

ECONOMIC UPDATE DECEMBER 2022

It has been a pretty torrid period since September and there is a lot of media commentary on the pros and cons of the two, quite different, budgets presented by two different UK Chancellors.

I want to focus in this update on some fundamentals which appear to have been forgotten, and the Global situation, before looking in more detail at the UK.

It would seem that a growing proportion of the population think that it is the Government which creates economic growth. This is wrong. Economic growth is the monetisation of natural and intellectual resources by humans. The rôle of Government is primarily to provide a stable legal and social environment to promote risk-taking by individuals. Secondly, it is to deliver social necessities such as infrastructure, education, defence, healthcare and policing. And thirdly, to ensure monopolistic market structures are regulated in a way which protects the consumer and the environment.

In a mature Western economy, a great deal of Government spending is merely a transfer of existing income from those in work to those who are not, by virtue of being retired, sick or young. This is the redistribution of income already created. Government has no income of its own. I read that 52% of the UK population is on benefits. That is because we have nearly 13 million pensioners! Strip them out and the figure is 30% - and many of these are the working poor.

The creation of income flows is not the purpose of Government. It is the purpose of business. If Government tries to create new flows, it seldom succeeds. It can and should be an enabler; not a producer. Government, other than the Chinese Government, cannot create economic growth. Nor can Government control the economy - unless in China - although it can nudge us to behave differently.

However, by its actions, it can damage the willingness of business to invest and take risks. The dominant disincentive to investment is political uncertainty. There is a naïve view that Government can create long-run economic growth by lowering taxation.

More investment raises the stock of capital owned by businesses

– which could be in the form of tangible assets like machines, or intangible assets like IP. Reducing the tax rate should raise the level of that stock of capital, all other things being equal. It would raise the current size of the economy, but not its long-run growth rate. The Corporation Tax super deduction which effectively gave business £1.25 for every £1 spent on capex in the UK had at best a marginal impact on investment. The political machinations were a larger offset.



The economy can only continually grow in the long term if there are continual increases in productivity. Tinkering with investment incentives may provide a useful short-term, or one-off, stimulus, but it is very unlikely to affect the long-term growth rate. Of course, raising productivity is by no means straightforward. It is likely to require long-term support for education and training of the workforce, and for research and development. To significantly affect the long-term growth rate, such policies would need to be introduced on a large scale. By comparison, cutting (or not raising) corporation tax is a quick fix, which is very unlikely to significantly impact growth. Growth is not their tax bill, but the lack of labour.

Similarly another naïve view is that if personal tax rates increase, people will make less effort and work shorter hours. The average human looks at the trade-off between work and leisure. In fact, all of us look at our post tax income. If taxation reduces our disposable income, we work longer to restore the level to that which we wish. It is a paradox, but reducing income tax, particularly on higher earners, enables them to live happily for less effort and certainly to retire earlier than planned. 600,000 55-60 year olds have retired early in the last nine months – the assumption is that they can afford to.

It is true that high marginal tax rates are a disincentive, but this is distinct from average tax rates. And if people are effectively working for the Government for 6 months of the year, they will expect high quality Government services, as in the Nordic countries.

There is a widely held view that generous welfare benefits are a disincentive to work. The evidence from a study of EU countries fails to support this.

Research suggests that generous welfare benefit levels make people who are not in employment more likely to want to work, rather than less.

Survey responses from 19,000 people in 18 European countries, including the UK, showed that the notion that big welfare states are associated with widespread cultures of dependency, or other adverse consequences of poor short-term incentives to work, receives little support. On the contrary, employment commitment was much higher in all the studied groups in bigger welfare states.

This supports the widely held view that work means much more than obtaining an income. It is a social necessity for the well-being of humans. In the UK, there are thousands of retired people working for charities, pro bono.

A 2022 review of 18 countries' tax policies between 1965 and 2015 found no evidence that tax cuts for the rich trickled down to bolster the economy as a whole. When first introduced in the USA in 1880, is was called the horse-and-sparrow theory: "If you feed the horse enough oats, some will pass through to the road for the sparrows."

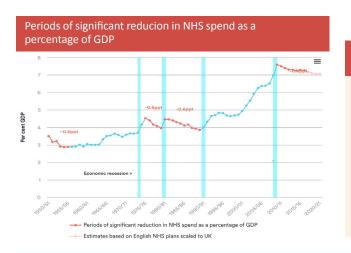
Finally, the political colour of Government makes no difference to the long-term growth rate. The only difference is that a left-of-centre Government is marginally more effective in a recession. From 1950-2008 in the UK the average real growth rate was the same regardless of Government. There is a widely held belief that the Thatcher Government boosted the long run UK growth rate. It didn't. But it did change the mix of business from heavy industry to services.



THE MONEY ILLUSION

During periods of low inflation, employers raise nominal wages without increasing real wages. Employees think they are doing well regardless of the actual rate of inflation. When employees begin to realise this and attempt to grow their real wages, the wage increase demanded is deemed excessive. For example, nurses asking for 17%.

In the last year, average house prices have risen by 8% in the UK and the majority of owners feel happy as a result. But their property wealth is actually shrinking by 3%. This is the money illusion. In real terms, the UK economy is no larger than in 2017, but in money terms it has performed well. And it allows the politicians to claim success.



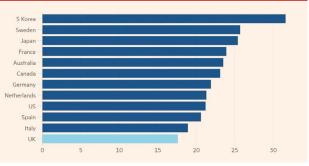


In the UK, since 2010, nominal GDP has grown by 24%; real GDP by just 6%. The real economy has barely grown.

The expression big state is used to imply Government is squeezing out the private by spending a larger proportion of GDP, which damages growth. Most of Government spending is not Government consuming scarce resources. It is Government redistributing existing incomes from those who are young and working, to those who are old and retired. And the demands on our healthcare system rise significantly as the population ages. The share of GDP being spent on health has actually fallen since the peak of 2010, but there are 2.5 million more pensioners.

State pensions are 5% of GDP, state health care is 7% of GDP. So 12% of GDP is being taxed from the young and healthy and redistributed to the old and frail. Unless we introduce euthanasia or further rises in the retirement age, this percentage can only increase. If the whole system was privatized, the percentage of GDP spent would be higher to allow for profit. The outcomes might be better, but the cost would most certainly be higher. The NHS spends 14% of its budget on administrators and managers; not surprising, given the complexity of a 24hr, 350 days of the year operation which is still primarily paper based. Since 2012, the number of hospital beds has reduced by 34,000.





Since the 2016 referendum, the uncertainty created has resulted in investment spend flat-lining. It is now 40% below what it would have been if the pre-2016 growth rate had been maintained. Our productivity growth has consequently dropped to just 0.5% per annum. Additionally, we are short of 3.5 million workers. Our demographics indicate that the workforce will expand by 0.5% per annum. Because of this, the fastest non-inflationary real growth rate is 1% per annum. This is our long run growth rate. No amount of tax changes can alter this. The Truss target of 2.5% is only achievable if productivity quadruples or immigration increases.

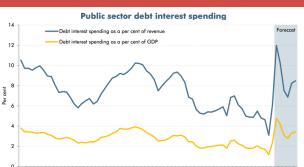
When there is no spare capacity, significant tax cuts only fuel inflation. This happened in 1987, after a Lawson budget. Two years later, the inflation rate was 9% and the inevitable recession followed.

The core problem the UK faces is that very few people understand this. The majority of MPs are economically illiterate. They make growth promises which are unachievable. Neither they, nor most of the population, can accept that an aging population requires a larger share of GDP to be spent on the old and infirm.

Turning to the issue of the National Debt, the November budget is an attempt to stop any further increase in the total debt. On the chart below, you can see that the gap between Government income and spending is forecast to fall. On the right-hand side, you see the outstanding total stabilises at around 96% of GDP. The problem is not the size of the debt, but the cost of its financing.

It is generally accepted by those who buy country debt that a country exhibits higher risk if 10% or more of its tax revenues are paid out in interest payments. This creates a doom loop. Investors ask for higher return to compensate for the risk and the cost of debt rises as a consequence. We saw the cost rise by 1.5% when the Truss budget was announced. The chart shows that the 1987 giveaway budget pushed debt interest to 10% of GDP. Truss repeated this mistake.

Debt Interest



1955-56 1961-62 1967-68 1973-74 1979-80 1985-86 1991-92 1997-98 2003-04 2009-10 2015-16 2021-22 2027-28

THE MYTHS SURROUNDING INVESTMENT SPENDING

The Brits think buying a house is investment spending. There are 1.2 million housing transactions a year. At most, 200,000 of these are new build. New build increases the capital stock of the nation and is therefore investment. However, the remaining 1 million do not. These purchases are not investment but rather an exchange of an existing asset.

If someone purchases a share which is not a new issue, this is not investment. It is a financial transaction. An increase in capital gains tax does not reduce capacity creating investment, but it does reduce the trading volume of existing assets.

The UK invests 17% of GDP. This is the lowest in the EU. The average for the EU is 23%. Norway has a capital gains tax rate of

35% and it invests 25% of its GDP in capital. Denmark has a 42% CGT rate and still invests 23% of GDP. The issue for the UK is that so many people believe buying shares increases investment and that an increase in CGT will reduce the supply of investment funds. The fact is that the bulk of so-called investment does nothing to increase our productivity – it is merely financial engineering.

I am repeatedly told that the 23% increase in the rewards of FTSE company CEOs last year is because they deserve exceptional rewards for exceptional performance. In most cases the increase is a bonus because of earnings per share targets are being met or exceeded. How have they delivered this? In essence by using shareholders money to buy back shares from the market. This reduces the number of shares in issue and therefore boosts EPS and triggers bonus payments. This is clever financial engineering but it in no way reflects business growth.

Until recently, debt has been basically free. So if the balance sheet is loaded with debt, it enhances value for shareholders. Again, none of this improves productivity. Additionally, every 1% fall in sterling against the dollar boosts FTSE profits by the same amount. Sterling has dropped almost 14% since January. Record bonuses will be paid in 2024 unless sterling recovers to the correct value which is \$1.40!

THE BONUS CULTURE BASED ON SHAREHOLDER VALUE IS A SIGNIFICANT CAUSE OF UK DECLINE

The bonus system encourages management to play down the longer-term risks in order to maximize short term profits per share. It is, in effect, an encouragement to exploit shortterm monopoly power more aggressively than before. It also encourages mergers and takeovers which reduce the number of suppliers in any market and therefore allow more price making. Big corporates show growth by buying market share through acquisition. They always tell their shareholders that it is a great strategy. 80% fail to deliver on the promise. The buyer is often a much larger corporate.

In my years working with such corporates, it became clear that their strategy is buying and selling businesses, not building businesses. So we have an emerging pattern. The visionary entrepreneur makes some big bets using their, their family's and their friends' savings (banks are not interested at the start up stage). The business invests in technology, people and equipment. This is productivity and wealth enhancing. The business reaches a certain size and its growth rate stalls. The founder is now bored with the necessary systems required to run a sizeable company, so tunes it for sale. It's bought by a much larger business and, often, the culture which created the business is crushed. Or it's bought by a VC fund and financially engineered for sale five years on. This often, but not always, results in lower investment spending, because investing in the future reduces ROI in the present.



The result is the UK spends 27% less on investment than the average spent by its neighbours. It seems perverse of the UK Government to reduce the tax credits for R&D spend as announced in the recent budget.

THE GLOBAL OUTLOOK

Inflation is too much money chasing too few goods, services, people and real estate. There is a widely held view that current shortages are primarily the result of Covid. I would suggest that 20% of current global inflation at 9% is supply chain constraints, but the remaining 80% is due to excess money i.e. well above normal demand.

Pre-Covid global money supply growth of 6% was consistent with 3% real growth and 3% inflation. During Covid money supply grew by 14%. Real growth was 6% and inflation 9%. NB Putin has added about 3%!

The global economy is rebalancing. The process is straightforward. Inflation reduces real spending and incomes, to match availability of stuff. For example, the fall in the demand for new cars will solve the lack of chips over the next 12 months.

A year from now it is probable that global inflation will be between 3% and 5% with GDP growing around 1-2%. But until then, mild recessions will be experienced by all the major economies. China will grow at circa 2% but it will feel like a recession to them.

The businesses which suffer most will be those with significant debt and a business plan based on post-Covid demand surges. All businesses, apart from start-ups, should ignore data from the Covid period. The pre-Covid growth trend will prove to be a much better indicator of likely demand in volume terms.



The sustainable Global GDP growth rate is 3.5%. Last year it grew at 6.5% as the pressure on scarce resources resulted in average inflation going from 2% pre-Covid, to currently 9%. This was the consequence of excess money creation to finance Covid support. Another China arrived on the earth's surface, with \$17 Tn to spend, but bringing with it no extra labour, raw materials, containers, vessels, semiconductors, or in the case of the UK, competent Government.

The job of inflation is to equalise real spending power with available resources. And it is working.

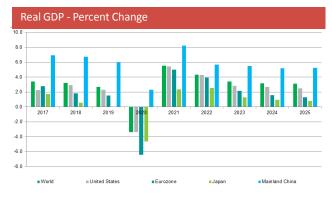
Real global demand has dropped from 6.5% growth to 3.2%, and in 2023, it's likely to fall further to circa 2%.

This means mild recessions in all the major economies. However by the end of next year, the global system will be back in balance and 2024 will see a return to pre-Covid growth trends. This could be derailed if Governments make the error of stimulating growth though debt financed tax cuts (Trussenomics).



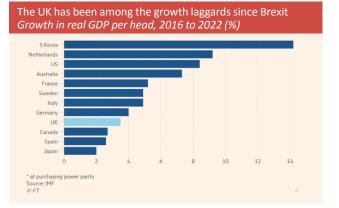
WORLD GROWTH FORECASTS

If you look at the projections I think the forecasts for 2023 are too optimistic. I expect the EU to be close to zero, China to be 3%, global to be 2.5% the USA 0.5%. But for 2024, they seem about right.



WHAT ABOUT THE UK?

The UK faces a unique set of inter-related circumstances. Like all other countries, productivity growth has slowed since the 2008 crash. But unlike other countries, capital investment is now 40% below trend. This is due to significant political turbulence. The Brexit vote and subsequent political machinations have damaged our long run growth rate. There will be those who deny this. For me the evidence is overwhelming. Add to this our demographics, and we have the perfect storm.



The consequence is the UK economy has barely grown since 2016.

In 2016 real GDP per person was $\pm 32,208$. In 2021 it was $\pm 31,793$. In 2022 I expect it will be $\pm 31,400$. CVM means chained volume measure, which in turn effectively means adjusted for inflation!

These numbers are averages. And we all know about the statistician who drowned in a river the average depth of which was 2 feet! The median after-tax and benefits income in the UK was £539 per week, in April 2022.

Currently the UK is short of around 3.5 million workers. This will not change by much; in 2030 we will still be short of 2.9 million given our demographic profile and assuming no mass immigration. 2.9 million is twice the number currently employed by the NHS.

Our workforce is expected to grow by 0.5% pa, assuming productivity grows at the post 2016 rate of 0.5%. The maximum real growth rate with an inflation rate of 2-3% is 1%.

This fundamental is why the Truss budget was moronic, and the markets rejected it. To go for growth at a time of no spare capacity was seen by the markets as inflationary and interest rates would therefore increase significantly not only snuffing out the stimulus, but collapsing the housing market to boot.

Essential infrastructure projects take forever to be implemented. According to the right-wing media, the culprit is our planning system. In fact, the national policy statements which bind Government have been neglected due to revolving ministerial doors. For example, a new water policy statement which would have encouraged more reservoirs was promised for 2019. It has not been delivered. Grant Shapps, in 2021, announced a review of road and rail policy. It has not been completed because Shapps has changed jobs. Ministers have been unable to specify what they want or to explain how their demands for more infrastructure can be reconciled with their desire to protect the environment. An example is Boris Johnson. When PM he was against new onshore wind farms. Now he is favour of them, because the current PM is against them. The nation suffers when politicians behave like children when upset.

THE SUNAK-HUNT BUDGET

UK inflation would be 13% without the energy price guarantee. Real wages are likely to fall by 7% despite £100bn of additional Government support. Tax increases of around £40 Bn and spending cuts to bite in 2024-25 are insufficient to stop the deficit increasing over the next 18 months. The interest bill is already £87Bn. This is not far short of the education budget of £99Bn.

The rightwing press are asking for USA tax levels, with European welfare provision, based on the ridiculous notion that this can be funded by cuts to the Civil service.

So what are the implications? There will be a shallow recession. Highly leveraged businesses will fail; the zombie businesses which have been surviving on free money will fail. There will be record insolvencies and M & A activity. This means significant opportunities for well-run businesses which are unable to expand due to shortages of manpower. Unemployment will increase by 500,000. But we will still be at full employment. There is still a cash pile in the accounts of half the population, although its real value is diminishing. The banking system has strong balance sheets and rising net income.

The clearing out of date-expired businesses will result in some small increases in productivity so in 2024-25 we could see real GDP growth up at 1.8%.



The media reporting leaves a lot to be desired. In the year to July, England saw house prices increase by 16.4%. Clearly there are plenty of buyers with money to spend. The typical purchaser was a couple with combined incomes of £82,000 who paid £296,000 for the average UK house.

Headlines such as house prices fall by 2% which appeared in November are wrong. The growth rate dropped by 2% from 10% to 8%.In December, I expect prices to be flat. i.e. no increase on the previous 12 months.

Chancellor Hunt has been kind to first time buyers: The level at which firsttime buyers have to pay stamp duty has risen from £300,000 to £425,000 and first-time buyer relief will be applicable to properties worth up to £625,000. Previously, the additional first-time buyers' relief only applied to properties costing less than £500,000. It will revert to this level in March 2025.

The number of transactions has returned to normal at 100,000 per month. And real price of the average house is no higher than in 2003.

Real wages are falling by 2.3% currently, and are expected to fall further (the OBR expect a 7% fall over the next two years).

If real incomes fall by 7%, I expect real house prices to do the same. This means no price increases. It doesn't mean nominal price reductions.

I do not expect price falls year-on-year because we are still at full employment.

Mortgage providers always want volume because the margin on a mortgage is small. The Bank of England has relaxed the lending rules so expect plenty of mortgage deals to be available.

600,000 fixed rate mortgages will renewed this year, the majority at rates below 6%. 1.5 million next year will be at rates close to 6%. The impact of this will be felt by retailers and hospitality, not nominal house prices in my judgement. It will be a return to the days when households made significant sacrifices to get or keep a roof over their head.



Some house prices will fall. The discount

will depend on the EPC rating. And eco homes with very low energy costs will enjoy premiums.

UK monthly housing transactions are now back to normal. The rental market will strengthen as would-be buyers run out of purchasing power.

UK Real House Prices

This graph shows that the media message on house prices is misleading. The real price of the average house is the same as 2003.

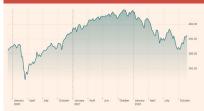




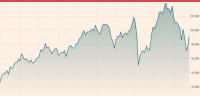


Global share prices reflected global excess money during covid. The global index is adjusting to the fact that, since Covid, the global supply of goods and services has increased by around 6%, but now, the rate of increase is slowing to 2.5%. PE multiples have fallen to below Covid levels in all major economies because real demand is growing much more slowly than the surges post-lockdowns. I don't expect an equity crash, but I don't expect much upside either. In short, the real value of a share portfolio will fall for the next 18 months.

FT Global Share Price Index



UK SharePrice Index excluding top 100 companies



I his is a much better indicator of domestic performance. Top 100 performance is driven by global activity and particularly the sterling dollar exchange rate.

BOND YIELDS

The Bond market indicates the end of cheap money. Yields have risen strongly as investors price in higher inflation. The UK 10 year Gilt yield is an illustration of Government incompetence.

The spike in October is mostly due to the Truss/Kwarteng budget. But now, yields reflect the Hunt budget. If you look at the interest bill on Government debt and add in the £18Bn of QE to rescue some pension funds the Truss debacle has cost us at least £27Bn.



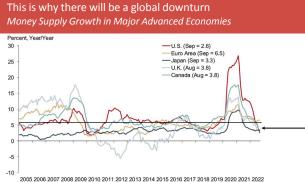
The equity market data indicate a global system rapidly transitioning to pre-Covid trend. The bond market data show the effect of inflationary expectations and the steady unwinding of QE.

THE GLOBAL MONEY SUPPLY

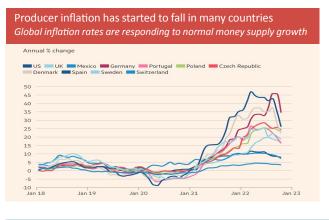
Regular readers will know I firmly believe that today's money supply determines nominal growth in the following 18 months.

Money supply in the major economies shows that inflation over the next 18 months should fall back to pre-pandemic levels. If it doesn't then the global recession will be deeper than expected.

The purchasing power of the monetary surge which occurred in 2020-22 is currently being eroded by 10% a year. At this rate, the global system normalises by 2024.



2005 2006 2007 2006 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 NOTE: The chart plots M2 in the Euro Area, U.S., Japan and Canada and M4 in the U.K.



THE WEATHER

The weather has always mattered when forecasting economic activity. But more than ever since the sanctions on Russia and the reduction in gas supply to Europe. The EU gas reservoirs are now full. Germany has 2.5 months of supply. France has 4 months. The UK has 5 days!

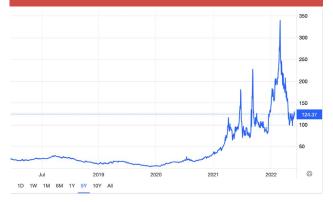
If it is a very cold winter, Germany will ration gas to its heavy industry and the UK will experience power cuts. Real economic activity in both cases will fall. Even with Government support, the price of energy is a key factor when forecasting demand for non-energy items.

The spot price of gas has fallen because reservoirs are now full. If the winter is mild, I would expect it to fall further.

If you believe the media's horror stories, the average middle class Brit will reduce their spend on non-essential items and activity to build their cash reserve in anticipation of a high energy bills. The bottom third of households will not be able to make provision and the demand on food banks will escalate as a consequence, with possible social unrest.



Natural Gas EU Dutch TTF (EUR/MWh) 124.37 | +0.58 (+0.47%)



INTEREST RATES

The normal rate of interest is a country's real growth rate plus 2.5%. But this is when the economy is neither too hot nor too cold i.e. real demand is growing at trend. Historically for the UK this means a base rate of 5%. But given our underinvestment and demographics, real growth at best will be 1.5% so base rate at 4% over the next few years. This would produce money supply growth at around 5% with an inflation rate circa 3.5%. Assuming grown-up decisions by Government, this is the most likely outcome from 2024.



HOW CAN AN INDIVIDUAL BUSINESS GROW FASTER THAN GDP AS A WHOLE?

Simply by having a better value proposition than the competition. Consumers switch and the weaker competitor disappears or is bought out. This Darwinian approach has always been presented as the key driver of productivity. Over the next two years, there will be a radical shift in productivity as the efficient drive out the zombies. In addition, UK based businesses can export and drive out foreign competition. We know Brexit has made this more expensive and time consuming, but the energetic and bloody minded SME owner can make anything work.

There is always space and opportunity for market disrupters. The incumbents (often large corporates) are usually too slow to respond, and instead, financially engineer their business to maintain earning per share growth and/or try to persuade Government to legislate in their favour.

Usually consumers vote with their wallets, and the disrupters win. But it requires significant tenacity.

My biggest wish for 2024 is for the UK Government to stop doing stupid things. Here is the list:

Only change EU embedded law if it will genuinely improve our ability to grow and compete

Drop the expensive requirement for the UK Chemicals Industry to have a UK regulatory framework in addition to the EU.

Stop the UK Kite mark and recognise the EU mark as the global standard.

Stop believing the USA will do a trade deal in our interest.

Stop the Global Britain nonsense.

Recognise that there is a border in the Irish Sea and sit down with the EU to make it as frictionless as possible.

Bend over backwards to maintain participation in the Horizon programme which will be a major source of innovation over the next seven years.

Accept that we are 2.6% of the Global economy. Our biggest market is 24 miles away across the Channel and even though we have left the single market, it is still less expensive to serve than markets 6,000 miles away. Start recognising that our economic problems are homemade, not caused by the EU, and are due to under-investment by Government and big business in the context of an aging population. It is going to be a long haul requiring consistent, grown-up action by Government.

SUMMARY AND CONCLUSIONS

The global economy is transitioning to normal. Transition is never smooth and will result in some countries doing better than others. My opinion is that the USA will be the least affected; the UK and Germany the most affected. Germany because of energy and the slowdown in China, the UK primarily because of foolish political decisions. In mitigation, the Sunak cabinet might just deliver the stable platform business needs to invest and expand. Global growth in 2023 will not exceed 2.5% and the drivers will be the USA and Asia. The global inflation rate should begin to fall towards 3-4% in the third quarter of 2023. The UK will be higher at 4-5%, or 6% if it is a cold winter.

Given our demographics, the UK has to raise the productivity of its existing labour force. This requires significant investment in AI, back-office automation, training and development and ways of attracting and retaining quality employees.

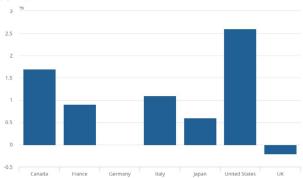
More than ever the mantra is innovate or die, and even if you think change is hard, its better than death.

FORECAST FOR 2023 UK	
If a mild winter Real GDP 0% to -1.5%	
If a severe winter -2.5%	
Earnings growth end 2023: 6%	
Inflation: 5%	
House price growth: 0%	
Base rate: 3.75%	
Fixed rate mortgage circa: 5.5%	
Unemployment: 4.3%	
Exchange rate: \$1.22 €1.18	

I strongly believe a few years of stable mature Government will improve our performance.

The UK is the only G7 economy to not have yet recovered to pre-coronavirus levels of real GDP

UK, real GDP percentage change, Quarter 4 (Oct to Dec) 2019 to Quarter 2 (Apr to June) 2022





JSA Consultancy Servi

London, WC1X oES England T: +44 (0)20 7688 1928 | E: info@jsacs.com W: www.isacs.com

Roger Martin-Fagg

Roger is a graduate of the University of Leicester. He has worked in the New Zealand Treasury, at the Bank of England and, for many years, was Client Director at Henley Management College where he worked with a wide range of businesses. He is a behavioural economist who believes that economic forecasting is an art, not a science and that it is crucial to estimate the nature, size and impact of 'animal spirits' when looking forwards. He believes that Government cannot control the economy; it can only influence the behaviour of economic agents. He was one of the few who forecast the depth of the recent recession based on his anticipation of the behaviour of the banking system. He thinks it is better to be broadly right than precisely wrong when forecasting the future!