



The Long View

The “Japanification” of the West or why real assets are the new bonds

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Given rising fears about a “Japanification” of Western countries, we analyse the similarities and differences between Japan and four prominent Western economies: the US, the UK, Germany and Australia. We find that demographic trends are likely to lead to slower growth, but unlike in Japan, we do not expect inflation to remain low for much longer. Over the coming decade, most Western countries should experience rising inflation and rising real rates. This has significant implications for investors since in this environment, bond returns should be very low and value stocks may outperform growth stocks by a lower margin than in the past. The good news is that the next decade should be beneficial for real assets, such as property, infrastructure and commodities. ”

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Japanification has become a trending hashtag

Since March, the term "Japanification" has been increasingly used in articles about the future of the Eurozone and other Western countries and #Japanification has been trending on Twitter – at least in the nerdy corners where economists and investment strategists like to hide.

Of course, if you ask ten economists what the term "Japanification" means, you will get eleven answers, but in general it describes a tendency for developed Western economies to experience lower trend growth, low inflation (and maybe even deflation), as well as permanently low interest rates. Figure 1 shows how trend growth in the US and the UK has declined significantly since the Global Financial Crisis (GFC), mirroring the decline in trend growth in Japan during the late 1990s and early 2000s.

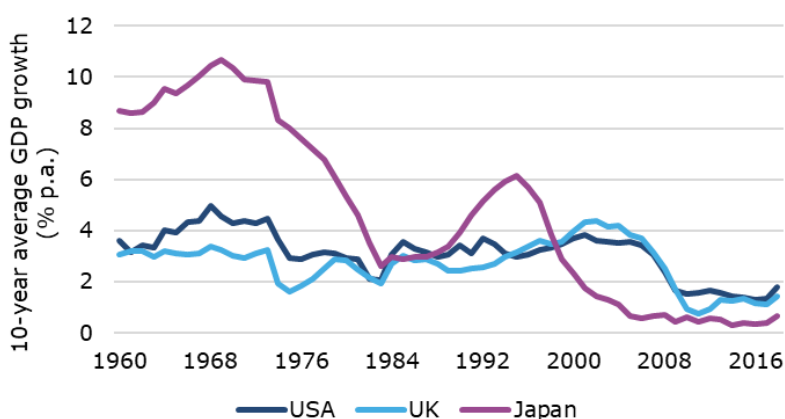
Another similarity of the post-GFC world in the West with Japan is stubbornly low inflation. Eurozone inflation rates are almost identical to Japanese inflation and in some countries, like Switzerland, they have been persistently lower for the best part of a decade. With inflation stubbornly below the typical 2% target of central banks, monetary

policy has approached and shattered the zero lower bound both in the US and in Western Europe, and central bankers have increasingly used unconventional monetary policy measures, first introduced by the Bank of Japan, to stimulate the economy.

In this edition of our "The Long View" series we will look at the drivers of these developments and investigate the similarities and differences between the West and Japan. This investigation will allow us to build a model that predicts long-term developments for growth, inflation and real interest rates for the coming decade. As part of these projections, we will see how conventional monetary policy effects might be turned upside down, and how lower interest rates might lead to slower economic growth instead of stronger growth.

Finally, we will show how our projections for growth, inflation and real interest rates will impact investments from bonds to stocks and alternative investments. As we will show in these sections, investors might have to fundamentally rethink some conventional wisdom about stocks and bonds in their portfolios.

Fig 1: 10-year average GDP growth



Source: Penn World Tables, Bloomberg, Fidante Partners.

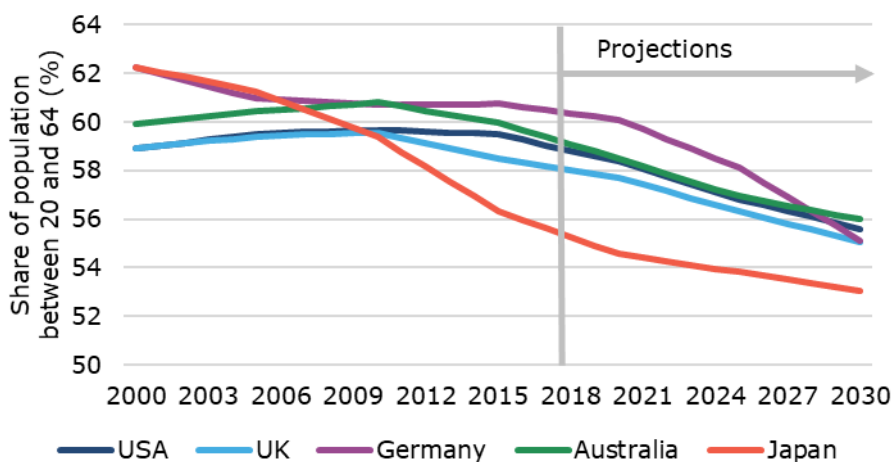
Demographics: Japan is showing the way

The most obvious starting point for a comparison between developed Western countries and Japan is the similarity in demographic trends. Figure 2 shows the share of working age population (aged 20 to 64) in the five countries we will focus on throughout this report: the US, UK, Germany¹, Australia, and of course Japan. All four of these Western countries are experiencing a decline in the working-age population and with it a decline in labour supply, from around 60% of the overall population now to around 55% at the end of the coming decade. Germany faces the steepest decline in labour supply during the 2020s because of lower immigration into this country compared to the Anglo-Saxon countries in our sample. Of course, working-age population is already a mere 55% of the total population in Japan today and demographic projections point towards a decline of this cohort towards 53% in 2030 and below 50% during the decade after that.

This decline in labour supply has several important implications for the potential growth and inflation in Western countries:

- A shrinking labour force should lead to lower potential growth since growth is the product of labour, capital investments and productivity growth.
- Declining labour supply should lead to higher wages as competition, especially for well-educated employees, intensifies. This, in turn, could lead to rising inflation.
- As the share of pensioners increases, fewer workers must pay for more pensioners. If existing social safety nets remain unchanged, this can only be done by increasing taxes, leading to lower consumption by working age people and reducing growth.
- If social safety nets and transfer payments are reduced in order to not increase the tax burden on working age people, this would lead to lower consumption by pensioners, again reducing growth.
- As disposable income declines for either working age people or pensioners, savings rates for these cohorts should decline as well, leading to lower capital available for investment unless real interest rates rise.

Fig 2: Decline of working-age population



Source: UN Population Division, Fidante Partners.

¹ Germany is a stand-in for the Eurozone because we need to work with long-term historical data that is difficult to get for the Eurozone overall. Germany has the additional advantage that

demographic trends are most similar to Japan and interest rates in Germany are lowest within the Eurozone.

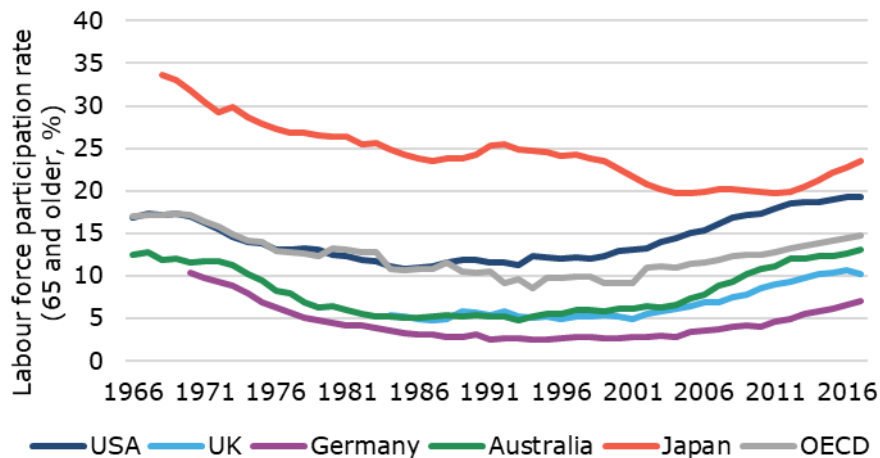
The impact this shrinking labour supply will have on economic growth and inflation will largely depend on the societal reactions to these changes. Two trends are already shaping Western economies in the same way they are shaping Japan.

First, if labour becomes scarcer, businesses can try to substitute labour with capital. The trend towards the so-called “fourth industrial revolution” (Industry 4.0) is effectively a large-scale replacement of labour with capital. The rise of robots in industrial manufacturing has displaced many workers in these industries. The same has happened in farming and other agricultural areas. In the US, the share of the workforce employed in the agricultural sector has declined from 2.5% in 1988 to 1.5% in 2018, while the output of the sector has grown steadily. The coming decade is likely to intensify this displacement of workers in favour of more capital-intensive methods of production. This will inevitably hit unskilled labour and lower educated members of the workforce harder than the more skilled and higher educated ones – a process that leads to higher inequality and increased political tensions. The political backlash to these processes can already be seen in the rise of populist parties on both the left and the right across Europe, and the rise of populist politicians within the established parties in the US.

Assessing the implications of these geopolitical trends for investors goes beyond the scope of this report but will be the subject of an upcoming “The Long View” report later this year.

The second trend seen in Western societies is a tendency for workers to not retire and instead work past the age of 65. Figure 3 shows the labour force participation rate of people aged 65 and older in the five countries we are focusing on, as well as the OECD average. Since the late 1990s we have seen an increasing shift towards delaying retirement in Western societies. This shift has been driven mostly by white collar workers that have physically less demanding jobs, enabling them to work longer. The shift towards delaying retirement is more pronounced in countries like the US that have a less generous social safety net compared to Germany and other continental European countries with higher pension benefits. As people in the West not only live longer but their healthy lifespan increases as well, we expect more people to voluntarily work past the official retirement age. From an economic perspective, this means that these people will continue to contribute to the social safety net through their tax payments, alleviating some of the stress on the social welfare system.

Fig 3: More people are working longer



Source: OECD, Fidante Partners.

This trend towards a delayed retirement is, however, by no means pronounced enough to stabilise the pension systems in the West. In the US, the Pension Benefit Guaranty Corporation that guarantees pensions when private pension funds default on their obligations is already covering more than 10 million Americans today. It is projected to run out of assets in 2025. Even in Switzerland, a developed country with one of the healthiest pension systems in the world, the government-run social security fund is projected to run out of money by 2031.

Given these stresses on public pensions there are only two ways forward:

- If pension benefits are kept in place as they are today, contributions from active workers must rise, which means taxes have to increase and consumption by active workers will decline.
- If pension benefits are reduced, pensioners must make up for the loss of income by using their savings, or face lower living standards and lower consumption during retirement.

We believe that a reduction in benefits for existing pensioners is extremely hard to achieve in practice because of the public

backlash against politicians advocating these steps. With pensioners making up an ever-increasing part of the electorate, their voices will become louder and more influential over time.

Furthermore, the example of Switzerland shows that any reform of pension benefits must overcome high hurdles, even in a country where the people famously increase their own taxes voluntarily. A couple of years ago, a referendum asked Swiss people to change the so-called "Umwandlungssatz", i.e. the percentage of pensions savings in private pension funds that are paid out each year as income. Given the increasing longevity of pensioners, the idea was to moderately decrease this percentage to make pension funds more sustainable. The law was roundly rejected at the ballot box. In fact, the only successful attempts to increase the sustainability of pension systems have been efforts to change the system gradually over a long time, e.g. step-wise increases in the pension age or gradual declines in pension benefits over decades. Given the multi-year time frames of such gradual reforms, we prefer to use the current social safety net in our projections for the coming decade.

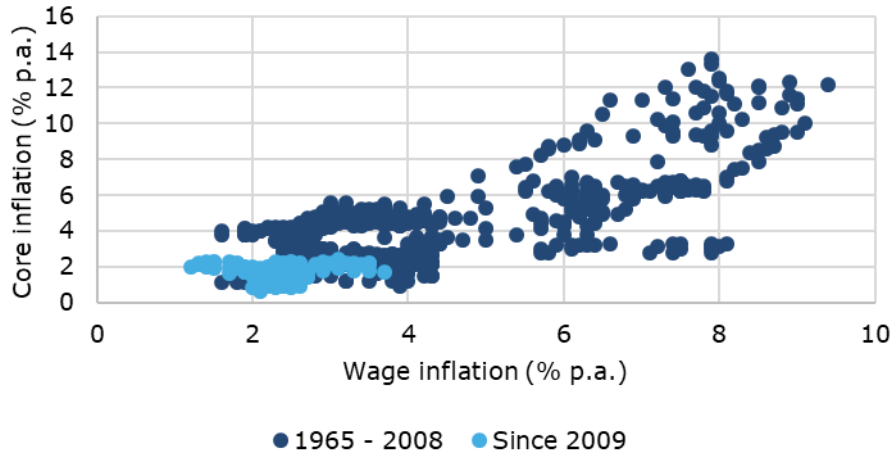
The end of the wage-price spiral

As we have seen in the previous section, the demographic trends in Western countries can have both an inflationary and a deflationary impact on the overall economy. On the one hand, the declining supply of labour should lead to more competition, at least for skilled labour, and should thus trigger rising wage inflation. On the other hand, the increased replacement of labour with capital intensive technologies, like robots and other forms of automatisations, has a deflationary impact on the economy. Which of these forces will prevail is not clear ex ante, but we have increasing evidence that the deflationary impact of technological progress seems to be dominating.

In Figure 4 we show the relationship between annual wage inflation and core

consumer price inflation in the US since 1965. Until the 2000s, wage inflation and core inflation were relatively closely linked with a correlation of +0.74. Whenever wage inflation increased, this translated almost immediately into higher consumer price inflation. The 1970s runaway inflation in the US and the UK can serve as prime examples of how this wage-price spiral can get out of hand if the central bank does not counteract inflationary pressures with effective monetary policy. However, since the GFC, the correlation between wage inflation and core inflation has broken down. Even though wage inflation has surpassed 3% in 2018, core inflation in the US remains anchored around 2%.

Fig 4: The broken wage-price spiral in the US: Exhibit A for the prosecution



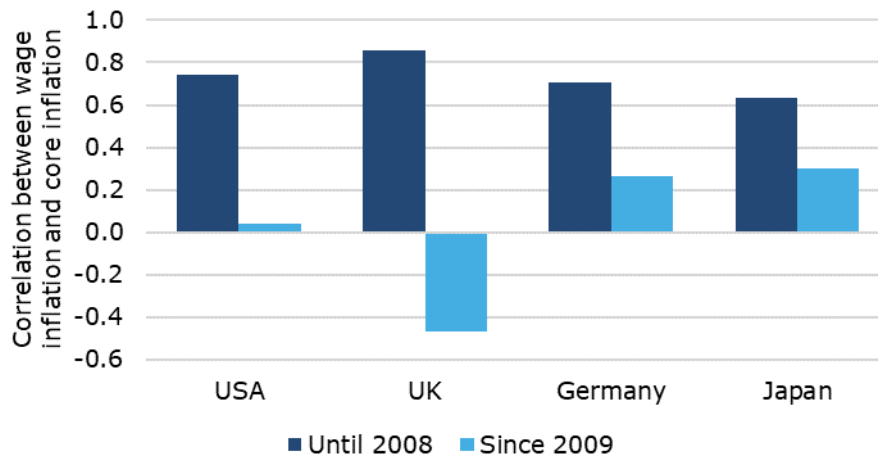
Source: Bloomberg, Fidante Partners.

Figure 5 provides an international overview of this relationship between wage inflation and consumer prices. We see the same trends towards lower correlation between wage inflation and core inflation since the GFC not only in the US but also in the UK, Germany and Japan. Of course, correlation in this case does not imply causation. The breakdown in the classic wage-price spiral might be temporary and be due to the exceptional circumstances of the post GFC recovery.

However, if we look at the inflation rates of goods and services that were increasingly

automatised in the decades before the GFC, we see a trend towards lower inflation rates in these goods well before the GFC. Take for instance the inflation rate for new vehicles. In the 1970s, the average inflation rate was 4.8% and in the 1980s it was 3.8%. Automatisation and global value chains pushed the annual inflation rate down to 1.8% in the 1990s and -0.5% in the 2000s. The identical trend can be observed for furniture and clothing. Compare this to the inflation of rents, which was 2.9% during the 1990s and remains at 2.8% in the current decade, simply because this is not an item that can be globalised or automatised.

Fig 5: The broken wage-price spiral: Exhibit B for the prosecution



Source: Bloomberg, Fidante Partners.

Demographic trends might push inflation higher

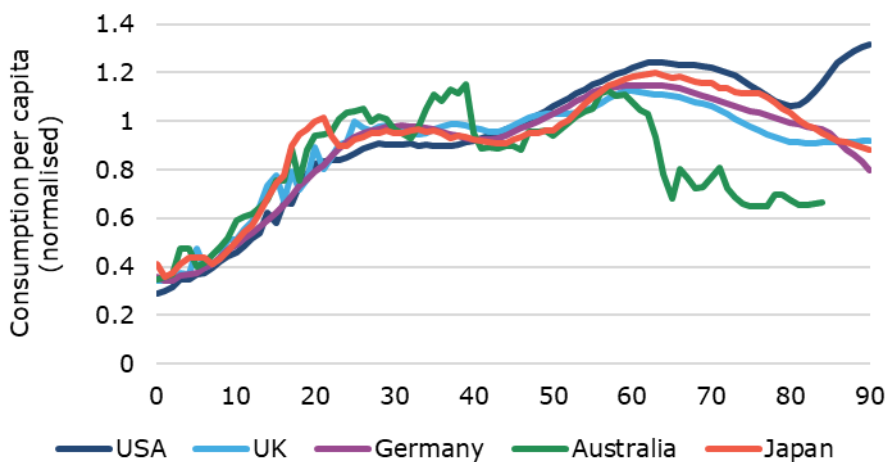
While declining labour supply might not be enough to overcome the deflationary effects of automatization and globalisation, the demographic shifts in North America and Western Europe might still prove inflationary in the long run. The reason for this is the shifting consumption pattern over the lifecycle. Classical economics, with its assumption of rational investors, predicts that people should try to smooth consumption over their lifetime. This means taking on debt when they are young, then saving to pay off the debt and build a nest egg and reduce consumption in old age as needs decline. The reality, of course, looks very different, as can be seen in Figure 6.

We have calculated the average consumption per person in the five countries under investigation depending on age. To make the numbers comparable we have normalised the data in such a way that the average consumption between ages 20 and 64 equals one in each country. Values above one then mean that people in that age bracket consume more than the average consumptions during their working life, while numbers below imply the opposite. Figure 6 shows that consumption per capita increases by about 10% to 20% in early retirement

compared to working age consumption. Consumption remains well above working age averages for pensioners well into their 70s and only declines for very old people².

If we assume that the habits of the retiring baby boomer generation are not significantly different from previous generations, then we have to expect that the demographic shift of the next decade will lead to higher consumption per capita in Western countries. Furthermore, pensioners consume different goods and services than the overall population. Expenditure on healthcare and recreational activities (e.g. vacations) increase, while deflationary goods like new cars, new furniture or electronic goods account for a smaller share of the consumer basket. But inflation rates for healthcare services are on average about two percentage points higher in the US than overall consumer price inflation, and recreational activities are amongst the parts of daily life that are hard to automatise, so there is less room for deflationary trends to take hold. Thus, the personal inflation rate of pensioners tends to be higher than the personal inflation rate for working age people. And this, in turn, should have an inflationary effect on the overall economy as societies age.

Fig 6: Consumption rises in old age



Source: National Transfer Accounts, Fidante Partners.

Note: Consumption per capita is normalised so that consumption between age 20 and 64 equals 1.

² The increase in consumption per capita for very old people in the US is a reflection of the private health care system in that country that forces people to pay

for health care and eldercare out of their own pockets.

Given stable to declining income of pensioners, higher consumption in old age also means that savings rates decline. In an ageing society this implies that the savings ratio of the overall economy declines as well. If savings become scarcer, investments need to pay a higher rate of return to attract enough savings to finance the investments made by the private sector in the economy.

Thus, higher consumption in old age not only implies upward pressure on inflation, but also upward pressure on real rates. Thus, when we model the impact of demographic changes on the economy, we need to make sure we also model the impact of demographic changes on inflation and real rates, as well as the interaction between inflation, real rates and economy growth over time.

The (potential) death of monetary policy

The second dimension along which the term Japanification is commonly used is with respect to the zero interest rate policy (ZIRP) of central banks in developed Western economies. Faced with persistent deflation, the Bank of Japan was the first central bank in history to lower lending rates to zero and when that proved insufficient to stoke inflation, the Bank of Japan engaged in quantitative easing, interest rate targeting for long-dated bonds and even the direct purchase of stocks and ETFs in the secondary market.

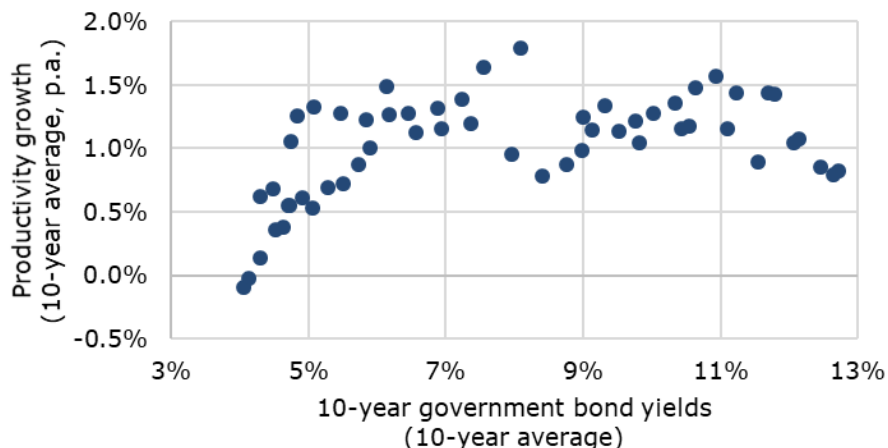
However, the Keiretsu system of cross holdings did not allow for the bankruptcy of what were effectively insolvent banks. These “zombie banks” proved a drag on growth and inflation for many years.

In the US and Western Europe, the banking system was successfully recapitalised after the GFC and we don’t have Japanese-style zombie banks dominating the landscape today – though parts of the Italian and German banking system could be considered zombie banks. The absence of these zombie banks in the West is a crucial difference that might render a comparison of the West with Japan inappropriate, in our view.

Two decades after the Bank of Japan’s target rate hit 0.0%, none of the measures that the bank has taken there proved successful. And this is where the similarities between Japan and the West end. The deflation in Japan was triggered by the implosion of the massive property and stock market bubble in the early 1990s that forced banks, private businesses and households to delever their balance sheets dramatically and cut back on both investments and consumption.

However, there is another effect that is observable in the West since the GFC that needs to be considered when we try to evaluate the long-term effects of ZIRP in the West. It starts with the famous impossibility to push on a string and ends with lower productivity growth, as shown in Figure 7.

Fig 7: Impact of low rates on productivity growth in the UK



Source: Penn World Tables 9.0, Bloomberg, Fidante Partners.

The difficulty with monetary policy is that it is more effective in restricting the lending activities of banks than in expanding it. Just like one cannot push a string, central banks cannot force banks to lend the money they receive from the central bank. If there is not enough demand for additional loans from the private sector, banks will prefer to hold fresh central bank money in the form of excess reserves rather than making potentially costly loans. This effect is even more pronounced when banks can earn a risk-free rate of return by depositing these excess reserves at the central bank. Since the GFC, the Fed pays interest on reserves held in its system while previously it paid no interest on excess reserves. Since this opened the possibility for commercial banks to repair their balance sheet with interest bearing risk-free assets held at the Fed, expanding the Federal Reserve's balance sheet proved largely ineffective in stimulating the economy.

In the Eurozone, the ECB broke with the long-held belief that interest rates cannot be negative and first introduced negative deposit rates in 2014, which were subsequently lowered to -0.4%. This was done in an effort to force commercial banks to withdraw reserves from the ECB and lend them to private borrowers. These measures not only have proven ineffective, they increase the risk of an actual run on the bank and a system-wide collapse in payments. If commercial banks pass on negative interest rates to deposit holders, there comes a point at which deposit fees become so large that depositors have an incentive to withdraw their cash from their bank accounts and store it in a safe deposit box or at home, where it earns a superior interest rate of 0%.

Zero or negative interest rates also lead to a decline in saving within an economy since savers are no longer rewarded with interest income. As savings rates decline, the risk is that the investment to GDP ratio also declines. As long as savings decline less than central bank balance sheets expand, there will be an increasing amount of "money" in the financial system available to be lent out to businesses and households for investment. In this situation, lending activity is essentially limited by the demand for loans, and not by its supply.

The situation changes, however, when savings decline faster than the central bank balance sheet expands. If households reduce their savings after a cut in interest rates or as long-term interest rates decline as a reaction to QE and other unconventional monetary policy measures, the supply of savings to finance loans to businesses and households can only grow if central bank assets increase and banks are willing to lend. If, however, an increase in central bank assets is insufficient to increase the supply of loans – either because commercial banks need to repair their balance sheets and hold excess reserves at the central bank or because interest rate spreads between short-dated deposits and long-dated loans have become so small that making additional loans becomes unprofitable for banks – then the decrease in savings can overpower the growth in assets available for loans. In this case, the decline in household savings could lead to a decline in investments.

In the long run this should lead to declining productivity growth since technological progress is most often the result of investments in new technologies, as well as research and development. Declining investments and declining productivity growth then conspire to produce lower GDP growth as a consequence of lower interest rates and quantitative easing.

Figure 7 shows the ten-year average of 10-year Gilt yields and the corresponding ten-year average productivity growth in the UK since 1950. As long as 10-year Gilt yields in the UK averaged 5% or more, productivity gains per year averaged typically between 1% and 1.5% per year. Since 10-year Gilt yields have declined below 5% in the aftermath of the GFC, productivity growth rates have declined markedly to averages below 0.5% per year. Figure 7 shows the picture for the UK, but the developments in Germany, France and other countries look similar. The "breaking point" at which productivity starts to decline seems to be different in every country, but the tendency for lower interest rates to be accompanied by lower productivity growth remains the same.

Ernest Liu and his colleagues from Princeton University and the University of Chicago demonstrate another pathway for low interest rates to cause lower productivity

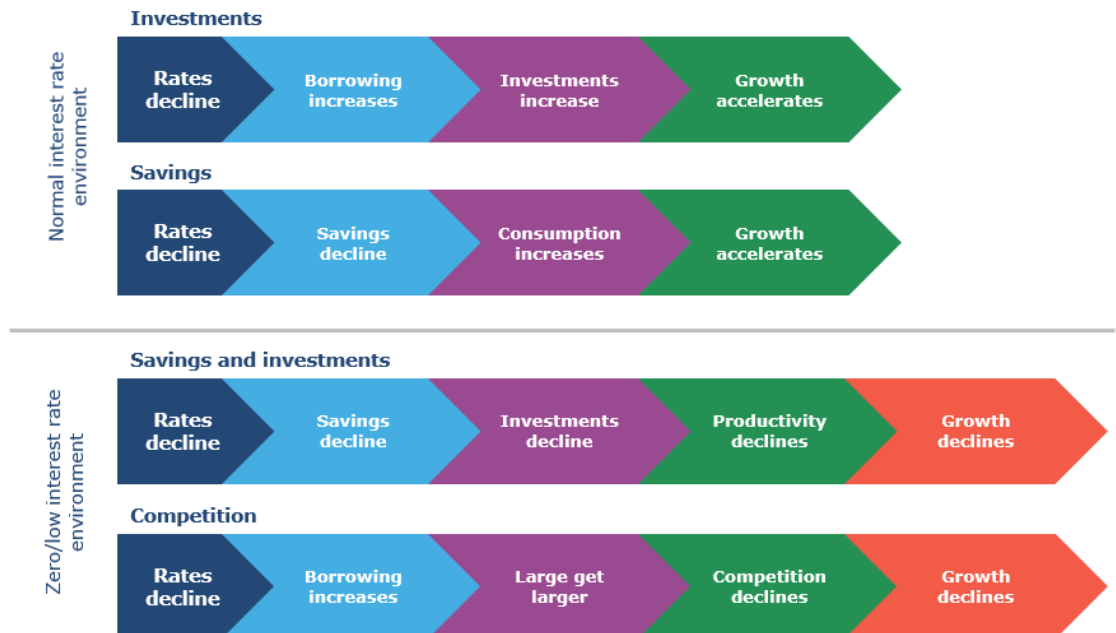
growth³. They show that in a low interest rate environment, a central bank that lowers interest rates even further triggers additional demand for loans by businesses. However, this additional demand is not evenly distributed across the economy. Large companies react quicker and expand their balance sheet at a faster rate than smaller companies. This is possible because larger companies have a bigger balance sheet to begin with and can thus provide more assets to banks as collateral.

This in turn means that the large companies in an industry can grow at a faster pace than the smaller companies. Because interest rates are at or close to zero, the cost of borrowing is minimal, and even in an economic slowdown, interest coverage remains high enough so that large companies do not face bankruptcy. Thus, large companies in an industry not only can grow faster than their smaller competitors, they can also survive longer even if they are less profitable than their smaller peers. This

gives these market leaders the possibility to acquire the smaller competitors in the market (and since interest rates are close to zero the acquisition can easily be financed with new debt). Over time, market competition declines and the large businesses in a given industry become monopolies or oligopolies.

As market competition declines, productivity growth declines as well and the profit margins of the surviving large businesses increase, enabling them to service the existing debt more easily while reducing the need for future investments or productivity growth. In effect, in a zero interest rate world, Liu and his colleagues show how cutting interest rates may not only be ineffective to spur growth, but counterproductive. As interest rates decline, economic growth declines as well (Figure 8). Using data going back to 1980 in the US, they show that industry leaders indeed grew bigger as interest rates declined and the effect of outpacing their smaller competitors was statistically significant.

Fig 8: Monetary policy effectiveness at normal and zero interest rates



Source: Liu et al. (2019), Fidante Partners.

³ Liu, E., A. Mian, and A. Sufi (2019). "Low Interest Rates, Market Power, and Productivity Growth."

Projections, part 1: Slowing in the US, slow in Germany and Japan

Given the various pathways for interaction between demographic factors, interest rates, inflation and growth, we built a structural vector autoregressive (SVAR) model for each of the five countries we focus on in this report. A description of the model can be found in the appendix.

Figure 9 shows the projected average GDP growth rates until 2030 in comparison to the realised growth rates since 2010. To facilitate the identification of overall trends, we group the two decades into blocks of five years.

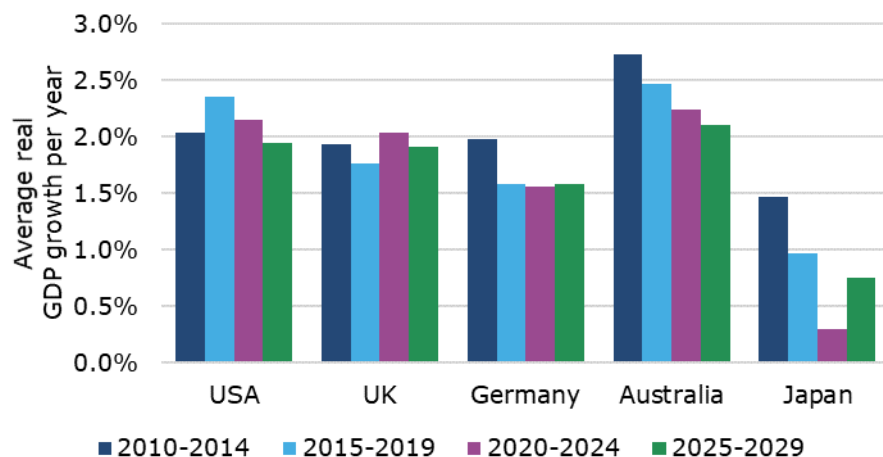
The growth trend projected by our model is similar for most countries and calls for declining growth over the next decade. In the US, growth is expected to drop from 2.4% between 2015 and 2019 to 1.9% on average between 2025 and 2029. This means that growth in the US is eventually decline to levels below the average we have seen in the early years of the current decade and settle at values below 2.0% per

year. Australian GDP growth shows an even more pronounced decline over the coming decade, from 2.5% on average between 2015 and 2019 to 2.1% in the latter half of the 2020s.

Growth in the UK is projected to stay relatively stable at current levels throughout the coming decade, as is the case in Germany. The projected growth in Germany is substantially lower than the projected growth in the UK or the US. Our projections also show that the strong growth Germany experienced during the Eurozone debt crisis was probably a one-off arising from the very weak Euro during this time period.

Finally, our model projects that growth in Japan should remain well below 1.0% per year on average throughout the 2020s but experience an acceleration in the late 2020s as demographic changes are expected to have a reduced influence on the economy while productivity is expected to increase.

Fig 9: Projected GDP growth over the next ten years



Source: Penn World Tables 9.0, Jorda-Schularick-Taylor Macrohistory Database, Bloomberg, Fidante Partners.

Note: Forecasts are subject to estimation errors and may deviate significantly from the performance shown.

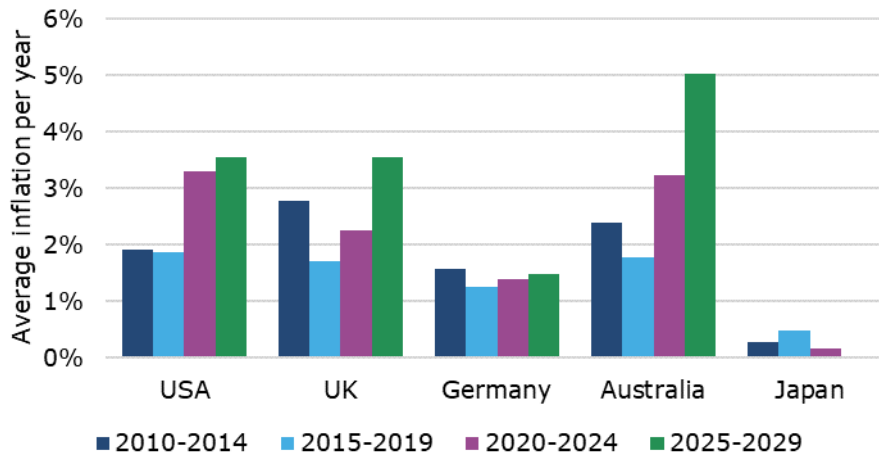
Projections, part 2: No Japanification of inflation

As we have discussed in previous sections, inflation developments very much depend on the size and timing of demographic changes, as well as the impact technological changes have on wage inflation and productivity growth. We emphasise that the results shown in Figure 10 depend on our assumption that productivity will increase towards 1.0% annual growth in 2040. This is a higher annual growth rate than has been observed since the GFC and it means that there is considerable downward pressure on inflation in our model. Nevertheless, the demographic shift towards a larger share of older people with their increased consumption overwhelms this effect of rising productivity growth. As long as future pensioners consume the way current pensioners do, this increased consumption should push inflation higher over the next decade, ending a three-decade long trend towards lower inflation.

In fact, unlike the projected changes in GDP growth, which point towards a continued Japanification of Western countries, the inflation picture is in stark contrast to the developments in Japan. While Japan is projected to be stuck in a zero inflation, or even deflationary, environment for yet another decade, inflation in the US, the UK and Australia is projected to rise quickly throughout the 2020s, without getting out of control. Average inflation rates around 3% may be well above current central bank targets but by no means high enough to cause inflation shocks like the ones we saw in the 1970s and early 1980s.

Finally, we note that of the Western countries we examine here, Germany looks most like Japan. Not only is growth projected to be lower in Germany than in the UK or the US, but inflation hardly picks up throughout the 2020s. Instead, Germany is projected to remain in a low inflation environment for some time to come, with annual inflation rates hovering around 1.5%.

Fig 10: Projected inflation over the next ten years



Source: Penn World Tables 9.0, Jorda-Schularick-Taylor Macroeconomy Database, Bloomberg, Fidante Partners.

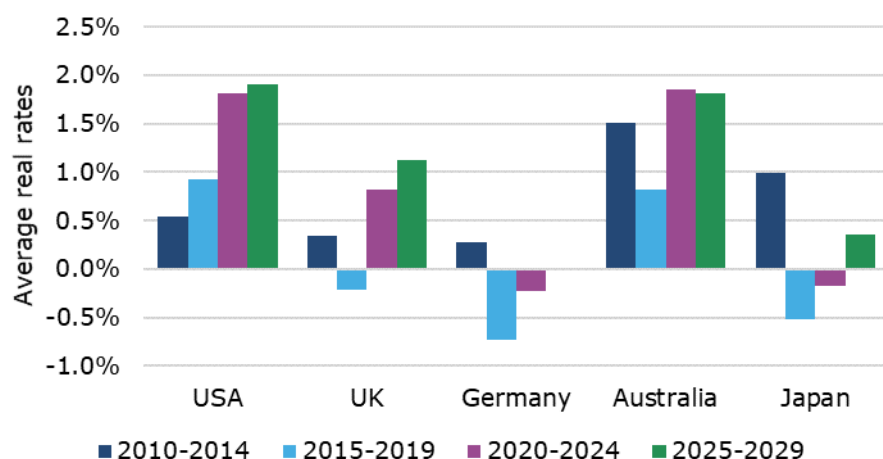
Note: Forecasts are subject to estimation errors and may deviate significantly from the performance shown.

Projections, part 3: Expect rising real rates

Finally, Figure 11 shows our projections for real rates. Despite slowing growth, real rates are projected to rise substantially (typically about one percentage point) by the end of the 2020s. This increase in real rates will be driven by the declining labour force which increases the demand for capital at the same time as consumption increases and savings decline. An equilibrium between the demand and supply of capital is then only reached if

the return on capital increases. As in the case of GDP growth and inflation, the Anglo-Saxon countries in our sample show more dynamism than Germany and Japan, where real rates remain at subdued levels and may well remain negative for most of the coming decade. In the US and Australia, on the other hand, we expect positive real rates that should accelerate in the next five years, while the UK should see a return to positive real rates in the early 2020s⁴.

Fig 11: Projected real rates over the next ten years



Source: Penn World Tables 9.0, Jorda-Schularick-Taylor Macroeconomic Database, Bloomberg, Fidante Partners.

Note: Forecasts are subject to estimation errors and may deviate significantly from the performance shown.

Implications for bond markets: Tough times

The results of our model for inflation and real interest rates allow us to project 10-year government bond yields for the next decade. Figure 12 shows that 10-year government bond yields are expected to rise by more than two percentage points in the US, the UK and Australia over the next decade. The increase in German Bund yields is comparably smaller, with 10-year Bund yields averaging little more than 1% throughout the 2020s.

For investors looking for safe assets, this is bad news. With 10-year Bund yields at zero at the moment, a one percentage point increase in yields would depress the price of

these government bonds by 10%. To cover this loss in value, investors must earn 1% interest per year for ten years. To put it simply, German Bunds no longer provide risk-free return but only return-free risk.

Gilt investors face a similar challenge. The current yield to maturity of a 10-year Gilt is 1.2% and the duration of the current on-the-run 10-year Gilt maturing in October 2028 is 8.8. As a result, if an investor holds a Gilt portfolio with constant duration for the next ten years, the expected drag on performance from rising interest rates is a whopping 22%. Even if spread out over ten years, this still amounts to 2.2% per year.

⁴ We also note that our results for real rates are qualitatively identical to the results and correlates found by Kurt Lunsford and Kenneth West in their

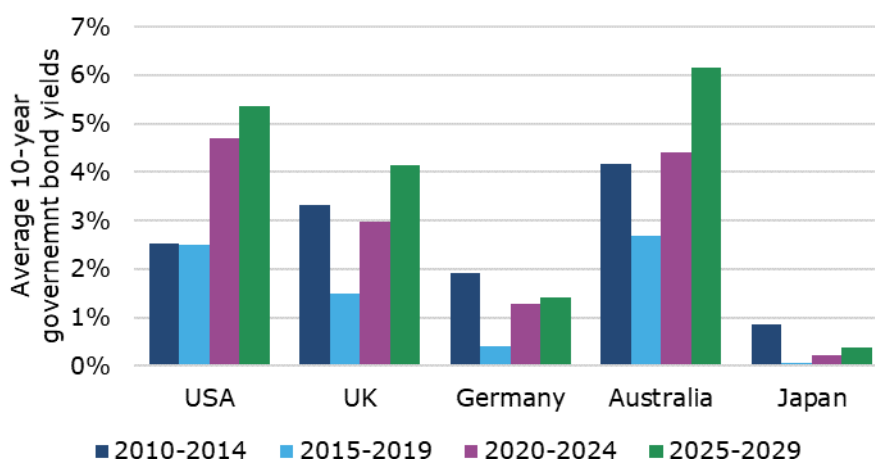
study of US safe real rates (Lunsford and West (2017)).

Worst of all, the anticipated increase of 10-year Treasury yields to 5.5% in the second half of the 2020s implies that a portfolio with long duration will face a 25% drag on performance over the coming decade or c. 2.5% per year.

Given the absence of any significant acceleration in inflation in Japan, it should be no surprise that our model predicts that the Bank of Japan will most likely be unable to normalise interest rates and 10-year government bond yields should remain close to zero. Bad as this sounds, this is good news for Japan and the global economy. As everybody knows, Japan has the highest debt/GDP-ratio of any country in the world. The reason why the Japanese government

can finance this large amount of debt is the low cost of debt. As long as Japanese government bond yields remain close to zero, interest costs for the Japanese government remain stable and the government can continue to service its debt. If Japan faces a sustained increase in government bond yields, the government would have to deal with rapidly rising interest costs eating away large parts of tax revenues. This in turn could fuel a spiral that could eventually lead to a Japanese government default. Our model implicitly predicts that the risk of a Japanese sovereign default remains low.

Fig 12: Projected 10-year government bond yields



Source: Penn World Tables 9.0, Jorda-Schularick-Taylor Macroeconomy Database, Bloomberg, Fidante Partners.

Note: Forecasts are subject to estimation errors and may deviate significantly from the performance shown.

Implications for equity markets: The declining value premium

Our model does not contain any financial market returns, but of course investors are most interested in the impact these projections for GDP growth, inflation and real rates will have on their portfolios. In order to estimate the performance boost or drag these macroeconomic developments will have on different asset classes we estimated a multi-factor model for each asset class using annual data going back to 1950. For each asset class we estimated the historic impact GDP growth, inflation and real rates have on returns and then used our projections for these variables to predict the

performance impact in the future. We emphasise that these estimates are not return estimates, since asset class returns depend on many more factors than GDP growth, inflation and real rates. Most prominently, valuation has an important impact on future returns. Thus, our results shown in this and the following sections should not be interpreted as expected or projected returns but as headwinds or tailwinds to asset class returns that change as the macroeconomic environment changes.

For equity markets, it turns out that the impact of macroeconomic variables on equity

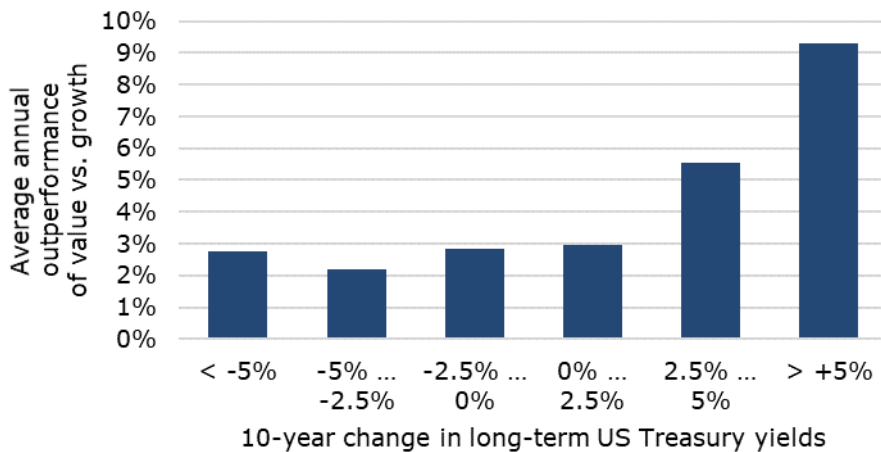
market returns is not statistically significant and thus we cannot make inferences for equity market returns overall. However, there is one area where our projections allow us to make forecasts. The return of value stocks vs. growth stocks depends to some extent on the level and the changes in long-term interest rates. This relationship is driven by the impact long-term interest rates have on both earnings and the discount rates applied to future earnings. On the one hand, rising long-term interest rates lead to rising discount rates and correspondingly to lower valuations of stock markets. Thus, we should expect stock market valuations to decline in the coming decade.

But rising interest rates also impact the growth of corporate earnings. On the one hand, businesses try to pass on rising inflation to end customers through higher prices for their goods and services. Rising real rates, on the other hand, typically are not passed on to end customers but manifest themselves in the form of rising costs of capital. Growth companies, which typically are more leveraged than value companies, feel this effect more and as a result, rising interest rates lead to an underperformance

of growth stocks vs. value stocks. Figure 13 shows the average outperformance of value stocks vs. growth stocks in the US over a decade depending on the change in 10-year Treasury yields over that decade. If Treasury yields drop or remain stable, value stocks outperformed growth stocks only by a small margin. Only once Treasury yields increase substantially do value stocks outperform a lot.

Over the last decade, value stocks have dramatically underperformed growth stocks in the US and worldwide. In Japan, value stocks have been underperforming for so long that one has to wonder if there are any value investors left in that country. Unfortunately, the projected increase in government bond yields over the coming decade is generally not sufficiently large to create a large value premium. While investors should expect value stocks to outperform growth stocks given our projection of rising interest rates and rising real rates, the value premium is most likely going to be substantially lower in the next five to ten years than historic averages suggest.

Fig 13: Change in bond yields and value premium



Source: Kenneth French website, Bloomberg, Fidante Partners. Past performance is not a reliable indicator of future results.

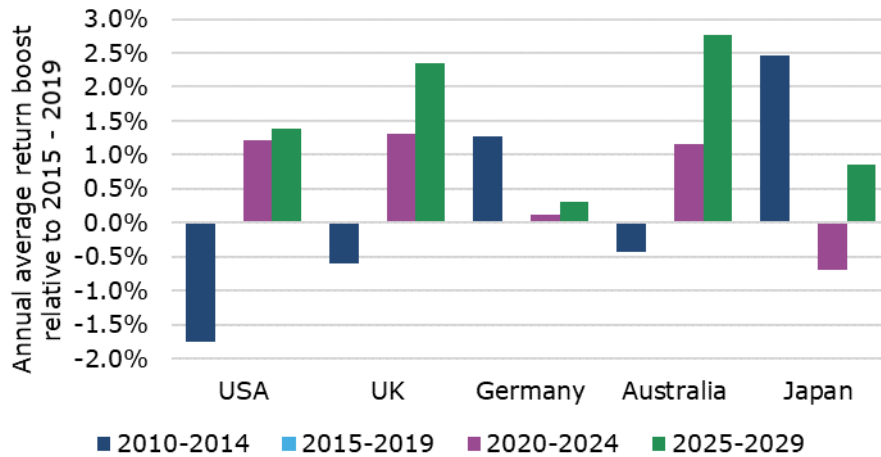
Implications for property markets: Tailwinds for house prices

Similar to equity markets, listed real estate companies show no significant correlation between macroeconomic variables and returns. There simply is too much noise from other factors to establish a reliable relationship. But we can estimate the impact of GDP growth, inflation and real rates on house prices and the valuation of property itself. Figure 14 shows the results of our study⁵.

To nobody’s surprise, property prices react mostly to changes in inflation and changes in GDP growth. In Figure 14 we show how the return boost from macroeconomic changes differs across time. We have normalised the return boost so that it is zero in the current time period 2015-2019.

In the US and the UK, the bursting property bubbles of 2006-2008 had a negative impact well into the early years of this decade. However, with growth accelerating, this drag on return has diminished over time and for the coming five to ten years, our model predicts a boost to returns of 1% and more per year. This return boost is a reflection of substantially rising inflation rates that will overcome the drag from slowing economic growth. Since our model does not predict inflation to pick up significantly in Germany and Japan, it comes as no surprise that property markets in these countries will experience less of a return boost than property markets in the US, UK and Australia.

Fig 14: Expected return boost for house prices



Source: Knoll, Schularick, Steger (2017), Bloomberg, Fidante Partners. Past performance is not a reliable indicator of future results.

Note: Forecasts are subject to estimation errors and may deviate significantly from the performance shown.

⁵ We have used house prices since 1950 as published in Knoll, K., M. Schularick, and T. Steger (2017). "No Price Like Home: Global House Prices,

1870-2012." *American Economic Review*, vol. 107 (2), pp. 331-353.

Implications for alternative investments: Real assets should do well

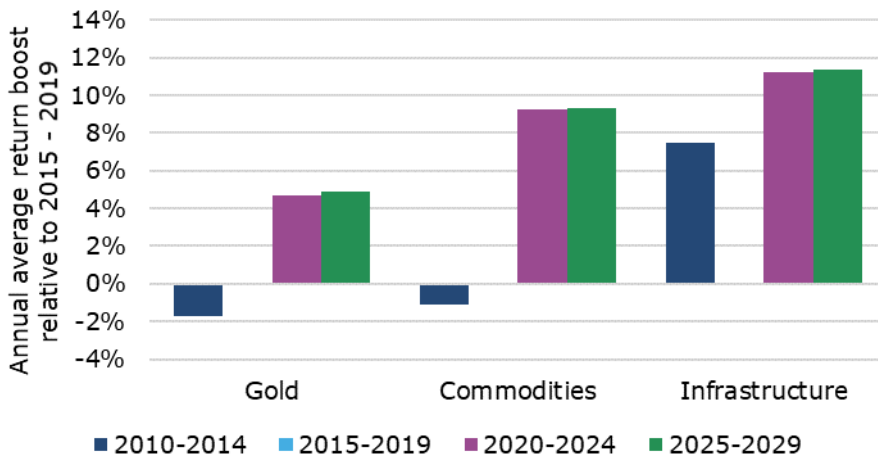
The return boost for property investments already indicates that our macroeconomic projections should support real assets in general, since they help protect a portfolio against rising inflation. In Figure 15 we show the expected return boosts for three additional alternative investments: gold, commodities and infrastructure investments.

Gold prices react most sensitively to changes in inflation and real rates. Given our projections of rising inflation and rising real rates, this means that the net effect on gold returns is unclear since rising inflation should boost returns and rising real rates should depress them. It turns out that our model predicts a return boost for gold in the coming decade as rising inflation dominates the drag from rising real rates. This is in keeping with the results for property returns presented in the previous section, where rising real rates also have a dampening effect on returns.

However, in the struggle between rising inflation and rising real rates, it seems as if investors will be best positioned in protecting against rising inflation rather than rising real rates.

Commodities and infrastructure investments may be the asset classes that benefit the most from the changes in the macroeconomic environment in the 2020s. Rising inflation and an increasing population, with limited declines in economic growth, imply that demand for commodities and infrastructure will remain high in the foreseeable future. Especially defensive, less cyclical assets within commodities and infrastructure, such as agricultural commodities and regulated utilities, should be at an advantage since these investments provide inflation protection together with some protection against declining growth.

Fig 15: Expected return boost for commodity and infrastructure investments



Source: Bloomberg, Fidante Partners. Past performance is not a reliable indicator of future results.
 Note: Forecasts are subject to estimation errors and may deviate significantly from the performance shown.

Conclusions: We need new tools for new challenges

The macroeconomic challenges for the coming decade will be different from the challenges we faced during the last seven decades since the Second World War. As the baby boomer generation retires and the working population shrinks, the supply of labour will decline while the need for transfer payments via social security, pensions, health insurance and eldercare will increase. If social safety nets remain largely unchanged in the coming decade, as we expect, these developments will put increasing pressure on workers and the government alike. The result is likely to be slowing trend growth in the coming decade, particularly in the US and the UK, while growth in Germany and Japan should remain subdued.

Unlike any time before, developed economies have to face these growth challenges without any effective monetary policy tools. Ten years after the GFC, monetary policy rates in the West remain close to zero and policy overall remains very accommodative. At the same time, all the unconventional monetary policy measures taken over the last decade have failed to stoke inflation so far. This is why some investors fear a Japanification of the West.

Our study shows that Western economies face a similar fate to Japan in terms of growth, but not in terms of inflation. An ageing population in the West should lead to rising consumption and increasing demand for "high inflation" medical and recreation services. Because the measures taken by the central banks in the West in the aftermath of the GFC were different from the measures taken by the Bank of Japan after the Japanese property bubble burst, with banks

in the West being quickly recapitalised, we expect the current low inflation environment to come to an end in the next few years. Throughout the 2020s, we expect inflation to rise moderately towards 3% per year. This is a key difference in our projections to the Japanification scenario. The only country in the West that comes closest to the path of Japan seems to be Germany, where inflation and interest rates are expected to remain subdued for a long time without dropping to the lows seen in Japan.

Investors need to prepare for this changing environment. This study has shown that government bonds will likely provide limited to no protection against declining growth, as rising inflation and rising real rates will be such a big drag on returns that substantial returns will only be achievable in circumstances such as market crashes or during the height of a recession. In fact, our projections indicate that government bonds will best be implemented as tactical tools in a multi-asset portfolio rather than a strategic holding.

Real assets, on the other hand, are likely to be the investments that get the biggest return boost from the economic developments of the next decade. Whether it is property investments, commodities or infrastructure, their ability to protect against inflation while providing stable cash flows turns them into the new bonds. Given these projections, investors are in our view best served by increasing allocations to real assets at the cost of fixed income. It is as if portfolios in the future should not be dominated by fixed income investments with an addition of real assets, but by real assets with an addition of fixed income.

Appendix: Description of our structural VAR model

We build a structural VAR model with three endogenous variables:

- Real GDP growth since 1950 taken from Penn World Tables v. 9.0⁶.
- Consumer price inflation since 1950 from the Jorda-Schularick-Taylor Macrohistory Database⁷.
- Long-term real interest rates taken as the 10-year government bond yields from the Jorda-Schularick-Taylor Macrohistory Database minus the rolling five-year average of consumer price inflation.

The number of lags chosen for the endogenous variables is one and we use annual data throughout.

We add exogenous variables to the model that cover the projected demographic changes. We also add other macroeconomic variables that have been proven to have a statistically significant effect on real rates and inflation. The selection of the exogenous variables considered is based on recent work by Kurt Lunsford and Kenneth West⁸:

- Total factor productivity (TFP) growth taken from Penn World Tables. We assume that TFP growth trends towards 1.0% in 2040, which is an optimistic assumption since it is the long-term average of TFP

growth rather than the lower averages recorded since the GFC.

- Private consumption growth taken from Penn World Tables.
- Investment share of GDP taken from Penn World Tables.
- Debt/GDP ratios taken from Jorda-Schularick-Taylor Macrohistory Database.
- Volatility of GDP growth and private consumption growth taken from Penn World Tables.
- Total population growth taken from the UN Population Division⁹, including projections until 2030.
- Growth of the young population aged 19 or under from the UN Population Division.
- Growth of the working age population (aged 20 to 64) from the UN Population Division.
- Growth of the retired population (aged 65 and over) from the UN Population Division.
- Dependency ratio defined as working age population divided by the sum of young and retired population.

In order to reduce the number of variables we need to estimate, we successively eliminate exogenous variables that do not have a statistically significant impact (p-level > 0.05) on the endogenous variables of the SVAR.

⁶ Feenstra, R., R. Inklaar, and M. Timmer (2015). "The Next Generation of Penn World Table." *American Economic Review*, vol. 105 (10), pp. 3150-3182. www.qgdc.net/pwt

⁷ Jorda, O., M. Schularick, and A. M. Taylor (2017). "Macrofinancial History and the New Business Cycle Facts." *NBER Macroeconomic Annual 2016*, vol. 31, Chicago. <http://www.macrohistory.net/data/>

⁸ Lunsford, K. G. and K. D. West (2017). "Some Evidence on Secular Drivers of US Safe Real Rates." Cleveland Fed Working Paper 17-23.

⁹ United Nations, Department of Economic and Social Affairs, Population Division (2017). *World Population Prospects: The 2017 Revision*. <https://population.un.org/wpp/>

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