

Market Metrics: September 2008

19 September 2008

The real cost of cash

Key points

- **We investigate the often forgotten but real costs involved in switching in and out of cash.**
- **We highlight the implicit bet investors make as to the future level of the market that is concealed within their decision of when to sell out of equities and invest in cash.**
- **We show that in many cases investors who have sold out of equities at some time in the last year will be worse off at the end of 2010 if the market recovers to its previous peak of 6,800 by this time.**

Executive Summary

Those investors who have ever read an academic study on share market returns would have surely seen the big disclaimer at the end of what was probably a fantastic set of numbers “these results ignore the effects of taxes and transaction costs”. So common is such a disclaimer in these kinds of reports that it has become an academic joke of sorts. So why then, do most of us forget about these issues when thinking about getting in and out of cash?

While cash is definitely a safe haven with an important role to play in the portfolios of all investors it does involve some costs that are often over-looked. The real cost of cash includes not only inflation and tax but also the cost of getting in and out. Unless you were always in cash you are likely to incur some kind of cost to enter. This cost will either be Capital Gains Tax (CGT) on the asset you are selling in order to make the switch or a

capital loss which you are forced to realise. Likewise, unless you plan to stay in cash forever, you are likely to realise a cost on the way out. This will be in the form of an opportunity cost. That is, what returns have you missed out on by holding your funds in cash?

The purpose of this report is to give investors a framework for understanding the true cost of cash when making asset allocation decisions. While cash is integral to the stability and success of any portfolio, the theoretical advantage of having a dynamic asset allocation which involves regular switching from cash to equities or vice versa is likely to be completely eroded by the real costs which are embedded in such a strategy. Selling to invest in cash is a good thing if your appetite for risk has changed but doing so for short-term shelter only to return at some later stage may not deliver the capital protection many expect.

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Section 1: Recent events

Former Federal Reserve chairman Alan Greenspan has described the fall-out for global financial markets from the sub-prime lending crisis as a once in 50 year event. Such uncertainty makes maintaining your conviction in the asset allocation prescribed to you as a result of your risk appetite and financial goals a challenging task – especially if that asset allocation involves equities. Are you better off by just selling out and sitting back in cash? While only the most courageous among us are likely to be able to truthfully say that they haven’t considered this, unless the end-of-the-world doomsday predictions come true, the answer is likely to be no. At times like these the most important thing is to not lose sight of the big picture. Investing is a long-term game, markets do go down at times, but long-term have proven to out-perform. The right asset allocation diversified across a range of different asset classes and holding tight in times of turmoil are key to long-term success.

But what happens if you’ve already decided to sell with a short-term view to re-enter at some later date? Let’s assume that you sold at the start of January this year (see Figure 1). What were the costs you realised by doing so and what will be the trigger for you to get back in? Over these eight or so months the market has undeniably been cruel but would you have been in a worse position by sitting tight and holding on? For some investors the answer will be yes but for many, and this will depend on when you bought and what stocks or managed funds you were holding, the answer will be no. The answer will also depend on your view as to the direction of the market from here. The following section attempts to provide investors with a framework for rationally answering these questions. These examples are by no way exhaustive and investors must keep their own financial situation and appetite to risk in mind at all times when considering such questions.

Figure 1: S&P/ASX 200 index since 1 Jan 2008



Source: IRESS
Data to 16 September 2008

Section 2: The cost of switching

In this section we investigate the costs investors would have realised to switch into cash at different times over the last 12 months assuming that they had bought the S&P/ASX 200 index at various times over the last 13 years. We also look at what level of the S&P/ASX 200 index they would need to buy back in at in order to make the switch to cash worthwhile and not be left behind. In all cases we assume that the investor is taxed at the top marginal rate of 46.5% (including Medicare Levy).

By way of example we have chosen the following times for investors to sell down their holdings:

- 17 August 2007 – the bottom of the first significant fall resulting from the sub-prime lending crisis (the S&P/ASX 200 was 5,671)
- 1 November 2007 – the market peak (the S&P/ASX 200 was 6,829)
- 2 January 2008 (the S&P/ASX 200 was 6,353), 1 April 2008 (the S&P/ASX 200 was 5,361) and 1 July 2008 (the S&P/ASX 200 was 5,139) – the start of each quarter beginning 2008

Example 1 – You bought the S&P/ASX 200 index in 1995

Assume you entered the market on 3 January 1995 and invested \$1 for each point of the S&P/ASX 200 index making an initial investment of \$1,849 (the S&P/ASX 200 was at 1,849 points at the time). Your investment and any subsequent gains, losses and taxes can therefore be measured in terms of index points which we show in Table 1.

Table 1: Investor's position if bought the S&P/ASX 200 at a level of 1,849 in January 1995

Sale date	S&P/ASX 200 index	Gain	Realised CGT	After-tax funds to invest in cash
17 Aug 07	5,671	3,822	889	4,782
1 Nov 07	6,829	4,980	1,158	5,671
2 Jan 08	6,353	4,504	1,047	5,306
1 Apr 08	5,361	3,512	817	4,545
1 Jul 08	5,139	3,290	765	4,374

Source: PCS Investment Research, IRESS

If selling on 17 August 2007 your initial investment of \$1,849 would have grown to \$5,671. Therefore, upon sale you would realise CGT of \$889 leaving you with after-tax funds to invest in cash of \$4,782. This is equivalent to realising 889 index points in CGT or selling when the S&P/ASX 200 was 4,782 points and not paying any CGT.

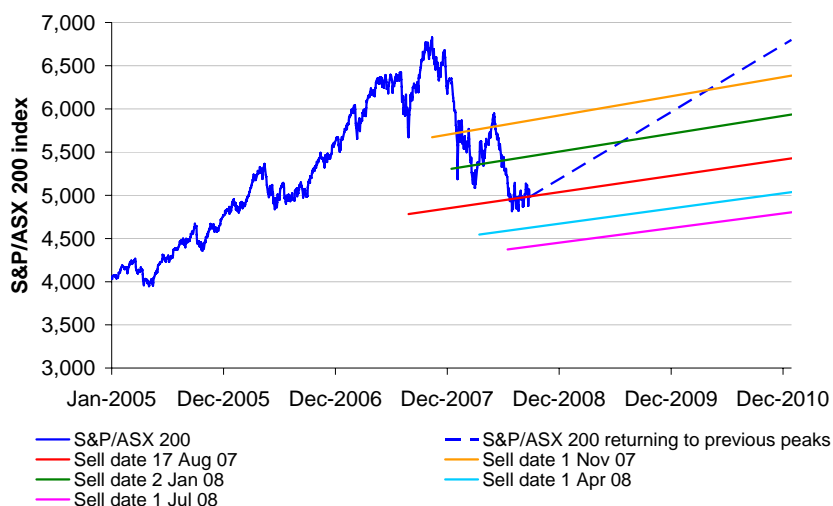
If you then invest these after-tax funds in cash (on the sale date) what would your investment return? If we assume a cash interest rate of 7% p.a. investors on the top margin tax rate receive 3.75% p.a. after tax. Cash is taxed as income meaning that the investor is liable at the end of every financial year. While dividends are also taxed this way, capital gains on equities are not taxed until they are realised creating a tax-effective investment for many

investors who can defer this tax until they are in a lower tax environment (eg in retirement). The tax treatment of cash as well as the impact of inflation often means that for those investors on high marginal tax rates, the real after-tax return on cash is very low.

Assuming after-tax growth of 3.75% p.a. for cash, in Figure 2 we show the expected growth of these investments from the sale date until December 2010. We also compare these investments to the S&P/ASX 200 if it recovers to its previous peak (6,800) in this time (requires annual growth of approx. 5% from current levels).

For all sale dates, the size of the realised capital gains (and therefore CGT payable) is so large that the cash investments are playing catch up from the start. So much so that if the market does return to its previous peak at some time during the next 2 years, those investors who switched to cash will be worse off. For example, if you had been lucky enough to sell at the peak in November 2007 your investment would be worth \$6,385 at the end of 2010 versus \$6,800 had you simply stayed in the market – a difference of \$415. What this means is that the value of your investment in cash at the end of 2010 is equivalent to an index level of just 6,385. Therefore, if you believe that the index will be above this level by this time then switching to cash and staying there would not have been the best strategy. Even if you think that the market will fall further below current levels provided you believe it will recover in time then staying in for the long-term will still be the better option. A paper loss is simply that if you are not forced to sell at a low. Therefore, what this means is that if you had sold but think the market will be at previous peaks by December 2010, you must re-enter at some point before this time to ensure that you are not worse off. But the question is at what level?

Figure 2: S&P/ASX 200 index and projected cash growth paths if investor bought in 1995



Source: IRESS
Data to 9 September 2008

If you sold at the peak and believe that the S&P/ASX 200 will be back at 6,800 by the end of 2010 you must re-enter the market before it gets to 6,219 to make sure you receive the same return you would have earned had you simply stayed in the market the whole time. If you don't re-enter when the market is below this point, your return from selling and switching to cash will be less. However, if you do re-enter before this point, your return from

switching in and out will be greater than what would have achieved from staying in the market. This re-enter point occurs where the future path of the index crosses the projected path of cash. In this stylised example (by which we mean that the index grows at a constant rate) this point occurs in February 2010.

The index level at which the cash investor will need to re-enter the market to avoid being worse off at the end of 2010 will of course vary depending on the investor's belief as to the level of the index at this point in time. However, to obtain a benchmark, if you assume that your funds in cash do not grow then this level will remain constant and be equal to the level of your after-tax funds at sale (which is 5,671 in this case). Table 2 shows the value of each cash investment at the end of 2010 and the required re-enter points for the different sale dates to ensure you would not be worse in December 2010. These points are shown for various projections for the future.

Table 2: Investor re-enter levels if bought the S&P/ASX 200 at a level of 1,849 in January 1995

Sale date	S&P/ASX 200 index	After-tax funds to invest in cash	Value of cash by Dec 2010	Required re-enter level (in terms of S&P/ASX 200 points)			
				If cash does not grow (not dependent on future index forecast)	If expect S&P/ASX 200 to be 6,000 by Dec 2010	If expect S&P/ASX 200 to be 6,800 by Dec 2010	If expect S&P/ASX 200 to be 7,500 by Dec 2010
17 Aug 07	5,671	4,782	5,427	4,782	4,990	4,988	4,987
1 Nov 07	6,829	5,671	6,385	5,671	6,787	6,219	6,095
2 Jan 08	6,353	5,306	5,936	5,306	5,878	5,622	5,563
1 Apr 08	5,361	4,545	5,038	4,545	4,380	4,519	4,554
1 Jul 08	5,139	4,374	4,804	4,374	4,042	4,247	4,300

Source: PCS Investment Research, IRESS

Notes: Blue cells indicate low levels not (yet) reached by the S&P/ASX 200 index in the current bear market. Green cells indicate high levels not expected to be reached by the S&P/ASX 200 index in the time period based on the scenario.

The figures in the 'value of cash by December 2010' column show the value that your funds would grow to if invested in cash from the sale date. It is this level that the S&P/ASX 200 must be below in December 2010 in order for your decision to switch to cash to have been worthwhile. As we showed in the November 2007 sale date example, if the index is above this level, you would have been better off simply sitting tight in the market. Now we see that in all cases, for investors who originally entered the market in 1995, the value of their investment from switching to cash, at the end of 2010 is significantly below the S&P/ASX 200 index's previous peak of 6,800. What this means is that had you bought and sold at these times, effectively what you were doing was locking in a view that the index would not return to its previous peak within the next 2 years. It is important for investors making these decisions that they realise such implications.

For those investors who sold out in November and believe that the index will not be above 6,000 by the end of 2010 (requires annual growth of approx. 3% from current levels over the next 2 years), and this in fact is realised, switching to cash would have been a good decision. However, for those investors who waited and did not sell out to April or July this year, the market will need to fall further to levels not yet seen by this bear market, in order for

them to re-enter and not be worse off from switching. These levels are around the 4,000 – 4,500 mark compared to current levels of around 4,600.

Example 2 – You bought the S&P/ASX 200 index in 2003

Now assume that you entered the market 8 years later on 2 January 2003 and invested \$1 for each point of the S&P/ASX 200 index making an initial investment of \$3,028 (the S&P/ASX 200 was at 3,028 points at the time). Subsequent gains, losses and taxes on your investment are shown in Table 1 for each of the different sale dates. CGT in all cases is less since you entered the market at a higher level. However, in all cases you would still have made a positive after-tax return on your investment.

Table 3: Investor’s position if bought the S&P/ASX 200 at a level of 3,028 in January 2003

Sale date	S&P/ASX 200 index	Gain	Realised CGT	After-tax funds to invest in cash
17 Aug 07	5,671	2,643	615	5,056
1 Nov 07	6,829	3,801	884	5,945
2 Jan 08	6,353	3,326	773	5,580
1 Apr 08	5,361	2,334	543	4,819
1 Jul 08	5,139	2,111	491	4,648

Source: PCS Investment Research, IRESS

As was the case in the 1995 example, the size of the CGT liability means that the after-tax funds available for you to invest in cash on the sale dates are significantly less than the level at which the index was trading on these day. Again, this forces your cash investment to play catch up from the start. Looking at Figure 3, we see that in all cases, the value of each cash investment at the end of 2010 is less than the market’s previous peak of 6,800.

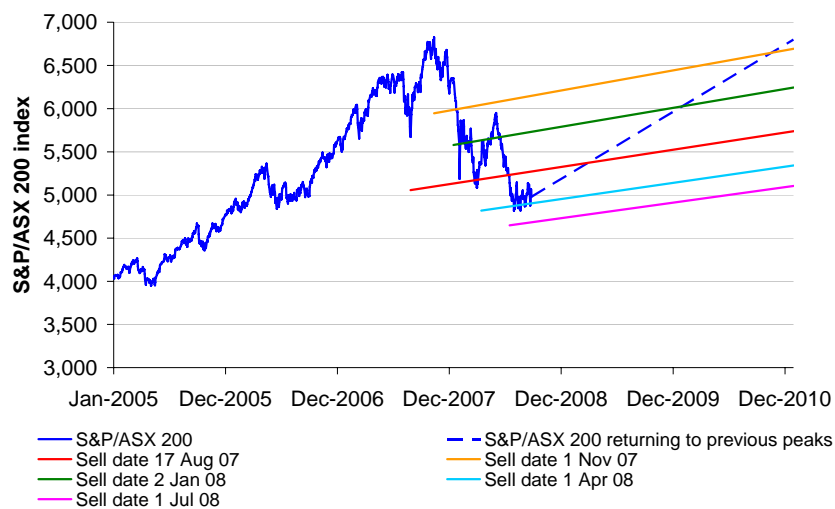
Table 4: Investor re-enter levels if bought the S&P/ASX 200 at a level of 3,028 in January 2003

Sale date	S&P/ASX 200 index	After-tax funds to invest in cash	Value of cash by Dec 2010	Required re-enter level (in terms of S&P/ASX 200 points)			
				If cash does not grow (not dependent on future index forecast)	If expect S&P/ASX 200 to be 6,000 by Dec 2010	If expect S&P/ASX 200 to be 6,800 by Dec 2010	If expect S&P/ASX 200 to be 7,500 by Dec 2010
17 Aug 07	5,671	5,056	5,738	5,056	5,517	5,372	5,338
1 Nov 07	6,829	5,945	6,694	5,945	7,493	6,648	6,471
2 Jan 08	6,353	5,580	6,243	5,580	6,486	6,025	5,923
1 Apr 08	5,361	4,819	5,341	4,819	4,844	4,878	4,886
1 Jul 08	5,139	4,648	5,104	4,648	4,474	4,593	4,623

Source: PCS Investment Research, IRESS

Notes: Blue cells indicate low levels not (yet) reached by the S&P/ASX 200 index in the current bear market. Green cells indicate high levels not expected to be reached by the S&P/ASX 200 index in the time period based on the scenario.

Figure 3: S&P/ASX 200 index and projected cash growth paths if investor bought in 2003



Source: IRESS
Data to 9 September 2008

Since the investor bought into the market at a higher level and therefore realised less CGT, the levels required to re-enter the market to avoid being worse off at the end of 2010 are higher than in the 1995 example. That being said, if you had sold recently around July this year, you would still need the index to fall lower than its current levels in order for you to be able to re-enter and not be worse off. However, if you managed to sell in November 2007 or January this year after originally buying in 2003 and believe that the market will not be above 6,000 in 2 years time (and this occurs) then selling to invest in cash will have been the right decision.

Example 3 – You bought the S&P/ASX 200 index in 2006

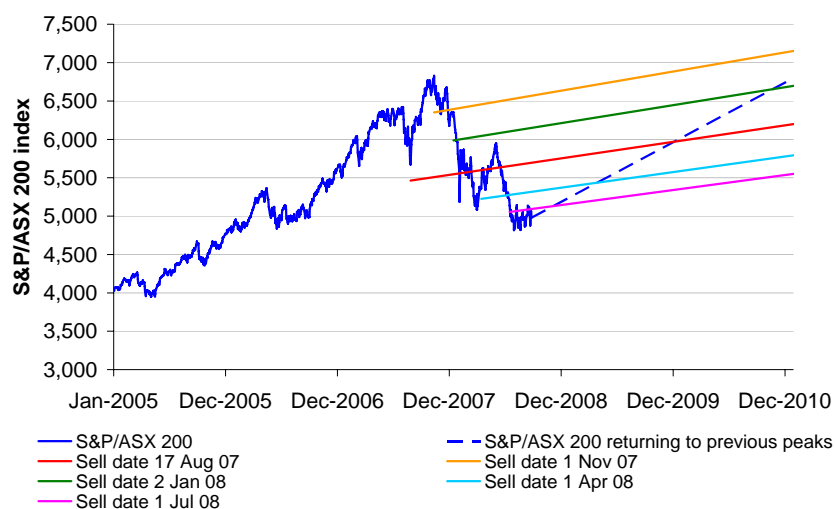
In this section we repeat the example had you entered the market on 3 January 2006 and invested \$1 for each point of the S&P/ASX 200 index making an initial investment of \$4,776 (the S&P/ASX 200 was at 4,776 points at the time). In all cases you would have still realised a positive after-tax return on your investment. Additionally, for all sale dates except that now the peak in November 2007 is excluded, the value of your funds from switching to cash continues to be less than the market’s previous peak of 6,800 at the end of 2010.

Table 5: Investor’s position if bought the S&P/ASX 200 at a level of 4,776 in January 2006

Sell date	S&P/ASX 200 index	Gain	Realised CGT	After-tax funds to invest in cash
17 Aug 07	5,671	895	208	5,463
1 Nov 07	6,829	2,053	477	6,351
2 Jan 08	6,353	1,577	367	5,986
1 Apr 08	5,361	585	136	5,225
1 Jul 08	5,139	363	84	5,055

Source: PCS Investment Research, IRESS

Figure 4: S&P/ASX 200 index and projected cash growth paths if investor bought in 2006



Source: IRESS
Data to 9 September 2008

Table 6: Investor re-enter levels if bought the S&P/ASX 200 at a level of 4,763 in January 2006

Sell date	S&P/ASX 200 index	After-tax funds to invest in cash	Value of cash by Dec 2010	Required re-enter level (in terms of S&P/ASX 200 points)			
				If cash does not grow (not dependent on future index forecast)	If expect S&P/ASX 200 to be 6,000 by Dec 2010	If expect S&P/ASX 200 to be 6,800 by Dec 2010	If expect S&P/ASX 200 to be 7,500 by Dec 2010
17 Aug 07	5,671	5,463	6,199	5,463	6,393	5,969	5,874
1 Nov 07	6,829	6,351	7,151	6,351	8,689	7,317	7,046
2 Jan 08	6,353	5,986	6,698	5,986	7,508	6,653	6,475
1 Apr 08	5,361	5,225	5,792	5,225	5,610	5,435	5,394
1 Jul 08	5,139	5,055	5,551	5,055	5,184	5,130	5,118

Source: PCS Investment Research, IRESS

Notes: Blue cells indicate low levels not (yet) reached by the S&P/ASX 200 index in the current bear market. Green cells indicate high levels not expected to be reached by the S&P/ASX 200 index in the time period based on the scenario.

Example 4 – You bought the S&P/ASX 200 index in 2008

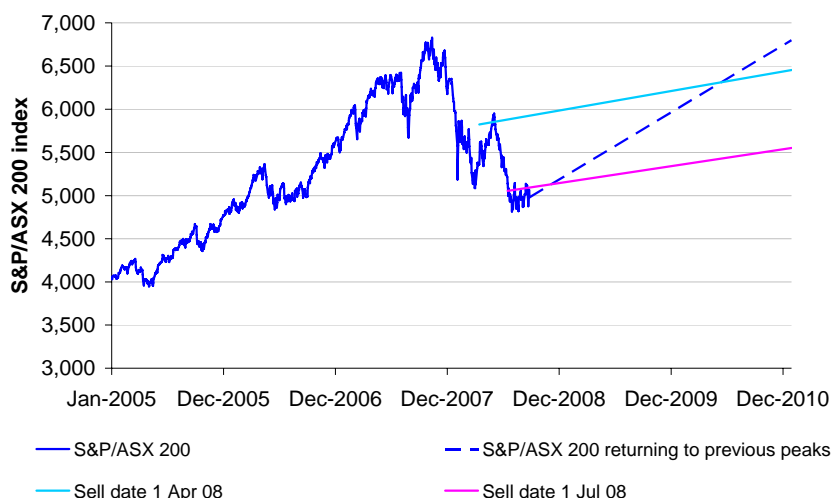
What if you had only recently started investing in equities? In this example, we consider a case where the investor entered the market on 2 January 2008 and invested \$1 for each point of the S&P/ASX 200 index making an initial investment of \$6,353 (the S&P/ASX 200 was at 6,353 points at the time). In this case the only sale dates we are able to consider are 1 April 2008 and 1 July 2008. In both cases, if the investor sold at this time they would be realising a capital loss. Since capital losses can be carried forward to offset future gains, we credit the investor's after-tax position by the taxable value of the capital loss. Therefore, the after-tax funds available to invest in cash on each of the sale dates are actually greater than the level at which the index is trading on these days.

Table 5: Investor’s position if bought the S&P/ASX 200 at a level of 6,353 in January 2008

Sell date	S&P/ASX 200 index	Gain	Realised CGT	After-tax funds to invest in cash
1 Apr 08	5,361	-992	-461	5,822
1 Jul 08	5,139	-1,214	-565	5,704

Source: PCS Investment Research, IRESS

Figure 5: S&P/ASX 200 index and projected cash growth paths if investor bought in 2008



Source: IRESS
Data to 9 September 2008

Table 7: Investor re-enter levels if bought the S&P/ASX 200 at a level of 6,353 in January 2008

Sell date	S&P/ASX 200 index	After-tax funds to invest in cash	Value of cash by Dec 2010	Required re-enter level (in terms of S&P/ASX 200 points)			
				If cash does not grow (not dependent on future index forecast)	If expect S&P/ASX 200 to be 6,000 by Dec 2010	If expect S&P/ASX 200 to be 6,800 by Dec 2010	If expect S&P/ASX 200 to be 7,500 by Dec 2010
1 Apr 08	5,361	5,822	6,454	5,822	6,946	6,312	6,175
1 Jul 08	5,139	5,704	6,264	5,704	6,535	6,051	5,944

Source: PCS Investment Research, IRESS

Notes: Green cells indicate high levels not expected to be reached by the S&P/ASX 200 index in the time period based on the scenario.

In this case the cost that the investor realises to switch to cash is not in the form of CGT but rather a capital loss. While this is partly offset by the associated tax benefit, in both cases the investor’s cash investment at the end of 2010 is still significantly below the market’s previous peak of 6,800. But if indeed the market does not recover to this level by such a time and instead stalls around the 6,000 market, switching to cash will have been the better decision.

Section 3: Conclusion

While investing in such uncertain times is definitely not easy it's important not to lose sight of long-term goals. Therefore, while investors can earn a safe 7% – 8% in cash this security must be weighed up against those costs that must be realised in order to switch into cash and the risk of not reaching long-term objectives.

In nearly all the cases we have considered in this analysis, the value of an investor's funds at the end of December 2010, after switching to cash at some time in the last 12 months, would be less than the market's previous peak of 6,800. Therefore, by selling what the investors in these examples are essentially betting is that they do not believe that the market will recover its losses over this 2 year period. While no one knows what the future holds given the continued strength of the fundamentals underpinning our market we believe that there is a good chance that such a recovery can be made in this time. Of course if it isn't and the market continues to slide and does not recover then switching to cash will have been the right thing to do. However, even if you believe that the market has further to fall, provided you are confident it will recover these gains then staying in for the long-term is likely to produce a better outcome than trying to time the market and switch in and out of cash. Remember, a paper loss is simply that if you're not forced to sell at a low for funding or gearing reasons.

So as the volatility in the market continues around us we urge investors to ponder their true motive behind a switch to cash. Is it a result of changes in risk tolerance or investment horizon or is it simply just to seek shelter from the storm. If it is the latter and investors are intending to re-enter the market at some later time, it will be important that they do so at a level which ensures they are no worse off as a result of their temporary switch to cash. While for some who have sold very recently this is will require the market to fall below current levels, for others this level may present itself sooner than expected when (and if) the market begins to recover.

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