

The following transcript has been edited for clarity and ease of reading, without compromising the intended content of the webcast.

Bruce Kirsch

Good afternoon and welcome to Linneman Associates' summer 2023 Capital Markets Webinar, presented by Linneman Associates and Real Estate Financial Modeling. This is your host Bruce Kirsch, founder and CEO of REFM, provider of financial analysis tools and training to the CRE business since 2009. We are pleased to have an insightful program for everyone today, which will be presented by Dr. Peter Linneman, founder and CEO of Linneman Associates, which for those of you who do not know, is a strategic and investment analysis advisory firm. Without any further ado, Peter. It seems like we were just here last week but evidently it has been three months!

Peter Linneman

It has been an interesting three months. I know some of you may have heard me in the interim. We thank all of you for joining us and thank you Bruce. Thank you to my team, we switched to a new platform this time so hopefully it works for everyone. We try to do this particular webcast for our subscribers and our close friends, so thank you for your support. In case I forget, have a great holiday season that we are about to head into. Bear in mind those that are less fortunate and try to give them a hand as you can.

With that, let us talk about the economy. We will start with Figure 1, showing real GDP. When I say "real," what I mean is that the data is adjusted for inflation. The light-green line shows a simple pre-pandemic trend. This shows what would have happened if the economy had continued at its pre-pandemic pace, which by the way was not a very high trend versus long-term history. The blue line shows actual GDP, and the red line shows where we were prior to the pandemic. You can see that we are well above the pandemic level. Real GDP is around \$28 trillion. The past quarter showed great growth, but it is a false positive in the sense that I expected growth above normal, but we are not going to get the kind of growth rate we had last quarter over and over.

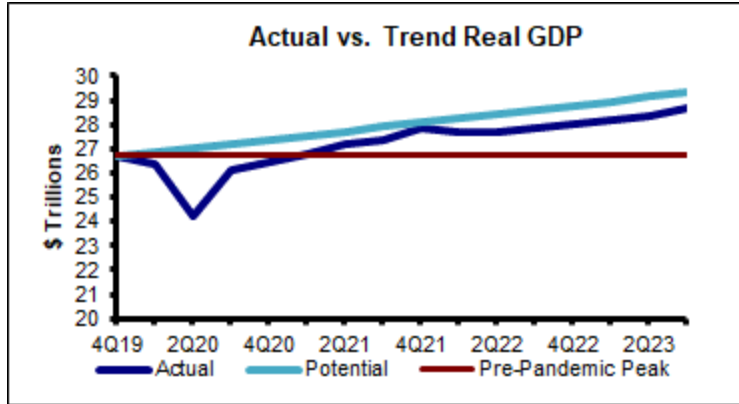


Figure 1

We are not near a recession. What I have been saying steadily throughout recent years is summarized in this chart. Namely, it is not a terribly high bar to keep up with pre-pandemic trends. Yet even by that low bar we are still about 2.7% below where we would have been if all we had done was keep track with the trend. That means there is a lot of pent-up demand. There are still a bit of supply chain issues here and there. Those are still being worked through and I will come back to that. There are powerful forces that are carrying the economy forward.

Figure 2 shows employment with the red showing where we were as the pandemic began, the green showing if we had continued by trend, and the blue is actual. You can see we have been above the pre-pandemic level for about a year and a quarter. However, there are still 3.3 million fewer people employed than a rather aggressive pre-pandemic trend would have had us at. Things today are not so much different from that. This means that there is still a lot of room to go.

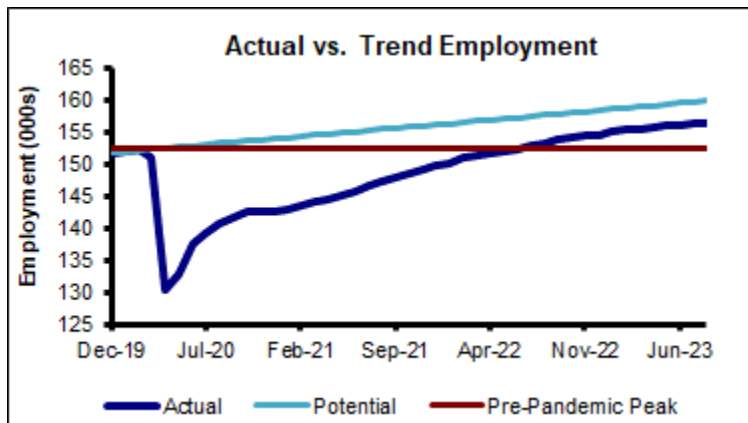


Figure 2

The main demographic not working here are people 62 and over. That age category has not returned to work, and they were a big driver of growing labor force participation for the previous 30 years. The pandemic dented it, and it is still stumbling around at about 2% fewer people 62

and over working, and it has been flat as opposed to trending upward. These things are quite notable and consistent. The 2.7% shortfall in GDP is interesting in that it is roughly one year worth of growth. A simple way of putting it is the pandemic has gone on for three and a half years and we have only had two and a half years of growth. Looking forward over the next year or two we would expect to get the normal growth generated by entrepreneurship and all types of growth drivers, plus this pent up one year that has not occurred. That is an interesting face to put on it.

Figure 3, showing the percentage of industries adding workers, gives the sense that the economy is still not normalized. During the stretch of the period between 2011 through the pandemic shutdown, you can see that in good times around 60-70% of industries are adding jobs. Interestingly, even in bad times 30-40% of industries add jobs. We shot down and then shot back up to where essentially 80% of all industries are adding jobs. You can see that that has worked its way back down, but it is not quite back to normal. There are two narratives. The one that the bad news bias puts on this is that the amount of industries adding jobs is falling. That is factually true, but it is actually good news. It is falling because we are moving back into a normalized economy. We are not at a level where even weak industries are adding jobs because they shut down. We are in a situation that is much more normal. Again, this shows that we have a good margin to go in the economy.

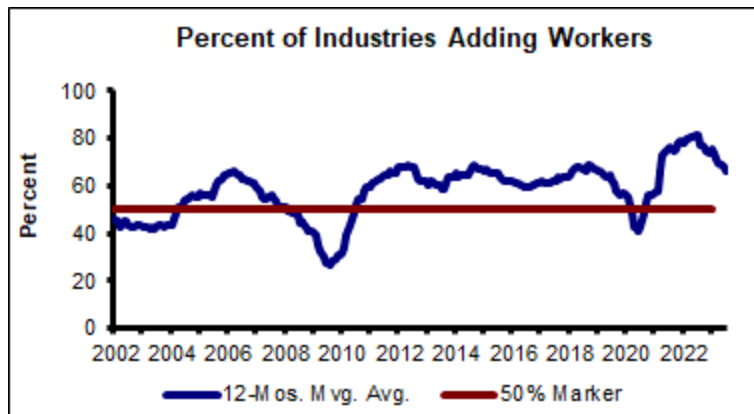


Figure 3

Figure 4 shows the labor force participation rate of workers that are 65 years old and over. This is a rather dramatic chart in that you see that if you go back to the early 60s the labor participation rate of this group was around 18%. It took until about 2010 for it to get back to that. It bottomed in around 1986 and then began a pretty steady rise.

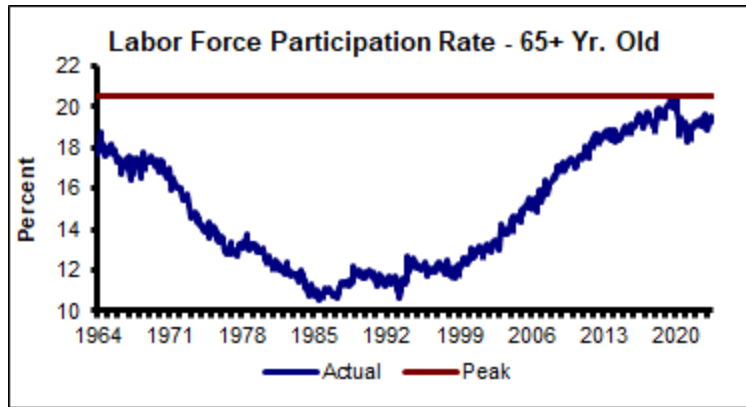


Figure 4

One of the most amazing things about this chart is the financial crisis does not even appear on it, in that the upward climb through 2007-2012 did not drop. It shows the power of this wave. It got to a modern high of around 21% of this group working. It dropped fast during the pandemic shutdown and it has not really rebounded. It has gone up from the bottom but it has not rebounded. These people that left the labor force are not coming back. You do not come back to only work a year or two. This demographic needs to extrude out of the labor force. They were going to retire in the next few years anyway, so after those years happen the labor force will correct itself. New 18-year-olds enter the labor force, 30 year olds become 40 year olds, etc. This is really the missing labor force. All other age groups are back to their pre-pandemic labor force participation rates.

Where is the pent-up demand in the economy? Of course, it is in many segments but I want to hit some obvious ones. One is medical care. All elective surgery was effectively shut down for a year. That is a lot of cataracts, hips, knees, etc. that are backlogged and working their way through the system. In addition, there were people who did not get taken care of whose medical conditions got worse and are now being treated. Travel and tourism, tracked by hotel nights or air traffic, over the past summer was about 2-3% below the summer of 2019. That is not fully recovered. 2% does not sound like much but it is, particularly when you realize 2019 was four years ago. In four years you would have expected about 2% per annum growth over those four years. In other words, you would have expected it to be 8% higher, and it is actually 2% lower. That is 10% pent-up in travel and tourism.

The auto sales industry is an odd phenomenon. Early in the shutdown people were afraid to buy cars. By the time they were not afraid to buy, supply chain issues made it very difficult and expensive to get cars, so people did not purchase them. Just as people started to buy again the Fed pushed up interest rates and dampened the roughly two-thirds of auto buyers that borrow. This had no effect on the one-third that do not borrow to purchase their cars. Auto sales are pent up.

Single-family housing still has a huge pent-up demand. That will continue for years to come, largely because of NIMBYism keeps things from being built. It is a source of pent-up demand. People ask how the economy can be growing when the Fed is raising interest rates so much. My Keynesian economics class taught that as interest rates go up the economy slows because the short-term interest rate going up discourages borrowing. Putting aside that it is a nonsense model, you are not going to not buy toilet paper because the interest rate has gone up.

Huge segments of the economy are not interest rate sensitive, such as government employment. The Federal Reserve, which is an independent branch of the government, did not feel any pressure to lay people off as they raised the interest rate. Nor did the Department of Treasury or the Department of Defense, etc. That is just not an interest rate sensitive sector. In fact, government employment has continued to rise quite rapidly as the interest rate increases have occurred. That is roughly 35% of GDP already that is unaffected by anything the Fed does with interest rates.

The medical care sector makes up about 18% of the economy. There is no one who was two months pregnant when the Fed started raising interest rates more rapidly than at any time in history who, seven months later, decided to keep the baby in until rates fall. No one having a heart attack would say “no, do not take me in, interest rates are too high.” That is absurd. By and large medical care is not interest rate sensitive. Medical and government alone make up 53% of the economy. Adding in things like food, toilet paper, and not to mention Eagles tickets or Taylor Swift tickets (because we know those are necessities), you get a lot that is not interest rate sensitive. My crude back of the envelope math shows that approximately 80% of the economy is not sensitive to short-term interest rates. Many people do not borrow or have loans. Do not forget that probably half of credit card debt, though it is hard to get real data, is paid off in the 21-day grace period where no interest is charged. People are just using it for transactional convenience, not as a financing tool. The rise of credit cards as a transactional mechanism is one of the reasons why credit card debt or personal debt in general has risen so dramatically over the last 50-60 years. No one pays for groceries any more with an \$8.11 check, which used to happen all the time. Most credit card debt is not sensitive to interest rates, though there are some. Most auto buyers are but one-third are not. A lot of people locked in long-term mortgages who are in good shape. They locked in 4-5% of their disposable income in abnormally low interest rate payments on their home by historic standards. A lot of businesses also flow to long-term debt. That is not everybody but this notion that there is a lot of evidence that the economy is interest rate sensitive is nonsense.

About 20% of the economy is interest rate sensitive, including property development. Multifamily starts over the last six months have halved, and even that is not over yet. Autos, to the extent that about two-thirds buy with loans, are sensitive. About half of credit card purchases

are sensitive. Lines of credit secured by inventory and receivables that a lot of businesses have are sensitive. Only about 20% of the economy is interest rate sensitive. This is the reason the economy is still powering forward. The pent-up demand is dominating the interest rate impact.

Figure 5 shows housing starts and auto sales indexed together. After a decade of divergence between the two, they have joined up again. That is good news. They are both a bit low, however, for different reasons. High interest rates on the short end are discouraging the two-thirds of auto purchasers that borrow. High interest rates on the long end are discouraging multifamily borrowers. Again, remember that only two-thirds of all people who buy a home do so with a mortgage. Not everyone is affected by it but it is having a drag on the economy.

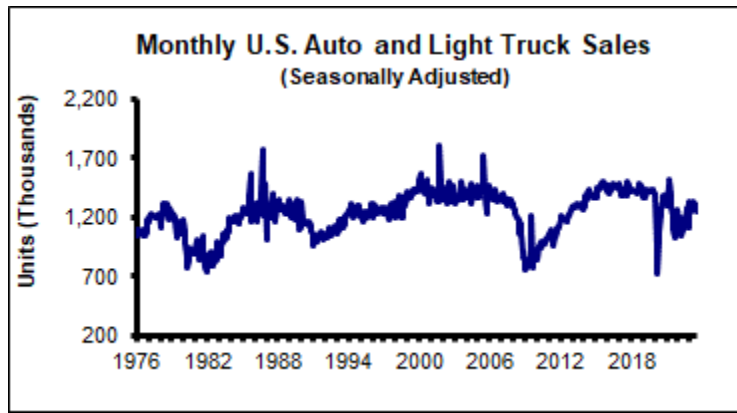


Figure 5

Figure 6 shows real quarterly retail sales that occur in brick stores. Following the pandemic, we now know what can and cannot be sold online. Stores have stopped selling things that cannot be sold profitably online. You can see it is near the all-time high from a year and a half ago. It is well above the pre-pandemic level and doing quite well. Brick is not out of business. \$6 out of every \$7 sold in retail occurs in brick.

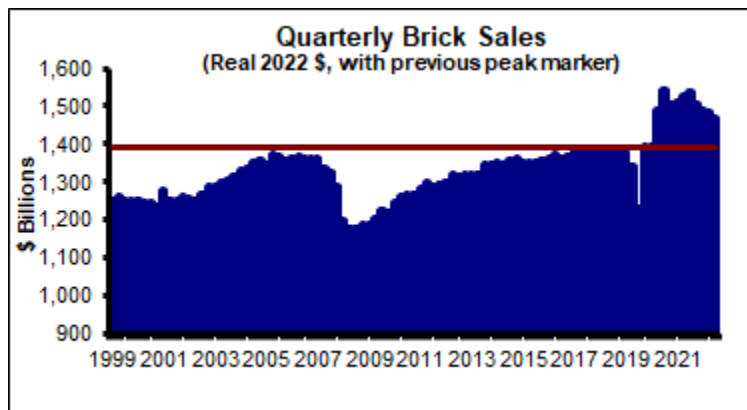


Figure 6

Figure 7 shows the rough share of all non-auto retail sales that are e-commerce with a simple trend line. You can see it shot up when retail centers were shut down and then it dropped bottomed much as we said it would. Now it is continuing its upward trend. This upward trend does work to consistently keep industrial space demand growing faster than GDP.

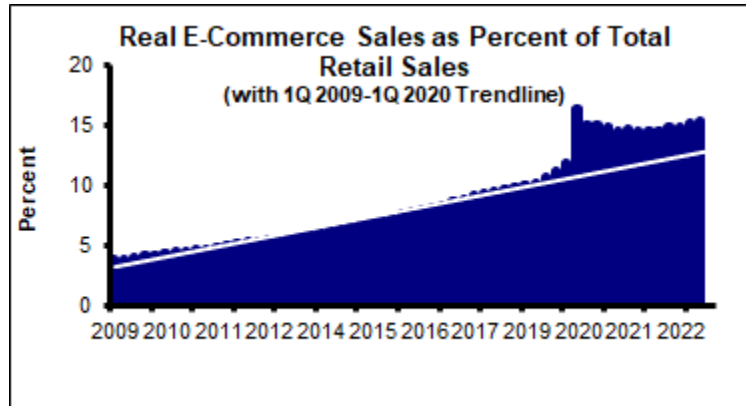


Figure 7

Brick sales grow roughly at the same rate as the economy and require about the same amount of space for warehousing. Therefore, there is a one to one correlation between the growth of the economy and industrial demand. 1% growth in GDP creates about a 1% increase in the amount of industrial space needed for brick retail. However, the ratio is about three to one for online sales. A 1% increase in the economy generates about a 3% growth in warehouse demand for online retailers. That means, on average, for every 1% of growth in the economy you get roughly 1.4% of growth for industrial demand. If the economy grows at 2.5% in a normal year you are going to have around 3.4% of growth in demand for warehouse space. Until supply catches up to that number, demand will continue to exceed supply and industrial will stay strong.

Figure 8 shows real WTI crude oil prices. We are in a time where a lot of people have their eyes on oil because of what is happening in the Middle East. Oil prices are extremely volatile. Every time prices go up there is a spate of newspaper articles saying they will never come down, but they always does come down. It comes down because at the margin you can make too much money. For example, in fracking you can make around \$45 per barrel. If the price is up in this range you will frack. Yes, you would frack more if the administration were more welcoming of it, but there is still money to be made and deals are occurring. In addition, Guyana and other countries that are outside OPEC have an enormous incentive to produce. The Saudis reduced supply which caused inflation to jump, but obviously there is nothing the Fed's interest rate policy can do to increase supply. That is silly.

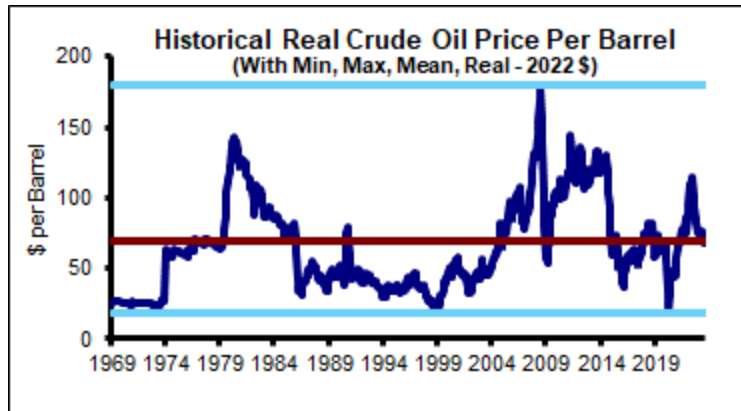


Figure 8

Figure 9 shows the global supply chain pressure index. This basically shows whether there is excess demand or supply. If the chart is above 0 it is excess demand, if it is below 0 it is excess supply. You can see that normally the index is plus or minus one standard deviation from average. This is to say that most of the time supply and demand for most things are in decent balance constantly moving around. As the pandemic began, it shot out of sight, getting up to three and ultimately four standard deviations above average. For those of you who never had statistics, four standard deviations means we have never seen anything like it before. Is it a surprise that following this we went from normal inflation to higher inflation than we had ever seen? Demand greatly outstripped supply in sector after sector.

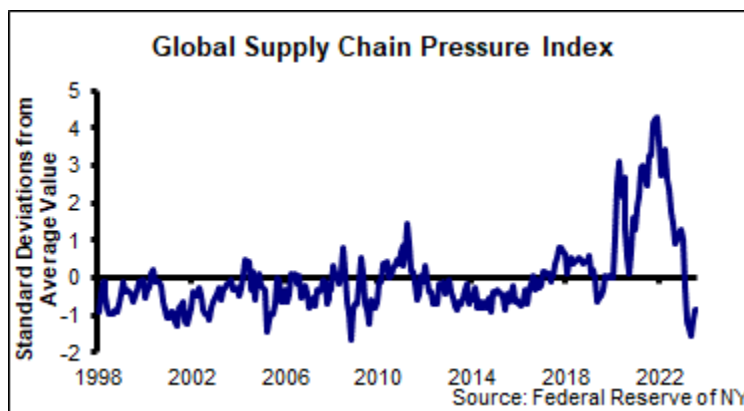


Figure 9

Figure 10 shows annualized monthly inflation rather than year-over-year. This gives a sense of what is happening, though it is volatile and bounces around. For several months the annualized rate of inflation has been running around 1-2%. This index mismeasures housing, which has been one of the big drivers of inflation over the last few months. Housing makes up about 42% of the CPI, and they are showing 8% annualized increases in housing costs, or rental costs. That is absurd. Any of you in the rental market know that last month you were not raising your rents at

an 8% annualized rate. If you put that around zero, you see that inflation is running down in the 1-3% range. There are a lot of different indexes to follow, but when you cut through it all inflation is probably between 2-3% as we speak in true terms.

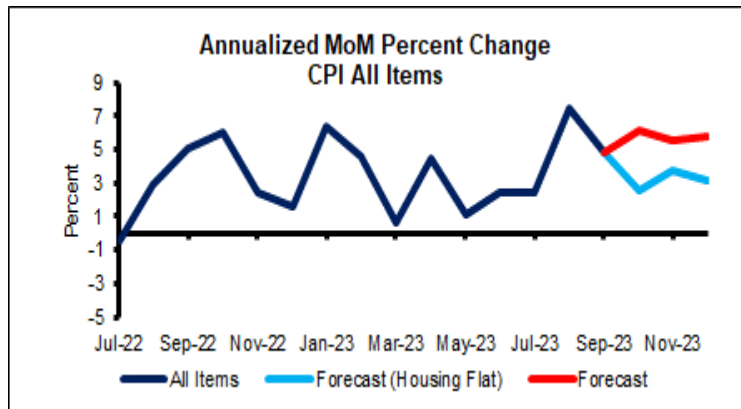


Figure 10

Figure 11 shows the 10-year treasury and Fed funds rates. Why would you have a 5.5% interest rate for overnight lending, safe money, when in fact inflation is at its most 3% or at its lowest 2%? It makes no sense. All this does is slow down 20% of the economy needlessly. Remember where we started. We are still a year's growth behind. We should be trying to figure out ways to bring people back to work and produce more, not less. From a policy point of view, the game should be more, not less. This interest rate policy is crazy.

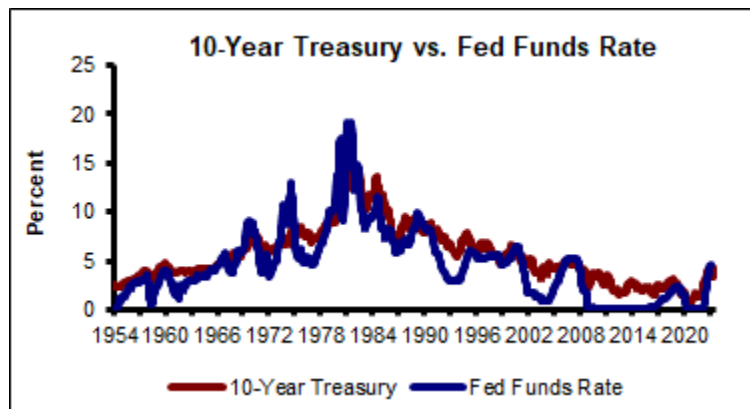


Figure 11

The Fed raised interest rates believing that they have an impact, but we just went through that. They do not have nearly the impact they think they do. They have not slowed the economy but they have distorted it enormously. You can see that the Fed funds rate was zero for nine years in the 2010s, and I said that was distortionary and that slowed the economy. That is to say, artificially selling rents, for example, too low would do harm to the economy. Artificially selling rents too high would also harm the economy. The whole point of markets is to try to figure out

where is neither too high nor too low. The Fed had interest rates too low in the 2010s and it slowed the economy. They were starting to get them back to around the right level, the pandemic happened and they shut them to zero. The inflation that occurred had a little to do with the Fed but it had a lot to do with the supply chain issues. As the supply chain issues disappeared so did inflation. Not because of interest rates but because of the supply chain.

People ask me how they should think about cap rates looking forward. My research shows that they are mostly driven by capital flows, not interest rates. Let us do some thinking. Capital flows have dried up because the banking model got turned upside down by high short-term rates and a negative slope yield curve. They had to get all of their returns from the credit spread because they were getting none of it from the yield curve. It is not surprising that as lending dried up cap rates went up, exactly as we predicted. They did not go up as much as you would think because transaction volumes are way down. They are down because bid asks are huge. We get to see pricing on 20% of assets, but not on 80%. On the 80% we are not seeing, the owner is buying it back from themselves. What we would really like to see is what cap rate they are willing to pay themselves to buy it from themselves. You know it is a lot lower or they would have sold it to someone else. My gut instinct is that unless you need to sell the cap rate is much lower. If you have to sell because you are an inheritor, you have a 1031, or some other estate issue, the cap rate you see is the cap rate you will get.

Capital markets always normalize. No matter how bad you think they are, give them a year and they will normalize. Crudely, the short rate should be the rate of inflation, let us say 2.5%, plus about 50 basis points premium, for around 3%. The long rate should be the rate of inflation (2.5%), plus 150 basis points, for around 4%. You can get a sense that the short rate is currently about 250 basis points too high, and the long rate is about 80 basis points too high. The cash flow cap rate on real estate is the long rate plus about 225 basis points for risk (more for lower quality properties, less for high quality properties), plus about 50 basis points for illiquidity. Remember that you need to take off the anticipated cash flow growth rate, which with 2.5% inflation is about 3.25% per annum. That means the cash flow cap rate should be around 3.5% today given the inflation fundamentals at 2.5%. That says that the NOI cap rate, adjusting for the gap between NOI and cash flow, is probably at about 4.3%. If you have bigger properties like offices it will need to be higher, and if you have industrial it would be lower because there is not as much of a gap. This is a nice discipline metric to think about.

Figure 12 shows the cumulative shortage of multifamily housing. Over the last 20 years we are still about 370,000 short of the amount of multifamily housing needed to keep up with demand. That is 370,000 out of about 440 million. Compared to a shortfall of 1 million in 2014, this has gotten to a pretty good balance. That is to say some markets have an excess supply, some are balanced, and some are in short supply.

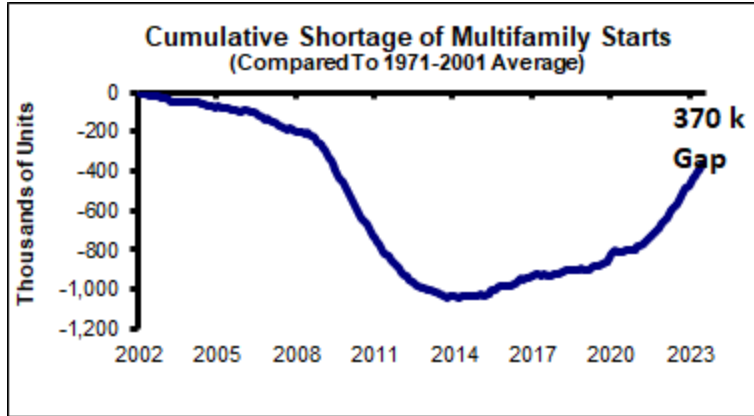


Figure 12

Figure 13 shows the cumulative shortage of single-family housing. During the housing bubble from 2002 to 2006 we massively overbuilt to the tune of almost 2 million homes in four years. Then we shut down production and you can see the shortfall building and building. At first the shortfall grew because of the fundamentals and eventually it grew due to NIMBYism. We are running a shortage of about 3.5 million homes out of about 95 million units, or around 3.5%. This means that single-family prices are going to continue to rise in real terms. They may not raise every month and quarter but over time they will raise because NIMBYism is keeping it that way. This is probably the best single thing going for multifamily, because single-family is the competitor. If you have to save longer before you can get your down payment to move to a single-family home, it increases multifamily demand by a couple of years for the typical renter.

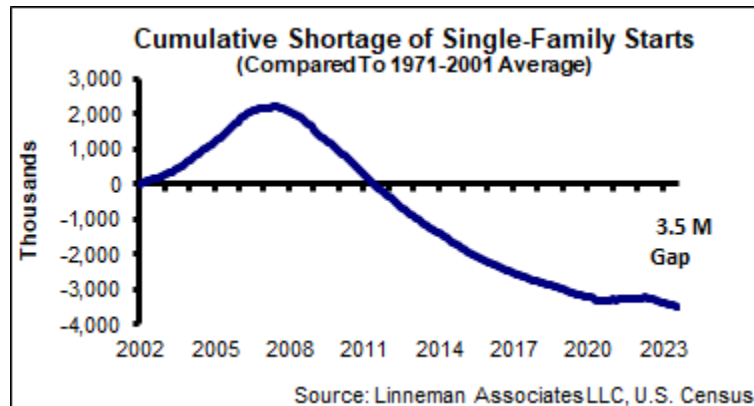


Figure 13

Figure 14 shows office vacancy rates. Office markets are, by and large, frozen. It is not even clear how relevant these vacancy rates are, but it is fair to say the market is frozen. This is similar to past times of difficulty when the capital markets were in trouble at the same time as property markets. In that sense office is typical to past downturns.

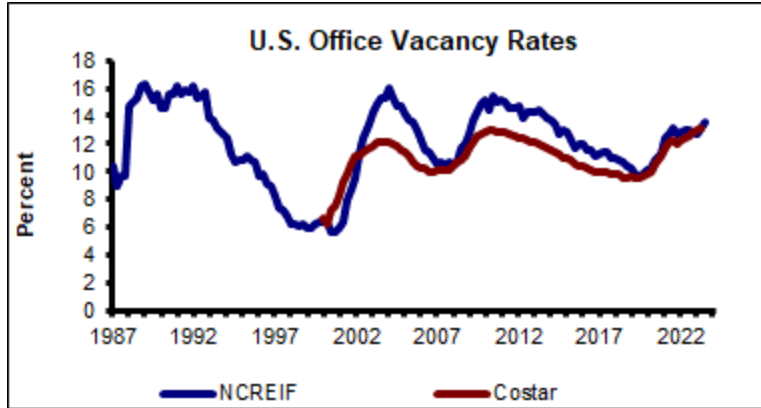


Figure 14

Figure 15 shows industrial vacancy. Here, rent and occupancy are in very good shape. It is the capital markets that are the problem. All you need there is for capital markets to adjust, you do not need time for capital markets and rent and occupancy to adjust. This is very different to 2010, 2003, or the early 1990s. Those situations saw high vacancy in addition to capital markets being in trouble.

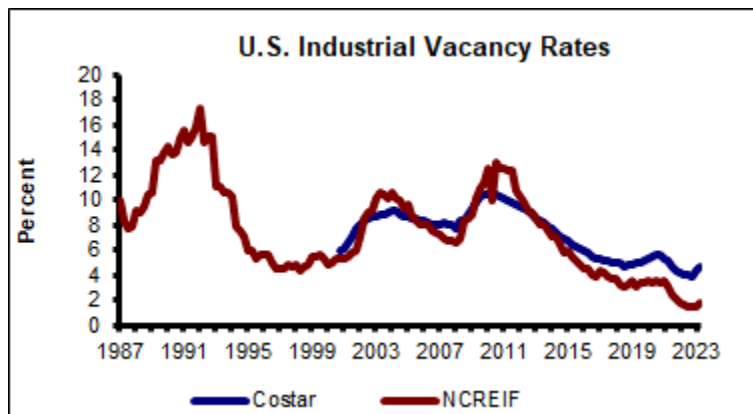


Figure 15

Figure 16 shows retail vacancy rates which have come down. Good retail is doing pretty well, though it is hard work. This time, capital markets are stressed for retail but not so much rent or occupancy for better properties. Again, this is a very different scenario from the early 90s or 2010. I do not think most people have grasped that.



Figure 16

Figure 17 shows hotel occupancy rates, which are pretty good, though they have not fully recovered. Notice where it was during the Financial Crisis, where it was after 9/11, and where it was in the early 90s. Again, the capital market is a problem for hotels, but not rent or occupancy.

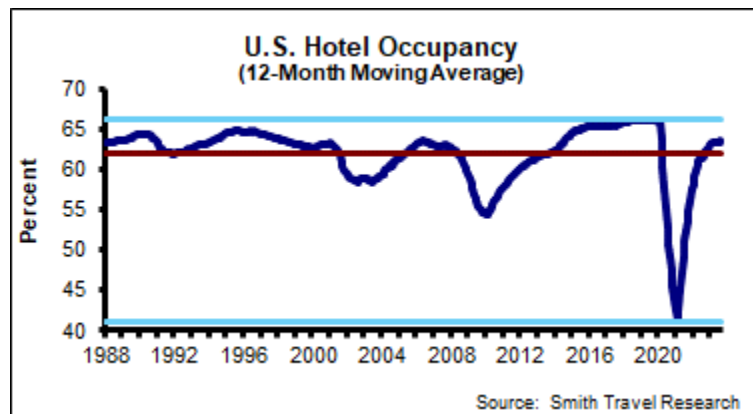


Figure 17

Figure 18 shows multifamily vacancy rates. These are also quite good. Capital markets are stressed but not the rent and occupancy. That contrasts with the early 90s, the early 2000s, the Financial Crisis. This is a very different scenario for every sector but office. In the past during times like this, rent, occupancy, and capital markets were all in disarray.

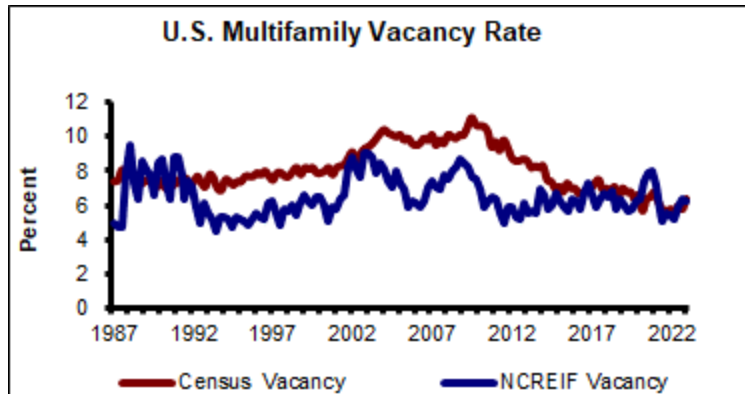


Figure 18

Finally, Figure 19 shows outstanding government debt as a percent of GDP. It is big, I am not saying it is not. The blue line shows essentially the headline number, which is over 100% of GDP. If you strip out debt that the federal government owes to itself, which is essentially intracompany debt, you get the red line. The red line shows that yes, our debt as a percent of GDP is up notably from 2007, but it is about 60% of GDP not 110%. That is to say, a lot of the money owed is owed to the government. It is both the payer and the collector of the interest. It nets out. This is more relevant than the total debt. The problem is not how high or low the debt amount is, the problem is whether we are getting our money's worth on the debt.

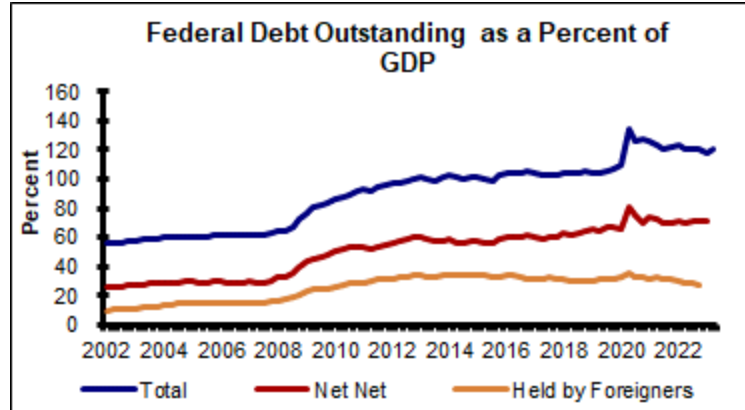


Figure 19

If you think of GDP as a crude metric of our income, how many of you could pay off the debt on your buildings with seven to eight months of income? That is essentially the situation with the U.S. debt. We could pay it off entirely if we used all of the money to pay it. We would never do that, but the debt itself is not high. We are just not getting our money's worth. This is also a reflection of the fact that people want someone else to pay it. I want you to pay it, you want me to pay it, etc. Politically it is an issue.

The orange line in Figure 19 shows debt held by foreigners, which has gone down fairly notably over the last decade. The money that is truly owed to outsiders is not so dramatic, and it is not so dramatically different from the past relative to the size of the economy.

I will end by saying there will be no recession before our next call. I read articles that say economists are surprised at the state of the economy and how inflation has come down. Not me! You will see inflation continue to moderate as supply chains continue to adjust. You will see the pent-up demand outweighing the Fed needlessly keeping interest rates at distortionary levels.

How will the banking system get back on its feet? In late 1991 when both property markets for all categories of real estate were in trouble and capital markets were in disarray, my friend Sam Zell famously said, “stay alive till 95.” In an homage to that, I would say “stay alive until 3.5.” When the Fed comes to its senses and reduces the interest rate to 3.5% you will have a real slope on the yield curve and the banking system will be back. Growth in the economy means new deposits in the bank, which will drive lending. Stay alive until 3.5. With that, Bruce, I will end for questions.

Bruce Kirsch

Great, thank you so much Peter. We have had several participants write in regarding the impending office defaults and how those are going to potentially impact the broader lending market. Do you think lenders have a good sense of their exposure? What have they done to protect themselves, or what have they not done?

Peter Linneman

Firstly, they are still figuring it out. A lot of the buildings are still cash flowing if they have low leverage. They have 2-7 years to go on their loans. As occupancy has gone down, they are not flowing as much, so lenders are trying to figure that out. When the loan is due, what is a building with no bids really worth? You are seeing some wealthy individuals buying properties but not many institutions. It is an out of favor category that way. The most important thing to bear in mind is that the debt on office buildings is a fraction of what it was on single-family when it became a big problem during the Financial Crisis. Therefore, I do not think it is nearly as systemic an issue as single-family was. Remember that for single-family people were doing only 1-3% down. That has not been the case with office, which had 10-40% push ins of equity. It is an issue, with people trying to push out and not solve, if you will. I do not think it is a catastrophic issue for the market, however.

Bruce Kirsch

We have several individuals requesting clarification on your new saying, “stay alive until 3.5.” Does that mean the short rate?

Peter Linneman

Yes, the short rate at 3.5. If the Fed put the short rate at 3.5% tomorrow there would not be notable change in inflation. Remember that we had the short rate at zero for eight years in the 2010s and we did not have issues with inflation. The notion that they are achieving a lot with high interest rates is just fantasy. They will not drop the rate tomorrow because they are too stubborn and they are using a model that does not work, but if they did capital markets would quickly become functional again.

Bruce Kirsch

Beyond what you just said, what other triggers might precipitate an acceleration in the flow of funds into CRE?

Peter Linneman

The main thing is that people forget that economic growth, not just in the U.S., generates wealth and deposits at banks. Imagine that today we had no extra money in the system to invest. Then if we get 3% growth in the coming year. That 3% growth has to find a home. The wealth and liquidity that gets created by growth has to find a home. Growth alone results in capital market situations. A year or two of growth goes a long way. Two years of growth at 2.5% means 5% more money that needs to find a home.

Bruce Kirsch

Multiple participants have written in with the comment that you seem pretty optimistic. That is generally the case with you, Peter, so what concerns you?

Peter Linneman

To respond to the optimism first, if you are investing in real estate, it is not a trading asset. You are in the business of predicting what is going to be happening five or ten years from now, not so much predicting what is going to happen tomorrow or next week. If you are a hedge fund trading U.S. treasuries or currency at leveraged levels, you are in the business of knowing what happens tomorrow. One of the reasons I am fundamentally optimistic is that I view real estate as a long-term investment. I look at the U.S. economy, and with exceptions in particular submarkets, it is a growth story over the course of my entire life. I do not view it as optimism, I view it as empirical realism. If you are in the business of long-term real estate, the future does look good. Something I try to drive home is to not get confused by shiny objects. I have done a fair amount

of research on this. The returns you are going to receive on a 10-year hold have very little to do with tomorrow or a week from now or even three months from now. It has to do with what will happen over the next 10 years.

Another reason for my optimism, or realism, is that pent up demand is very real. People are trying to get back. In addition, the Fed has distorted the economy again, this time with too high interest rates as opposed to too low interest rates in the 2010s. Eventually they will come to their senses and that 20% of the economy will do better and make up for the gap. I would feel differently if Figure 1, showing GDP, were way above trend. I would say that we cannot grow at that pace forever unless we found new productivity drivers. People accuse me of always being optimistic, but on this basis I do not view it as optimism, I view it as empirical realism, and I try not to be distracted by shiny objects such as who is going to get elected. That is important for social issues, but it is not important for the long-term drivers of the economy which is what I focus on.

Bruce Kirsch

Thank you. On the development side, we have had multiple participants inquire about what you expect regarding construction cost pricing in light of the reduction in starts.

Peter Linneman

Two things. One is Figure X, showing the supply chain issues. Construction products were one of the hardest hits in that regard. The fact that we swung from massive excess demand, even though demand was not that high, to a bit of a surplus means that for materials cost for construction have already moderated and they will moderate more. On the labor side things are not fully back. It is still a bit tight, though not as tight as it was a year ago. This is pushing construction costs upwards still. Net net, construction costs are going down slightly, which means in inflation adjusted terms it is down, but it is probably not going down in nominal terms in the near term. The cost of money is a big issue at the margin.

Bruce Kirsch

Unfortunately, we are not going to be able to get to all of the questions that have come in, so thank you again, Peter. Always an insightful presentation and it always helps to clear things up for many of us. And we look forward to seeing you back in February.

Peter Linneman

Thank you very much. Have a great day.

