

ANALYSIS
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Slowcession

Introduction

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Slowcession

BY MARK ZANDI

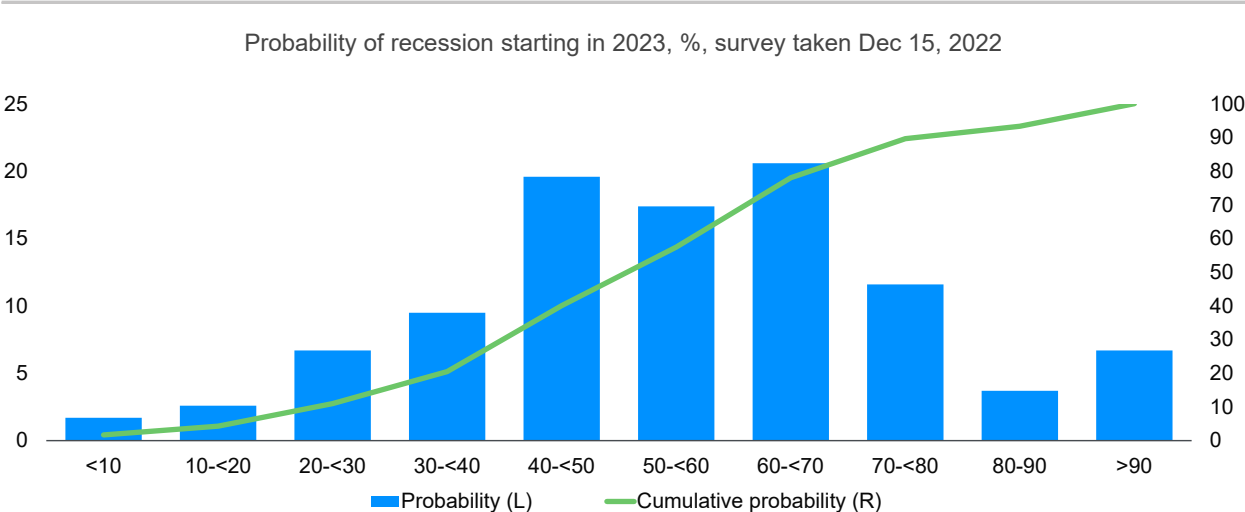
The U.S. economy will struggle in 2023 with halting growth and higher unemployment. Recession is a serious threat. But the Moody's Analytics baseline forecast—the most-likely outlook—holds that the economy will avoid a downturn. Call it a slowcession.¹

The U.S. economy is sure to have a difficult 2023 as the Federal Reserve continues to aggressively push up interest rates to quell the painfully high inflation (see Table 1). The federal funds rate, which was at the zero lower bound a year ago, has surged to near 4.5%, and strong signals from the Fed say it will soon go higher. Investors anticipate a funds rate close to 5% in the next few months.

Recession pessimism

Expectations are strong that high and quickly rising interest rates will push the economy into recession at some point in 2023. This includes everyone from CEOs—J.P. Morgan's Jamie Dimon has proclaimed a coming economic "hurricane"—to a meaningful majority of economists in various consensus surveys. Most recently, economists put the probability of a recession starting in 2023 at close to two-thirds (see Chart 1).

Chart 1: Consensus Is Convinced Recession Is Dead Ahead



Source: Moody's Analytics

¹ This description of the economic outlook was coined by Moody's Analytics Deputy Chief Economist Cristian deRitis.

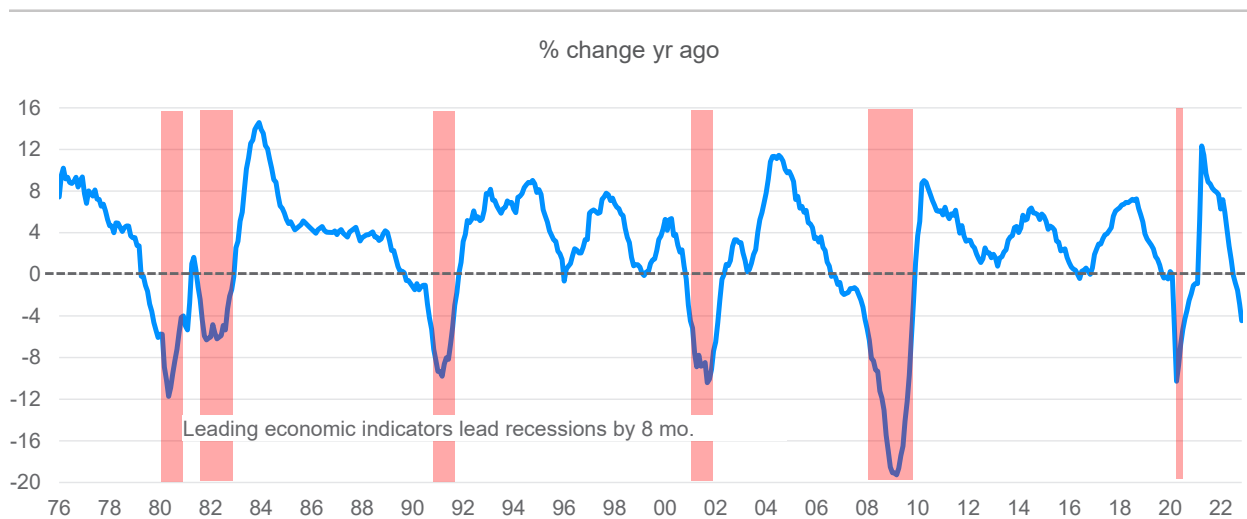
Given how deep this recession pessimism runs there is reason to worry that it could be self-fulfilling. Recessions are ultimately a loss of faith—a loss of faith by consumers that they will hold on to their jobs, causing them to curtail their spending, and a loss of faith by businesses that they will be able to sell what they produce, causing them to lay off workers. A self-reinforcing vicious cycle—a recession—takes hold.

To be sure, a recession in the coming year would be consistent with many past business cycles in which the economy overheated. That is, undesirably high inflation was ignited by a fast-growing economy operating beyond full employment, forcing the Fed to quickly raise interest rates, which ultimately undermined the economy and ended in recession. More often than not when the Fed has battled high inflation, its effort ultimately has precipitated a downturn.

A coming downturn would also be consistent with many tried-and-true leading indicators of recession. Most notable is the deep inversion of the Treasury yield curve. When the two-year Treasury yield rises above the 10-year Treasury yield a recession invariably happens more than a year later. The two-year rose firmly above the 10-year in July. The long lag between inversion and recession likely reflects how long it takes for a tightening in monetary policy to fully impact the economy.

The Conference Board's leading economic index presages a similarly dark economic outlook. The index is a compilation of 10 indicators that have historically led recessions. They include the shape of the yield curve, measures of interest rate-sensitive manufacturing and housing activity, and labor market indicators. When the index falls sharply on a year-over-year basis and most of the indicators are down, as is now the case, recession follows six to 12 months later (see Chart 2).

Chart 2: Leading Indicators Sound the Recession Alarm



Sources: The Conference Board, Moody's Analytics

Reining in inflation

There is no doubt the economy will struggle in the coming year as the Fed works to rein in the high inflation, but the baseline outlook holds that the Fed will be able to accomplish this without precipitating a recession. That is, it will be able to raise rates high enough, fast enough to sufficiently quell the wage and

price pressures, but not so high and fast that it knocks the wind out of the economy. This is a scenario that we might well call a slowcession—growth that comes to a near standstill but that never slips into reverse.

Recent developments are consistent with our more sanguine baseline view. Particularly important are lower oil prices. The price of West Texas Intermediate has dropped to near \$80 per barrel and is back near where it was prior to the Russian invasion of Ukraine. This is down from a peak of more than \$120 per barrel in June, and not much higher than our estimate of the equilibrium price of oil—the price of producing and transporting the last barrel of oil to the global markets. Gasoline prices are quickly falling in response. The cost of a gallon of regular unleaded is closing in on \$3, down from this summer's record high of \$5.

Weighing on oil prices are the weak Chinese economy, which is crimping the demand for oil, and the so-far successful implementation of the European Union's sanctions on Russian oil and a price cap on Russian oil imposed by Western governments. This, despite OPEC's recent production cuts. Although oil prices are not likely to remain this low for long, since the Chinese economy will revive and Russia may yet respond more forcefully to the sanctions, the global oil market is adjusting admirably to the severe disruption caused by the Russian invasion.

The inflationary impact of the COVID-19 pandemic is also set to finally fade away. Freight rates are already down, and purchasing managers are reporting an easing in supply-chain bottlenecks. Also, China's recent decision to end its zero-COVID policy means that country will no longer impose debilitating lockdowns to contain the virus. It will take time for China's economy to get back to full speed, in part because it is now being hit by a wave of infections. But once that wave passes, likely by summer, global supply chains should fully settle.

Back to target

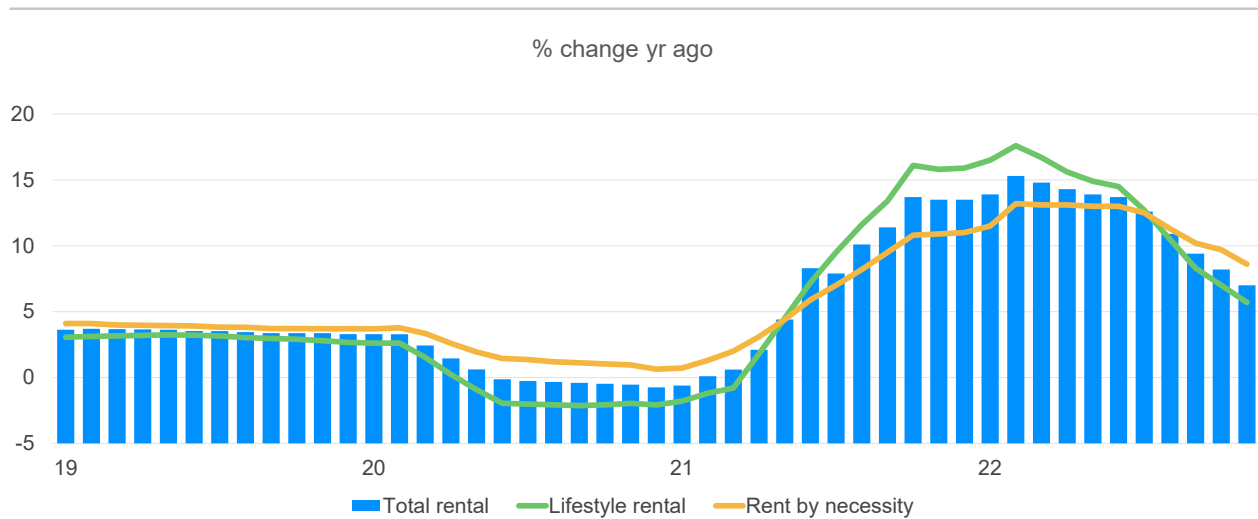
Inflation will have taken another big step back by this time next year. By then, the recent sudden stop in rent increases on new apartment leases will show up as much slower growth in the cost of housing services. Weak new rents reflect soft demand for rental units. A surge in rents last year after the pandemic lockdowns made renting unaffordable for many. There is also more supply of rental units as a record number head to completion. Supply-chain problems, which limited the delivery of necessary building materials and appliances, are easing, as are labor shortages with the pandemic no longer significantly obstructing the number of foreign immigrants working in the construction trades (see Chart 3).

Getting inflation all the way back to the Fed's inflation target will require a significant moderation in wage growth, allowing labor-intensive healthcare and other service providers to throttle their price increases. Much of this script is still to be written, but recent job-market data show this is already beginning to happen. Monthly job gains have slowed to near 250,000, which is not too different from the growth in labor force supply, and traditional measures of slack in the job market have eased, such as unemployment and the employment-to-population ratio. Wage gains also appear to have topped out and are slowing quickly in industries such as leisure and hospitality and retailing, where until now they have been strong. To ensure inflation returns to the Fed's target, job and wage growth will need to slow much more. But we are well on our way.

Healthy finances

Adding to optimism that a recession is avoidable are the economy's generally solid fundamentals. Typically, prior to recessions, the economy is plagued by significant imbalances such as overleveraged households and businesses, speculative asset markets, an undercapitalized financial system that has extended too much

Chart 3: Rent Growth Rolls Over



Sources: Yardi, Moody's Analytics

credit, overbuilt real estate markets, or financially stretched state and local governments. For the most part none of these imbalances exist today.

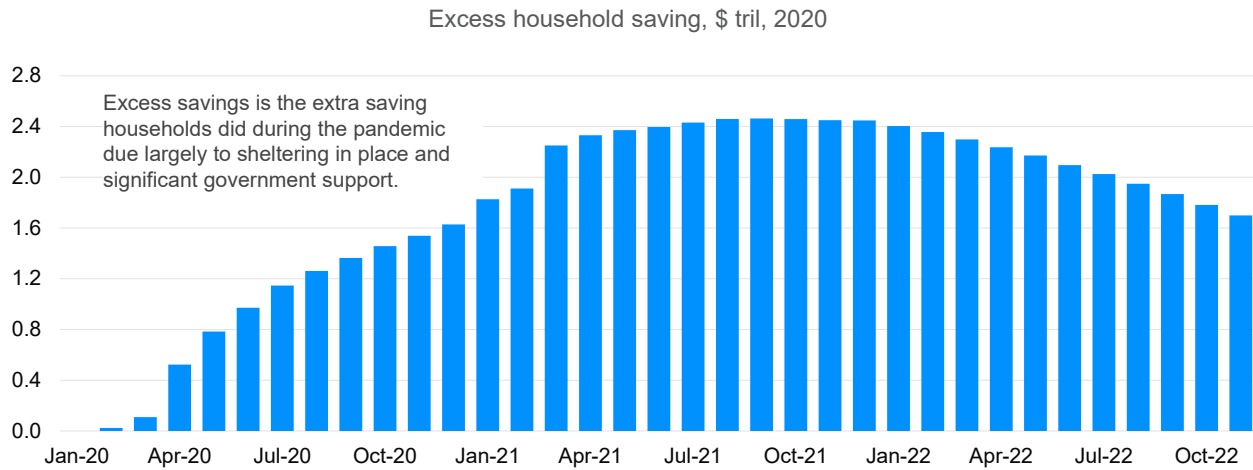
First are the healthy finances of the typical American household. Despite everything from the pandemic to the Russian invasion of Ukraine, there are plenty of jobs, unemployment remains low, and layoffs are about as low as ever. Tech, housing-related and financial services companies are cutting payrolls, but those losing their jobs are quickly finding new ones.

Many households saved a lot more than usual during the pandemic; stuck-at-home families were not able to spend like they normally would. Middle-income and especially high-income households are flush, and while they are now drawing down their checking accounts, they still have plenty of cash to supplement their purchasing power—an estimated \$1.7 trillion as of November. Most households have also done a good job managing their debts. The share of their incomes going toward principal and interest payments is near a record low, and for the most part these payments will not increase with the higher interest rates. Through the various mortgage refinancing waves of recent years, households paid off higher-cost and variable-rate credit card debt with long-term, fixed-rate mortgages (see Chart 4).

In our consumer-oriented economy, shoppers are the firewall between an economy in recession and an economy that skirts a downturn. While the firewall is sure to come under pressure, particularly as financially hard-pressed low-income households struggle, it should continue to hold.

American businesses are also in good financial shape. They are making lots of money, with close to record profit margins. They have been careful, for the most part, not to take on too much debt, and they were good at locking in record-low interest rates when those were available. Businesses are also investing in labor-saving technologies and improving the resilience of their supply chains, as they adjust admirably to pandemic-related disruptions. Some businesses are sure to run into trouble as the economy slows. They will be forced to cut jobs and investments, but most of these will be companies levered up by private equity firms that were looking to juice their returns. There are not enough of these companies for their cuts to become an economywide problem.

Chart 4: Excess Saving Is Drawn Down, but There's Plenty Left

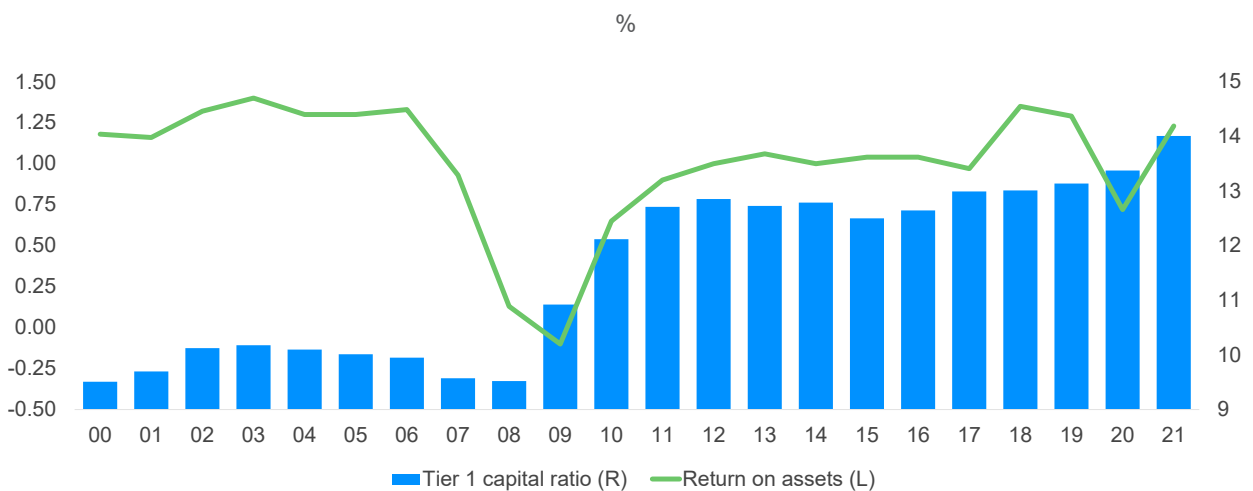


Sources: BEA, Moody's Analytics

Well-capitalized banks

The nation's banking system is on about as strong financial ground as it has ever been. In the wake of the financial crisis more than a decade ago, regulators have required banks to hold substantial amounts of capital—the financial cushion to absorb losses on loans and other investments. They must also engage in stress tests to determine how they would perform in the most difficult conditions, like a pandemic, and make appropriate changes. It is working. There is neither too much credit (like before the financial crisis when lenders gave loans to households and businesses that could not reasonably pay them back) nor too little credit (like after the crisis when even credit-worthy borrowers could not get loans in that credit crunch). Credit growth is just right (see Chart 5).

Chart 5: Banking System Rock Solid



Source: Moody's Analytics

Low vacancy, flush governments

Prior to recessions, overly optimistic developers typically build way too many homes. Vacancy rates are high and rising. Homebuilding thus collapses when conditions turn unfavorable, exacerbating the economic downturn. Not so this time. Homebuilding has consistently lagged housing demand since the financial crisis, resulting in record-low vacancy rates and a severe shortage especially of affordable housing. We estimate the shortfall at near 1.6 million homes, about the number of homes built in a typical year. While housing is under pressure from the recent surge in mortgage rates and decline in affordability, the shortage of housing should put a floor under the market.

State and local governments are also in tip-top financial shape with overflowing rainy-day funds. Tax revenues have been strong until recently, and the American Rescue Plan, the massive federal fiscal support package passed early in the Biden administration, set aside hundreds of billions for local jurisdictions. In most recessions, state and local governments are in precarious financial straits and given their balanced budget requirements have no choice but to make cuts in jobs and programs, further hurting the economy. There is little prospect of this happening this time around.

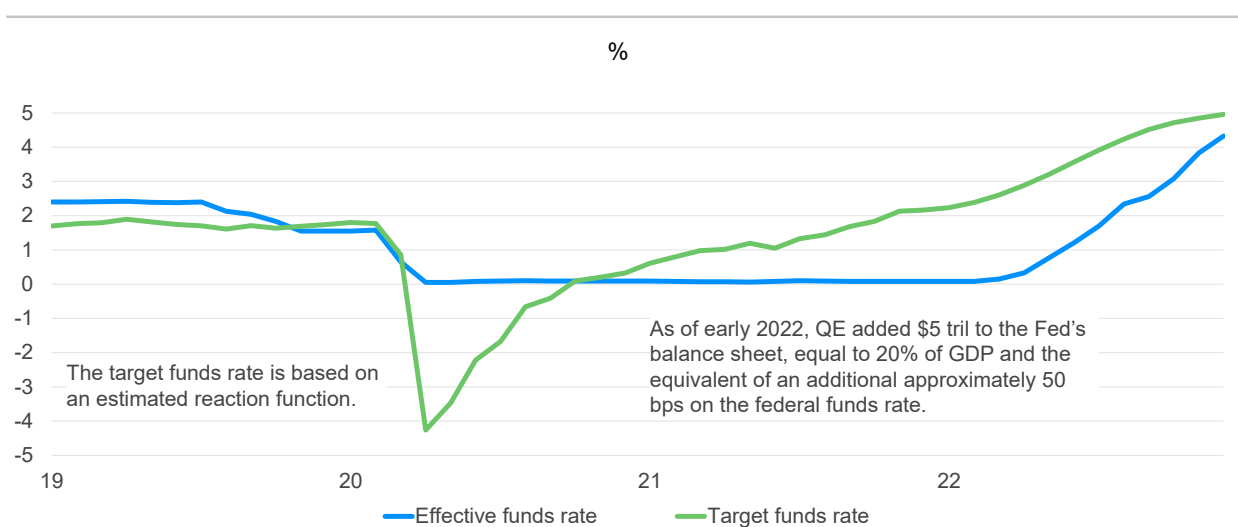
Fed misstep

Despite the improving inflation outlook and sturdy fundamentals, the economy faces a number of serious threats that could quickly push it into recession. Most significant is the prospect of the Fed making an error in setting monetary policy, sparking a recession that would have been unnecessary to achieve its inflation target. Getting policy right is never easy, but it has been particularly difficult given the wild swings in growth and inflation caused by the pandemic and Russian invasion.

This is evident from the mistake the Fed was making a year ago; it had waited too long to begin normalizing policy from the extraordinary measures it took at the height of the pandemic. A year ago, the federal funds rate was still at the zero lower bound and the Fed was continuing its quantitative easing—purchasing Treasury and mortgage-backed securities—to push down long-term rates. This was inconsistent with economic and financial market conditions at the time. Indeed, the Fed's reaction function used in our macroeconomic model of the economy, which is based on various factors including inflation, inflation expectations, unemployment, the full-employment unemployment rate, financial conditions, and the value of the U.S. dollar, suggests the funds rate should have already been at 2.5%. This is in line with most estimates of the so-called equilibrium rate, or r -star—the rate that is neither supporting nor restraining economic growth. It is unfair to be overly critical of the Fed. It was impossible at the time to know how serious the fallout from the pandemic and Russian invasion would be. In hindsight, though, the Fed's inaction was a mistake that helped to entrench inflation (see Chart 6).

Monetary policy since then has nearly caught up with current economic and financial market conditions. The reaction function suggests the funds rate should be close to 5%, consistent with investors' current expectations of the terminal funds rate—the highest the funds rate will go during this rate cycle. But it is reasonable to worry that the Fed will make another misstep given the highly uncertain environment and the Fed's clear difficulty navigating through it. This time the most likely error would be for the central bank to continue raising rates well above 5%, precipitating a recession in an unnecessary effort to ensure inflation is not a problem. A less likely Fed error would be to end the rate hikes prematurely, perhaps on a thought that inflation is set to moderate. But instead, inflation becomes more endemic. The Fed would not be able to let that stand and would ultimately hike rates more aggressively than before, causing a recession, albeit not until 2024.

Chart 6: Federal Reserve Scrambles to Catch Up



Sources: Federal Reserve, Moody's Analytics

Financial fault lines

There is also the threat that something in the financial system breaks under the weight of the high and quickly rising rates. This has not happened so far. Asset prices have corrected, but the retreat has been more or less orderly. Households are less wealthy given the last year's decline in stock, bond and crypto prices, and house prices seem set to fall substantially. Nevertheless, households remain wealthier than they were even before the pandemic, and the impact on household spending has been hard to see.

Things could quickly change, of course. The decline in stock prices to date has been largely caused by the surge in interest rates, as investors have yet to discount a meaningful decline in corporate profits. As a reminder, stock prices equal the discounted present value of expected future profit growth. Stock prices fall if the discount rate rises and/or investors anticipate a tough economy and weaker profits. Rates are up a lot over the past year, but investors' profit expectations have held up. This is different from bear markets in the lead-up to past recessions.

However, earnings are sure to weaken, and if investors then meaningfully mark down their earnings forecasts, stock prices could take another big leg down. The loss of wealth may be too much for households to shrug off, and they will pull back on spending—the consumer firewall burns down.

The decline in house prices could also be more severe than expected. We project a close to double-digit peak-to-trough decline in house prices through mid-decade as the market adjusts to the last year's doubling in fixed mortgage rates. House prices soared throughout much of the pandemic, and combined with higher borrowing costs, housing affordability and demand have been hit hard. While the coming house price declines will be significant, they should be limited by the severe shortage of homes—the homeowner vacancy rate is at a record low—and only a modest increase in foreclosures and distress sales. The latter is because of the strong mortgage underwriting and the widespread adoption of plain vanilla 30-year fixed-rate mortgages since the financial crisis.

However, when house prices decline meaningfully and more homeowners become upside down on their mortgages (the value of their homes falls below the mortgage debt they owe) and incomes are disrupted

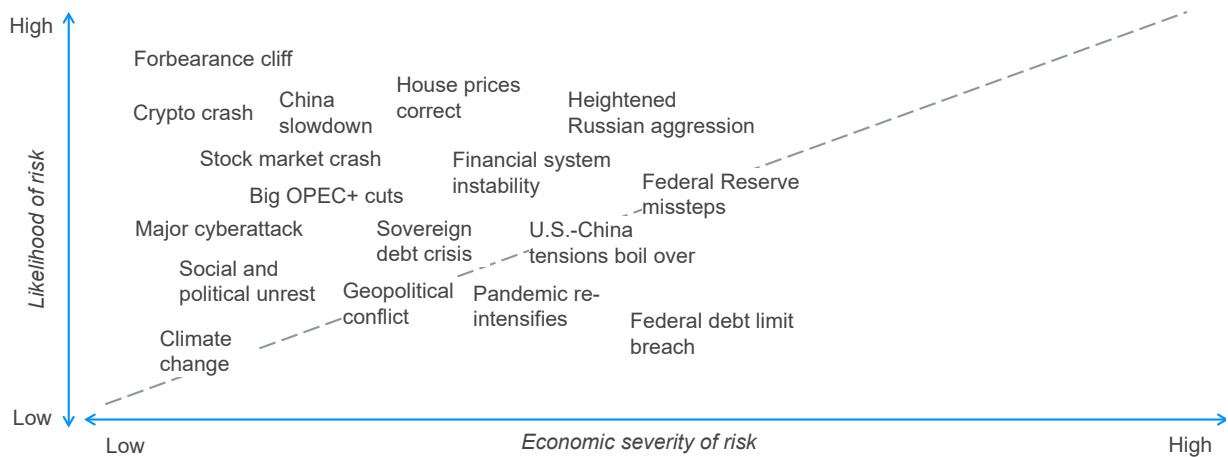
in the weakening job market, there could be more defaults and distress sales than anticipated. House price declines could become self-reinforcing and the fallout on household wealth and spending more serious.

Other fault lines in the financial system may exist but remain hidden. These could reveal themselves as the Fed pushes interest rates higher and for longer. Possible problems include the rapidly growing market for leveraged loans to already highly indebted businesses, a lengthening list of emerging markets that appear to be on the financial edge, and fintech and other nonbank financial institutions operating in the less regulated and opaque so-called shadow financial system. The collapsing crypto market is also worth a mention, although to date it appears too small and disconnected from the financial system to be a macroeconomic issue.

Known unknowns

The economy is also especially vulnerable to another shock. It would not take a big one to undermine already-fragile sentiment (see Chart 7). There are the known unknowns, most notably the Russian invasion of Ukraine. It is impossible to fathom what Russian President Putin has in mind, but it is not difficult to construct many dark scenarios. He has yet to significantly curtail the Russian oil and natural gas exports that provide critical revenue to finance his war, but cutoffs cannot be ruled out. There is also the pandemic, which appears to be receding with China as the last severely disrupted major economy. But there is no telling if the virus will prove more persistent and once again disrupt the global economy.

Chart 7: Known Unknowns Threaten the Economy



Source: Moody's Analytics

Also worrisome is a likely partisan showdown over the Treasury debt limit, which will need to be raised again by fall 2023. The debt limit sets a legal maximum on the nation's outstanding debt. Once the limit is reached, the government can spend only what it receives in revenues. If the government has a deficit, as it consistently does, then someone is not going to get paid, at least not on time. That someone could be a soldier, a Social Security recipient, a global investor who has previously lent money to the government, or a long list of others who expect checks from the U.S. Treasury. Not being able to pay its bills on time means the government would default.

The debt limit was intended to force lawmakers into fiscal responsibility. If they reached the limit and faced a default, so the thinking went, they would have to raise taxes or restrain government spending. That is not how it has worked. Instead, often after much Sturm und Drang, lawmakers raise the limit in the nick of time to avoid a default but without making difficult policy choices. The drama intensifies at each debt-limit battle with some lawmakers contemplating just how bad a breach of the limit would be for financial markets and the economy. It would be bad. That the government pays what it owes in a timely way is a bedrock of our economy and global financial system. It is why we pay the lowest interest rates in the world, and why the U.S. dollar is the global economy's reserve currency. The economic benefits of this over the generations are incalculable.

There are also plenty of unknown unknowns, inherently unpredictable shocks most likely to emanate from geopolitical flashpoints. Most notable of these are the ongoing tensions between the U.S. and China over a range of issues from trade practices and intellectual property to the independence of Taiwan, the uneasy transition for the European economy precipitated by the U.K.'s Brexit, and ongoing struggles with Iran and North Korea. If anything veers even a bit off script, skittish consumers and businesses will quickly pull back, and the economy will sink into recession.

AWOL fiscal policy

This may be more problematic in the new year with a new Congress and a divided federal government. For economic policy, if history is a guide, the next two years will be frustrating, punctuated by legislative log-jams and fiscal brinkmanship. Moreover, the economy will also be on its own. That is, if the economy suffers a recession, no help will come from lawmakers. This may not be a big deal in a modest downturn precipitated by the Federal Reserve working to rein in the high inflation. Fiscal stimulus from deficit-financed tax cuts or spending increases would be working at cross-purposes with the Fed. However, recessions can take on a life of their own, and if one turns out to be more severe and long-lasting than expected, lawmakers will not be there to save the day. The government will not have the economy's back.

Conclusion

Calls for a recession in the coming year are loud and widespread. To be sure, recession risks are uncomfortably high given runaway inflation and the Federal Reserve's effort to rein it in through aggressive interest rate hikes. And under almost any scenario, the economy is set to have a difficult 2023. But inflation is quickly moderating, and the economy's fundamentals are sound. With a bit of luck and some reasonably deft policymaking by the Fed, the economy should avoid an outright downturn. If so, we may dub it a slowcession. It is important not to be Pollyannish, but it is also important not to convince ourselves that a recession is inevitable. It is not.

Table 1: Moody's Analytics December 2022 Baseline Economic Outlook

| | 2020Q1 | 2020Q2 | 2020Q3 | 2020Q4 | 2021Q1 | 2021Q2 | 2021Q3 | 2021Q4 | 2022Q1 | 2022Q2 | 2022Q3 | 2022Q4 |
|------------------------------|--------|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Real GDP, 2012\$ bil | 18,990 | 17,379 | 18,744 | 18,924 | 19,216 | 19,544 | 19,673 | 20,006 | 19,924 | 19,895 | 20,039 | 20,082 |
| Annualized % change | -4.6 | -29.9 | 35.3 | 3.9 | 6.3 | 7.0 | 2.7 | 7.0 | -1.6 | -0.6 | 2.9 | 0.8 |
| % change yr ago | 0.8 | -8.4 | -2.0 | -1.5 | 1.2 | 12.5 | 5.0 | 5.7 | 3.7 | 1.8 | 1.9 | 0.4 |
| Nonfarm employment, mil | 151.9 | 133.8 | 140.5 | 142.5 | 143.7 | 145.2 | 146.9 | 148.6 | 150.4 | 151.6 | 152.7 | 153.5 |
| Avg monthly change, ths | 102.6 | -6034.4 | 2229.4 | 666.1 | 420.8 | 484.2 | 565.1 | 586.4 | 573.4 | 408.8 | 381.8 | 258.2 |
| Unemployment rate, % | 3.8 | 13.0 | 8.8 | 6.8 | 6.2 | 5.9 | 5.1 | 4.2 | 3.8 | 3.6 | 3.6 | 3.7 |
| Change yr ago, bps | -7 | 937 | 520 | 317 | 240 | -707 | -373 | -253 | -240 | -230 | -153 | -55 |
| Consumer prices, 1982-84=100 | 258.6 | 256.4 | 259.4 | 260.9 | 263.5 | 268.8 | 273.2 | 278.4 | 284.6 | 291.8 | 295.9 | 298.8 |
| % change yr ago | 2.1 | 0.4 | 1.3 | 1.2 | 1.9 | 4.8 | 5.3 | 6.7 | 8.0 | 8.6 | 8.3 | 7.3 |
| Federal funds rate, % | 1.23 | 0.06 | 0.09 | 0.09 | 0.08 | 0.07 | 0.09 | 0.08 | 0.12 | 0.76 | 2.20 | 3.68 |
| 10-yr Treasury yield, % | 1.37 | 0.69 | 0.65 | 0.86 | 1.34 | 1.59 | 1.32 | 1.53 | 1.95 | 2.93 | 3.10 | 3.81 |
| S&P 500 Index | 3,069 | 2,929 | 3,322 | 3,554 | 3,863 | 4,183 | 4,421 | 4,601 | 4,467 | 4,110 | 3,974 | 3,793 |
| % change yr ago | 12.8 | 1.6 | 12.3 | 15.2 | 25.8 | 42.8 | 33.1 | 29.4 | 15.6 | -1.7 | -10.1 | -17.6 |
| FHFA House Price Index | 451.93 | 453.89 | 460.62 | 473.44 | 486.05 | 510.22 | 537.27 | 558.94 | 581.14 | 617.42 | 626.28 | 624.33 |
| Annualized % change | 5.7 | 1.7 | 6.1 | 11.6 | 11.1 | 21.4 | 23.0 | 17.1 | 16.9 | 27.4 | 5.9 | -1.2 |
| % change yr ago | 5.1 | 4.4 | 4.9 | 6.2 | 7.5 | 12.4 | 16.6 | 18.1 | 19.6 | 21.0 | 16.6 | 11.7 |

Sources: BEA, BLS, FHFA, S&P, Federal Reserve, Moody's Analytics

Table 1: Moody's Analytics December 2022 Baseline Economic Outlook

| | 2023Q1 | 2023Q2 | 2023Q3 | 2023Q4 | 2024Q1 | 2024Q2 | 2024Q3 | 2024Q4 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|--------|--------|--------|--------|
| Real GDP, 2012\$ bil | 20,088 | 20,122 | 20,196 | 20,275 | 20,380 | 20,503 | 20,642 | 20,792 | 19,036 | 18,509 | 19,610 | 19,985 | 20,170 | 20,579 |
| Annualized % change | 0.1 | 0.7 | 1.5 | 1.6 | 2.1 | 2.4 | 2.7 | 2.9 | 2.3 | -2.8 | 5.9 | 1.9 | 0.9 | 2.0 |
| % change yr ago | 0.8 | 1.1 | 0.8 | 1.0 | 1.5 | 1.9 | 2.2 | 2.6 | | | | | | |
| Nonfarm employment, mil | 153.8 | 154.0 | 154.2 | 154.4 | 154.7 | 155.0 | 155.3 | 155.7 | 150.9 | 142.1 | 146.1 | 152.0 | 154.1 | 155.2 |
| Avg monthly change, ths | 101.9 | 73.9 | 59.8 | 67.7 | 82.9 | 107.9 | 121.4 | 110.1 | 166.3 | (729.0) | 329.7 | 494.7 | 172.7 | 87.8 |
| Unemployment rate, % | 3.8 | 4.0 | 4.1 | 4.2 | 4.2 | 4.1 | 4.0 | 3.9 | 3.7 | 8.1 | 5.4 | 3.7 | 4.0 | 4.1 |
| Change yr ago, bps | 0 | 36 | 50 | 48 | 39 | 15 | -5 | -24 | -22 | 442 | -273 | -170 | 34 | 6 |
| Consumer prices, 1982-84=100 | 301.4 | 303.8 | 305.7 | 307.7 | 309.5 | 311.2 | 312.9 | 314.5 | 255.6 | 258.8 | 271.0 | 292.8 | 304.6 | 312.0 |
| % change yr ago | 5.9 | 4.1 | 3.3 | 3.0 | 2.7 | 2.4 | 2.4 | 2.2 | 1.8 | 1.2 | 4.7 | 8.0 | 4.1 | 2.4 |
| Federal funds rate, % | 4.53 | 4.83 | 4.83 | 4.78 | 4.55 | 4.30 | 4.05 | 3.77 | 2.16 | 0.37 | 0.08 | 1.69 | 4.74 | 4.17 |
| 10-yr Treasury yield, % | 4.03 | 4.22 | 4.29 | 4.23 | 4.18 | 4.05 | 3.84 | 3.78 | 2.15 | 0.89 | 1.45 | 2.95 | 4.19 | 3.96 |
| S&P 500 Index | 3,846 | 3,976 | 4,093 | 4,093 | 4,082 | 4,078 | 4,080 | 4,105 | 2,913 | 3,219 | 4,267 | 4,086 | 4,002 | 4,086 |
| % change yr ago | -13.9 | -3.3 | 3.0 | 7.9 | 6.1 | 2.6 | -0.3 | 0.3 | 6.1 | 10.5 | 32.6 | -4.2 | -2.1 | 2.1 |
| FHFA House Price Index | 620.67 | 615.67 | 609.96 | 604.08 | 598.32 | 593.04 | 588.48 | 585.20 | 437.5 | 460.0 | 523.1 | 612.3 | 612.6 | 591.3 |
| Annualized % change | -2.3 | -3.2 | -3.7 | -3.8 | -3.8 | -3.5 | -3.0 | -2.2 | 4.6 | 5.1 | 13.7 | 17.0 | 0.0 | -3.5 |
| % change yr ago | 6.8 | -0.3 | -2.6 | -3.2 | -3.6 | -3.7 | -3.5 | -3.1 | | | | | | |

Sources: BEA, BLS, FHFA, S&P, Federal Reserve, Moody's Analytics

About the Author

Mark Zandi is chief economist of Moody's Analytics, where he directs economic research. Moody's Analytics, a subsidiary of Moody's Corp., is a leading provider of economic research, data and analytical tools. Dr. Zandi is a cofounder of Economy.com, which Moody's purchased in 2005.

Dr. Zandi is on the board of directors of MGIC, the nation's largest private mortgage insurance company, and is the lead director of Reinvestment Fund, one of the nation's largest community development financial institutions, which makes investments in underserved communities.

He is a trusted adviser to policymakers and an influential source of economic analysis for businesses, journalists and the public. Dr. Zandi frequently testifies before Congress and conducts regular briefings on the economy for corporate boards, trade associations, and policymakers at all levels. He is often quoted in national and global publications and interviewed by major news media outlets, and is a frequent guest on CNBC, NPR, Meet the Press, CNN, and various other national networks and news programs.

Dr. Zandi is the author of *Paying the Price: Ending the Great Recession and Beginning a New American Century*, which provides an assessment of the monetary and fiscal policy response to the Great Recession. His other book, *Financial Shock: A 360° Look at the Subprime Mortgage Implosion, and How to Avoid the Next Financial Crisis*, is described by *The New York Times* as the "clearest guide" to the financial crisis.

Dr. Zandi earned his BS from the Wharton School at the University of Pennsylvania and his PhD at the University of Pennsylvania.

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