

Fixing a broken economy

Shortages, ignorance and inflation

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Economics

- ◆ Lockdowns were necessary...
- ◆ ...but the economic costs have been decidedly odd...
- ◆ ...thanks to a huge loss of market “information”

From one break to another

During the Global Financial Crisis, the financial economy snapped. As we emerge – tentatively – from the pandemic, it's now the real economy's turn. Shortages in both goods and labour markets suggest the economic costs of COVID-19 and its associated lockdowns have been far stranger than originally anticipated.

Daisy chains and “daisy matrices”

Compared with the Global Financial Crisis, there are two important differences. First, while that crisis was substantially about a loss of trust – in (possibly toxic) bundles of assets, and in the liquidity of banks – the latest economic fracture reflects a massive loss of market information. With the price mechanism – Adam Smith's invisible hand – barely able to function, supply and demand are completely out of kilter across multiple markets: there is “institutionalised ignorance”. Second, while the Global Financial Crisis reflected breakages in a daisy chain that ran from American sub-prime customers through to, say, Norwegian pension funds, today's upheaval reflects disturbances across a whole “daisy matrix”, where each daisy – shipping, truck drivers, semiconductors – has multiple connections with thousands of other daisies.

The costs of limited information

While markets don't always work well, they are often better than the alternative. After all, during the Cold War, there were fewer empty shelves in Western supermarkets than in their centrally-planned Soviet equivalents. That's largely because markets can provide near-constant feedback to buyers and sellers via multiple matrices. Shut those matrices down and you end up with a combination of queues and, at the macroeconomic level, a loss of productive potential. Trying to boost demand in these circumstances is more likely to lead to inflation than to higher levels of supply.

How to build resilience

It's important to learn the right lessons from the Global Financial Crisis. The real economy equivalent of higher capital and liquidity ratios is greater stockpiling. Yet, for labour markets, that's a non-starter: no one's about to stockpile truck drivers or waiters. Instead, we need to allow markets to spring back to life: only then will information flows be restored. By all means use tax breaks and subsidies to protect those most exposed to price “shocks” but don't conclude that markets are part of the problem. They are, instead, very much part of the solution.



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Fixing a broken economy

- ◆ The Global Financial Crisis broke the financial “daisy chain”...
- ◆ ...but the COVID-19 pandemic broke the economic “daisy matrix”
- ◆ Lost market “information” has triggered a supply crisis and created a major inflation risk

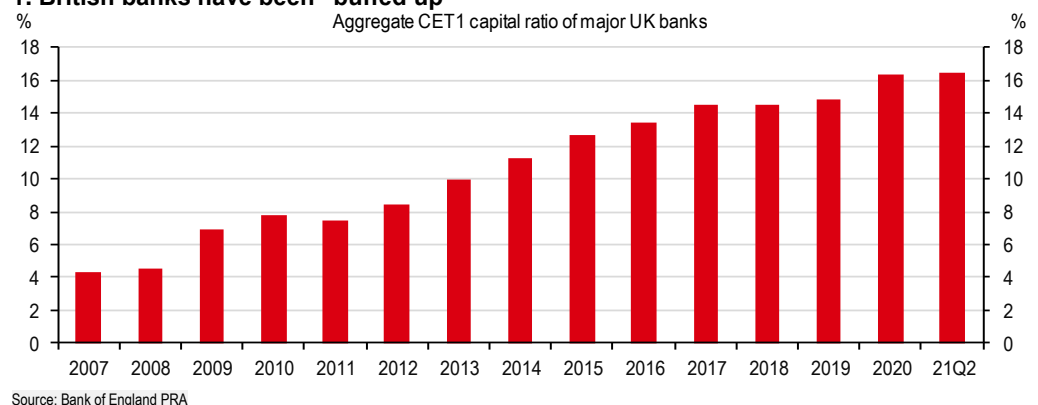
Lessons from the financial world

As the Global Financial Crisis unfolded, there was a growing sense that financial markets – and the people who worked within them - couldn’t be trusted. Bankers were suspected of pursuing a strategy of “heads I win, tails you lose”, seemingly able and willing to take excessive risks knowing that, if everything went wrong, the taxpayer would be obliged to bail the banks out. After all, beyond the “socially useless” trading activities that contributed to their profitability¹, banks also provided a “boring” but essential (yet typically not very profitable) utility service to their millions of customers. Whatever else happened, that “socially useful” service would have to be preserved. Without banks, payment systems would disappear, threatening economic collapse.

For some, it was a classic moral hazard problem. Not everyone agreed. Tim Geithner, President Obama’s Treasury Secretary, was particularly critical of both “too big to fail” and moral hazard arguments. As he subsequently noted in *Stress Test*², his personal “history” of the Global Financial Crisis, plenty of institutions did indeed fail, leaving shareholders and employees – but not necessarily taxpayers – nursing huge losses. Those failures, in turn, partly stemmed from errors associated not so much with “casino” trading but, instead, old-fashioned bank lending. And, for all the concern about “too big to fail”, the banking industry in many countries is, ironically, more concentrated and more oligopolistic now than it was at the time of the original crisis.

Still, the crisis led to change, designed primarily to make the banking sector more “resilient”. In some cases, the change has been explicitly designed to protect “local” taxpayers from any malign consequences stemming from the activities of “global” banks: the UK ring-fence arrangement is a good example. In others, the aim has been to create capital and liquidity “buffers” to reduce the chances of banking collapse in response to nasty, unforeseen, future financial upheavals (chart 1). Arguably, the pandemic demonstrated the wisdom of this approach: banks were in a better position than they might once have been to cope with potential losses associated with lockdowns and related business failures.

1. British banks have been “buffed up”

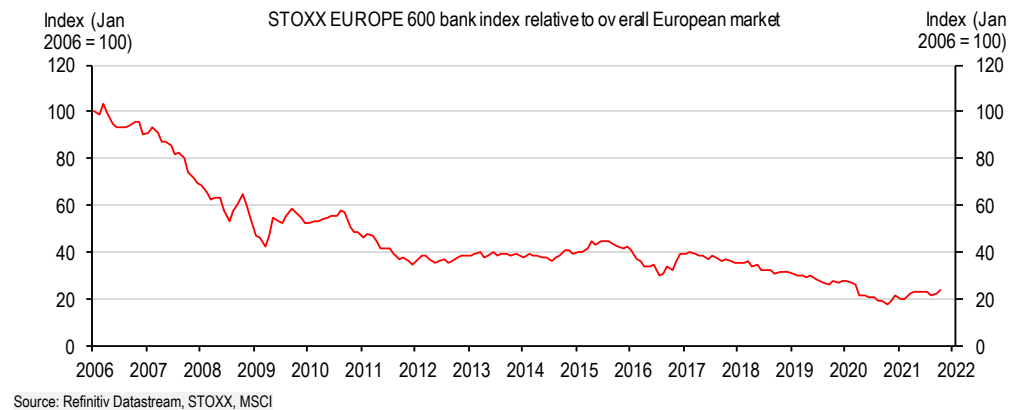


¹ The “socially useless” accusation was made by Adair Turner in 2009 while he was Chair of the Financial Services Authority, at the time the UK’s main financial regulator.

² Geithner, T., *Stress Test: Reflections on Financial Crises*, New York, 2015

There is, however, no such thing as a free lunch. The costs have been felt by shareholders (chart 2) – because money that previously might profitably have been lent out or traded now has to be held as a “buffer” – and by employees who, in some cases are now subject to pay “clawback” clauses. And banks which, as a consequence of buffer requirements, may be permanently less profitable may struggle to raise new capital, constraining both their own investment in new technologies and their future lending abilities³.

2. Banks have not been popular with equity investors

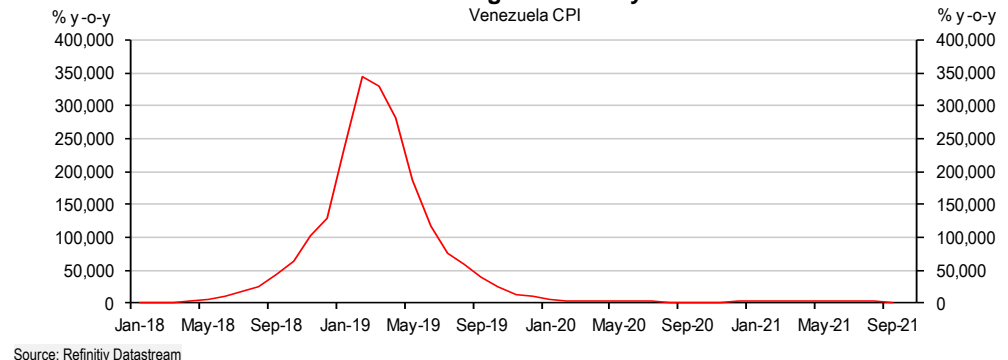


Put another way, resilience is costly, at least for those who end up paying the bill (it’s one reason why, although illegal, around 4% of cars on UK roads are uninsured). Investing in Homeland Security after 9/11 may have been the right thing to do but a large number of people were now employed to prevent bad things from happening, and thus not engaged in productive activities. Installing a burglar alarm might give you peace of mind but it serves primarily to deter would-be burglars and thieves: if criminals did not exist, you could spend your money on something a little more enjoyable. Demanding that a taxi rank should always be populated by taxis might reduce waiting times but would mean that at least one taxi would be sitting idle at all times.

The pandemic has provided its own “stress test”

Most of the time, we don’t think about economic resilience for the rather obvious reason that, most of the time, economies are resilient. Whether it’s Adam Smith’s invisible hand or the deployment of public services, we generally believe that economies “work”. True, the fact that supermarket shelves are mostly full doesn’t mean that we can afford – or, indeed, would want – to buy all that’s on offer. Nevertheless, if we need something, we can normally find it. And even if the high street lets us down, items can typically be sourced online. Shortages may have existed in the centrally planned Soviet Union and, more recently, in hyperinflationary Venezuela (chart 3) but, outside of wartime, they’re conspicuous only by their absence through much of the developed world.

3. Venezuelan inflation has been a little high in recent years

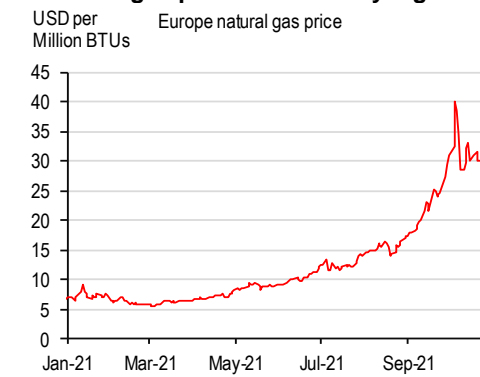


³ There are, of course, other reasons for poor relative performance by banks, including low rates of economic growth, low interest rates and flat yield curves

Until now, that is.

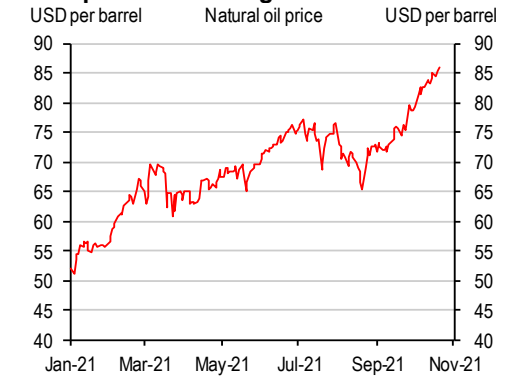
In the UK, shortages are particularly visible: for a mad few weeks in October, queues of frustrated motorists gathering outside fuel stations; energy companies going under; supermarkets warning of empty shelves in the run-up to Christmas. Some of this represents panic buying: inventories of petrol and diesel have, in effect, been transferred from forecourts to individual fuel tanks (at least for those lucky enough to have been at the front of the queue). Shortages, however, are not confined to the UK. The price of natural gas – and, more recently, crude oil – has soared worldwide. Semiconductor shortages have led to a huge fall in car production. Germany's famed manufacturing sector is bogged down, unable to respond meaningfully to a rapid recovery in industrial orders. Second hand car prices have soared as new car production has been crimped. Vacancies have surged, prompting at least a temporary acceleration in wage growth not supported by any meaningful increase in productivity (charts 4-10).

4. Natural gas prices unnaturally high



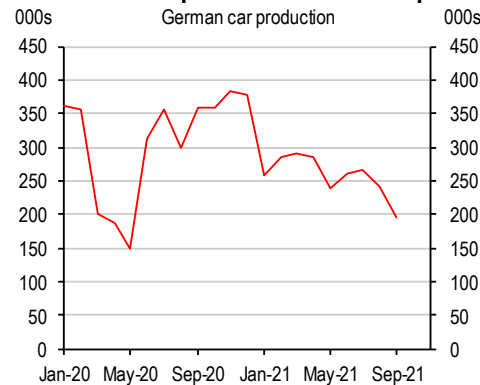
Source: Refinitiv Datastream

5. Oil prices have surged



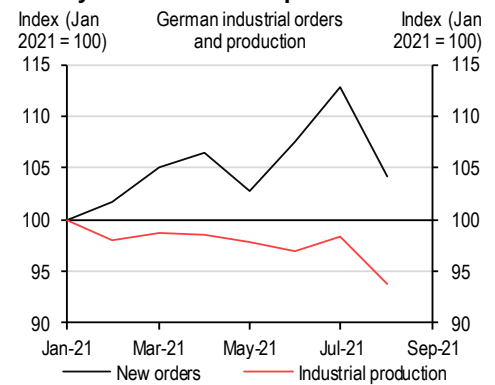
Source: Refinitiv Datastream

6. German car production has slumped



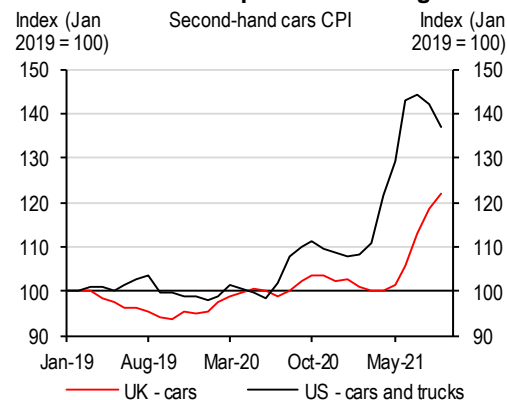
Source: Macrobond, HSBC

7. Only orders were rampant



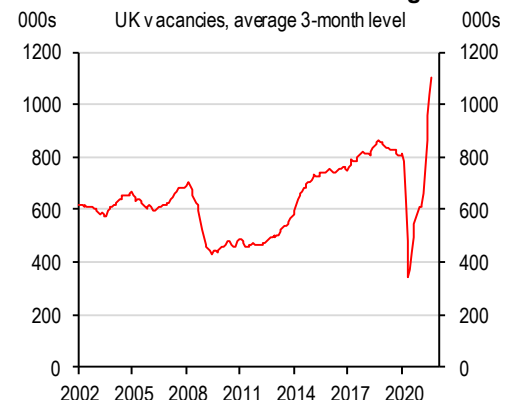
Source: Macrobond, HSBC

8. Second hand car prices have surged



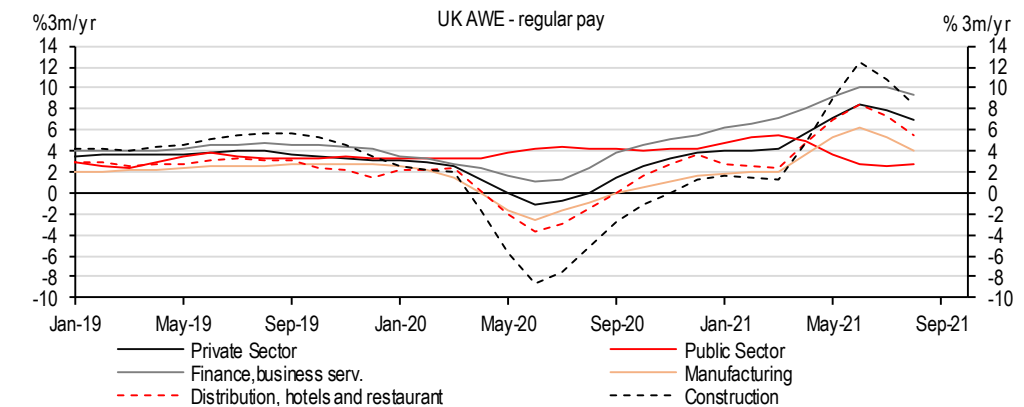
Source: ONS, Refinitiv Datastream

9. UK vacancies are at a series "high"



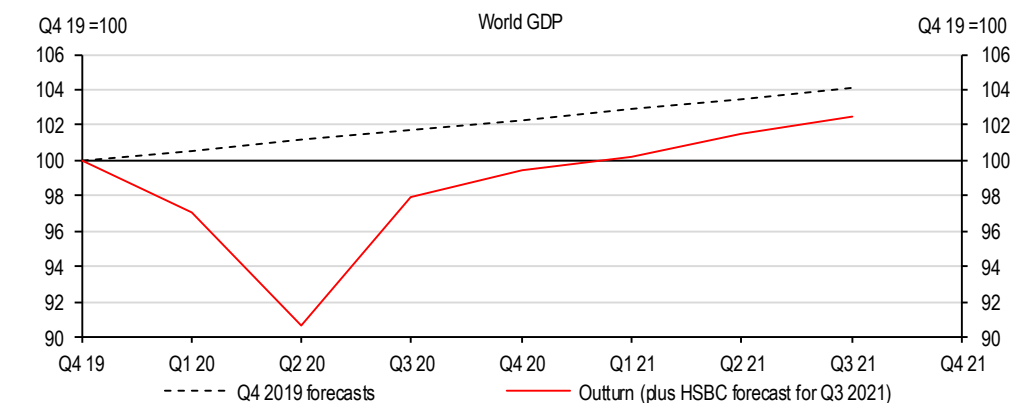
Source: ONS, Refinitiv Datastream

10. Pay growth has picked up across multiple sectors

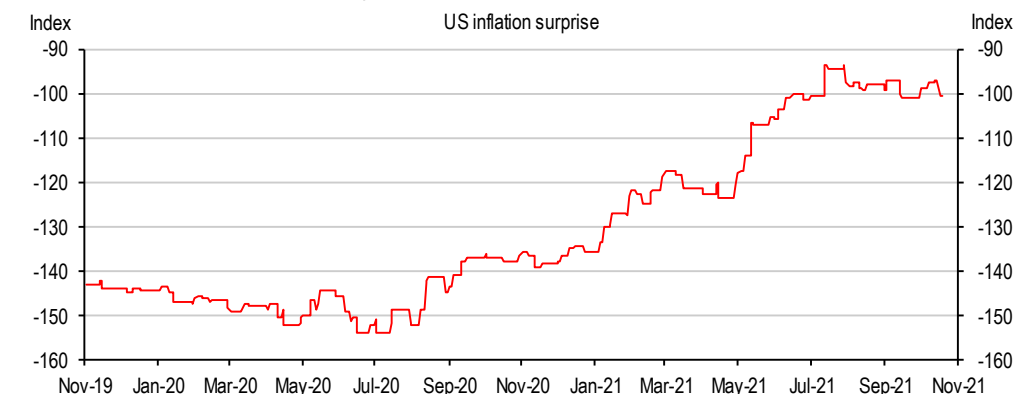


The remarkable feature of all these developments is that they have all occurred against a background in which, despite an unexpectedly large rebound, the level of GDP is still unusually depressed (even if many forecasts now suggest that the pre-pandemic path could be exceeded in 2022 or 2023). Chart 11 shows the level of world GDP since before the onset of the pandemic both as forecast at the time and in reality. In normal circumstances, a shortfall on this scale would be regarded as a sign of insufficient demand. That no longer is so obviously the case. With prices of all manner of items – goods, services and labour – rising more quickly than anyone had anticipated earlier in the year (chart 12), it is easier to suggest that the shortfall reflects problems with supply: or, put another way, that the pandemic has revealed a lack of resilience in our economic systems.

11. Global GDP is still lower than it would have been in the absence of the pandemic



12. US inflation has persistently surprised on the upside over the past 12 months



The Fukushima factor

Clues regarding this lack of resilience have always been there. In 2011, the earthquake that triggered the Fukushima nuclear disaster also led to the temporary shutdown of a Renesas factory responsible for producing a huge number of the microcontrollers routinely incorporated into new cars. Admittedly, the factory reopened within around three months, half the time initially feared. Nevertheless, car production worldwide was temporarily interrupted thanks to the initial microcontroller shortage.

13. Japan's shaky supply side



Source: Wikimedia Commons

In a less-well documented incident, Renesas was hit by a further earthquake in 2016, this time at its plant near Kumamoto in southern Japan. Although operations at the plant quickly returned – in just over a month – this was not the end of Renesas's problems. The earthquake had damaged the capabilities of almost 100 of Renesas's suppliers, alongside a range of semiconductor contractors. Renesas's own business continuity plans might have been perfectly crafted but, on their own, they could not cope with supply outages over which Renesas had no direct control⁴.

Renesas's problems provided a "real economy" reminder of one of the problems associated with the Global Financial Crisis. The link between sub-prime customers in the US and triple-A investors in, say, Norway, wasn't entirely obvious, thanks in part to the ways in which collateralised debt obligations had been bundled together and, thereafter, repackaged in countless different ways. In

⁴ See <https://asia.nikkei.com/Business/Tech/Semiconductors/Fukushima-quake-shows-chipmaker-Renesas-value-of-resilience>

effect, a financial “daisy chain” had been created that, at times of acute stress, was in danger of snapping. And, when it did snap, there was a real danger of a collapse in confidence: financial assets which, until then, had been regarded as entirely liquid suddenly acquired a toxic reputation. Trust began to drain out of the financial system.

When a financial daisy chain snaps, the loss of “information” associated with a collapse in market liquidity can lead to mass panic: fire sales of suddenly dubious assets, an excess demand for cash, queues of people hoping to withdraw their savings from “untrustworthy” banks.

A real economy daisy chain is not quite the same: people’s opinions of a Nissan Leaf, for example, are not likely to shift to such a degree that Nissan dealerships are suddenly awash with unwanted vehicles⁵. Nevertheless, a real economy daisy chain can still easily snap.

14. A Nissan Leaf isn’t quite the same as a collateralised debt obligation



Source: Wikimedia Commons

The snapping is more likely to occur on the “supply-side” than the demand side, at least initially. Last year’s lockdowns led to the ripping up of production schedules, reflecting not just initial declines in demand but huge uncertainty about who, precisely, would be doing what in months to come. Increased uncertainty, in turn, led to the postponement of investments that might have meant an earlier upgrade to existing capital stock, an increase in capacity or the adoption of a new technology. Labour markets, meanwhile, became dysfunctional: workers switched sectors, moved back to their home countries, chose to exit from certain industries and certainly didn’t always “reappear” when lockdowns ended.

From daisy chains to daisy matrices

Put another way, it was as if millions of Renesas-type stories were emerging simultaneously all over the world. Daisy chains were snapping left, right and centre. Indeed, rather than describing the supply side as a series of daisy chains – in which one daisy connects with only two other daisies – it is more fitting to use the term “daisy matrix”. Each daisy has connections to multiple other daisies, leading to a level of complexity far greater than seen in the sub-prime market during the Global Financial Crisis. And it is the complexity – not the uncertain nature of the goods and services being traded – that is the source of the problem.

Market complexity is typically – but not always – solved through the price mechanism or, in Adam Smith’s terminology, the invisible hand. The price mechanism is, ultimately, a mechanism to provide

⁵ Although European emissions scandals were certainly damaging for some car manufacturers

information. The supply and demand diagrams beloved of textbooks tend to show markets for individual products in some kind of equilibrium. Under certain assumptions – notably perfect competition and perfect knowledge across all markets – these multiple equilibria will provide a perfect allocation of resources, in the sense that no one actor can be made better off without making someone else worse off (in other words, the outcome is Pareto optimal).

In truth, of course, markets are far from perfect: monopolies and oligopolies restrict competition, limit supply, raise prices and introduce inefficiencies; asymmetries of information exist between buyers and sellers (dentists and used car salespeople are good examples); and no one could possibly have access to, nor process, all the necessary information to make a fully informed choice. Nevertheless, in normal times, markets work well enough (at least when compared with a centrally-planned alternative).

There is, however, something mostly missing from basic economic textbooks. It's the role of time and, with it, the ways in which markets supposedly shift from one equilibrium to another (if, indeed, they are ever in equilibrium – it may sometimes be better to think about them as unstable dynamic systems where a “snapshot” at any moment in time is like a still from a movie, only marginally indicative of the movie's subject matter and in no way a guide to its plot).

Think of it this way. Imagine that the foreign exchange market is shut down for a year. All the second-by-second and minute-by-minute transactions that basically “make a market” would be lost over an entire twelve-month period. During that time, of course, many developments that, in normal circumstances, would affect pricing in the foreign exchange market would appear to have no impact at all. In effect, the pricing set at the beginning of the shutdown year would be preserved in aspic. Yet there is no reason whatsoever to think that the prices prevailing at the beginning of the shutdown would still be relevant at the end. When the foreign exchange market eventually reopened, prices would presumably “jump” – possibly by large amounts – to reflect all the “missing information” that would now have to be reincorporated into the pricing constellation. Those jumps, in turn, might prove to be highly disruptive for anyone who had based their economic plans on “aspic” prices: decisions would be both regretted and reversed.

That's just one market. Now consider how markets affect each other. Basic textbooks refer to goods as either substitutes or complements. If good B is a substitute for good A, a rise in the price of A will lead to an increase in demand for B (and hence a rise in its price too). If, conversely, good Y is a complement of good X, a rise in the price of good X will trigger a fall in demand for good Y (and hence a fall in its price).

Meanwhile, each individual economic actor can only have a highly subjective perspective on what is driving price movements. A manufacturer of car windscreens may discover that demand has dropped, with the inevitable result that windscreen prices are falling. Does this reflect an overall fall in demand for cars? Perhaps. Equally, however, it might reflect a reduction in the supply of semiconductors, leading to a slowdown in car production for any given level of consumer demand. And, as the windscreen factory lays workers off because of the apparent drop in windscreen demand, activity in the area surrounding the factory tails off: restaurants serve fewer customers, bars sell fewer drinks and cinemas show fewer movies. To local businesses, a negative supply shock will look much more like a demand shock.

Now consider the impact of repeated lockdowns on our daisy matrix. Each supplier, each component manufacturer, each wholesaler, each logistics firm, each retailer, each consultant is faced with a similar information vacuum. The absence of reliable pricing in effect means that each actor cannot easily make informed decisions. In the absence of pricing history, it's near enough impossible to make a judgement regarding the state of a market. The absence of decision-making, in turn, can only damage supply-side performance.

This might seem very much like the fundamental “scarring” many observers feared at the beginning of the pandemic. In truth, however, it's a rather different story, driven by a persistent lack of microeconomic information over an extended period of time. With businesses reopening, there would be enormous uncertainties regarding prospective levels of demand, the availability of staff to meet that demand and the ability of suppliers to meet their needs. That uncertainty, in turn, might feed through into the competitive landscape. If, for example, there's a shortage of waiters, it's likely that, eventually, wages for waiters will rise. Other things equal, this either means lowering costs elsewhere

(by renegotiating the rent, for example), raising menu prices or going out of business. None of this, however, is likely to happen overnight. For a while, the restaurant industry will be faced with excessive costs and insufficient revenues: eventually, some restaurants will end up going out of business. Those that survive will eventually raise their prices.

Admittedly, not all economic transactions have a price. It's easy enough to show, however, that price changes in one area can distort non-price factors elsewhere. Consider the economics of queuing. The length of a queue depends on the speed at which each person in the queue is served, the number of people joining the queue in any given period of time and, finally, the number of available servers. Small tweaks in any of these areas can hugely change the expected "wait time". For example, a queue in front of only one server will become ever longer if the server can serve, on average, six people per hour and an additional eight people join the queue each hour. Add another server, however, and the queue disappears incredibly quickly: now, twelve people can be served per hour, more than enough capacity to deal with the eight joining the queue each hour.

15. Queues aren't just in supermarkets



Source: Wikimedia Commons

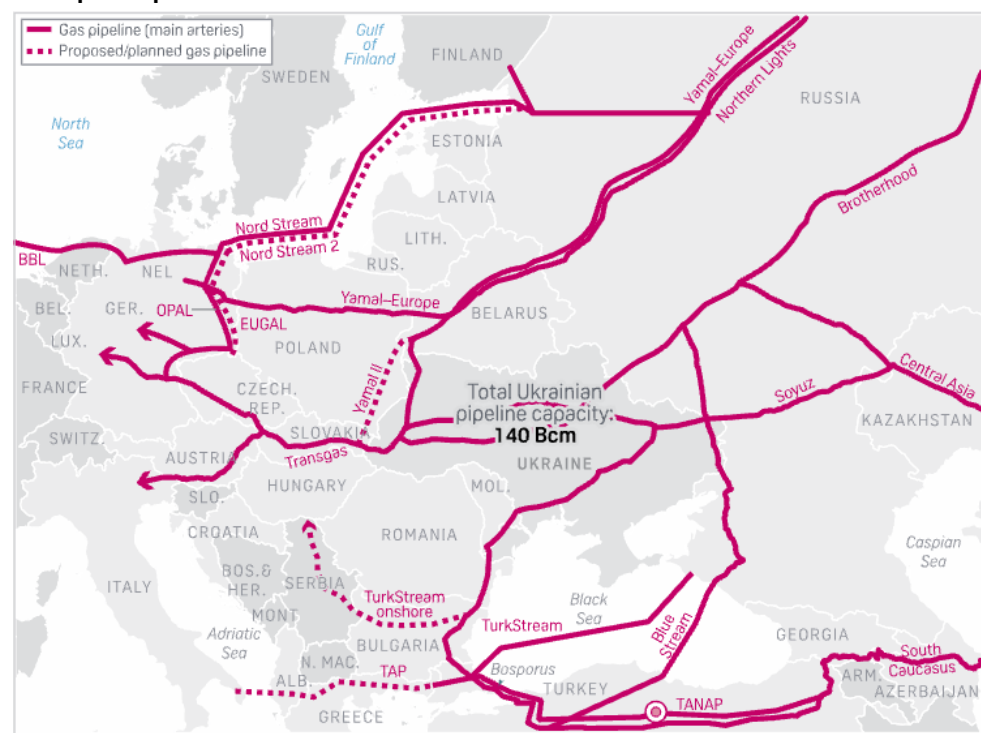
The UK's truck driver shortage can be seen in this context. If the number of containers arriving in UK ports rebounds to pre-COVID-19 levels but the number of truck drivers has fallen by, say, 30% thanks to either excessively low wages or an exodus of drivers to the Continent post-Brexit, the "queue" of containers on harbour sides will lengthen without limit. Without lockdowns, driver shortages would have been immediately visible and might have easily been dealt with through modest incremental changes in wages and other conditions of work, spread out over a lengthy period of time. With lockdowns, the impending driver shortfall steadily gets worse. Unfortunately, the shortfall's discovery comes too late. Drivers cannot be trained up overnight. And while those drivers engaged in work elsewhere may be tempted by the now-higher wages being offered by logistics firms, this only creates shortages in refuse collection and other areas in which wages cannot quickly respond.

Lockdowns and "hidden" shocks

The "aspic" pricing problem also applies in areas not directly linked to lockdown or, indeed, to its end. Consider, for example, the surging price of natural gas. Lots of reasons have been provided to explain the increase, ranging from pipeline Realpolitik (in the case of Nord Stream 2, which may be creating a politically-induced shortfall in gas supplies to Europe (map 16)) through to China's decision to switch quickly from coal to gas in the residential and industrial sectors, as well as lack of

investment in fossil fuels. Each of these, on its own, had the capacity to raise gas prices significantly. It's quite plausible to argue, however, that any initial effects were swamped by the impact of pandemic-related lockdowns: wholesale gas prices tumbled in the second quarter of 2020 as more and more countries succumbed to COVID-19 before recovering thereafter. And when gas prices started to rise, it was comforting to believe that the increase was entirely the consequence of the end of lockdowns, as if lockdowns alone determined gas prices. An alternative view – now, perhaps, more credible – is that rising gas prices reflected a combination of factors, of which the lockdown was but one. Put another way, rather than regarding higher gas prices as an indication that all is now well with the global economy, it may now be more accurate to suggest that rising gas prices reflect changes in regional demand and supply patterns that, in, turn, are threatening nascent recoveries in gas-importing nations.

16. Pipeline politics



Source: S&P Global Platts

Perfect, good and not so good

Perfectly competitive markets with perfect amounts of information have, of course, never existed: they are no more than a theoretical (and, for that matter, mathematical) construct. Markets are, by and large, imperfect. They are also, however, mostly good, to the extent that they generate constant feedback between buyers and sellers. An “empty shelves” outcome is less likely in a market economy than one which relies on central planning (image 17). The removal of markets (or a severe reduction in their operating capabilities) must imply a significant reduction in feedback. Without feedback, however, the allocation of resources will be worse than it otherwise would have been. Even when markets are “switched back on” after lockdowns, problems will persist: not all markets can be switched back on simultaneously (local versus international tourism, for example) while shortages in some markets will give rise to lost demand elsewhere. Reconstructing a daisy chain – however fragile – is easy compared with reconstructing a daisy matrix.

17. A Soviet-era supermarket: not exactly bountiful



Source: Museum of Moscow, Reporter

The macroeconomic consequences of these myriad daisy matrix problems are easy to spell out. The ambition to “build back better” has, until recently, left governments and central banks mostly willing to boost demand, on the assumption that supply will automatically be forthcoming. With inflationary expectations apparently well-behaved, the policy sluice gates have been kept wide open. The forced closure of markets, however, has created an information lacuna that, in turn, has damaged supply-side performance. Attempting to return economies to “pre-pandemic” levels of demand is, under these conditions, asking for trouble. Supply may be unable to respond fully. The consequences are shifting relative prices (reflecting the shortages more prevalent in some markets than others) AND overall increases in the price level, a reflection of the old adage that “too much money is chasing too few goods”. In other words, the combination of demand ambitions and information limitations is likely to generate previously-unexpected inflation.

Re-building resilience

After the Global Financial Crisis, there was an understandable desire to protect taxpayers – and, indeed, economies at large – from financial upheavals. The burden of future adjustment was shifted back to the banks, their employees and their shareholders, partly through an increase in capital buffers. Alongside this, there was a desire for greater transparency in a bid to reduce the risks associated with future asset toxicity: that meant more in the way of prudential supervision, a greater macroeconomic focus on financial stability and a shift away from banking “self-regulation”. By doing all this, the hope was that financial systems – and the economies they supported – would be more resilient and less vulnerable in the light of “extreme events”.

There were costs associated with strengthening the “daisy chains” of international finance. For the most part, these were regarded as acceptable: after all, the aim was to avoid another catastrophic financial meltdown. Moreover, the adopted measures were mostly practicable, in part because it was relatively easy to work out how the “daisy chains” ultimately connected: the link between sub-prime customers and Norwegian pension funds may have been lengthy and, at times, frail but it was mostly direct.

“Daisy matrices” provide a whole new level of complexity. How can an individual company – a “kite dancing in a hurricane” – hope to protect itself from a huge range of supply and demand shocks, particularly when it’s near enough impossible in real time to work out, subjectively, the ultimate origins of those shocks? How might governments be able to help when they’re as much in the dark – thanks to information failures – as everyone else? How should policymakers cope with “institutionalised ignorance”? The nearest real economy analogy to higher capital and

liquidity buffers is to stockpile those items which might be in danger of running short. Yet while that might be a useful approach for items of medical equipment – syringes, phials, PPE and so on – when planning for “once in a century” pandemics, it’s difficult to see how such a policy might work across the broader economy. The costs would be exorbitant. In any case, to suggest that shortages only apply to goods is absurd. As we’ve seen, there have also been plenty of labour market shortages. Stockpiling truck drivers or waiters is – to say the least – unlikely to catch on (the closest to labour stockpiling we have today is probably army reserves, but a shortage of waiters, while inconvenient, doesn’t so obviously undermine national security).

Indeed, the answer may be the diametric opposite of the response coming after the Global Financial Crisis. Rather than mistrusting markets, economies are likely to function best if markets are allowed to work as effectively as possible. They, after all, are the source of the information that allows people to make informed economic decisions that, in turn, reduce the chances of lasting disruptions. Admittedly, sudden price jumps – as has happened with energy prices – are hardly welcome and potentially leave many people financially vulnerable. There are, however, ways of ameliorating the impact of such spikes without directly interfering in market mechanisms: cutting VAT on fuel, for example, is a better bet than imposing an artificial price ceiling that will ultimately disincentivise future investment⁶.

How long this current period of market turbulence – in its broadest sense – will continue for is anybody’s guess: by definition, non-functioning markets cannot yield anything like the necessary amount of information. Nevertheless, some indicators are likely to be more useful than others. On the macro side, both price and wage measures will be vitally important: they’ll tell us something about the likely success of “build back better” and the balance between booming demand and truncated supply. At the micro level, inventories, order books and waiting times will all help determine whether we’re anywhere near close to returning to the lean, just-in-time, inventory management systems of old or whether, instead, we’re witnessing an increase in inefficiencies thanks to weaknesses in the daisy matrix.

Or, put another way, we need to spot visible signs that the invisible hand is back to what it does best.

⁶ Power cuts are a frequent occurrence in South Africa where the desire to give everyone a “fair price” has simply led to a sustained period of underinvestment in energy. The green transition needs to be carefully handled if shortages elsewhere are to be avoided.

Disclosure appendix

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