Cuffelinks
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This Week's Top Articles

Bruce Springsteen and Professor Robert Engle

David Bell

Hopefully you have never been to a concert where the band didn't play your favourite song. A good friend recently went to a Bruce Springsteen concert and she was disappointed that the Boss didn't play *Born in the USA*.

I know the feeling. Late last year, I attended the plenary session at the Australasian Finance and Banking Conference. Held in collaboration with PwC and Finsia, the session topic was systemic risk and Nobel Laureate Professor Robert Engle provided the keynote address. Engle talked on systemic risk and not ARCH volatility models, the subject for which he is most famous. You could feel everyone in the room wishing for a play of the famous track.

I'll discuss a little about both topics in this article.

Background of Robert Engle

Robert Engle studied physics and economics and his PhD was in the latter. He completed his PhD at Cornell University and spent time teaching and researching at MIT (Massachusetts Institute of Technology), University of Chicago; he is now at New York University's Stern School of Business. Throughout, he has been an active teacher and a prolific researcher, and his research has tended to be quite mathematical using his physics background. Today Engle heads up VLAB (Volatility Laboratory), a free website supported by New York University, which provides real time measurement, modelling and forecasting of risk, financial volatility and correlations for a wide spectrum of assets. Anyone with a passing interest in risk management would find the website a great resource (http://vlab.stern.nyu.edu/).

Analysing volatility – the ARCH family of statistical models

Robert Engle is most renowned for his work on analysing volatility in financial markets. It was for this work that he was awarded the Nobel Prize in Economics in 2003. Up to the time of this research breakthrough in 1982, much of the academic modelling assumed that volatility was constant through time. Yet empirical evidence shows this not to be the case. Any chart of the daily movements in stock prices will demonstrate this.

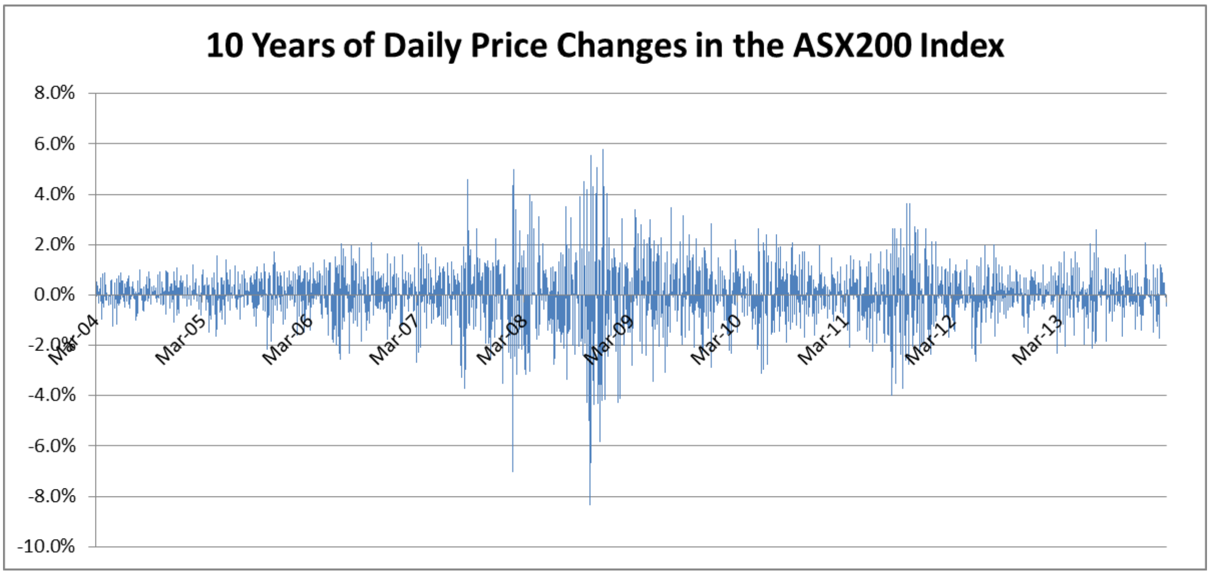


Chart 1: Daily price movements in the ASX200 Index (data sourced from Yahoo! 7 Finance).

When we look at the chart above does it appear that the scale (absolute size) of the movements is completely random? The answer is no. We can see periods of market turbulence and then we can see periods where the market calms down and the scale of daily movements settles down. These effects are known as 'volatility clustering' and 'volatility reversion'.

Engle's contribution was to incorporate these two effects into a model which could be used to forecast future period volatility. The model developed is known as the ARCH model (ARCH stands for autoregressive conditional heteroskedasticity – which sounds a little scary!). In simple words the model suggests that current volatility can be better estimated as a constant term plus a term based on the squared value of recent observations of market movements. If we are in a more volatile environment then there is a greater likelihood of a large movement (which could be up or down). Likewise if we are in a period of low observed volatility then the likelihood is that the next period's market movement will also be subdued.

The ARCH model has been extended by many researchers into an ARCH family of models, and. GARCH is most commonly used. It extends the ARCH concept by saying that a better estimate of current volatility is based on a constant term plus a term based on recently observed volatility plus a term based on the squared value of recent observations of market movements.

Financial plan application

While this may all sound quite complex and academic the concept is intuitively appealing. If we are in a volatile environment we should take this into account when considering the current risk of our portfolios. These models are not used solely by academics; they are commonly used by banks and by some fund managers. This concept has much application to the design of financial plans and super funds. For instance, if someone is approaching retirement and worried about the potential for a large negative return then it would make sense to scale exposures to account for the current best estimate of volatility. There are not many examples of this approach being applied in practice (DFS Advisory Group is one exception I know of).

Systemic risk

The topic of the lunch however was systemic risk. VLAB provides estimates of systemic risk of financial firms around the world. These numbers are aggregated to produce country level estimates of systemic risk.

The logic of the calculation is as follows: a financial firm reaches a crisis point when the value of its equity falls to a sufficiently small fraction of its outstanding liabilities. If it is a difficult market environment the company may be unable to raise capital or be taken over and the government is faced with the choice of bailing out or letting the company fail – and so we have systemic risk. The essence of the systemic risk calculations is to estimate how much capital would be required by a firm in a financial crisis to maintain a minimum capital standard (in this case it is assumed to be 8% capital relative to asset value). Systemic risk changes with market volatility and capital position of the firm. On VLAB you can find a list of systemic risk estimates by firm which are aggregated to produce country level estimates (Chart 2) and global aggregates (Chart 3).

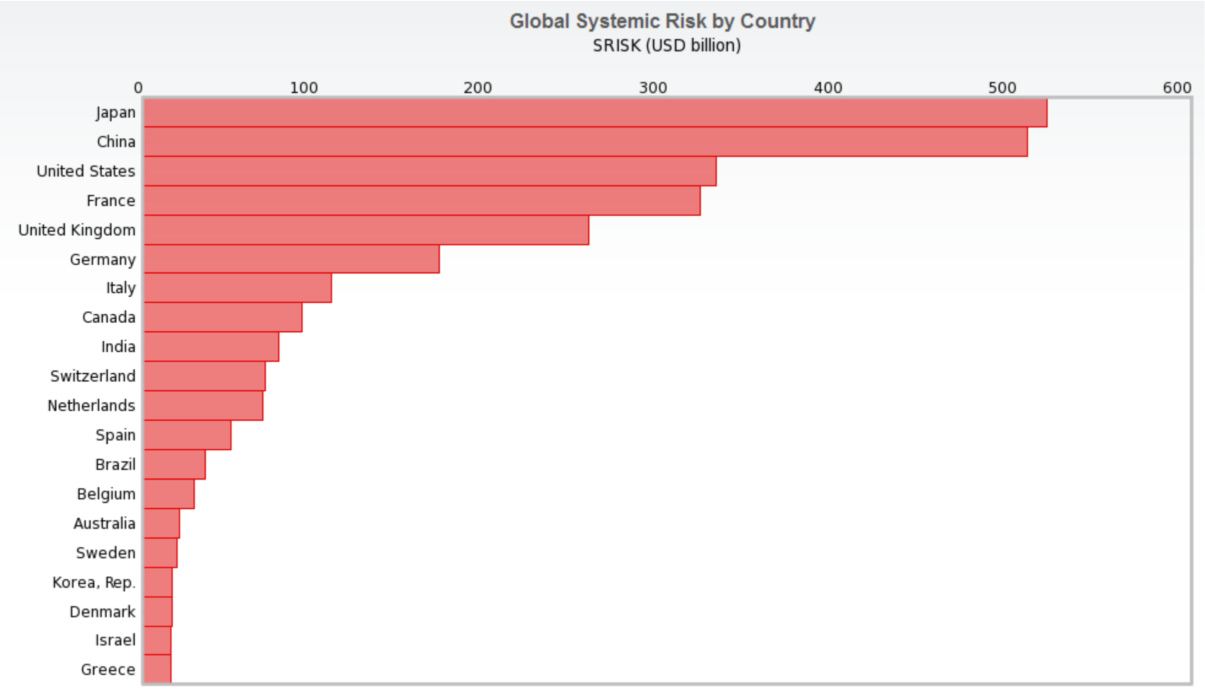


Chart 2: Global systemic risk by country at 3 March, 2014. Source: VLAB

Chart 3: World financials total systemic risk through time. Source: VLAB

In chart 2 we can see it is currently Japan and China where VLAB estimates the greatest amount of systemic risk to reside. This suggests that the finance companies in those countries collectively have the greatest potential capital shortfall in a crisis event. Chart 3 suggests that while global systemic risk levels are below those seen during the Global Financial Crisis systemic risk remains at elevated levels.

What impresses about Robert Engle is that he is not living on the laurels of past successes. VLAB is an exciting free service provided for academics and market practitioners. You will find ARCH-like modelling in VLAB but it is one of many research calculations performed on the VLAB site.

While I walked away without hearing Engle's most famous song, at least I was not left Dancing in the Dark.

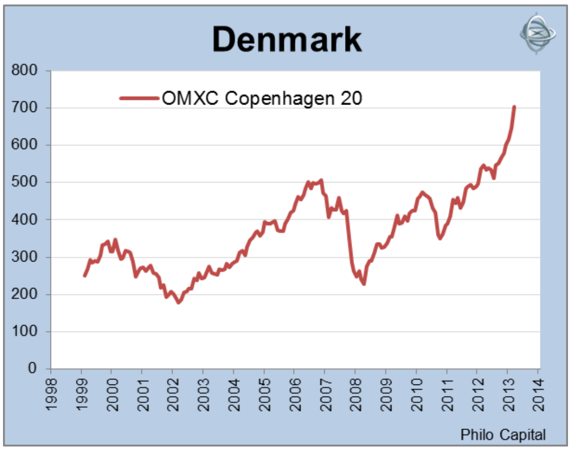
David Bell's independent advisory business is St Davids Rd Advisory. In July 2014, David will cease consulting and become the Chief Investment Officer at AUSCOAL Super. He is also working towards a PhD at University of NSW.

Australia can learn from gold medal winner, Denmark

Ashley Owen

In the global Stock Market Olympic awards last week, the race to beat their pre-GFC stock market highs was won by Denmark - the home of Lego, King Canute, Soren Kierkegaard, Hans Christian Andersen, Hamlet, Jørn Utzon, Helena Christensen, Danish pastries, and a long line of Vikings called Erik.

In January 2013 Denmark became the first of the 'developed' country stock markets to beat its pre-GFC high. It had peaked on 11 October 2007 at the top of the global credit bubble right before the global financial crisis hit.



The Danish stock market had a similar experience to most other markets over the course of the past decade. After surging in the late 1990s dot-com boom it collapsed in the 2001-2002 tech-wreck, rose strongly from early 2003 to October 2007, plunged 50+% in the GFC, rebounded strongly in 2009, fell back in the 2011 sovereign debt crisis and then surged during 2012-2013.

Citizens of Denmark and Australia enjoy among the highest average living standards in the world (USD60,000 GDP per person), ranking behind only Luxembourg, Norway, Switzerland, Monaco and Qatar. There are some similarities between Denmark and Australia, but also many differences.

Unfavourable business environment

On paper, Denmark should not be a good place to do business. It is the model European welfare state, with a gigantic public sector (the government employs more than one third of all workers), and the highest tax rates (top marginal tax rates above 60%) plus 25% VAT. The enormous welfare budget results in the lowest level of income inequality in the world, and ranks 2nd in the world on having the lowest poverty rates (Australia ranks 27th, almost at the bottom of the OECD table). Denmark also has the world's highest minimum and average wage levels, and the highest pensions in the world (as a percentage of pre-retired incomes).

Social expenditure takes up a mammoth 30% of GDP (nearly double Australia's level), which makes Denmark second only to France, where social spending consumes a third of GDP.

Denmark has an older population (with a median age of more than 3 years older than in Australia, putting 30 countries between them). Denmark also has a more dependent population (16.6% of its population over 65, compared to Australia's 13.2%).

Manufacturing giant

Despite Denmark's aging population, high wages, high taxes, high social security costs, huge government sector, heavy unionisation and mountains of stifling European regulations, it still manages to be a world class manufacturer and exporter.

Not low-tech manufacturing of undifferentiated basic cars, something Australia has wasted billions of dollars in tax-payer subsidies trying to cling onto. When the Danes do make cars they make highest quality super-cars like the Zenvo without endless government hand-outs and subsidies.

Without being blessed (or cursed) with abundant natural resources, Denmark has built a high-tech knowledge economy. Perhaps one key reason is education. Denmark has the highest level of public spending on education in the OECD at 7.5% of GDP, compared to Australia's 4.5%, which is one of the lowest (Australia ranks a lowly 27th out of 32 OECD countries on that score).

No natural resources

Denmark has very little land and virtually no natural resources or space (contiguous Denmark is less than two thirds of the size of Tasmania), but it has a highly paid and highly skilled workforce. Denmark epitomises the industrious, protestant north of Europe. This is reflected in some key economic statistics:

Current Account: average over 2000s as % of GDP:
- Denmark: +5.8% pa surplus. Only one current account deficit year since 1990
- Australia: -3.0% pa deficit, despite the so-called mining export boom. Australia hasn't achieved a current account surplus since 1973 (which was a one-off freak surplus year).

Government net budget balance, average of past 5 years during GFC as a % of GDP:
- Denmark: -0.3% deficit (has an enormous government sector, but also extremely high taxes)
- Australia: -3.1% deficit

Inflation:

- Denmark: +2.2% pa average over the 2000s. Currently +1.0%
- Australia: +3.1% pa average over the 2000s. Currently +2.7%

Unemployment:
- Denmark: averaged 5.0% over 2000s. Currently 5.6%
- Australia: averaged 5.4% over 2000s. Currently 6.0%

Exports: as a % of GDP:
- Denmark: over 50% of GDP (and has been for many years)
- Australia: 21% of GDP (averaged 20% of GDP in the 2000s China boom but post Federation average has been 18%)

Relative to Australia over the past decade and currently, Denmark has had lower inflation, lower unemployment, a much larger government sector, yet balances its budget far more often than Australia, and runs current account surpluses, not deficits like Australia.

Exports

One of the key differences is export performance. Contrary to perceptions generated by government and in the media, Australia is one of the smallest exporters in the world. And that's during our so-called 'mining export boom' (plus tourism, agriculture and the so-called 'boom' in services exports like education). Not even in the 1850s gold rush did exports reach 50% of Australia's GDP. Out of 200+ countries in the world only six major countries export LESS than Australia as a share of their national income - Brazil, the US, Japan, Pakistan, Afghanistan and Colombia. (There are also a few tiny countries that Australia beats as an exporter - including Tonga, Ethiopia and Rwanda).

Denmark, in contrast, is one of the great exporting nations where exports routinely generate more than half of their national income - a long list that includes Germany, Belgium, Austria, Switzerland, Sweden, Netherlands, Belgium, Ireland, Korea, Singapore, Malaysia, Thailand and dozens of others.

Denmark may be a great exporter, but it has not been blessed with proximity to great export markets. Most of Denmark's exports go to Europe which has suffered the slowest growth and highest unemployment rates in the world (and therefore worst demand growth), not only since the GFC but also over the past couple of decades. In contrast, only 10% of Australia's exports go to Europe, but 70% of our exports go to Asia, the fastest growing region with the lowest unemployment levels and greatest demand growth in the world.

Denmark kept its currency, the kroner, pegged to the Euro all through the GFC and did not devalue it to stimulate exports (Denmark is a member of the EU but not the Eurozone). In contrast the Australian dollar fell 38% in the GFC making our exports 38% cheaper for foreign buyers.

Danish companies

The Danish stock market consists of several major companies that operate on a global scale. The market is dominated by global healthcare and biotech stocks (Novo Nordisk, Coloplast, Demant, Lundbeck, Novozymes), high-tech food technology (Hansen), and high-tech machinery manufacturing (FL Smith, Westas). There are also some large banks (Dankse, Nordea, Jyske) that operate across Europe, and insurance stocks (Tryg, Topdanmark). The largest company is Moller-Maersk, the largest container shipping operator in the world. In addition there are global luxury goods makers like Pandora and of course the global beer giant Carlsberg.

CEO pay

Another difference between Australian companies and Danish companies is CEO pay for listed companies. CEOs of Danish listed companies are paid half what Australian listed company CEOs are paid. For example one study shows average total remuneration of Danish CEOs in 2012 was $2.2m, or 48 times the pay of average workers, compared to Australian CEO average of $4.2m or 93 times the pay of average workers. (http://www.aflcio.org/Corporate-Watch/CEO-Pay-and-You/CEO-to-Worker-Pay-Gap-in-the- United-States/Pay-Gaps-in-the-World).

The Danes are not perfect of course. Their protestant work ethic doesn't extend to thrift. Denmark is one of the few countries in the world that has had lower household savings rate over the past decade and higher household debt levels than Australia. Their house prices are also over-inflated but not as much as in Australia.

Some conclusions

A country like Demark can overcome seemingly insurmountable obstacles that include an aging population, high wages, high taxes, high social security costs, a huge government sector, heavy unionisation, stifling European regulations, a fixed currency, lack of natural resources, and being stuck on the edge of a decaying Europe in cyclical and structural decline and still manage to be a world class high-tech manufacturer and exporter with the best performing stock market in the developed world.

There are surely some lessons for Australia in this. Australia's over-paid company CEOs should stop bleating about the so-called high dollar, high wages, high costs, high taxes and all the other lame excuses they offer. They should instead show some real leadership and build world class businesses that compete and win on a world stage. Companies in other countries with none of our advantages and many of our supposed disadvantages (like high wages, high taxes, larger governments, fixed currencies, etc), and less expensive CEOs, manage to prosper.

The so-called 'tyranny of distance' from export markets is only a problem if we export dumb rocks and other bulky goods (which are just partially processed dumb rocks). Other countries aren't blessed with our rocks that foreigners turn into useful things, or our thousands of miles of pristine beaches that foreigners like to visit, or our host of funny-looking animals that foreigners like to photograph, so they have to use their brains instead. In the post-industrial knowledge economy, knowledge and ideas can be transmitted around the world in fractions of a second and so physical distance from markets is irrelevant.

Ashley Owen, CFA, is Joint CEO of Philo Capital Advisers and a director and adviser to the Third Link Growth Fund.

Six property potholes for SMSFs to avoid

Monica Rule

I'm always concerned when I see advertisements such as, 'Convert your Super to a Self Managed Fund and pay off your home in as quick as 10 years.' In my 28 years at the Australian Taxation Office (ATO), I saw many people caught up in these schemes, especially when in financial difficulties.

To give you an idea on how to avoid some of these dodgy schemes, here are six things that you should always consider if you are entering into property investments using your SMSF.

1. **Does your SMSF's trust deed allow for property investments?** There are two main sources that provide details of what you, as trustee of your SMSF, can and cannot do. One is your SMSF's trust deed and the other is the *Superannuation Industry (Supervision) Act 1993* (SISA). An SMSF trustee is not able to undertake actions, regardless of whether it may be permitted by the superannuation law, if it is not also permitted by the SMSF's trust deed. If your SMSF needs to borrow money to purchase a property, you must ensure your SMSF's trust deed allows for security to be placed over its assets and allows for a separate trust to hold the asset while the loan remains outstanding.

2. **Is property part of your SMSF's investment strategy?** There is nothing in the SISA that requires an investment strategy to be in writing. However, SMSF trustees are solely responsible and accountable for the prudential management of their members' benefits. It is the trustees' duty to make, implement and document decisions about investing in assets and to carefully monitor the performance of those assets. Also the SISA provides a defence to trustees against any action for loss or damage suffered as a result of them making an investment. The defence is available if trustees can show that the investment was made in accordance with the investment strategy formulated for their SMSF. I recommend that your SMSF investment strategy is documented.

3. **Who is the owner of the property prior to the property being acquired by your SMSF**? Under the SISA, only properties that meet the definition of a 'Business Real Property' (BRP) can be acquired by an SMSF from related parties. A BRP is any land and building used wholly and exclusively in a business. It can be residential property as long as the property is used in a business at the time the SMSF acquired it from a related party. Examples of BRP, can be found in the ATO's publication SMSF Ruling 2009/1. You cannot use your SMSF's money to purchase the residential property that you live in unless the property value does not exceed 5% of the total assets value of your SMSF. For most people, their SMSF is not worth enough to meet this requirement.

4. **Does the purchase reflect market value?** The SISA states that all investment transactions must be conducted at arm's length. Of course if the parties (i.e. the SMSF and the property owner) are related then they are not arm's length. ' However, the SISA allows sales of BRP between related parties by stating that if the parties are not at arm's length then they must act as though they are or on terms that do not disadvantage the SMSF. Therefore, the purchase price paid on properties should always reflect the true market value regardless of who the buyers and sellers are.

5. **Has the SMSF accumulated enough money to purchase the property outright or would it need to borrow?** If your SMSF needs to borrow to purchase the property, then the borrowings must be structured correctly in accordance with the requirements of a "Limited Recourse Borrowing Arrangement" (LRBA) under the SISA.

   If borrowing is required, it needs to be structured correctly, follow the correct process, have the correct wording on the loan document, and ensure the correct names are on the purchase and loan documents. A separate holding trust should be established by a qualified legal practitioner. Failure to properly execute a holding trust arrangement may lead to unnecessary stamp duty and/or capital gains tax implications. I recommend appropriate legal advice is obtained prior to any part of the purchase taking place. Also for more details on the application of the LRBA, refer to the ATO publication SMSF Ruling 2012/1.

6. **Once the property is acquired by your SMSF, who is it going to be leased to?** The SISA prevents properties that do not meet the definition of a BRP to be leased to related parties unless the property value does not exceed 5% of the SMSF's total asset value. So unless your SMSF has substantial wealth, beware of any claim that you can use your SMSF to pay off your mortgage. It cannot be done.

If everything is done correctly and in accordance with the superannuation law, property may be a good investment for SMSFs. If things are done incorrectly, not only can your SMSF be penalised by the ATO, it may end up paying three times the stamp duty as well as incur additional capital gains tax.

Monica Rule worked for the Australian Taxation Office for 28 years and is the author of 'The Self Managed Superannuation Handbook – Superannuation Law for Self Managed Superannuation Fund in Plain English'. *She now runs her own business focussed on SMSF and superannuation education and consulting.*

The conundrum of finding yield amid low interest rates

Scott Minerd

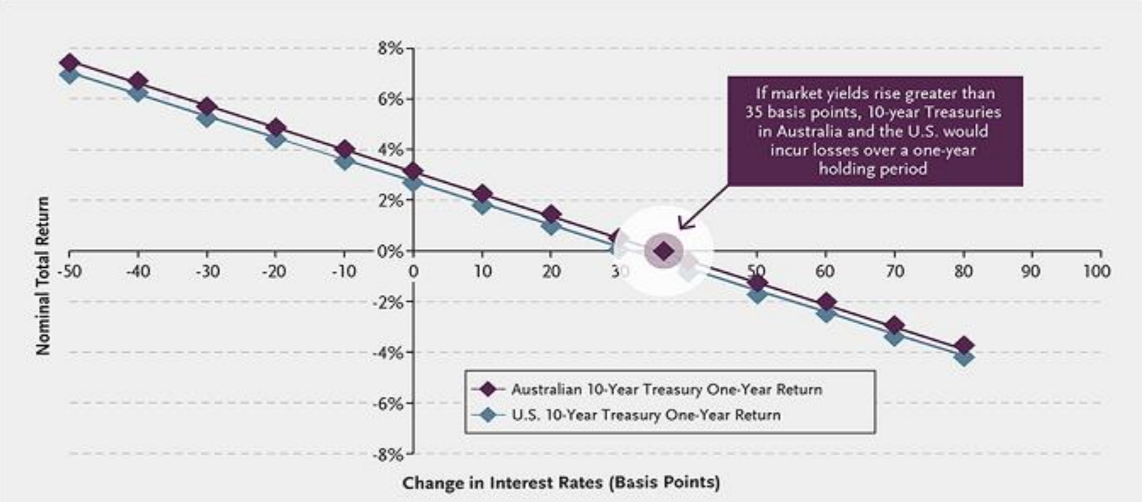
Shifting monetary policy across developed markets has forced many investors to consider the risks involved in holding U.S. and Australian Treasuries. After six years of unprecedented liquidity, the U.S. Federal Reserve is tapering its asset purchases, and could start raising interest rates in 18-24 months. In Britain, unemployment is declining faster than expected, prompting debate that the Bank of England may raise interest rates next year. One thing is certain: over the longer term, interest rates will rise, and investors should understand the inherent risks in so-called 'risk-free' assets, given their limited return potential.

Although interest rates have risen over the past year as the U.S. Federal Reserve began talking about withdrawing monetary accommodation, even at current yields we question whether U.S. Treasuries sufficiently compensate investors for interest rate risk. The interest income earned from recently issued 10-year U.S. Treasury notes would be negated by the loss incurred from a 0.30% increase in interest rates over a one-year holding period. The same risk is present in the 10-year Australian government bond, where a 0.35% increase in interest rates would have the same effect on the Australian Treasury bond maturing 21 April 2024. But yields remain artificially depressed from several years of expansionary monetary policy. U.S. 10-year government bonds yield 2.7% and Australian 10-year government bonds yield 4.2%, below their historical averages of 6.5% and 7.9% respectively. Treasuries have gone from offering 'risk-free returns' to effectively becoming 'return-free risk'.

Broad benchmarks, which often dictate the way investments are allocated, reflect the composition of a market. The Barclays U.S. Aggregate Bond Index ('the Barclays Agg'), the most widely used proxy for the U.S. bond market, is now over 70% concentrated in low-yielding U.S. government-related debt. Soaring fiscal deficits have increased outstanding U.S. Treasury debt by 255% between 2007 and 2013. The Barclays Agg yields only 2.3% and few compelling yield alternatives remain within the 'core' fixed-interest landscape, making it more difficult for investors to meet total return targets. The same is true beyond the United States and we think investors globally should move away from the traditional view of core fixed-interest management into a broader investment framework.

Era of "Return-Free Risk"

Australian 10-Year Treasury and U.S. 10-Year Treasury One-Year Holding Period Returns



Purchasing 10-year Treasuries in Australia and the United States comes with considerable duration risk. A rise in interest rates of greater than 35 basis points would lead to negative total returns over a one-year holding period. With the risk in Treasuries heavily skewed to the downside, we believe Treasuries have gone from offering "risk-free returns" to effectively becoming "return-free risk".

Source: Bloomberg, Australian Office of Financial Management. Data as of 12/31/2013. Total return scenarios are calculated based on the coupon rate of 2.75% for the Australian bond and the U.S. note, and durations of 8.8 and 8.6, respectively.

Value in a broadened investment framework

Over the past few years, aversion to non-traditional, riskier assets such as high-yield debt, structured credit, and emerging-market debt, has waned as investors seeking yield took on more credit risk. This approach can be successful if the investor has the resources to conduct in-depth credit analysis. A larger, more diversified portfolio can benefit from actively assessing relative value and shifting portfolios toward the best value proposition, called a 'multi-credit strategy'.

In a multi-credit strategy, managers actively assess three major components during the portfolio construction process, while remaining driven by long-term views:

- Sector valuation. Is the sector overvalued or undervalued? How do valuations compare to historical levels?
- Risk assessment. What are the major macroeconomic and sector-specific risks? Does each sector fairly compensate for the risk they carry?
- Relative value. Can another sector offer better returns for the same duration or credit risk? Is our outlook more positive for one sector relative to another?

Just as important is the risk management component, which considers diversification and correlation, among other factors. By properly assessing these components and shifting portfolio allocations toward the best value proposition, investors can steadily outperform a broader benchmark over time.

A multi-credit strategy should be tailored to individual needs. Some investors have the tolerance to tilt toward less liquid, more research-intensive sectors which typically offer premiums for their lack of liquidity and relative complexity. We believe this offers most value. For other investors with higher liquidity needs, a multi-credit strategy can focus on high quality, liquid sectors. For example, last year's U.S. Treasury sell-off spread into investment-grade U.S. municipal bonds, where credit spreads widened to levels not seen in over two years, moving beyond what we felt was fair given our constructive view on specific credits. The sell-off created a temporary buying opportunity in municipal bonds which offered higher yields than in 2012, for the same credit risk. These short-term buying opportunities can ultimately be a source of long-term outperformance for investors with the flexibility to take advantage of them, while remaining long-term oriented on the overall strategy.

The Barclays Agg is overweight in government-related debt, resulting in its lacklustre yield and making the traditional approach to fixed income investing antiquated. In today's low-interest rate environment, we believe investors need to take a different approach to generate better returns. Over the past year, such better returns were achieved by increasing allocations to corporate bonds, residential mortgage-backed securities, commercial mortgage-backed securities, municipal bonds and asset-backed securities. This approach can increase a portfolio's yield by more than 200 basis points over the benchmark.

Intuitively, a multi-credit approach would increase tracking error, a measure of how much a portfolio's performance differs from its benchmark. We think increasing tracking error for the potential of achieving higher returns is justified. Remaining tightly aligned to broad benchmarks leaves investors without the flexibility to take advantage of undervalued sectors.

Scott Minerd is the Global Chief Investment Officer and a Managing Partner of Guggenheim Partners, LLC, a privately held global financial services firm with more than $190 billion in assets under management. Principle Advisory Services is Guggenheim Partners' distribution partner in Australia and New Zealand.

Ten lessons from Warren Buffett's 2013 shareholder letter

Graham Hand

Each year since 1965, Warren Buffett has written a newsletter to Berkshire Hathaway shareholders, and the 2013 letter was released last weekend. In that time, Buffett has produced an annual compounded gain of 19.7%, turning USD19 into USD134,973. Wow, the power of compounding over 49 years!

In Buffett's words, here are some highlights (only the headings are mine):

1. Irrational herd mentality is bad, fear is good

Owners of stocks, however, too often let the capricious and often irrational behavior of their fellow owners cause them to behave irrationally as well. Because there is so much chatter about markets, the economy, interest rates, price behavior of stocks, etc., some investors believe it is important to listen to pundits – and, worse yet, important to consider acting upon their comments … Indeed, tumbling markets can be helpful to the true investor if he has cash available when prices get far out of line with values. A climate of fear is your friend when investing; a euphoric world is your enemy.

2. Focus on earnings and productivity

Focus on the future productivity of the asset you are considering. If you don't feel comfortable making a rough estimate of the asset's future earnings, just forget it and move on. No one has the ability to evaluate every investment possibility. But omniscience isn't necessary; you only need to understand the actions you undertake.

3. Worrying about price fluctuations is speculating not investing

If you instead focus on the prospective price change of a contemplated purchase, you are speculating. There is nothing improper about that. I know, however, that I am unable to speculate successfully, and I am skeptical of those who claim sustained success at doing so. Half of all coin-flippers will win their first toss; none of those winners has an expectation of profit if he continues to play the game. And the fact that a given asset has appreciated in the recent past is never a reason to buy it.

Games are won by players who focus on the playing field – not by those whose eyes are glued to the scoreboard. If you can enjoy Saturdays and Sundays without looking at stock prices, give it a try on weekdays.

4. Ignore macro opinions or the political environment

Forming macro opinions or listening to the macro or market predictions of others is a waste of time. Indeed, it is dangerous because it may blur your vision of the facts that are truly important. (When I hear TV commentators glibly opine on what the market will do next, I am reminded of Mickey Mantle's scathing comment: "You don't know how easy this game is until you get into that broadcasting booth.") In the 54 years we (Charlie Munger and Warren) have worked together, we have never foregone an attractive purchase because of the macro or political environment, or the views of other people. In fact, these subjects never come up when we make decisions.

5. Don't need to own 100% of a great business

At Berkshire, we much prefer owning a non-controlling but substantial portion of a wonderful company to owning 100% of a so-so business; it's better to have a partial interest in the Hope diamond than to own all of a rhinestone … Woody Allen stated the general idea when he said: "The advantage of being bi-sexual is that it doubles your chances for a date on Saturday night." Similarly, our appetite for either operating businesses or passive investments doubles our chances of finding sensible uses for our endless gusher of cash.

6. The best opportunities are in the United States

Charlie and I have always considered a 'bet' on ever-rising U.S. prosperity to be very close to a sure thing. Indeed, who has ever benefited during the past 237 years by betting against America? If you compare our country's present condition to that existing in 1776, you have to rub your eyes in wonder. And the dynamism embedded in our market economy will continue to work its magic. America's best days lie ahead … Though we invest abroad as well, the mother lode of opportunity resides in America.

7. **Non-professional investors will do well indexing**

You don't need to be an expert in order to achieve satisfactory investment returns. But if you aren't, you must recognize your limitations and follow a course certain to work reasonably well. Keep things simple and don't swing for the fences. When promised quick profits, respond with a quick 'no.'

Most investors, of course, have not made the study of business prospects a priority in their lives. If wise, they will conclude that they do not know enough about specific businesses to predict their future earning power. I have good news for these non-professionals: The typical investor doesn't need this skill. In aggregate, American business has done wonderfully over time and will continue to do so (though, most assuredly, in unpredictable fits and starts) … A low-cost S&P 500 index fund will achieve this goal.

My money, I should add, is where my mouth is: What I advise here is essentially identical to certain instructions I've laid out in my will. One bequest provides that cash will be delivered to a trustee for my wife's benefit. (I have to use cash for individual bequests, because all of my Berkshire shares will be fully distributed to certain philanthropic organizations over the ten years following the closing of my estate.) My advice to the trustee could not be more simple: Put 10% of the cash in short-term government bonds and 90% in a very low-cost S&P 500 index fund. (I suggest Vanguard's.) I believe the trust's long-term results from this policy will be superior to those attained by most investors – whether pension funds, institutions or individuals – who employ high-fee managers.

8. Don't sell when the news is bad

The main danger is that the timid or beginning investor will enter the market at a time of extreme exuberance and then become disillusioned when paper losses occur. (Remember the late Barton Biggs' observation: "A bull market is like sex. It feels best just before it ends.") The antidote to that kind of mistiming is for an investor to accumulate shares over a long period and never to sell when the news is bad and stocks are well off their highs. Following those rules, the 'know-nothing' investor who both diversifies and keeps his costs minimal is virtually certain to get satisfactory results. Indeed, the unsophisticated investor who is realistic about his shortcomings is likely to obtain better long-term results than the knowledgeable professional who is blind to even a single weakness.

9. A public pension crisis is coming in the United States

Local and state financial problems are accelerating, in large part because public entities promised pensions they couldn't afford. Citizens and public officials typically under-appreciated the gigantic financial tapeworm that was born when promises were made that conflicted with a willingness to fund them. Unfortunately, pension mathematics today remain a mystery to most Americans.

During the next decade, you will read a lot of news – bad news – about public pension plans. I hope my memo (reproduced in his report) is helpful to you in understanding the necessity for prompt remedial action where problems exist.

10. 50 years of Berkshire Hathaway

Next year's letter will review 50 years at Berkshire and speculate a bit about the next 50.