projection exercises for France as well as counterfactual simulations. It is a large-scale, semi-structural model, described in detail in Lemoine et al. (2019). Inspired by the US Federal Reserve's FRB/US model, FR-BDF gives an explicit role to expectations, for both financial and non-financial variables, and has a good empirical fit due to the presence of costs for the adjustment of economic agents' decision variables (e.g. their level of consumption) to the desired target. Moreover, the model simulations converge in the long term towards a balanced growth path.

Strictly speaking, the model cannot directly simulate a tariff-shield-type policy, i.e. a combination of energy price caps and financial compensation for energy distributors. However, in practice, the impact of such a policy (i.e. a cut to prices) is similar to a cut in indirect taxes (such as value added tax or VAT) for households, and we therefore chose this option for modelling it in FR-BDF. We assume that the tariff shield is not financed by additional taxes, and hence leads to a rise in government debt.

However, the exercise has some limitations. First, by using the FR-BDF version with backward-looking expectations (used for forecasts), we assume that economic agents do not take account of the withdrawal of government policies or of the introduction of policies aimed at financing them. Moreover, our analysis does not take account of the price signal distortion linked to the tariff shield, which can lead to an overconsumption of energy. Lastly, in the case of a transfer policy, the consumption function of FR-BDF can lead to excessive savings behaviour compared with a model where agents smooth present and future consumption. This can lead to a downward bias in the assessment of this transfer policy's impact on activity.

Appendix 2

Review of the literature on the tariff shield

Several studies offer different perspectives on the impact of the tariff shield, with a particular focus on France.

In a study by the International Monetary Fund (IMF), Dao et al. (2023) use a multi-country, semi-structural FSGM (Flexible System of Global Models) to look at all energy-related measures and simulate tariff shields as tax and subsidy shocks. In the case of France, they find a gradual fall in inflation, followed by a marked rebound in 2024. The cumulative fiscal cost for 2022-23 is estimated at around 4% of French GDP, of which 3% is directly attributable to the tariff shield. The cost is much higher than in our analysis (2.2% of GDP), as the measures were notably evaluated in December 2022, based on market expectations of energy prices at that time, which turned out to be too high. As in our study, the IMF stresses that the effects of this policy would have been less favourable if energy prices had remained persistently high. They also propose an alternative approach with a non-linear Phillips curve, leading to stronger effects on euro area inflation.

A study from the *Observatoire français des conjonctures économiques* (OFCE – French Economic Observatory) by Malliet and Saumtally (2023) uses another semi-structural, multi-sector model, ThreeMe, which contains detailed energy and environmental data. The assessment looks not only at the macroeconomic impact of the tariff shield, but also at its environmental repercussions. According to the authors, the policy leads to a 2.5% increase in CO_2 emissions. The macroeconomic analysis finds that the shield had a moderate impact on inflation in 2022 and 2023, and its fiscal cost was lower than that observed in other studies.

In a 2022 study from the *Centre pour la recherche économique et ses applications* (Cepremap – Centre for Economic Research and its Applications), Langot et al. find the shield had a more gradual impact on inflation and a higher fiscal cost, as, like the IMF, they use energy assumptions dating from November 2022. Using a DGSE model[1] with heterogeneous agents, the authors evaluate the effects of the tariff shield on inequality, and conclude that it reduced it slightly, albeit less effectively than targeted transfers. Their study also underlines the crucial role played by wage indexation in determining the effectiveness of the shield.

In an analysis published in 2022, the *Institut national de la statistique et des études économiques* (INSEE – National Institute for Statistics and Economic Research) uses an input-output accounting approach. The authors find that the tariff shield (including the fuel rebate) had a significant impact on inflation, lowering it by 3.1 percentage points between the second quarter of 2021 and the second quarter of 2022. The study also finds that the shield had a stronger impact on the first income deciles, highlighting its role in reducing inequality.

In a working paper published by the *direction générale du Trésor* (DGT – Directorate General of the Treasury), Clavères and Gantois (2024) analyse the macroeconomic effects of anti-inflation fiscal measures using a multiregional model with behaviour equations having error-correction specifications. They find that the tariff shield in France had cumulative impacts of -4.9 percentage points on the consumer price index (CPI) and +1.4 percentage points on GDP growth over 2022-23.[2] The spillover effects of policies in France's main neighbouring countries are estimated at +0.2 percentage point for French GPD growth, but 0.0 percentage point for the CPI. The estimated impact on French firms' production costs is +1.8 percentage points over 2022-23.

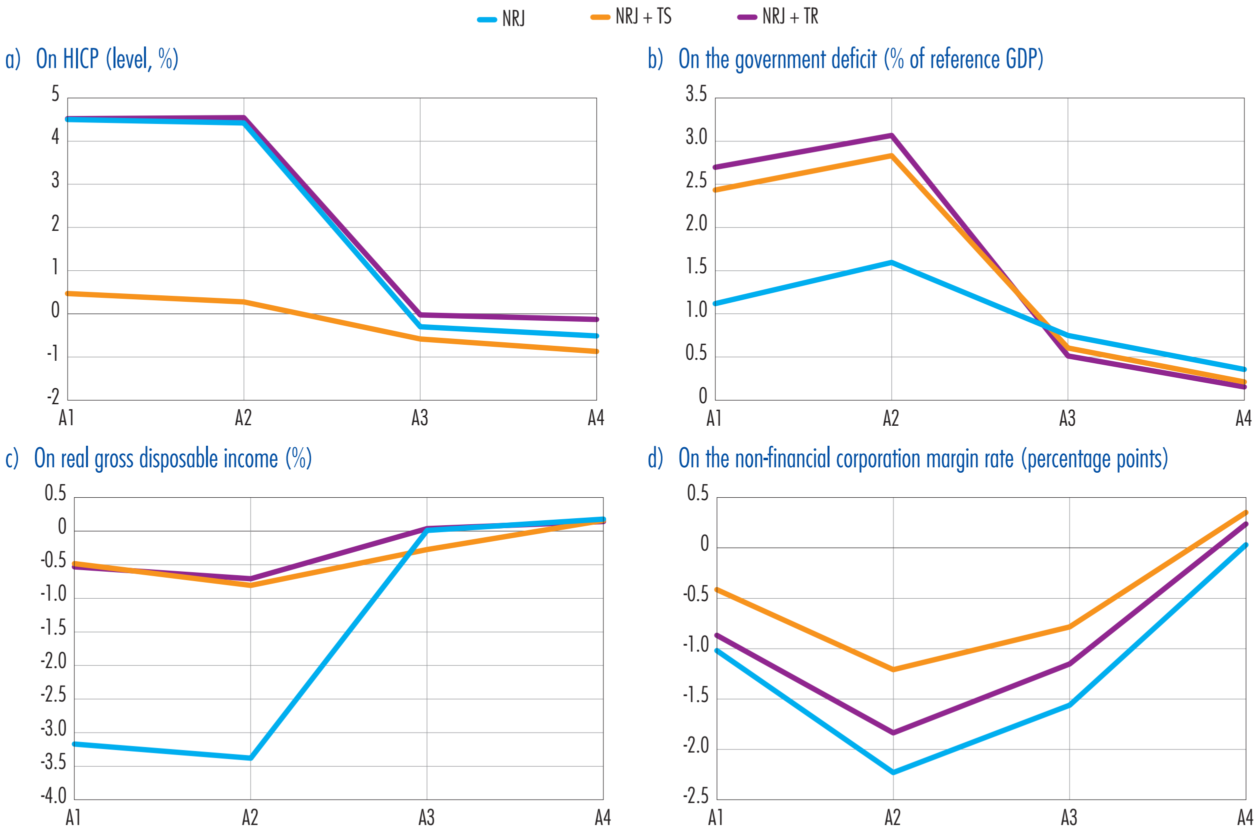
1 DSGE stands for Dynamic Stochastic General Equilibrium Model.

2 The DGT study finds much stronger effects than our study for two reasons: first, the DGT study evaluated the fiscal measures in April and not in November 2023 and therefore found that they were slightly higher; second, the model used in the DGT study assumes that the tariff shield lowers firms' costs, whereas our model assumes that only households benefit from the tariff shield.

Despite using different methodological approaches, the studies converge in finding that the tariff shield had a moderating impact on inflation. However, any direct comparison of their results is complex. The models differ in terms of structure and elasticities, and the analyses were carried out at different times, which notably affects their assumptions on fiscal costs. Their results are complementary in that each highlights a specific aspect of the policy: a potential non-linear reinforcement of its impact in the case of the IMF, its environmental effects for the OFCE, its repercussions on inequality for Cepremap and INSEE and, in the case of the present study, the distribution of the losses across economic agents and the role of wage indexation, using a model containing more detail on agents' accounts.

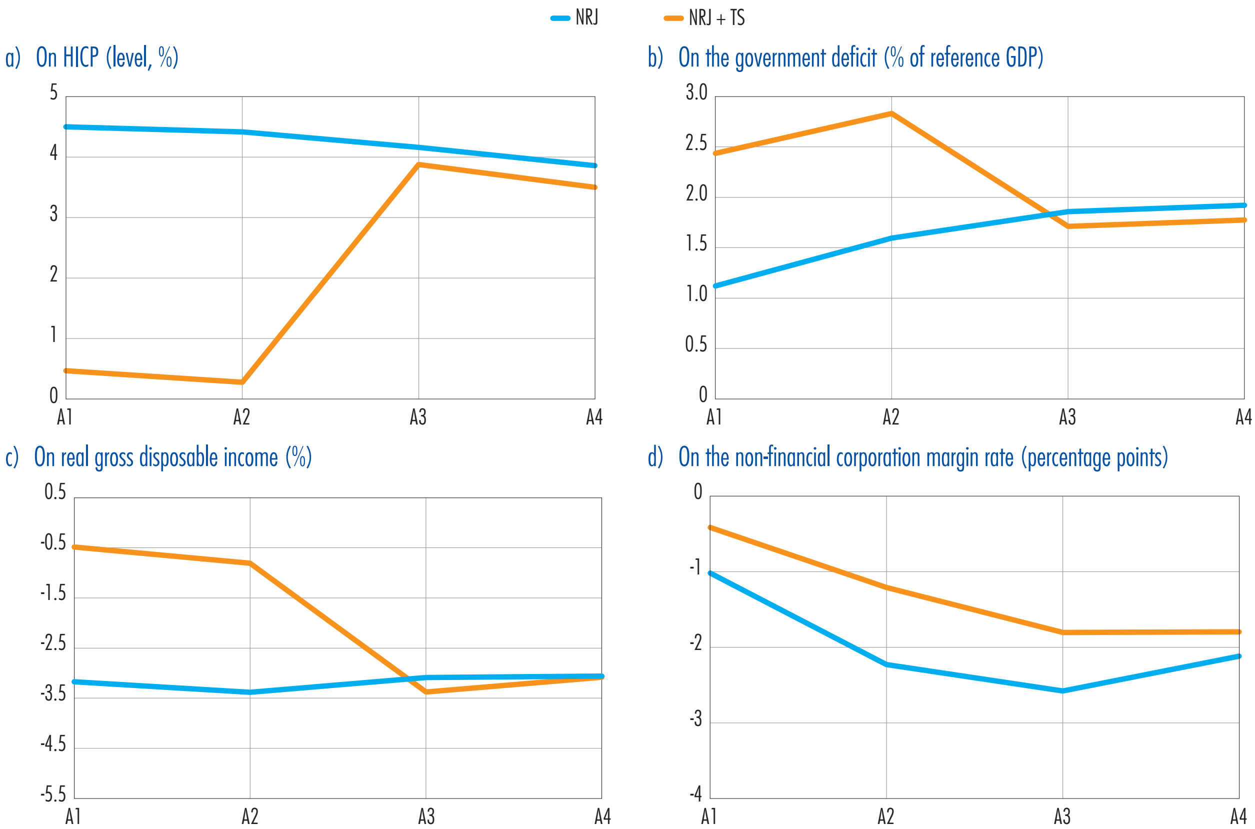
Appendix 3

CA1 Effects of the energy price shock (NRJ), the tariff shield (TS) and the transfer policy (TR)



Source: Authors' calculations.
Note: HICP – Harmonised Index of Consumer Prices, NRJ – 100% energy price shock, TS – tariff shield, TR – transfer policy.

CA2 Effects of a persistent energy price shock (NRJ) and effects of the tariff shield (TS)



Source: Authors' calculations.
Note: HICP – Harmonised Index of Consumer Prices, NRJ – 100% energy price shock, TS – tariff shield.

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