Watt, Andrew

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Inflation and counter-inflationary policy measures: The case of Germany

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INFLATION AND COUNTER-INFLATIONARY POLICY MEASURES:

THE CASE OF GERMANY

Andrew Watt[1]

ABSTRACT

Germany has suffered an inflationary shock broadly commensurate with that of the Euro Area. The current inflationary surge hits low-income households significantly harder than wealthier ones. Nominal wage increases in response to the price shock have been muted, with no sign of a price-wage spiral. Policymakers have responded to the crisis with three packages of increasing size and breadth. The overall stabilisation effect of the measures cannot be quantified precisely ex ante but will likely represent around two-thirds of the shock. While the packages are judged positively overall, criticisms can be raised. The initial response was hesitant. Not until the autumn were more radical measures, including a gas and electricity price brake announced. Overall, targetting of the measures in favour of vulnerable households has been limited. A number of measures benefit wealthier more than poorer households in absolute terms. Other measures incentivise higher, rather than lower fossil-fuel consumption. Germany did not reach a formalised "social pact" to address the crisis, although high-level tripartite discussions were held. Implicit coordination can be made out, however, in which government measures encourage the collective-bargaining parties to limit the pass through of higher current inflation into nominal wages.

[1] Excellent research assistance from Janis Jurgeleit and Hendrik Becker and helpful comments from numerous IMK colleagues on earlier drafts are gratefully acknowledged, with the usual disclaimer.

INFLATION AND COUNTER-INFLATIONARY POLICY MEASURES: THE CASE OF GERMANY

Andrew Watt[1]

Abstract

Germany has suffered an inflationary shock broadly commensurate with that of the Euro Area as a whole, with energy playing a slightly larger, food a somewhat smaller than average role. Because of differences in consumption patterns, the current inflationary surge hits low-income households significantly harder than wealthier ones. In addition, exposure to gas heating, which cuts across income brackets, is an important factor. So far nominal wage increases in response to the price shock have been very muted, with no sign of a price-wage spiral.

Policymakers have responded to the crisis with three large packages of increasing size and breadth. The overall stabilisation effect of the measures cannot be quantified ex ante (because it depends on price developments) but will likely represent around two-thirds of the shock. While the packages are judged positively overall, a number of criticisms can be raised. The initial response was hesitant. Not until the autumn were more radical measures, including a gas and electricity price brake announced. Overall, targetting of the measures in favour of vulnerable households has been limited. A number of measures – including the gas price brake, unless last-minute changes are made – benefit wealthier households more than their poorer counterparts in absolute terms. Other measures incentivise higher, rather than lower fossil-fuel consumption.

Germany did not come up with a formalised "social pact" to address the crisis, although high-level tripartite discussions were held. Implicit coordination can be made out, however, in which government measures encourage the collective-bargaining parties to limit the pass through of higher current inflation into nominal wages.

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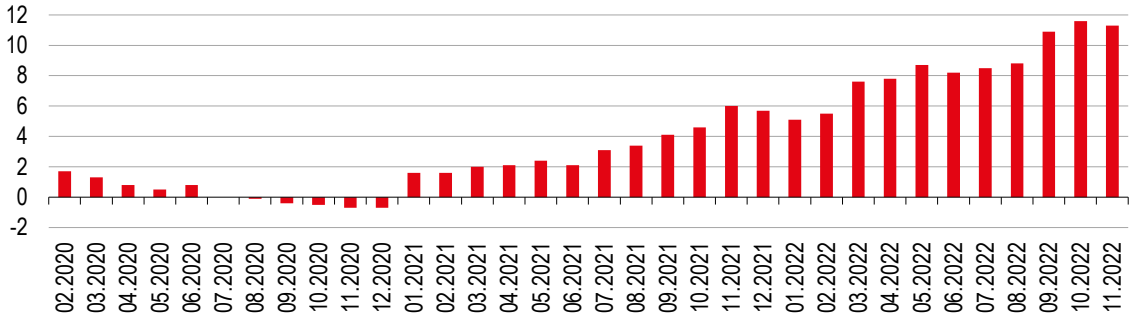
Recent inflation developments in Germany

HICP inflation in Germany and the Euro Area

After recovering from very low, even negative monthly rates in 2020, in the context of the crisis caused by the first wave of the COVID pandemic, HICP inflation in Germany recovered to around the ECB target of 2% in the early part of 2021. In the summer of 2021 the inflation rate substantially breached the ECB target for the first time since before the global economic crisis of 2008, when it had last exceeded 3%. From here it rose extremely rapidly – boosted by a base effect from VAT changes in 2020 – to around 6% at the end of 2021. It began to ease back, only to be given a renewed boost by the impact of Russia's invasion of Ukraine at the end of February. Inflation marched on up towards 10%. Subsidies on transport fuel and public transport produced some respite in June, only to boost the annual rate to almost 11% in September when they were removed. The monthly rate rose once again in October (11.6%) before falling back slightly in the latest month for which figures are available (11.3%).

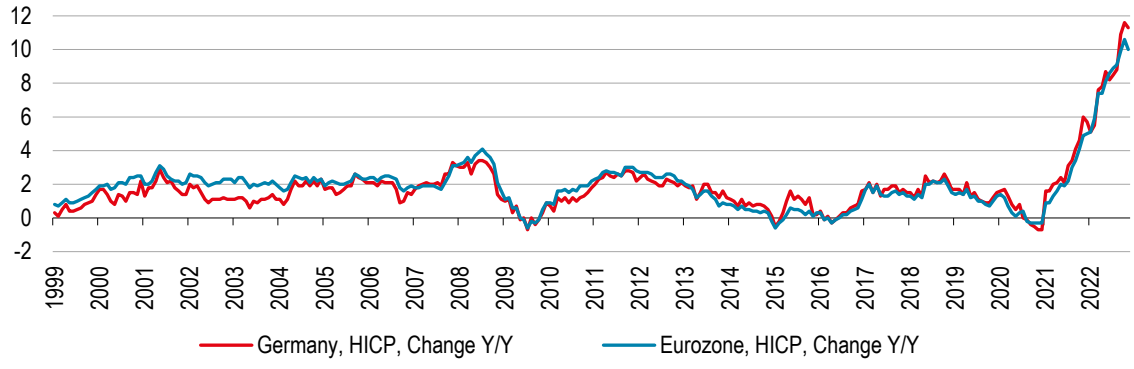
Figure 1: HICP inflation in Germany
year-on-year



Source: Eurostat.

Germany's large weight in the overall Euro Area HICP figure (currently just under 30%) mitigates against substantial gaps emerging between the national and the Euro Area HICP rate, as can happen with smaller countries. Nonetheless, famously, German inflation had been consistently below the Euro Area average in the early years of EMU (associated with widening current account surpluses). The competitiveness gap was partially closed again in the wake of the Euro crisis from 2012 (Fig. 2).

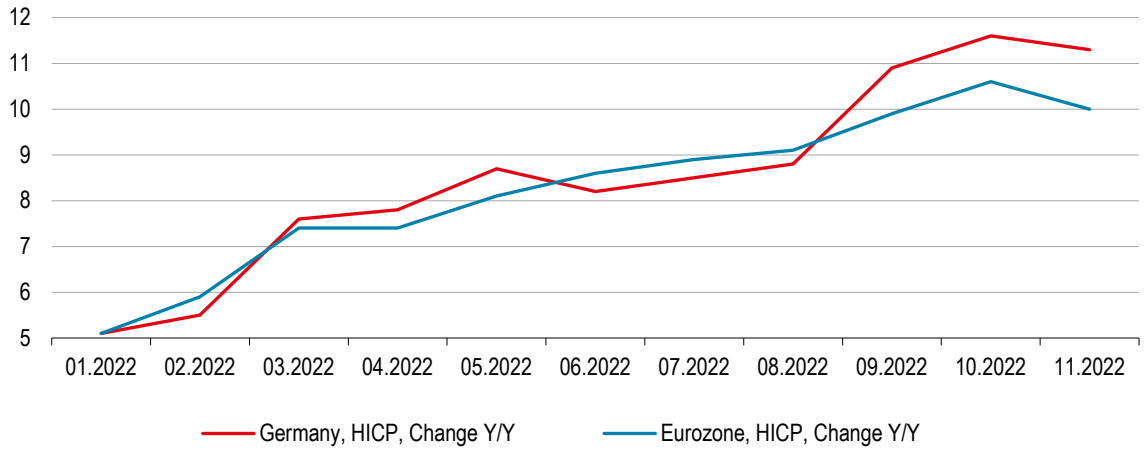
Figure 2: HICP inflation, Germany and Euro Area



Source. Eurostat via Macrobond.

Notable in the current inflationary shock is that the HICP inflation hike in Germany has cleaved very closely to the Euro Area average. In May 2022 it was running slightly above average (8.7% vs. 8.1%); in June policy measures, discussed below, pushed the national rate down to 8.2% while the average for the currency union rose to 8.6%. This differential was subsequently reversed as policy measures in Germany expired, while the inflation-reducing impact of policies in other countries began to make itself felt. For instance, in Spain policy measures pushed inflation down by 3.4pp in October (Uxo 2022: 1). Accordingly, since September HICP inflation in Germany has exceeded the Euro Area average by more than 1 percentage point (November: 11.3% vs. 10%); see Fig. 3.

Figure 3: HICP inflation, Germany and Euro Area, recent developments



Source. Eurostat via Macrobond.

Inflation composition and drivers

In terms of the basket of goods and services that have driven the inflationary surge there are, in terms of the broad European classification of spending items, three main components (Figure 4). Energy costs ('Housing, water, electricity, gas and other fuels') have exploded, most recently growing at a rate of almost 20%. With a weight in the consumption basket of around a quarter, this category contributed almost 5 percentage points (pp) – more than 40% – to the overall HICP inflation rate, on the basis of a simple calculation with unchanged (annual) category weights. The contribution from food (the category also includes non-alcoholic beverages) has steadily and substantially increased, most recently to 2.4 pp; in other words, price rises in this category alone have been so strong as to push the total basket of goods and services past the HICP target inflation rate of the ECB. Food prices have been affected by higher energy costs but also directly by the reduced supply of food and fertilizer from Ukraine and Russia. The rise in the cost of transport was also initially dramatic, with the inflation contribution initially peaking at 2.4pp in May. Fuel rebates and public transport subsidies that took effect in June successfully reduced the inflationary pressure from this component; by August it was under 0.7pp. But in September and October it was back to values close to 2pp.

All the other components had a substantially lower contribution, led by 'recreation and culture' (around 0.6pp) and furnishings, household equipment and maintenance' (around 0.5pp). Particularly in the latter case this recent contribution is, though, substantially above normal levels. Faster inflation in these areas is to a considerable extent a knock-on effect of forced savings and the curtailment of supply during the covid crisis.

Germany does exhibit certain structural features – notably a greater exposure to natural gas prices than most EU countries – that could lead to differences in the pattern of inflation-drivers compared with the Euro Area average. Before the Corona crisis gas had cost around €20/mWh. At the peak it was more than €300. Current futures prices for 2023 are around €140, implying an increase in the import bill of almost €150bn or around 4% of GDP (Dullien 2022: 2).

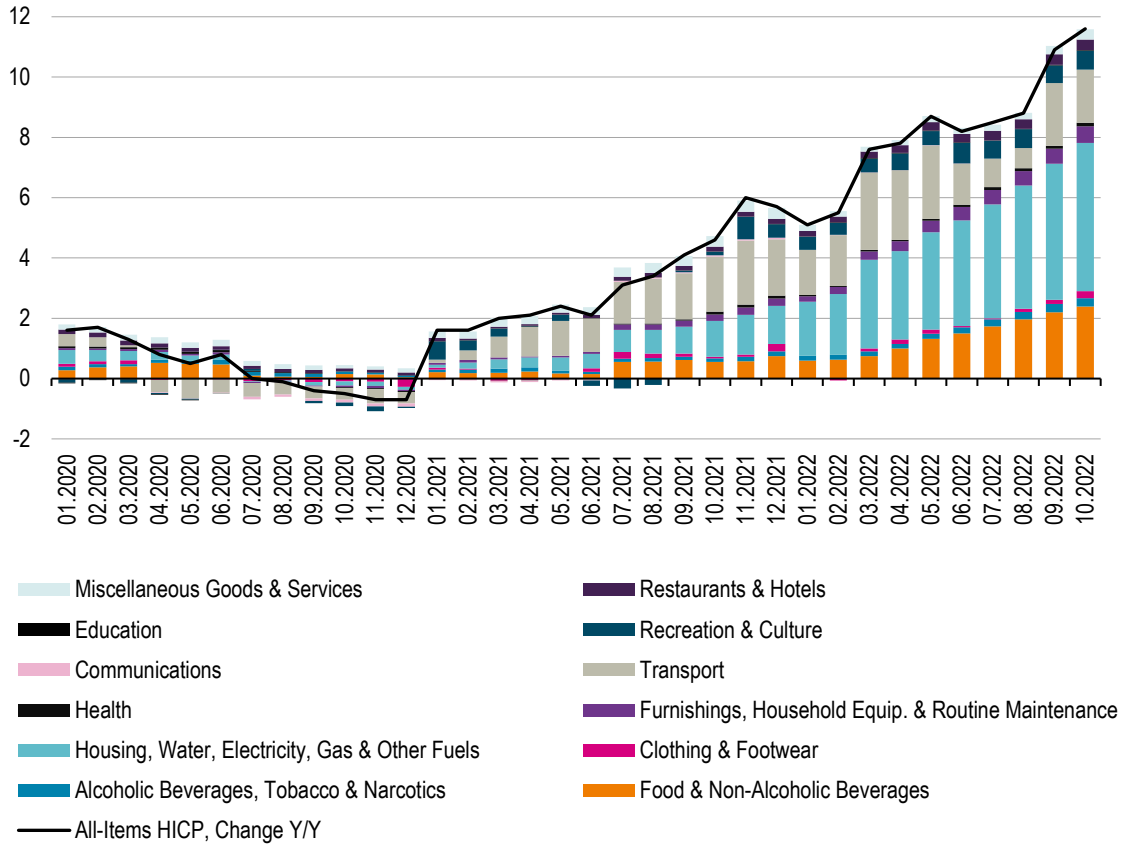
Turning to national inflation data (from the Federal Statistical Office), some narrower product categories can be identified. Against the background of a year-on-year inflation rate in October of 10.4%, household energy prices were rising at 55%, heating oil at 82.8% and gas at 109.8% (Endres and Tober 2022: 3). Germany's "core inflation" is 6.5% (excluding energy) and 5.0% (when both energy and food are excluded). According to OECD figures (OECD 2022), in October inflation in the narrow categories energy and food were running at 43.6% and 19.2% respectively (Euro Area: 41.5% and 15.5%). Energy and food accounted for 4.6 and 1.9 percentage points of overall inflation respectively; these figures allow also for changing category weights.

Overall, while inflation has been primarily driven by energy and food prices, as in other EU countries inflation in other categories of goods and services is now also very substantially above the ECB inflation target. Sharply higher input prices are steadily percolating through the economy.

For the rather broad categories used in the European classification, the differences between Germany and the Euro Area average are fairly minor. Against the background of an HICP inflation rate currently around 1pp above the Euro Area average, the contribution of housing, water, electricity, gas and other fuels has been around 0.7pp higher in recent months; food inflation, on the other hand, was marginally less of a driver in Germany (around 0.2pp below the Euro Area average). Leaving aside the three months where transport inflation was substantially reduced by policy measures, the transport contribution has been around 0.4pp above the Euro Area average. The differences were minor in absolute terms.

All in all, we see fairly minor differences between Germany and the Euro Area; the slightly above-average HICP rates in recent months boil down to somewhat above-average contributions by the two main components, energy and transport, offset only to a limited extent by slightly below-average impact from food.

Figure 4: Contributions to inflation, Germany
percentage points



Source: Own calculations on Eurostat data, via Macrobond.

Distributional impacts of inflation

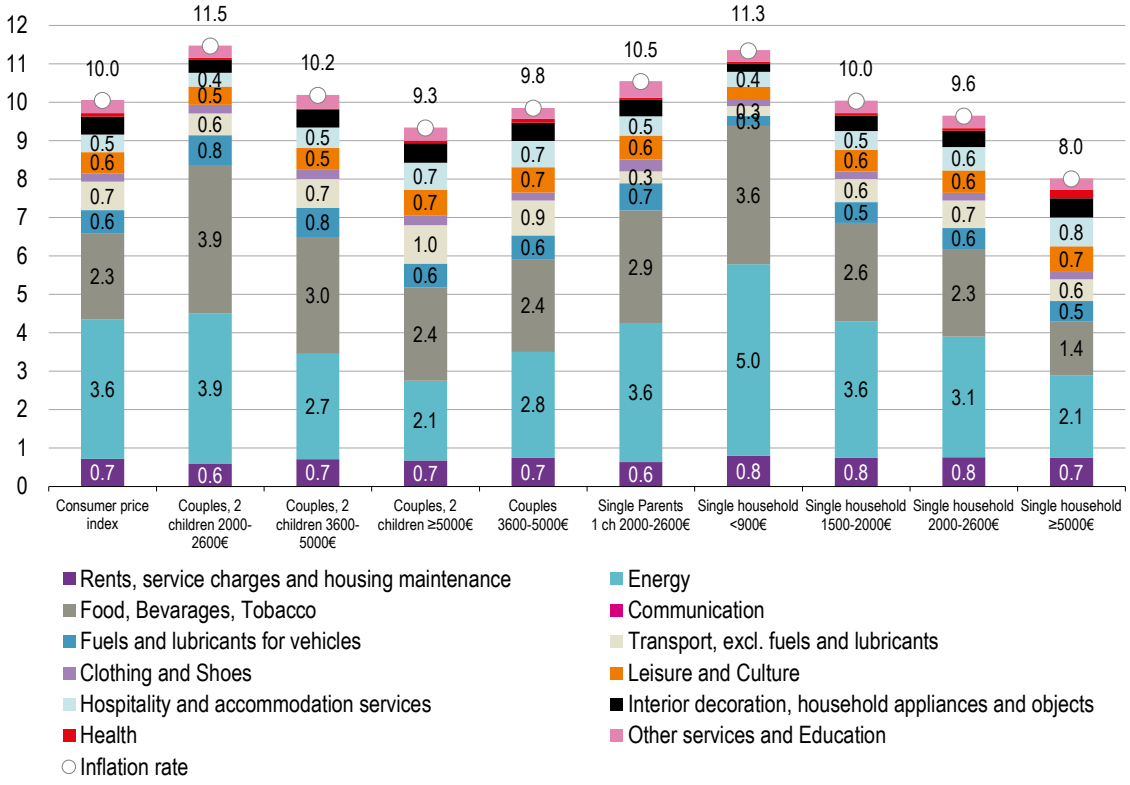
While the evidence on the distributional impact of inflation in Germany between different groups of the population, and the functional distribution of income between capital and labour is still provisional, it is already apparent that population groups have been differentially affected by the inflation surge. This reflects the highly concentrated nature of the inflationary surge on energy and food combined with differences in consumption patterns between household types and income groups.

Household distributional effects

Using detailed national price data and information on consumer spending patterns, the IMK has tracked the impact of inflation on nine representative household types.[2]

[2] The analyses have been conducted monthly starting in January 2022 and are available under the title IMK Inflationsmonitor as IMK Policy Briefs: https://www.imk-boeckler.de/de/imk-policy-brief-15382.htm

Figure 5: Household-specific inflation rates and inflation contributions in November 2022
in % percentage points



Source: Own translation of Dullien/Tober (2022: 5, Abb. 3).

As shown in Fig. 5, the inflation experienced by these household types varies considerably. Against a November average of 10% (using national CPI figures), low-income families faced year-on-year price rises of 11.5% whereas high-income single households suffered inflation at the much lower rate of 8%. For both singles and couples with children, inflation rates decline quite markedly as income increases; this is likely also true for childless couples and single-parent families, but income-disaggregated data are not available due to small sample size.

It is not straightforward to directly compare households with and without children in these figures – incomes are not equivalised and the income categories differ – but the burden of inflation appears somewhat higher for those with children. The three hardest-hit groups are low-income couples with children, poor single households and low-income single-parents. The figures reported here are for November, but regressive effects emerge as a consistent finding in the monthly reports since the start of the year.

Household energy and food (with beverages and tobacco) do not only make the biggest contributions to inflation, differences in their incidence on household budgets are also the prime drivers of inflation differentials between households. Poorer households generally live in less well-insulated accommodation, for instance, and in any case devote a higher share of their more limited budgets to necessities, including food and heating. For example, the single poor face almost a 3 percentage-point greater shock to their budgets from household energy costs than wealthy singles. Food price hikes represent a 3.9% hit to living standards for low-income families, compared to 2.1% for rich families. By

contrast, other consumption categories had a differential impact between households of just a few decimal points.

These already marked differences in the statistically measurable incidence of the current inflation on poor and wealthy households almost certainly understates the difference in the size of the challenge facing the population groups. Wealthy households have higher savings (indeed as a result of covid-related restrictions these are still unusually high). By contrast the three lowest household income deciles have a negative or zero savings rate. A recent analysis by the German Council of Economic Experts (Sachverständigenrat 2022: 111-12) shows that the savings rate rises monotonically from around -7% at the bottom of the distribution to over 25% for the highest income decile, while the estimated burden of inflation on net household income[3] declines monotonically across income deciles, from more than 8.3% to only 3.7%. This is partly due to the above-mentioned differences in consumption baskets, but more to the smaller share of income devoted to consumption amongst wealthy households. Moreover, richer households have a greater weight of discretionary items in their consumption basket and thus greater scope to adjust relative expenditure weights in response to differential price developments. A specific feature in Germany, where a much larger proportion of households live in rented accommodation than is typical in EU countries, is that tenants have less scope to avoid higher energy costs by investing in energy-saving technology than homeowners, and those in lower and medium income groups are more likely to rent.

Overall, the impact of the inflationary surge is regressive, generally affecting those on low incomes hardest irrespective of household type. There are, though, also notable differences between household types.

One noteworthy distributional factor is not directly related to income, however, and that is the type of heating used. The impact of the extraordinary rise in gas prices has already been, and, thanks to delays in price pass-through, will continue to be felt disproportionately by the approximately one half of the population whose homes are heated by gas. These are distributed across income groups. Recent government policy measures have consequently sought to address this impact head-on and are described in detail below.

Functional distributional effects

It is still not easy to ascertain to what extent the rise in inflation is weighing more on wages or on profits as a share of output. Quarterly national accounts data provide net domestic product figures disaggregated into profits, employee compensation, and production taxes. However, changes on the same quarter the previous year are susceptible to base effects and the most recent figures also to subsequent revisions. They are currently not a reliable basis for examining the functional distributional effects of the recent inflationary surge. It is preferable therefore to provide a granular look at the response of wages to the inflationary environment.

[3] The cost of purchasing the same basket of goods and services, assuming an across-the-board increase of 2.9% in nominal household incomes.

Wage trends and collective bargaining outcomes

A period of rapid inflation throws down difficult challenges to collective wage bargaining systems. If nominal wages ignore the inflationary hike entirely, wage-earners suffer a corresponding real income loss and aggregate demand is depressed. On the other hand, inflationary pressure is rapidly sucked out of the economy. Full compensation by nominal wages avoids real income and demand shortfalls, but either compresses profit margins or, more likely, perpetuates the inflationary shock (price-wage spiral). In a country with its own currency, either course of action will have consequences for the stance of monetary policy. In the Euro Area context the situation is complex as the ECB needs to assess the weighted average of trends in all member states. Moreover, wage responses – along with government policies to limit price increases – impact national competitive positions vis-à-vis Euro Area trading partners.

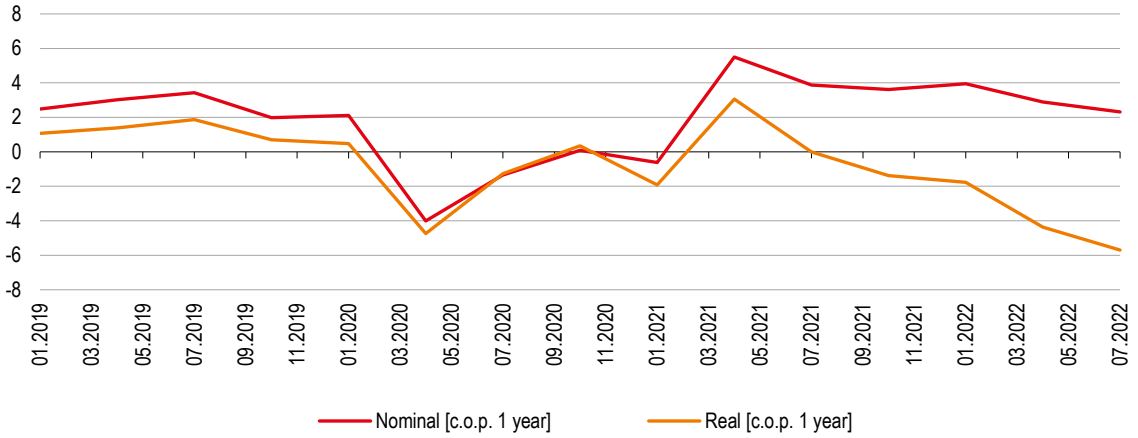
In this section we consider wage outcomes. Below we consider attempts by collective bargaining actors – unions and employers' federations – and the government to reach cooperative solutions.

Figure 6 presents recent real and nominal changes in monthly earnings compared to the same quarter the previous year. Prior to the covid crisis German workers had experienced moderate nominal wage increases which, thanks to low inflation, translated into steady real-wage gains of around 1% p.a. Real earnings were then negative under the influence of the covid crisis from the second quarter of 2020 to the first quarter of 2021. This was followed by a pronounced hike in nominal monthly wages. Both the dip and subsequent rise reflected not least a downshift in average working hours per month and subsequent recovery, rather than changes in hourly pay (Destatis 2021). Since this high-point of over 5% in Q2 2021, nominal monthly earnings have been on a declining trend, despite the sharp acceleration of prices. The most recent figure, for the third quarter, shows nominal earnings increasing at an annual rate of just 2.3%. As prices rose, real earnings passed into negative territory as early as Q3 of 2021. The real-wage plunge has continued since then, reaching -5.7% in the most recent quarter. This is the fastest fall in real earnings recorded since the series start in 2008.

These survey-based data suggest that German nominal wages across the economy have yet to respond to the rapid increase in inflation. Destatis (2022) has drawn attention to methodological changes currently affecting the earnings index and notes that gross wages and salaries in the national accounts are increasing at 3.6% on a monthly rather than the 2.3% indicated in this survey data. On the other hand, its series for collectively agreed wages show third-quarter increases of just 1.4% and 2%, without and with one-off payments respectively.[4] Not until next year will a more reliable picture of macroeconomic wage trends emerge, but the evidence from different official sources suggests a very sluggish nominal wage response so far. This is all the more remarkable given that the German labour market has, so far, proven robust in the face of the economic shocks that have hit it this year, with employment continuing to grow. Unemployment has increased, but initially at least this was driven by the influx of Ukrainian refugees. Most recently, though, the increase in unemployment has begun to reflect a weakening of labour-market conditions, especially fewer hirings from unemployment (Dullien et al. 2022a: 18-20).

[4] Index der tariflichen Monats- und Stundenverdienste. In Q3 the monthly and hourly figures were identical: https://www.destatis.de/DE/Themen/Arbeit/Verdienste/Tarifverdienste-Tarifbindung/Tabellen/Tarifindex.html#241922

Figure 6: Germany, earnings, nominal and real

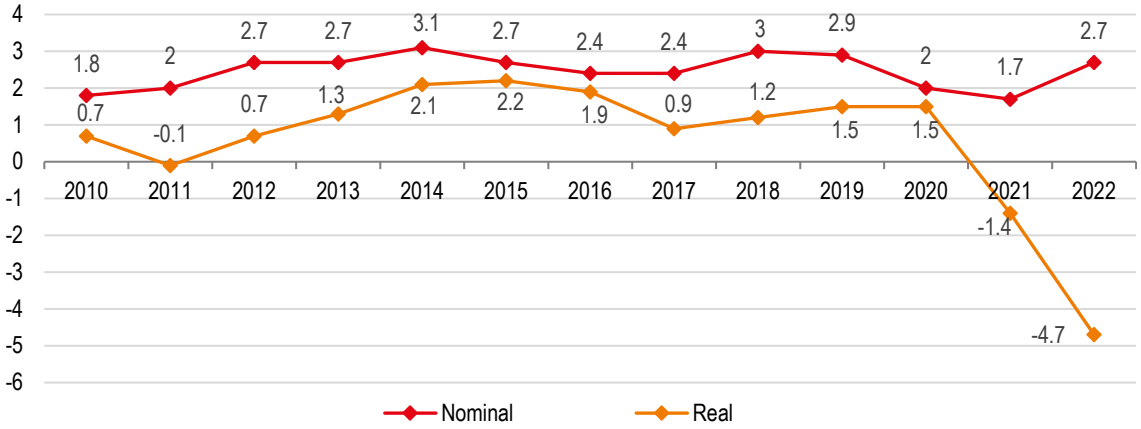


Source: Federal Statistics Office via Macrobond.

Although collective bargaining coverage has weakened over time, German wages are still primarily set collectively, mostly by sectoral agreements, increasingly though also via the statutory minimum wage introduced in 2015. Collective wage agreements in key sectors attract substantial media and policymaker attention, also outside the country as settlements in, for instance, the metal and electro industry have a certain “pilot” character also for other EMU countries. Analysing collective agreements has the important advantage of giving insights into expected trends in coming months and even years, rather than being backward-looking. At the same time, the analysis of the effective “value” of a collective agreement is not straightforward and can be contentious. Headline figures for pay rises, picked up by the media, can be highly misleading, as agreements have become increasingly complex. They frequently involve one-off lump-sum payments, which if not renewed imply a wage drop in the subsequent period. Calculating the value of such payments also requires assumptions about the average absolute salary of the recipients. Similarly, raises in different months of successive years (not to mention the interaction with working hours and other “qualitative” elements) affect the effective increase between two calendar years.

The WSI (Institute of Economic and Social Research) provides a detailed monitoring of collective bargaining trends in Germany (WSI 2022). According to its most recent analysis, collective agreements reached during 2022, together with those made in 2021 or earlier in which pay increases were set for 2022, imply a rise in collectively agreed wages of just 2.7%. The WSI provisionally estimates collectively bargained real wage losses of the order of 4.7% in 2022, a historically unprecedented value and the second year in succession in which real wages have fallen (Fig. 7). Partly the sluggish pace of collectively agreed nominal wages reflects the fact that many agreements (for 12 million workers) were concluded before the sharp rise in inflation manifested itself; these agreements foresaw increases of just 2.6%. Agreements concluded during 2022, when the price increases were becoming or had already become evident, were considerably higher at 4.2%. This figure does show a trend towards higher nominal settlements. However, it is still markedly below recent inflation rates; Moreover the 4.2% figure excludes the largest single agreement, that in the metal and electro sector, where increases have been pushed into 2023 and the 2022 is abnormally low (WSI 2022).

Figure 7: Collectively agreed wages, nominal and real
annual % change



Source: WSI 2022.

These very moderate overall increases in collectively agreed nominal wages do include some quite substantial pay rises, in some cases with double-figure percentage increases, in a number of traditional low-wage sectors (such as food, cleaning). These increases were not a reaction to higher inflation, however, but a response to labour shortages and the substantial increase in the statutory minimum wage, from €9,60 in 2021 to €12 from October 2022. This, in turn, was an election promise made last year, well in advance of the inflationary shock.

A number of important collective agreements were signed in the second half of the year. Their effect will be felt in 2023 and 2024. In October a settlement was reached in the chemical industry, which has been particularly badly affected by the fallout from the Ukraine war and rising input prices. (In response to this the agreement was pushed back from the spring, and a flat-rate bridge payment of €1400 per worker was agreed early in 2022.) The agreement is complex. Notable features include two annual flat-rate payments of €1500 which are free of tax and social insurance contributions (see below), and a headline 3.25% increase in 2023 and again in 2024. For workers in the mid-range paygrade the 2022 increase is estimated by WSI to be approximately 4.3% (low-pay and high-paid workers receive larger and smaller percentage increases respectively). Because of the exemption from tax and social security contributions the cost of the agreement to the employers and the net increase enjoyed by workers in 2023 and 2024 differ. Ignoring this effect, the agreement is estimated to imply a wage increase of 3.4% in 2023. Depending on assumptions made in the treatment of tax and social insurance the net benefit to the average chemical worker is around 5.1%, while the increase in employer cost is limited to 2.7%

The metal sector is a particularly marked example of the care needed with headline figure for percentage increases. On top of the same €3000 flat-rate payment as in the chemical industry, a raise of 5.2% was agreed from June 2023 and 3.3% from May 2024, so that media reports often referred to wage increase above 8%. Careful analysis of the timing of increases and the impact of (past) one-off payments shows that the agreement implies a mere 1.6% nominal increase in 2022, rising to a hardly spectacular 4.3% in the coming year; in both cases the net/gross difference is set aside.

These two settlements suggest that Germany's core industrial sectors, which are currently facing serious short-term but also structural challenges, have prioritised employment protection concerns over real-income maintenance. Nominal wages will rise faster than in previous years, but there is no sign of a price-wage spiral. At the same time the trend identified earlier for low-wage service sectors to agree substantial wage increases has continued in the second half of the year. Examples include cleaning services and hotel and catering. As noted, this is not only or likely mainly a response to higher inflation, but rather of a structural rebalancing of the German economy, in which traditionally the gap between service-sector and manufacturing wages has been amongst the largest in Europe.

Returning to the macroeconomic level, the IMK forecasts unit labour cost increases at 3% in 2022 and forecasts 3.6% for 2023 (Dullien et al 2022b). The current year's figure needs to be seen in the context of very low unit labour cost growth the previous year (0.7%). The 2022 figure is compatible with the figure of 2.7% given for collectively bargained wage increases above thanks to very low hourly productivity growth (0.2%) and a substantial gap between effective and collectively bargained earnings (wage drift of +1.1%).

Overall, the evidence suggests that – contrary to perceptions generated by some media reports – wages in Germany have reacted very moderately to the stark inflation hike. Where wage growth has been rapid, especially in low-wage sectors, the causes lie elsewhere than in the inflationary shock and represent a response to more structural issues. In the next section we turn to the counter-inflationary policies launched by the German government, before considering whether there has been formal or informal interaction between wage-setting and government policy.

Government measures to reduce inflation or counter its effects

In December 2021, a new "traffic-light" coalition took office with an ambitious modernisation agenda. Put crudely, the main priorities of the three parties were focused on social justice (social-democrats), decarbonisation (greens), and fiscal rectitude (liberals). All these priorities, and the corresponding promises to the electorate, came under pressure almost immediately with Russia's invasion of Ukraine and the inflationary surge to which it gave rise. The government found it had urgently to address inflation-induced rising inequalities, find alternative fossil-fuel import sources, and to fund substantial additional public expenditure.

The focus here is on measures that either sought to reduce offset the price increases or cushion its impact on citizens or businesses. Most measures were announced as part of policy packages. These are presented broadly chronologically. A synopsis table at the end attempts to classify the measures by type, irrespective of when they were or will be implemented.

Two initial policy packages

In February and March the federal government passed announced two packages of measures to blunt the impact of rising prices. These two "burden-reducing" packages (*Entlastungspakete*), taken together here, are estimated to have a total impact of around

€30bn in 2022, most of which affected the economy during the summer months. This represents just over 0.8% of Germany's (2021) GDP.[5] A considerably smaller effect (around €8bn) will, though, impact in 2023 (Table 1).

The initial emphasis was on net-income support via tax measures. These were as follows:

- The basis tax-free allowance (*Grundfreibetrag*) for 2022 was raised from €9.984 Euro to €10.347
- A tax allowance for employees (*Arbeitnehmerpauschbetrag*) was raised from €1000 to €1200
- The tax allowance for commuting to work (*Entfernungspauschale*) was raised from 35c/km auf 38c for journeys above 21km
- An additional one-off child allowance (*Kinderbonus*) of €100 paid in July
- A one-off compensation for energy prices (*Energiepreispauschale*) of €300, for those subject to income tax, paid in September.
- Targeted measures for benefit recipients: €200 for those on minimum social benefit (*Grundsicherung*), additional heating-cost allowance for those receiving housing benefit or on low-incomes and 20€/month for children at risk of poverty.

Two of the three tax-reduction measures are only available to worker-households and all three are not available to those whose income is below the tax-threshold. The net benefit of the second measure increases with the marginal tax rate. This led to criticism that, among others, pensioner and student households and those on social benefits were being left out. By contrast the two direct and broad-based income-support measures were strongly progressive. Not only were they flat-rate payments (benefiting lower incomes more in relative terms), but the energy-price allowance was subject to income tax at progressive rates, while the child allowance is at least partially recouped from wealthy families via the income tax declaration. The social policy measures were targeted at low-income households, but comparatively small in volume (just €1.3bn).

With some simplifying assumptions – and leaving aside the commuter allowance – the IMK estimated that the household type benefiting most in absolute terms from the first two packages was dual-earner families with mid-range incomes: they benefited by around €880 (with 2 children). Families with a single earner exhibited a similar humpback shape across the income distribution, peaking at just over €600. By contrast, single households benefited to a roughly equal absolute extent (€300-345) across all income categories.

A second set of measures had a clearly different focus, seeking directly to reduce the costs of energy consumption, specifically electricity and for transport.

- An electricity levy to finance the transition to renewables (*EEG-Umlage*) of 3.72c/kWh (4.43c/kWh including VAT) was scrapped from 1 July, earlier than planned.
- From June to August local and regional transport was made available for a monthly tickets price of just €9 valid across the whole country. Existing subscription ticketholders were reimbursed accordingly.
- For the same period petrol and diesel prices at the pump were reduced by 35c and 17c per litre respectively (including VAT).

[5] The analysis of the first two *Entlastungspakete* draws heavily on Dullien/Rietzler/Tober (2022).

The scrapped levy represented a saving of €63 in the second half of 2022 for the average household (Dullien/Rietzler/Tober 2022: 7). The impact of the two mobility-related measures varied, of course, very substantially between household types, in function not primarily of their income but of their geographical location and specific mobility preferences or needs. Holders of expensive regional transport tickets or those spending considerable sums on individual tickets benefited substantially. Low-income households were, during these three summer months, given mobility opportunities they would otherwise have lacked. On the other hand, motorised families and, in particular, commuters, benefited from the fuel subsidies, with the financial benefit increasing as a function of distance travelled and fuel consumption; this tended to benefit well-off households.

Averaging across households, the IMK estimates the average impact of the three price-reducing measures at just over €150 in the second half of 2022. Because the transport-related subsidies were temporary, only the scrapping of the electricity levy depressed the inflation rate, and this only by an estimated 0.3pp (Dullien/Rietzler/Tober 2022: 9).

The fiscal cost of these measures is estimated at around €30bn for 2022 and €8bn in 2023 (Dullien et al 2022a: 19). The most costly measure was the *Energiepreispauschale* (€10.4bn) and the abolition of the electricity levy (€6.6bn). The measures which generated most public debate, the mobility-related subsidies caused less of a fiscal hole (€2.5bn and 3.2bn for the 9€ ticket and fuel subsidy respectively), largely because they were only in force for three months.

Table 1: Fiscal measures policy packages 1+2
€bn

	2022	2023
Income tax allowances	4.5	4.7
Temporary reduction in vehicle fuel price	3.2	0
4th corona tax-assistance package	0.2	3.5
€9 public transport ticket	2.5	0
Scrapping of renewable-energy levy	6.6	0
Supplementary social benefit transfers	1.3	0.5
Child bonus	1.9	0
Energy-price offset for the employed	10.4	0
Total policy packages 1+2	**30.6**	**8.6**

Source: IMK estimates.

Third policy package

On 3 September a third burden-reduction package, under the title ‘Germany stands together’, was announced with the aim of expanding coverage to groups that had scarcely benefited under the first two packages and to extend support into 2023 (Federal Government 2022). The government originally put the value of the third package at €65bn (1.8% of annual GDP), almost twice the total value of the first two packages. Analysis by IMK suggests even a slightly higher figure: €14.2bn in 2022 and €59.7bn in the coming year

(Dullien et al 2022a: 19), partly because the government's estimate of the cost of exempting one-off wage payments from taxes and social insurance contributions will be significantly higher than the government has forecast. Summing the IMK estimates of all three packages (without the energy and electricity price brakes discussed in the next sub-section) the total volume is around €44.8bn in 2022 and €68.3bn in the coming year, representing around 1.2% and 1.9% of (2021) GDP. Some of the measures have yet to be fully defined and/or there is uncertainty about take-up, so all the fiscal-impact figures given here are indicative only.

The third package contains more than 20 measures, summarised under 14 headings in Table 2, together with provisional estimates of their fiscal cost.[6]

Table 2: Policy package 3, gas & electricity price brake

	2022	2023
Energy-price offset for pensioners and students	6.3	1.1
Heating cost grant	0.7	0
Housing and min. social benefit, add. child benefit	0	7.8
Raising income threshold for "midijobs"	0	1.3
Increased thresholds & other income-tax burden reductions	0	18.6
Tax & soc. contrib. exemption for one-off wage payments	1.1	10
Measures for companies	3	2.7
Follow-on measure for €9 ticket	0	3
Extension of more generous short-time working allowance	0.1	0
Extension VAT cut in gastronomy	0	2.8
Global food security measures (provisional)	1	0
Tax deductibility of pension contributions brought forward	0	2.9
Cut in VAT on gas and CO2 price	2	8.6
Continuation of home-office tax allowance	0	0.8
Policy package 3	**14.2**	**59.7**
Estimate gas price brake	5	32
Estimate electricity price brake	0	25

Source: IMK estimates.

For 2022, the most important measure is the extension of the energy-price offset to cover students and pensioners, responding to a critique that they had been short-changed in the previous packages. The third package also breaks new ground in offering direct support to businesses; the various subsidies are expected to total around €3bn in the current and a slightly lower figure in 2023. They offer subsidised loans and grants to firms struggling with high energy costs, either as financial support or aid (for example Kreditanstalt für Wiederaufbau loans) in implementing energy-saving measures. VAT on gas was cut

[6] The electricity price brake was announced as part of the third package, but in view of its similarity to the gas-price brake it is discussed in the next sub-section.

(from 19 to 7% until the end of March 2024), reducing gas bills by around €2 bn this and 6.5bn next year.

Most measures only make their (full) effects felt in 2023. By a considerable margin the most costly set of measures in 2023 are those under the "inflation compensation act" (€18.6bn). This is a set of tax-policy measures that reduces income-tax dues essentially by raising tax thresholds (reversing "bracket creep"). Also very substantial (€10bn) is the estimated cost of covering taxes and social insurance contributions for one-off payments by employers to workers (in lieu of permanent wage increases). The cost of the measure will depend, of course, on take-up. As noted above, the new collective agreements in the metal and chemical sectors make full use of this possibility (capped at €3000), and the financial advantages for both employers and workers – the wedge that the measure drives between net benefits for workers and gross costs to firms – are large. The government had originally allocated much smaller sums for this measure.

The government opted to cut VAT on gas and also to delay a planned increase in the national CO_2 price. This will have only a small effect in the current year, but in 2023 will be among the more costly measures (€8.6bn). Particularly the CO2-tax reversal is problematic as it mitigates directly against government decarbonisation targets.

A substantial €7.8bn is budgeted for various social policy measures, benefiting in particular minimum income recipients; this forms part of a broader reform of the minimum benefit regime (known as *Hartz 4*) in favour of a "citizens' allowance" (*Bürgergeld*) to which the new government was committed before the invasion of Ukraine. Notably, provisions have been made the raise minimum social benefit in line with inflation more frequently. Also, a one-off heating cost subsidy is planned for recipients of housing benefit (€415 for a one-person household plus €100 per individual in the household).

While there is to be no renewal of the vehicle fuel subsidy – prices have in any case come down from the highs of last summer as world oil prices have eased considerably – the €9 ticket, which proved very popular is, to be converted into a permanent measure. At the time of writing details were not entirely clear, but there is in principle agreement between federal and state-level government that a nationwide monthly ticket for regional and local public transport of €49 is to be offered. As the compensation for the public transport companies still has to be finalised, the total costs of this measure are uncertain (IMK estimate for 2023: €3bn). Compared with the temporary €9 ticket, the subsidy to the public transport and the corresponding impact on household transport costs is, of course, much more limited. However, by instituting a permanent measure, policymakers hope that citizens will be encouraged to shift from car to public transport, which studies showed happened only marginally this year; availability of the €9 ticket during the summer months primarily led to additional leisure travel.

Gas and electricity price-brakes

Just after the third package was launched, Chancellor Scholz also announced that a "defensive shield" (*Abwehrschirm*) involving price-curtailing and other measures would be set up for which purpose up to €200bn – more than 5% of annual GDP – were being set aside. This led to concern amongst European partners that Germany was about to tilt the single-market table in favour of its companies, as other countries would not have the financial resources to follow suit. This concern certainly had some validity, although, as other studies in this series have documented (e.g. Uxo (2022) and Plane (2022), for

Spain and France respectively), Germany was something of a policy laggard, and other member states had already gone much further in directly curtailing prices. It is also relevant that of this sum likely around €30bn will be needed to nationalise UNIPER, German's largest energy importer which the crisis had rendered insolvent.

The task of designing a gas-price reduction mechanism that would swiftly provide targeted and meaningful support to natural-gas consumers, both households and businesses, while maintaining incentives to save energy, was delegated to an expert committee. The committee issued its report at the end of October (ExpertInnenkommission Gas und Wärme 2022). The government has now passed legislation that largely, but in a number of areas not entirely, follows these recommendations. At the time of writing the legislation was still undergoing parliamentary scrutiny. The main provisions are as follows.

- Households are to receive a subsidy on their monthly gas payments equal to the difference between 12c/kWh (9.5c for district heating) and the current price charged by utility companies covering 80% of estimated consumption (usually the previous year's, as represented by the September monthly payment).
- Firms receive a subsidy at a similar effective rate (7c/kWh net of taxes) covering 70% of estimated annual consumption. This is capped such that the value of the rebate/subsidy cannot exceed the gas costs that are actually paid.
- The measure will formally start in March 2023, but payments will be applied retroactively to January and February. Additionally, as a bridging measure, the entire monthly payment for households in December 2022 is assumed by the government.

A similar principle will operate with respect to electricity:

- For households and small companies (up to 30,000 kWh p.a.) the price of 80% of last year's consumption is capped at 40c/kWh.
- For larger companies the cap is at a (net) price of 13c/kWh for consumption up to 70% of the previous year's.
- It will be partially financed out of what amounts to a windfall profit tax on inframarginal electricity generators (essentially all except gas and coal), in accordance with the recent European Regulation. In brief the German scheme will work as follows.[7] Reference revenues are set for each electricity-generation technology such that producers can earn a "standard profit". These are subtracted from actual revenues calculated based on hourly or monthly (for wind and solar power) electricity prices. 90% of the difference (the "windfall profit") is due to the government. Power generators can reduce the calculated size of windfall profits to the extent that they can show they have futures contracts that oblige them to sell electricity at below the current market prices.

The overall assessment of the gas and electricity-price brakes, both of which are due to run until the end of April 2024, is positive. The "burden reduction" on households and firms can start quickly, already in December (gas). Both brakes depress the inflation rate directly, focusing on the main inflation drivers; in the case of gas they address the arbitrary nature of the price hit to households with gas heating, who lack short-term

[7] The Economics and Climate Ministry describes the details of the scheme here: https://www.bmwk.de/Redaktion/DE/Downloads/F/faq-abschoepfung-von-zufallsgewinnen.pdf?__blob=publicationFile&v=10

adjustment mechanisms. They reduce social hardship particularly amongst the roughly 30% of households lacking savings and avoid households cutting expenditure in other areas, depressing output. It eases pressure on wage bargainers, while helping to avoid production shutdowns and bankruptcies in energy-intensive firms. Effective measures are in place to prevent firms shutting down production and benefiting from the gas subsidy.

At the same time, they maintain incentives to save energy, as consumption (net of the subsidy, which is independent of the current consumption of gas) is at market prices: the marginal cost is unchanged. The extent to which the state must dig into the reserves of the "defensive shield", and equivalently the degree of protection of household and business incomes cannot be determined ex ante, as it depends on the development of market prices. But to give an order of magnitude, if the average price for a kWh of household gas is assumed to be 25.4c (as in Bauermann et al. 2022), then households receive a subsidy, assuming an unchanged consumption level, of just under half for 80%, i.e. their actual gas bill is reduced substantially, by just under 40%. This also means that the measures have an "automatic stabiliser" property. The volume of support does not need to be fixed in advance, instead varying automatically with the energy price and thus with the seriousness of the shock.

The same uncertainty applies to the extent to which inflation is reduced. Earlier estimates were that the gas price brake alone could reduce inflation by up to 2 percentage points. Since then, gas futures prices have fallen, and if this is maintained, the effect will be smaller (but so will also the urgency of reducing inflation); cf. Dullien (2022: 4).

Some specific elements can be criticised, however, in particular distributional impacts. Using last year's consumption favours those who in the past have made the least efforts to save energy and benefits or penalizes arbitrarily those whose household composition has changed; it can be defended on grounds of pragmatism. Of more concern is that wealthy households consume considerably more gas than poor ones, on average. They also have greater scope to curtail "discretionary" heating (of additional rooms, swimming pools). A disproportionate share of the overall subsidy is therefore destined to go to those who could best absorb the price shock. Bauermann et al. (2022: 6) show using survey data that single households in the top income quintile would receive almost 50% more than in the lowest quintile (€141 vs. €95 monthly); the gap is less pronounced for families but still significant.

Imposing quantitative limits on the number of kWh that are entitled to the subsidy would, in principle, address this issue, rendering the gas-price brake more targeted and reducing its fiscal cost. Its operationalisation is challenging, though, because many contracts between households and utility companies are for multi-unit apartments; utility companies were opposed. Such issues could have been resolved given sufficient time, but, compared to other countries, Germany was very late in considering price caps; the expert commission, on which the utility companies were heavily represented, was only called up in September while the pressure was on to have a measure in place as soon as possible. This despite the fact that proposals broadly on the lines of what will now be implemented were first made as early as February (e.g. Dullien/Weber 2022a and 2022b).

All in all, the gas (and electricity) price brakes are welcome and will have substantial effects in reducing burdens on households and businesses, while largely avoiding the risk of blunting incentives to save energy. Their impact (and cost) automatically adjust to the size of the shock. But they are costly (assuming gas and electricity prices stay high

– the IMK has penciled in more than €30bn and just under €25bn respectively for these measures in 2023). At least with respect to the gas-price brake, there is an efficiency and social-justice price to be paid for not embarking sooner on designing the measure.

The government policy measures are classified by measure type in Table 3. A green tick indicates considerable deployment of the type of measure, often with multiple instruments. A grey one signifies that use is limited in time or extent. Unlike in some countries, German state-owned companies have not been deployed to limit price rises.

Table 3: Synoptic table of measures by type

Measures	Yes/No	Remark
Energy tax cuts	☑	
Gasoline tax cut	☑	2022, 3 months
VAT tax cut	☑	Gas, gastronomy
Retail price control	☑	Only 2023 but then substantial price control measures (gas and electricity price brake)
Wholesale price control	☑	Under the electricity price brake, in the form of a price limit for inframarginal producers (see also under windfall profits tax)
State-owned company mandate	✗	
Windfall profits tax	☑	Foreseen indirectly in the electricity price brake in form of a price limit for inframarginal producers; 90% of electricity-producer revenue due to market prices above the cap -> government (EU regulation)
Transfers to vulnerable households	☑	Numerous, substantial policy addressing different household types
Transfers to vulnerable firms	☑	Direct measures quantitatively limited, but firms benefit under gas /electricity price brake
Social pact/wage norm	☑	Non-binding tripartite “concerted action”; implicit coordination (govt subsidies for one-off wage increases & price-reduction measures, restraint with permanent wage increases)
Other measures	☑	Tax/soc. Ins. Exemption for one-off wage payments, Subsidised nation-wide public transport ticket, temp 2022, likely permanent from 2023, Income-tax measures (bracket-creep)

Source: author assessment.

Tripartite initiatives and a “concerted action”

As other countries in Europe, Germany has had to deal with an inflationary shock that is, in essence, or at least in origin, a term-of-trade shock: the price of imported energy and some other inputs has increased dramatically. In the disinflationary period following the oil-price shocks of the 1970s and 1980s, which has some similarities to the current situation, some countries attempted to use tripartite agreements between government, unions and employer federations to bring inflation down without imposing a deflationary shock to aggregate demand. Evidence (including Watt 2017) suggests that, by avoiding the need to push up unemployment to reduce inflation via the Philips Curve, inflation could be reduced at lower cost in terms of output and employment.

The question whether Germany has adopted corporatist strategies in order to cope with the current crisis is one to which an unambiguous yes or no cannot be given. The German government called the leaders of the country’s employers federations and trade unions together for two high-level meetings. Chancellor Scholz used in this context the phrase “konzertierte Aktion”, referring to the regular, formalised consultations held between 1967 and 1977 between the German government, Bundesbank and social partners. Although meetings were held, also involving the Bundesbank president, there is little sign that concrete and binding agreements were reached.

On the other hand, looking at the overall package of measures adopted by the government and the wage bargaining rounds discussed above, it can be argued that some sort of implicit, informal deal was reached. All the major actors are agreed in perceiving the inflationary shock as serious, but also as temporary. The key issue is to resolve it without adding to problems with contractionary policies or wage outcomes that perpetuate the initial shock.

Ideal-typically, the following pattern could be sketched. Through fiscal policy measures the government offsets the impact of inflation on both business and households, particularly those worst affected. It also directly (if belatedly) reduces inflation through price interventions. Unions accept that the price rises are not an attempt by domestic firms to rise margins, but (mostly) the result of a terms-of-trade shock. Nominal wage demands are higher than previously, but claim significantly less than full compensation for current higher inflation. Equally, employers do not reject wage-rises with a price component above the ECB inflation target. The government assists this process by reversing bracket-creep in the income tax system and, in particular, by driving a wedge between net pay rises and increases in employers’ wage bill by making one-off payments (up to a total of €3000) tax and contribution free.

Overall, then, it can be argued that, although formal “concertation” has been weak, an implicit form has been reached that may enable inflationary pressure to be reduced relatively swiftly and without recourse to policies to deflate demand that would be costly in terms of jobs and output. These involve a substantial fiscal commitment, especially in 2023.

A question is what the impact of such policies, if successfully implemented, will be on other countries. In signalling, as the largest member state, to the ECB that inflationary pressures can be expected to subside next year, such an approach would aid other countries to the extent that the ECB becomes more hesitant to break the inflationary surge by raising interest rates. On the other hand, if the disinflation process in 2023 is more rapid in Germany than competitors, and this is maintained over an extended period, the latter will experience pressure on export markets and there is a risk of serious macroeconomic imbalances returning to the Euro Area.

Conclusion

Compared to some other EU countries, Germany was rather slow to introduce policy measures to address the sharp rise in inflation. In the spring it focused on compensatory transfers and tax breaks of various sorts. Its measures to reduce vehicle fuel prices and radically subsidise public local and regional transport attracted much debate, but they were only in place for three months; a “light” version of the public transport subsidy is envisaged for 2023, however.

Only with the third policy package, in the autumn, followed by the gas and electricity price brakes, did Germany resort to more costly and also more radical market interventions. These will certainly have significant effects on net household incomes and also directly on the inflation rate itself, although largely not until 2023. How large these effects will be will depend not least on the future development of energy prices. A very attractive feature of the gas-price brake is precisely this automatic stabiliser property, which substantially reduces the risk of putting in place programmes that prove either too small to stabilise incomes and demand or excessive – as arguably recent packages in the USA have been – risking further exacerbating inflationary pressures. While the overall size of the measures cannot be quantified ex ante, they will certainly be substantial; depending on price assumptions they could offset around two-thirds of the terms of trade shock.

In this respect similar to most of its European neighbours, Germany has gone for a broad range of policies in an attempt to address trade-offs between social, economic and ecological goals – and appeal to different parts of the electorate. The overall assessment of the packages given in the previous pages is positive. Households and the economy as a whole have been shielded from inflationary pressures or compensated for higher prices, and they will be to a significantly greater degree in 2023 when the gas price brake and other measures make their impact felt. This stabilises the economy, reducing the extent to which consumers limit real spending on goods and services in the face of the dramatic increases in the price of some, more or less essential, goods. While a recession remains likely it is currently forecast to be mild, not least thanks to the policy measures adopted.

A number of criticisms can be made, however. Policy packages have come rather late. Simpler and less arbitrary measures, such as direct transfers to households, floundered on inadequate administrative capacity (poor digitalisation of the tax and benefit system). A political reluctance to engage in direct price regulation means that the gas brake will not take effect until 2023, while time pressure means that – unless last-minute changes are made –wealthy households with heavy gas consumption will, in absolute terms, benefit most: utility companies (so far) successfully argued that measures to limit the absolute amount paid out to households – which would have addressed distributional concerns – were not implementable in the timescale required. Nonetheless, the impact of all the measures together is likely to benefit poorer households the most, in relative terms. This is also vital as their inflation burden is also the heaviest, while maintaining the consumption of cash-constrained households delivers the most bang for the euro in terms of economic stabilisation.

Similarly, the record on the ecological scorecard – maintaining incentives to save energy – is mixed. The gas brake is well designed from this point of view and support for companies investing in reducing fossil-fuel dependence is appropriate. But the substantial (if temporary) subsidisation of vehicle fuel, generous support for commuters, and the postponement of the rise in CO_2 taxation are all problematic from this point of view.

It is also noteworthy that Germany did not take the option of raising additional tax revenues from high-income taxpayers, despite calls from, among others, the government's own Council of Economic Advisors. This would have offset higher spending, limited the rise in public deficits while offsetting to some extent the skewed distributional impact of some measures.

Germany did not come up with a formalised, corporatist "social pact" to address the crisis, although high-level tripartite discussions were held. A sort of implicit or informal coordination can be made out, however. Measures to curtail prices and, in particular, the government's offer to exempt up to €3000 in one-off wage payments from taxes and social insurance contributions, which is already being availed of in important sectoral agreements, encourage the collective-bargaining parties to limit the pass through of higher current inflation into nominal wages.

The impact of such a policy on Euro Area partner countries is ambivalent. It reduces the likelihood of further interest rate hikes by the ECB but at the same time raises issues of relative competitiveness that will need careful monitoring in the coming months.

References

Destatis (2021) 2. Quartal 2021: Reallöhne um 3,0 % höher als im Vorjahresquartal, Press release 446, 22 September 2021, https://www.destatis.de/DE/Presse/Pressemitteilungen/2021/09/PD21_446_62321.html

Destatis (2022) Reallöhne und Nettoverdienste. Methodische Hintergrund-informationen zur Veränderung des Nominallohnindex im 3. Quartal 2022, https://www.destatis.de/DE/Themen/Arbeit/Verdienste/Realloehne-Nettoverdienste/Methoden/veraenderung-nominallohnindex.html Quartal 2022, https://www.destatis.de/DE/Themen/Arbeit/Verdienste/Realloehne-Nettoverdienste/Methoden/veraenderung-nominallohnindex.html

Dullien, S. (2022) Preisbremsen für Gas und Wärme: Deutliche Stabilisierungswirkung mit Verbesserungspotenzial bei der sozialen Balance, Schriftliche Stellungnahme für die Sitzung des Ausschusses für Klimaschutz und Energie am 6.12.2022 zum Entwurf eines Gesetzes zur Einführung von Preisbremsen für leitungsgebundenes Erdgas und Wärme und zur Änderung weiterer Vorschriften, https://www.bundestag.de/resource/blob/925150/4e72d4264f779596f33c3f3883e367dd/Stellungnahme_SV_Prof-_Dr-_Sebastian_Dullien_IMK-data.pdf

Dullien, S., A. Herzog-Stein, P. Hohlfeld, K. Rietzler, S. Stephan, S. Tober, T. Theobald, S. Watzka (2022a) Energiepreisschocks treiben Deutschland in die Rezession Prognose der wirtschaftlichen Entwicklung 2022/2023, IMK Report 177

Dullien, S. A. Herzog-Stein, P. Hohlfeld, K. Rietzler, S. Schulte, S. Stephan, S. Tober, T. Theobald, S. Watzka (2022b) Wirtschaftspolitik verhindert tiefe Rezession Prognose-Update: Die konjunkturelle Lage in Deutschland zur Jahreswende 2022/2023

Dullien, S. / Rietzler, K. / Tober, S. (2022) Die Entlastungspakete der Bundesregierung - Ein Update. IMK Policy Brief Nr. 126.

Dullien, S. and S. Tober (2022) IMK Inflationsmonitor. Höhepunkt der Inflation im November 2022 überwunden, IMK Policy Brief 143

Dullien, S and I. Weber (2022a) Der Staat muss den Gaspreis deckeln, Süddeutsche Zeitung, 12 February 2022: https://www.sueddeutsche.de/wirtschaft/inflation-energiepreise-gas-subventionen-1.5526823?reduced=true

Dullien, S. and Weber, I. M. (2022b) Höchste Zeit für einen Gaspreisdeckel: ein wichtiges Instrument im Kampf gegen Energiepreisbelastung, Wirtschaftsdienst, Jg. 102, H. 8, S. 595-598.

Endres L. and S. Tober (2022) IMK Inflationsmonitor. Inflationsspanne zwischen Arm und Reich verharrt im Oktober 2022 auf hohem Niveau, IMK Policy Brief 138

ExpertInnenkommission Gas und Wärme (2022): Abschlussbericht, Berlin: https://www.bmwk.de/Redaktion/DE/Publikationen/Energie/abschlussbericht.html

Federal Government (2022) Deutschland steht zusammen – Maßnahmenpaket des Bundes zur Sicherung einer bezahlbaren Energieversorgung und zur Stärkung der Einkommen, https://www.bundesfinanzministerium.de/Content/DE/Downloads/Schlaglichter/Entlastungen/ergebnispapier-des-koalitionsausschusses.html

OECD (2022) Statistics News release, Consumer Price Index, Paris, 6 December 2022

Plane, Mathieu (2022) Inflation and counter-inflationary policies. The case of France, IMK Study 83-3

Sachverständigenrat (2022) Energiekrise solidarisch bewältigen, neue Realität gestalten, Jahresgutachten 2022

Statistisches Bundesamt (2022) Hohe Inflation führt im 3. Quartal 2022 zu Reallohnrückgang von 5,7 %, Press release, 29 November 2022

Uxo, Jorge (2022) Inflation and counter-inflationary policies. The case of Spain, IMK Study 83-5

Watt, A. (2017) Explaining unemployment developments in Europe. The role of wage-setting institutions and macroeconomic policies, IMK Study 57

WSI (2022) Pressedienst‚Tarifbilanz des WSI-Tarifarchivs‘, 13 December 2022: https://www.boeckler.de/pdf/pm_ta_2022_12_13.pdf

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Macroeconomic Policy Institute (IMK) of Hans-Böckler-Foundation, Georg-Glock-Str. 18,
40474 Düsseldorf, Germany, phone +49 211 7778-312, email imk-publikationen@boeckler.de

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