



“Money, it’s a gas”

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Key points

- We look at the implications for the Euro area of higher natural gas prices in the context of the Ukrainian crisis.
- We discuss Francois Villeroy de Galhau’s proposal to provide the European Central Bank with more flexibility on the timing of its lift-off.

As tension between Russia and Ukraine continues to mount, we look in details at the impact a sudden stop in Russian gas supply would have on the Euro area economy. Natural gas has become crucial for purchasing power dynamics. The direct effect of higher gas prices has already shaved 0.5% off real disposable income over one year in December 2021. More importantly, the indirect impact through electricity prices has also become significant, since gas-fired power stations are now the “marginal supplier” without which electricity demand cannot be fulfilled. The correlation between gas and electricity prices has thus got very tight, and this channel has shaved another 0.7% off purchasing power over one year in December 2021.

There is no easy alternative to Russian supply in the short run. Europe has increased its capacity to receive liquefied natural gas from the US and Qatar, but these two key exporters do not have much spare room to lift their output further. Raising the contribution from coal, as it has already been the case last year in Germany, is not palatable given its huge carbon footprint. Raising the share of nuclear power supplied to distributors at below-market prices is in general not an option outside France. The solution probably lies in a fiscal accommodation of the income shock – possibly offset by some windfall tax on low-cost electricity producers – but the countries where the rise in electricity prices has been the steepest are also the “fiscally fragile” ones, such as Italy and Spain. Beyond the short-term management of a possible additional energy shock, the renewed tension with Russia may prompt a re-think of the EU’s overall energy strategy. Even some costly new nuclear solutions get more attractive if raising baseload capacity becomes a priority as the cost and sheer availability of the currently dominant “marginal energy” become problematic.

The European Central Bank (ECB) will be one of the key players in dealing with the fallout of an exacerbation of tension with Russia which would be reflected in even higher energy prices. In an interview with the Financial Times board member Isabel Schnabel was reassuring: the ECB would not “accelerate the normalization of monetary policy” in such a configuration. Still, a geopolitical shock would add to what is already a very uncertain trajectory for the Euro area. In this context, we discuss Francois Villeroy de Galhau’s recent proposal to provide the ECB with more flexibility on the timing of the lift-off in policy rates.

Exploring the gas-works

In the previous issue of Macrocass we were struck by the difference in the level of concern expressed by Anglo-Saxon governments on the risk of an imminent Russian military intervention in Ukraine and the less alarmist message coming from the EU. Unfortunately, the tone has converged towards the stark warnings from the US and the UK. France and Germany's decision to ask their nationals to leave Ukraine is a concrete reflection of the decline in the perceived capacity to find a diplomatic solution to the crisis, while the intensification of military operations in the Eastern parts of Ukraine controlled by pro-Moscow separatists is starting to fit the scenario of a "false flag" operation triggering direct action by Russia. After focusing last week on the financial and macroeconomic constraints shaping the likely re-emergence of military competition between EU countries in Russia, we look this week at the potential short and long-term consequences on the EU's energy policy of a disruption in Russian gas supply to the West.

The sensitivity of the EU's short-term growth trajectory to gas imports from Russia should not be understated. In Exhibit 1, we compare the year-on-year (yoy) change in retail gas prices in the Euro area (the "gas component" in Eurostat's harmonized consumer price index), with the year-on-year change in the Dutch Title Transfer Facility (TTF) price, the benchmark in the EU for wholesale gas prices, smoothed over three months to control for "accidents" and lagged by one month. The correlation over the last five years is very strong (c.0.75). The elasticity (c.0.045) may look small at first glance: the standard deviation in wholesale gas prices before 2021 stood at 35% per year, translating into a volatility of only 1.5% at the retail level based on the regression results. Yet, **the current shock sent gas prices off the charts:** at peak on 21 December 2021 wholesale gas prices in Europe stood at EUR183/megawatt-hours (MWh) against EUR16.8/MWh a year earlier. The impact on the economy is thus already significant. The 28%yoy increase in retail gas prices in December 2021 in the Euro area, even if it was only a fraction of the quintupling observed on the Dutch TTF index on a monthly average basis, pushed the overall Euro area consumer price level by 0.5% (this component has a weight of 1.9% in the total consumer price index basket). In clear, **developments on the gas market alone ended up reducing the purchasing power of Euro area consumers by 0.5%. And this is only for the direct impact.**

Exhibit 1 – Gas price transmission...

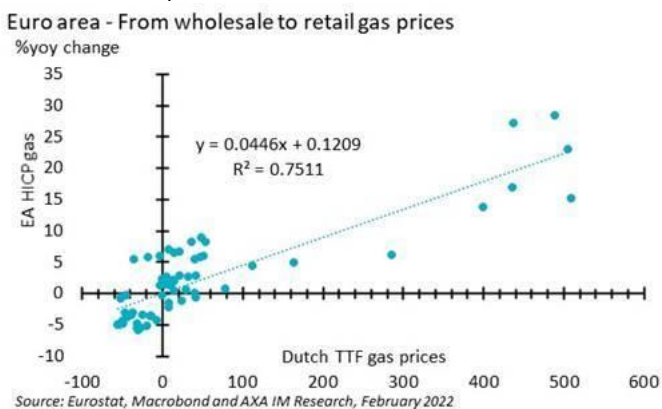
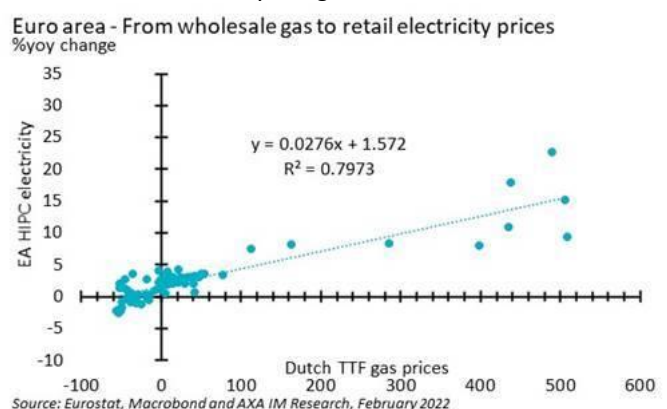


Exhibit 2 - ...to electricity is high



The indirect impact via electricity is even bigger. Indeed, what is probably surprising (Exhibit 2) is that the correlation between gas wholesale prices and the retail price of electricity is even tighter, even if the elasticity is smaller (0.027). This reflects the way wholesale electricity prices are determined in the EU's auction system. At the EPEX Spot day-ahead auctions, asks from distributors and bids from electricity producers close at 12pm. The intersection of the aggregated supply and demand curves at closure determines the market clearing price which is then applied to *all* executed orders. By construction, this clearing price is thus driven by the last unit of power generation which is called to fill the demand for electric energy, i.e. by the participating power plant which faces the highest marginal cost. More and more often, it has been a gas-fired plant.

Gas is now the habitual "marginal energy source" which is needed to close gaps in electricity supply, which means that its price, however high, drives the wholesale price of electricity. Indeed, production from renewable sources has been increasing as a share of the total European mix on average in the year but is of course dependent on weather conditions on a day-to-day basis, which makes matching "dispatchable" energy sources – increasingly gas – necessary to

avoid disruption in electricity supply. The contribution from renewable has been particularly disappointing this winter until the last few weeks. Nuclear power has also provided a lower contribution than usual this winter with many plants currently closed for maintenance, but more fundamentally the EU is dealing with a general contraction of capacity in Europe following Germany's decision to exit. If "baseload" energy is curtailed, recourse to the "marginal energy source" becomes more frequent. **Reliance on gas triggers in turn a self-sustained price spiral:** precisely because it is the necessary marginal source of power generation, demand is inelastic to prices, pushing wholesale gas prices even higher, compounding the effect of the concerns over Russian supply in the context of the Ukraine crisis.

Retail electricity prices have risen by 22.6%yoy in the Euro area in December 2021 (the details by components of the Euro area price index for January 2022 will be available only on 23 February). **Given the weight in the index (2.9% last year, rising to 3.1% in 2022), this mechanically contributed another 0.7%yoy to Euro area inflation.** Note that while the weight of gas in the consumer price index varies a lot across member states (it's twice as big in Germany as in France), electricity stands for a very similar share of consumption everywhere in the Euro area (see Exhibit 3).

There is however a significant variation in electricity prices across member states around the spectacularly high Euro area average. In January 2022 the rise in electricity prices has been staggering in Italy and Spain, and very limited in France, with Germany in between (see Exhibit 4). Many factors can blur the relationship between the spot wholesale markets and the bill at the consumer's level.

Exhibit 3 – Still a significant share of total consumption



Exhibit 4 – Various levels of pain



First, beyond the spot, day-ahead European electricity markets, power companies can hedge themselves against short-term price gyrations using the forward markets. Second, **there can be national arrangements – especially when there is a historic national champion – where a fraction of production is reserved at a fixed, below market price.** It's the case in France where *Electricité de France (EDF)* must supply its competitors with 100 terawatt-hours (TWh), brought to 120 TWh this year, at a fixed price of 46 euros per MWh (less than a third of the current wholesale spot price for electricity), calculated as the production cost of "historical nuclear power" (i.e. including the maintenance costs of *existing* nuclear power generation capacity). The 20% increase in the quantity decided by the French government is a way to dampen the impact of the rise in gas prices on retail electricity prices in France, taking advantage of the country's advance on nuclear power. Yet, this possibility is closed to many member states given the absence of meaningful nuclear capacity.

The EU could not easily find an alternative to Russian gas. The overall capacity of European terminals to receive liquefied natural gas (LNG) – mainly from the US and Qatar – can cover approximately 40% of the total gas demand in the EU, hence on paper offsetting the Russian imports. Yet, there are limits on the export side: these two producer countries are already close to the maximum of their production capacity. Note as well that the distribution network in Europe relies on trucks. The current fleet of 15,000 can't be easily increased in a matter of weeks. In the short-run, there would only be two ways to deal with a sudden collapse in Russian gas supply triggered by an exacerbation of the Ukraine confrontation without allowing a shock to purchasing power which would jeopardize the continuation of the recovery.

First, delay the “exit from coal” despite its huge carbon footprint, to close the gap left by gas in power generation. It has already started in 2021 in Germany, where coal capacity remains high, as even with the rise in carbon prices, coal-fired plants outcompeted gas-fired ones while renewable generation was abnormally low. Continuing with this would however be in complete contradiction with the coalition’s agreement to speed up the termination of the coal industry. Note that in any case – and given the rise in coal prices – it is not obvious that the remaining coal capacity in the EU would be able to “pick up the tab” without leaving electricity retail prices high.

Second, accommodate the price level shock with fiscal policy. It has already started in several countries, where “energy poor” households are receiving a one-off cash transfer from the government. What is however concerning is the fact that the countries where the energy price increase has been the steepest tend to be the “fiscally fragile” ones (Italy and Spain). The market has been remarkably welcoming to the Draghi model allowing “good public debt” to rise, i.e. financial liabilities which are the counterpart of expenditure raising potential growth. Still, saddling these countries with more “unproductive” debt to deal with what is hopefully a transitory shock on income on top of the one incurred during the pandemic is of course problematic.

Governments can recoup at least part of their income subsidy by levying a windfall tax on the power generation facilities currently benefiting from a huge difference between average energy prices and their own marginal cost. This would apply not only on nuclear power but also on renewables, which costs have fallen drastically. This is what Spain has been enforcing since last summer, where onshore wind output price can be as low as EUR43/MWh. It may seem counter-intuitive to tax renewables when they play such a central role in the EU’s net zero strategy, and Spain at the end of November has reduced the scope of its tax on wind farms. Yet, these energy sources have benefited for years from massive subsidies and tax breaks to help them become competitive in the EU. At the peak of the surcharge German consumers were paying on their electricity bills to fund the push to renewables, the cost reached 1% of their gross disposable income. That this sector would “in return” transitorily contribute to alleviating an adverse purchasing power shock for European consumers can be fairly easily justifiable. We would add another reason: non-dispatchable energy such as wind or solar creates a “negative externality” in the system since they make it necessary to build matching baseload or dispatchable capacity to ensure that electricity supply can meet demand at all time. Their producers reap the benefits of the difference between their costs and a wholesale price of electricity which is driven by carbon-intensive energies, such as gas, which they cannot fully replace. Yet there are limits to the capacity of some governments to recoup any fiscal cost, and it’s particularly the case in Italy, which is the only G8 country without nuclear power plant on its territory, and where natural gas contributes roughly 50% of total electricity generation

In the long run, the Ukraine crisis should trigger a deep re-think of the EU’s energy policy. While the price of historic nuclear electricity is below EUR50/MWh, in line with the cost of renewables, the price of future developments in nuclear capacity has often been seen as too high to make it the natural avenue for a carbon-free energy strategy. If, however gas prices regularly spike above EUR150/MWh, the calculation changes. Evolutionary Pressurized Reactor (EPR) solutions have been plagued with delays and budget overruns, and the Hinkley’s Point project in the UK has been derided for its electricity price guarantee at EUR105/MWh. Yet, they look much more palatable in the new environment in which the price of wholesale electricity now routinely shoots up above this level. **If the cost of the “marginal source of energy” becomes prohibitive, then the long-term solution probably lies in raising baseload capacity, and from this point of view nuclear power is an obvious candidate.**

We can look at the example of the only currently operational EPR power plant in Europe, Olkiluoto 3 in Finland. Because of overruns its total investment cost has probably reached EUR11bn, for a stated output capacity of 1600 MW. A capital cost of EUR6.875/KW is huge relative to other energy sources, such as onshore wind (now close to EUR1.850/KW). However, the assessment needs to consider the lifetime of the capital, 60 years for EPR against 25 years for wind for instance. Finally, the load factor (proportion of the time the facility can effectively send electricity through the grid) needs to be considered. It stands at about 70% for nuclear power against 30% for wind. The capital cost spread over total effective electricity output during the lifetime of a modern nuclear facility thus look competitive. A specific issue to nuclear power though is the lag between the start of the capex program and electricity generation (Olkiluoto took 16 years from the start of construction) which makes it very sensitive to interest rate assumptions. This is one of the reasons why a new nuclear power investment program would probably need to be financially front-loaded, to “lock in” the currently low level of interest rates.

Fine-tuning the ECB's forward guidance amid (even more) uncertain times

The European Central Bank (ECB) will be one of the key players in dealing with the fallout of an exacerbation of tension with Russia which would be reflected in even higher energy prices. Board member Isabel Schnabel has recently focused on a lot on the impact that rising energy prices would have on trend inflation, in particular through the expectations channel. It was thus reassuring that in her interview with the Financial Times last week she stated that *“Given the likely negative effects of an escalation of the crisis on growth and confidence, including through potential sanctions, it is in my view unlikely that we would accelerate policy normalization in such circumstances”*. We find it interesting though that in general her conversation with the FT was quite one-sided on risks. She made it clear that she now considers that the cost of “acting too late” to stem inflation would be higher than “acting too early”, but when discussing the Ukraine crisis, this would simply warrant “not accelerating” policy normalization. The room for manoeuvre to accommodate a geopolitical shock with monetary policy thus looks particularly tight.

This can become problematic because, as we explored in the previous section, some of the peripheral countries are already disproportionately hit by the negative supply-side shock triggered by the rise in energy prices. Yet, **the debate at the ECB looks closed on the end of quantitative easing** – which is particularly relevant for the periphery – as hawks and doves are now focused on the timing of the rate lift-off.

We have discussed last week already market pricing in this regard and expressed our incredulity with hikes being priced in for June 2022 already. Yet, given the current forward guidance and a sense that the ECB now wants to accelerate its tapering, a hike at some point late this year has become very likely, not to say a done deal. We have taken note however of Francois Villeroy de Galhau's latest speech which proposes to alter forward guidance to provide the ECB with more optionality.





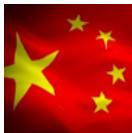

Villeroy de Galhau's main point is that the ECB needs to move away from focusing on “persistence” – which warranted the open possibility to continue quantitative easing (QE) after October 2022 – to shift to “optionality”, as the ECB might have to pull the brakes, i.e. hiking rates, if inflation were to fail to converge (from above) to 2%, but without any certainty now as to where inflation is actually heading. The Governor of Banque de France draws a clear distinction between the end of net purchases, which he described as stopping to add stimulus, and hiking rates, which he described as withdrawing stimulus.

In our understanding of his speech, **the mere risk that inflation becomes entrenched would warrant refraining from “adding stimulus” – the ECB would thus stop “fanning the flames” – but its likelihood is not high enough to justify reducing the stimulus**. However, in the current forward guidance, there is no optionality: a rate hike would “follow shortly” the end of QE. There is an element of automaticity: if the Governing Council decides to stop QE altogether, implicitly it will have also decided to hike rates quickly. This is why Villeroy de Galhau states that *“another way to enhance optionality could be to remove the word “shortly” from the forward guidance on asset purchases. This would be a possibility to break the quasi-automatic temporal link between the two instruments whilst retaining the sequencing. Optionality would mean that the lift-off could possibly take more time, if warranted”*.

We are not completely convinced by the identity “end of QE = stopping to add stimulus”. Indeed, the announcement of the ECB's QE tapering triggered an effective tightening in financial conditions which we don't think solely reflects the expectation of imminent rate hikes, but Villeroy de Galhau's speech provides an elegant solution to the ECB's current predicament and should help convincing the market to drop its most aggressive bets on the timing of the lift-off.

Another point of substance he made is that he is not convinced that one of the critical conditions for the ECB's rate lift-off has been fulfilled: durably setting inflation back to 2% across the forecasting horizon. This matters, because Philip Lane now seems to think that the Euro area has parted for good with the below-par inflation trend in which it had been wallowing before the pandemic. Villeroy de Galhau seems to opine that this is a mere *possibility*, not a definite conclusion, and this would warrant a lot of prudence ahead.

For our part, we continue to think that the ECB will wait until December 2022 to start its lift-off, and will pause once having put the deposit rate back to zero, a “possibility” which Villeroy de Galhau, clearly on purpose, also mentioned in his speech.

Country/Region	What we focused on last week	What we will focus on in next weeks
	<ul style="list-style-type: none"> Minutes of Jan FOMC meeting provided some additional detail about how policymakers were viewing the debate around QT and rate hikes Ongoing diplomacy with Russia around Ukraine as invasion fears grow Retail sales (Jan) rebounded 3.8% (mom) after downward revisions to Dec (-2.5% from -1.9%) Empire & Philly Fed surveys (Feb) showed further improvement in supply conditions Housing starts (Jan) – first decline in 4 months 	<ul style="list-style-type: none"> PCE inflation (Jan) expected to follow CPI to new record high, but close to peak Personal income/spending (Jan) to gauge impact of income squeeze on spending GDP (Q4, 1st revision) little change expected Conf Board consumer confidence (Jan) – likely decline, but not as -ve as Uni of Michigan index Following, prelim housing data new home sales and house price indices Manu and servs PMIs (Feb,p)
	<ul style="list-style-type: none"> ECB GC communication somewhat converging but still displaying marked differences EA Dec IP grew by 1.2%mom, back to July level EA “flash” February consumer confidence edged 0.3pts lower to -8.8 EA employment grew 0.5%qoq in Q4 21, slightly faster than GDP 	<ul style="list-style-type: none"> ECB GC communication ahead of 10 March policy meeting Activity: Flash PMIs, IFO, INSEE, EC (Feb) likely to improve & detailed Q4 GDP breakdowns EA Final January HICP details and flash HICP (Feb) in France
	<ul style="list-style-type: none"> Unemployment (Dec) held at 4.1% in line with expectations and payrolls (Jan) up +108k CPI (Jan) rose to 5.5% – a new 30yr high. Core CPI came in at 4.4% and RPI at 7.8% Retail sales incl fuel (Jan) rebounded by 1.9% (mom) above expectations of a 1.2% rise 	<ul style="list-style-type: none"> Rightmove House prices (Feb) may show signs of slowing acceleration due to rate rises Flash PMIs (Feb) expected to continue their rebound following the lifting of restrictions GfK cons conf expected to remain weak Gov Bailey to speak at BoE conference (Thurs)
	<ul style="list-style-type: none"> Q4 GDP (prelim) rebounded to +1.3%qoq after -0.7% (revised from -0.9%) Reuters Tankan Mfg and non-Mfg surveys (Feb) fell resp. to 6 and 3 from 17 and 8 Nationwide CPI headline fell 0.3pp to 0.5%yoy 	<ul style="list-style-type: none"> Mfg and composite PMIs Flash (Feb) to gauge any disruption on production from Omicron Business activity flash (Feb) may slightly improve as Omicron is starting to recede CPI Tokyo (Feb) as a proxy for nationwide level
	<ul style="list-style-type: none"> Price pressure eased in January due to continued declines of pork prices and slower commodity price appreciation 	<ul style="list-style-type: none"> All eyes are on HK, which is battling its worst outbreak so far in the pandemic
	<ul style="list-style-type: none"> CB: Turkey (14%) & the Philippines (2%) kept their policy rates on hold CPI (Jan yoy %) picked up in Taiwan (2.8%), India (6.0%), Romania (8.4%) & Poland (9.2%) Growth gained steam in Q4 (qoq%) in Singapore (+2.3%), remained robust in Colombia and in CEE3, was hit by the pandemic in Romania (-0.5%) 	<ul style="list-style-type: none"> CB: Hungary is expected to hike +50 bps to 3.40%. Korea should stay on hold at 2.0% Q4 GDP in Peru & Thailand CPI (Jan yoy%) expected to decelerate in Malaysia & increase slightly in Singapore Industrial production figures (Jan) in Russia, Singapore & Taiwan
Upcoming events	<p>US : Tue: PPI (Jan), Empire State survey (Feb), TIC data (Dec); Wed: Retail sales (Jan), Industrial production (Jan), Business inventories (Dec), NAHB housing indx (Feb), FOMC minutes (26 Jan); Thu: jobless claims, Philly Fed indx (Feb), Housing starts & permits (Jan); Fri: Existing home sales</p> <p>Euro Area: Tue: EU19 GDP (Q4,p), Ge ZEW survey (Feb), Sp HICP (Jan); Wed: EU19 Industrial production (Dec); Fri: EU19 Consumer confidence (Feb,p), Fr ILO unemployment rate (Q4), Fr HICP (Jan)</p> <p>UK: Tue: ILO Employment (Dec), Average earnings (Dec); Wed: Inflation (Jan); Fri: Retail sales (Jan)</p> <p>Japan: Mon: GDP (Q4,p); Tue: Industrial production (Dec); Wed: Trade balance (Jan), Private ‘core’ machinery orders (Dec); Thu: CPI (Jan)</p> <p>China: Wed: CPI (Jan)</p>	

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