

Geared investments

This article looks at the benefits and risks of using debt to gear investments. Gearing is a valuable tool in achieving efficient investment outcomes on many levels and its use in financial theory is well established. However, the manner in which gearing is applied can result in different investment outcomes than those expected from the application of financial theory. Like many aspects of investing there are no free lunches and gearing, in particular, is one area that tends to tempt investors beyond what is a rational course of action. One reason for this is that gearing can hide a multitude of sins in good times, which become horribly exposed when market conditions are less favourable. The current climate is a case in point. Investors should use gearing techniques appropriately and responsibly.

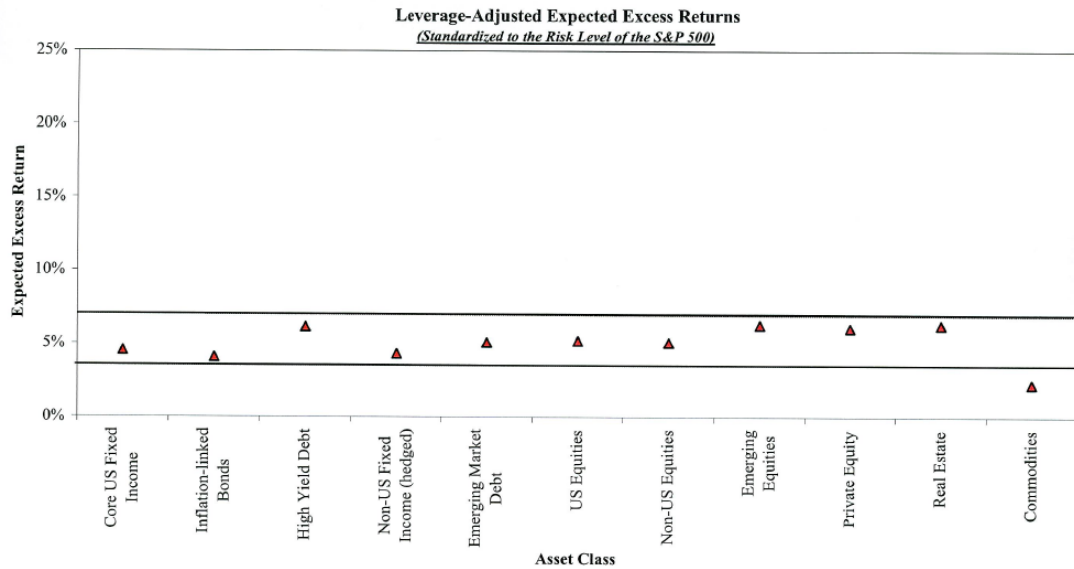
Why would an investor gear up returns?

There are a number of reasons why an investor would use gearing ranging from an attempt to increase absolute returns to using gearing to improve portfolio diversification. To follow are a number of benefits that may be achieved from gearing an investment

1. Gearing an investment is a method **to increase absolute returns**. The table below shows the effects of applying two times gearing to a notional \$100 investment

Initial Investment	100	100	100	100	100
Return	10%	20%	30%	40%	45%
Geared return	20%	40%	60%	80%	90%
Return Leverage	2.00	2.00	2.00	2.00	2.00

2. Gearing can be used to improve returns for lower returning/ lower risk assets or to modify the risk of certain asset classes to improve portfolio construction.
3. Gearing can be used **to improve portfolio diversification**. The chart below depicts an equalisation of risk across a number of assets classes through the use of gearing. From a theoretical standpoint, if the returns and risk of all asset classes are set to a common level, then a portfolio can be constructed to provide a better spread of return and risk, rather than one type of return and risk dominating. For example, in a typical balanced portfolio equity return and risk dominates, primarily because the higher expected return from equities sets its allocation to a high level. However, if returns and risk were equalised then the underlying characteristics of each asset class will have a greater influence on portfolio outcomes.



Source: Bridgewater

4. Using debt to gear investments provides **tax advantages**, both in terms of interest deductibility and the opportunity to defer taxation payments. These factors can have a substantial positive impact on investment returns.
5. Gearing can enable an investor **to access an investment** that it otherwise would not have the resources to achieve. This could have positive return and portfolio diversification benefits.

What are the risks of gearing?

1. Risk in terms of volatility of returns is increased by a factor equivalent to the level of gearing. For example, if an investment is two times geared then the volatility of the returns will typically be twice that of the ungeared asset.
2. However, and this is the critical point to understand, the impact of gearing on negative returns can be dramatic.

Gearing affects absolute positive and negative returns the same way, in that the geared outcome is a multiple (equivalent to the gearing level) of the ungeared outcome. However, when one considers the impact of negative returns on the investment value and the return that is required to restore the investment to its par value the story for negative returns is very different. Gearing amplifies the impact and then some.

The table below compares the impact on investment values for an ungeared investment and a two times geared investment. The Return to Par row is the one to focus on. If a -10% ungeared return is earned, then the geared return is -20%. The return required to restore the ungeared investment to its par value is 11%, for the geared investment the required return is 25%, a multiple over the ungeared return of 2.25.

Now consider a -45% ungeared return and a -90% geared return. In this case, the return required to restore the ungeared investment to its par value is 82%, for the geared investment the required return is 900%, a multiple over the ungeared return of 11 times!

Ungeared					
Initial Investment	100	100	100	100	100
Return	-10%	-20%	-30%	-40%	-45%
Market Value	90	80	70	60	55
Return to par	11%	25%	43%	67%	82%
Geared at 2x					
Initial Investment	100	100	100	100	100
Return	-20%	-40%	-60%	-80%	-90%
Market Value	80	60	40	20	10
Return to par	25%	67%	150%	400%	900%
Return Leverage	2.25	2.67	3.50	6.00	11.00

1. The risk adjusted return will only be constant if the cost of borrowing is at the risk free rate. The table below demonstrates that so long as the cost of borrowing is the same as the risk free rate (cash for example), risk adjusted returns are unaffected by gearing. However, if the cost of borrowing is greater than the risk free rate risk adjusted returns are impaired.

		Borrowing at Risk Free rate		
Leverage		0	1	2
Risk Free Rate	6.00%	8.14%	8.14%	10.28%
Volatility	0.00%	2.75%	2.75%	5.50%
Sharpe Ratio	0.00	0.78	0.78	0.78
		Borrowing at 7%		
Leverage		0	1	2
Risk Free Rate	6.00%	8.14%	7.14%	8.28%
Volatility	0.00%	2.75%	2.75%	5.50%
Sharpe Ratio	0.00	0.78	0.41	0.41

2. Most assets are inherently geared, which adds to the risk of independently gearing an asset. For example, ABC Learning employed a geared growth strategy (i.e. it borrowed heavily to buy assets to increase earnings). To the extent it suffers problems in accessing debt then its share price will be affected by its gearing strategy. If an investor also uses gearing to invest in ABC Learning then the investor has suffered (or benefited) from the effects of gearing twice over.

3. The nature of the borrowing arrangement can have an impact on the ability of an investor to control his/her investment. For example, in a margin lending arrangement, if the share price of an investment falls below a pre-defined level then the investor is required to either contribute cash or to sell shares. In this event the investor loses control of his/her investment at precisely the wrong time in the investment cycle (i.e. being forced to sell shares when prices are falling).
4. Gearing introduces new risks including interest rate risk, re-financing risk and liquidity risk.

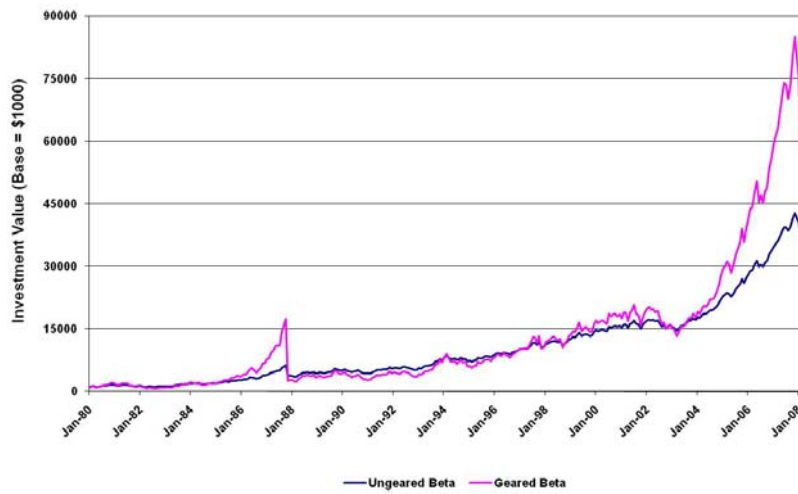
What do geared outcomes look like?

After exploring the theory it is worth taking a look at how investment returns have fared over time on a geared and ungeared basis. We have used the Australian stock market as our proxy asset class to consider the outcomes. Our starting premise should be that an ungeared investment in the Australian stock market will deliver a positive return over the long-term. Indeed, this has been the historical experience and it needs to be in order to encourage investors to assume the risk attaching to an investment in the stock market. It follows then that a geared investment in the Australian stock market should be expected to produce a positive return and that return should be the return of the ungeared stock market multiplied by the gearing level.

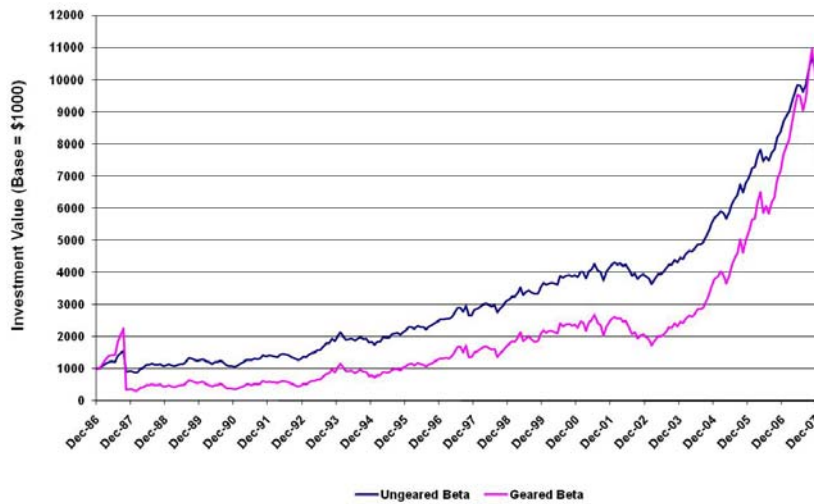
However, the timing of the investment will have a large impact on the returns an investor will earn from the stock market on an ungeared and geared basis. Furthermore, as noted above, because of the magnification of gains and losses from gearing, investing on this basis requires a higher tolerance for risk and perhaps greater patience.

The series of charts below depicts how a \$1,000 investment in the S&P/ASX 300 index has performed on a geared and ungeared basis over three different time periods.

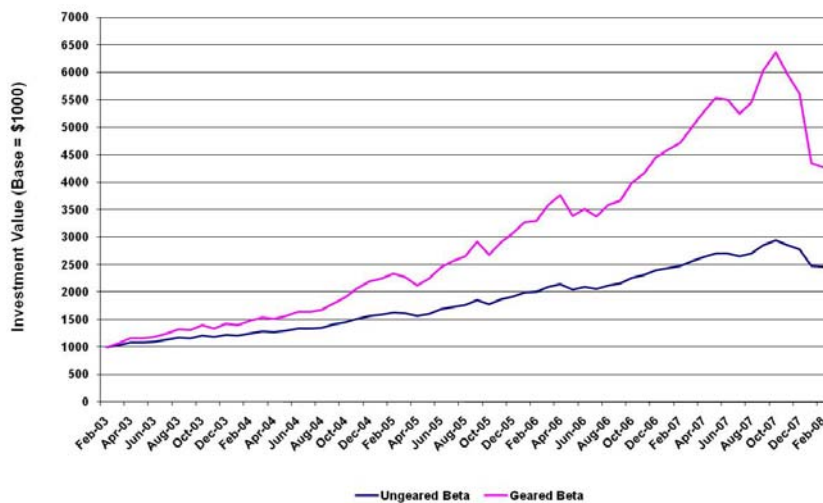
Period = January 1980 to February 2008



Period = December 1986 to February 2008



Period = February 2003 to February 2008



Historical experience informs us that:

1. Geared returns are susceptible to sharp downturns in the stock market. Over the data set this happened in October 1987 and the months following and in November 2007 and the months following. The top right hand chart above shows that a geared investor (in this case 2x geared) commencing in December 1986 up to February 2008 would have underperformed an ungeared investor.
2. Geared returns benefit from a sustained rally in the stock market. This is evidenced by the strong return environment from February 2003.
3. Geared returns are susceptible to choppy markets. That is, where returns are not in a positive trend, but bouncing around between positive and negative returns and where the magnitude of the positive returns is insufficient to recover the impact of the negative returns. The period from post October 1987 through to February 2003 demonstrates the impact of such market conditions on geared and ungeared returns.
4. The return experience depicted in the charts shows the real volatility of returns that investors have to contend with when they gear investments.

Conclusion

Gearing of investments can have a number of positive benefits from improving returns to improving portfolio diversification and risk management. However, gearing also magnifies losses and depending upon the borrowing arrangements entered into these can be exacerbated by an investor being forced to sell assets at the wrong time in the cycle. The current market environment is providing a salutary lesson for investors and business that have been less than judicious in their use of gearing. Nevertheless, provided gearing is used appropriately and responsibly it is a valuable tool to be used in constructing efficient investment portfolios.

Alistair McCreadie
Principal Consultant
27th March 2008

Ken Marshman
Head of Investment Outcomes

Advice Warning

This research note is intended to provide general information only for wholesale clients and has been prepared by JANA Investment Advisers Pty Ltd ABN 97 006 717 568 (AFSL 230693) without taking into account any particular person's objectives, financial situation or needs. Investors should, before acting on this information, consider the appropriateness of this information having regard to their personal objectives, financial situation or needs.

JANA Investment Advisers Pty Ltd, Level 9, 530 Collins Street, Melbourne VIC 3000, Australia, is a member of the National Australia Bank Group of companies.