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Quarterly Pensions Update

Key Points

- The funded status of plans sponsored by S&P 1500 companies, as measured by US financial reporting standards, was 75% at December 31, 2008 which represents a deficit of $409 billion. This compares to a funded status of 104% (surplus of $60 billion) at December 31, 2007 and a funded status of 97% (deficit of $35 billion) at September 30. This deficit will be included on the balance sheet of company financial statements, many of whom have a December 31 financial year end.

- The sharp reduction in the funded status over the quarter has been caused not only by the fall in the market value of equities (23% down over the quarter), but also the fall in corporate bond yields (8.0% at September 30, 8.5% at October 31, 7.6% at November 30 and 6.3% at December 31). The fall in corporate bond yields between November 30 and December 31 on its own caused the funded status to decline by 10% or $198 billion.

- The deterioration in funded status will also affect reported earnings in 2009. Mercer estimates that pension expense for 2009 will be approximately $70 billion for 2009, compared with approximately $10 billion for 2008 and $35 billion for 2007.

- Credit spreads remain high, and sponsors remain exposed to a contraction of these credit spreads. If credit spreads return to levels observed over the last 3-4 years, without a recovery in equity markets or Treasury yields, the funded status would fall to 58%, representing a deficit of over $880 billion.

- The funded status under US funding legislation (the Pension Protection Act), which sets out the methodology for determining plan contribution requirements, will also have declined. The amount of the decline will depend on certain decisions that plan sponsors need to make. The decline will result in increased cash funding requirements in 2009 and beyond.

- Unlike 401(k) plans, IRAs and similar retirement investment savings accounts, where workers have experienced significant losses in their retirement savings, any loss in the funded status of a pension plan is borne by the sponsor. The value of this guarantee should be even more apparent to workers after the turmoil of 2008

- Plan sponsors need to reevaluate the financial risks they are taking in their pension plans, and their tolerance for doing so. First, the significant change in funded status over the last 12 months results in a different risk profile. Second plan sponsors themselves are likely facing different business challenges; pension plan risk tolerances need to be reviewed in the new business environment. Finally, the capital market outlook has changed significantly; investment decisions taken need to be revisited to ensure the current investment strategy is appropriate given the current capital market outlook.

Introduction

"We have only one history of capitalism. Inferences based on a sample of one must never be accorded sure-thing interpretations" – Paul Samuelson.

Few economists or market commentators predicted the chaos that has been observed in the world's financial markets over the last 12 months. At the close of business on December 31, 2008 the S&P500 index stood at 903.25, a loss of almost 40% over the year and down 23% over the last quarter. Similar changes have occurred in the world's other main equity indices. In the bond markets, 10-year treasury yields have fallen from 4.1% to 2.3% and AA yields were practically unchanged ending the year between 6.0% and 6.5% (the range reflects the dispersion of bonds and indices at the year end),.

The divergence of Treasury yields and AA yields has resulted in a significant widening of credit spreads (the difference between corporate bond yields and treasury yields). For pension plans, declining equity markets have been the main driver behind asset losses. However, the financial position of pension plans is determined by the difference in the value of the assets and the value of the liabilities. Although rising corporate bond yields have benefited pension plans through much of 2008 by reducing the value placed on plan liabilities, through the fourth quarter, and particularly in the last few weeks of December, a rapid reduction in yields has eliminated this gain. Figure 1 shows how the reduction in yields has affected the discount rate (data based on the Mercer Yield Curve, with interpolation between monthly data points).The reduction in bond yields between November 30 and December 31 increased liabilities resulting in a reduction in the funded status by 10%, or $198 billion. This was more than the reduction in funded status caused by falling asset values in any calendar month in 2008.

Figure 1

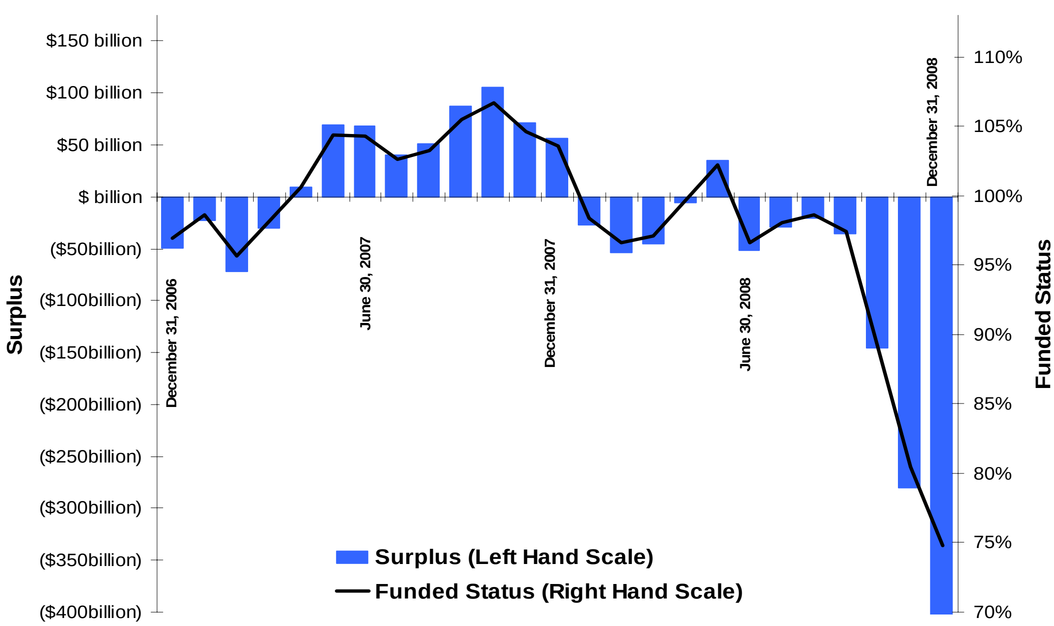
As a result, pension plans have borne the full impact of the losses in equity markets, without any benefit from reductions in liability values. The net result is a decline in the funded status of the pension plans sponsored by S&P1500 companies from 104% at December 31, 2007 to an estimated 75% at December 31, 2008. This is a significant change – based on historical data and simplified modeling, a typical plan might have expected a change of this magnitude no more than one year in 20. Corporate sponsors of defined benefit pension plans need to consider potential variations in funded status and determine whether the potential variation falls within risk tolerance limits.

This article takes a more detailed look into the current position for pension plans operated by S&P1500 companies, the implications of recent market events for 2009 (and beyond) and the possible financial management techniques for dealing with pension plans.

Focus on Pension Plan Finances

At the end of 2007, the value of assets held by S&P1500 companies to support their global pension obligations was $1.66 trillion, as reported under the US Financial Accounting Standards. The value of the pension obligations was $1.60 trillion, giving a net surplus of $60 billion. This surplus was replaced by a net *deficit* of $35 billion at the end of September 2008. Through the fourth quarter, a combination of the recent falls in stock markets and falling bond yields have resulted in the net deficit growing to an estimated $409 billion at December 31, 2008, with estimated assets of only $1.21 trillion supporting estimated liabilities of $1.62 trillion. The funded status (the ratio of assets to liabilities) at the end of 2007 was 104% and at September 30, 2008 had fallen to 97%. However, the change over the last quarter was far more significant, with the funded status falling by 22% from 97% to 75%. (See Figure 2 for more detail).

Figure 2



Source: Mercer, January 5, 2008

The change that has taken place over the last quarter is significant, but not a statistical anomaly. Over the last 40 quarters (10 years), there have been 2 occasions when the funded status has decreased by more than 15%[1] in a quarter, as illustrated in Figure 3 below, – there was a fall in funded status of 18% the third quarter of 2001 and a fall of 22% in the last quarter of 2008. These 2 occurrences out of 40 quarters equate to a historical outcome of 5% ($^{2}/_{40}$), which is in line with the expected outcome from the simple statistical model. More generally, changes in funded status since 2002 (until recently) have been much less volatile, as have investment markets generally. A key issue for corporate sponsors of defined benefit plans is whether the recent more volatile conditions fits with their current risk tolerances. This issue is covered in more detail later in this article.

Figure 3

The charts above focus on the funded status, as measured under the methodology set out under the US Financial Accounting Standards. However, plan sponsors are also concerned about the funded status under the Pension Protection Act (PPA) legislation, which affects the contribution amount required from the sponsor in 2009 and beyond, and also whether there will be a requirement to restrict benefits in any way. The precise impact of the recent market chaos is

[1] Using simple statistical models, a 15% quarterly change in funded status will occur approximately one quarter in twenty, for a hypothetical pension plan with an annual standard deviation of funded status volatility of 15%.

difficult to model, given that there are several options available under PPA to determine the value of plan assets and liabilities which are not available for financial reporting purposes. Given the sponsor options available under PPA, and despite the *Worker, Retiree, and Employer Recovery Act of 2008*, which was signed into law on December 23 by President Bush, granting some relief to the funding requirements, companies are likely to have to make higher cash contributions to their pension plans as a result of the market volatility in 2008. Additionally, there will be a significant number of companies that could fall under the 80 percent funded status trigger that could result in additional funding, benefit restrictions or plan freezes.

During the quarter there were two key drivers of the rapid and significant reduction in the funded status; the fall in equity values and the reduction in liability discount rates. These two issues are addressed below.

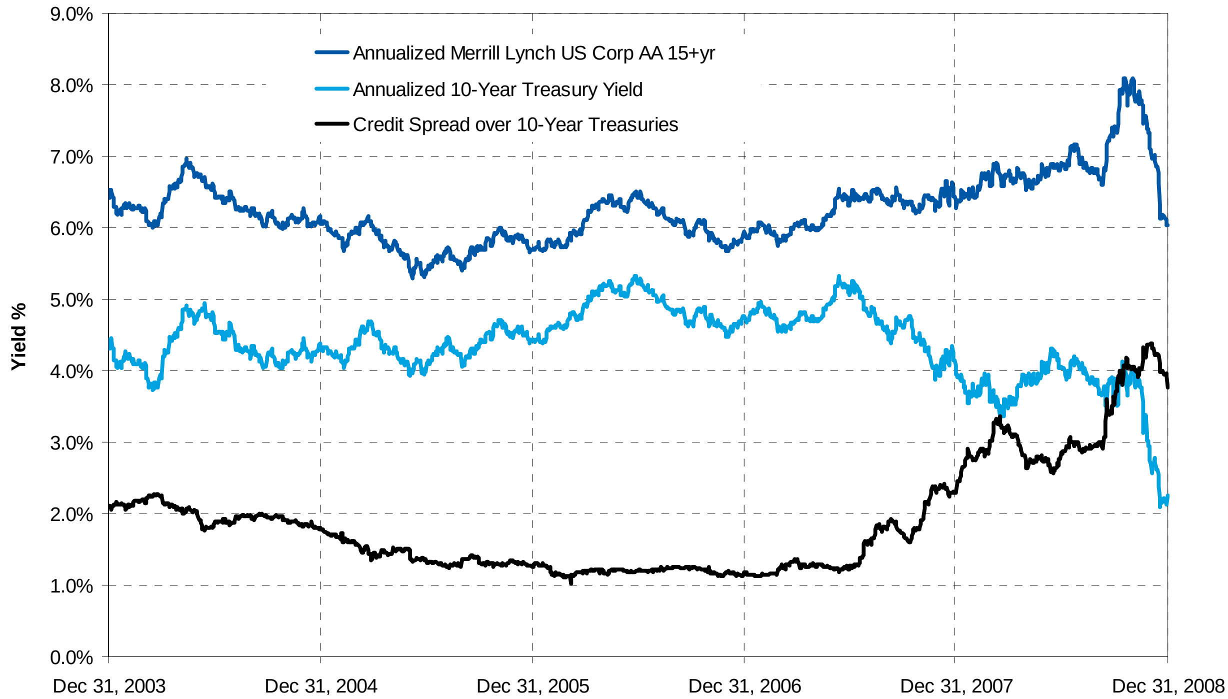
The reduction in the value of equity values (domestic and overseas) reduces the value of plan assets. Over the quarter, the return on US stocks, as measured by the S&P500, index was -23%. Non-domestic equity returns were affected not only by the negative equity return, but also by changes in the value of the dollar. With the average pension fund invested 60% in equities at the start of 2008, equity losses have had a significant impact for pension plans.

The second important issue for pension plans is the fall in liability discount rates. Over the quarter there has been a reduction in the yield on corporate bonds. Under US funding and accounting standards the value of the liabilities is calculated using a discount rate based on corporate bonds (for accounting purposes it is the yield on “high quality” – typically AA - corporate bonds and for funding it is a blend of the yields on A,AA and AAA corporate bonds). At the start of the quarter, the yield on AA corporate bonds[2] (as measured by the Mercer yield curve) was 8.0% at the end of September and has fallen to 6.3% at the end of December. This fall in the discount rate increased the present value of plan benefit payments.

Another feature of 2008 has been the widening credit spreads, up from a 5-year average of 1-1½% to over 4% at the end of November, as illustrated in Figure 4 below.

[2] Based on an assumed duration of 11 years

Figure 4

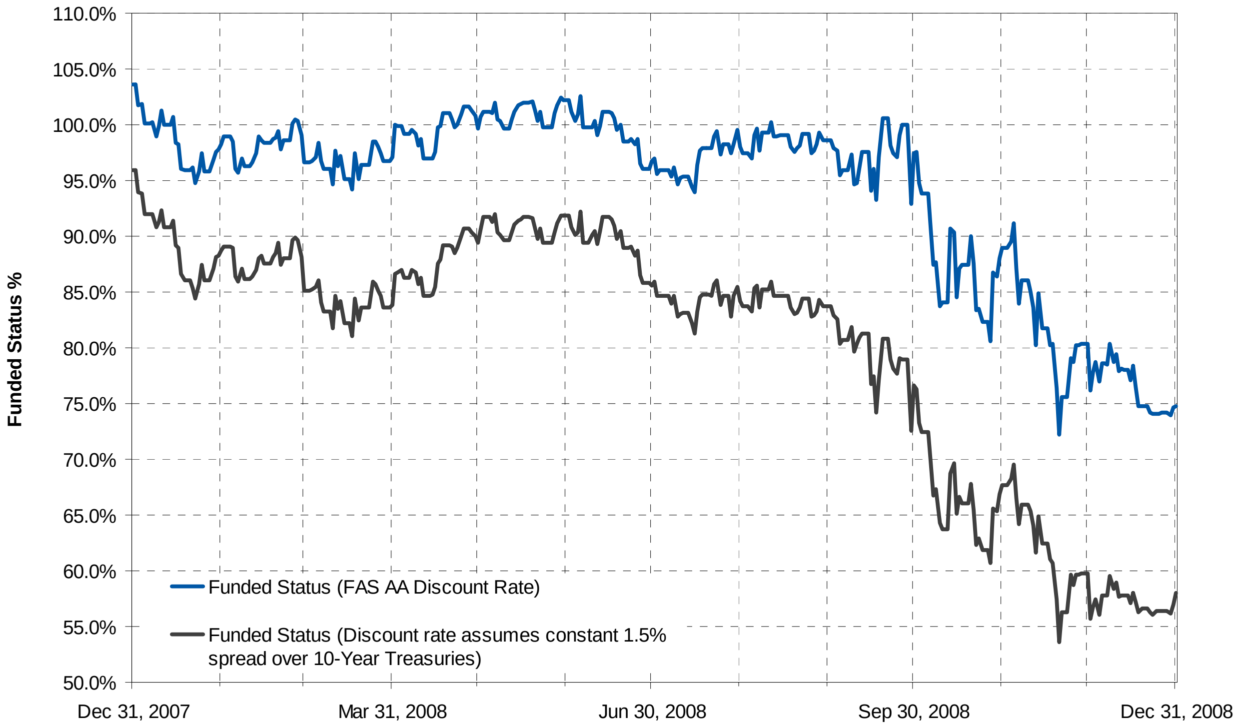


Of particular interest for pension funds is the way in which the AA yields, Treasury yields and credit spreads will move in the future, since this will determine the value of pension plan liabilities. As with our previous quarterly update[3], for the purposes of illustration, we have also considered the impact of assuming a discount rate that is based on a treasury yield plus 1½% (as a proxy for the longer term average). This might for example reflect views that measuring the value of the liabilities using AA corporate bond yields understates the true economic cost of the liability, and that a realistic position would be better captured by using a discount rate based on yields on US Treasuries. Even those that do not subscribe to this view need to consider carefully the impact of changing credit spreads.

The difference between the funded status calculated using current credit spreads and the funded status calculated allowing for credit spreads of 1½% is shown in Figure 5 below.

[3] Our previous Quarterly Update, released on October 1, 2008, showed that the impact of falling credit spreads from the September 30 position could result in a deficit of $400billion.

Figure 5



At the start of the year, the funded status using the AA yield was 104%, compared with a funded status of 96% allowing for credit spreads of 1½%. Over the year, as the credit spread has widened, so has the gap between the funded status using the two measures, so that at the end of December, the funded status using the AA yield had fallen only fallen by 29 to 75%, and the hypothetical funded status allowing for a 1½% constant credit spread had fallen by 38% to 58%. Using the 1½ % constant spread would equate to a year-end deficit of over $880 billion in pension plans sponsored by S&P 1500 companies.

Looking forward, the risk to plan sponsors depends on whether any future narrowing in credit spreads is caused by a rise in treasury yields or a reduction in AA yields. In a scenario where credit spreads narrow due to rising treasury yields (which might result from increased Treasury bond issuance to fund federal deficits), the impact on the funded status of pension plans is not significant. However, if credit spreads narrow as a result of reductions in AA bond yields (which might result from the market pricing in lower anticipated default risk, or from credit rating downgrades from the AA bond universe of the higher yielding bonds), there will be a further deterioration in funded status, as described above. The changes in market values and yields of different assets are, to some degree correlated. The widening of credit spreads, for example, is linked to the economic conditions that have driven down Treasury Yields and equity markets. Credit spreads are therefore unlikely to contract in isolation, but there is no guarantee of future orderly and even changes in AA yields, Treasury yields and equity markets.

Implication for US Corporations

As analysts prepare themselves for the 2008 year end reporting season and expectations are set for 2009, the impact of pension plans on corporate earnings, the balance sheet and on future free cash flow is likely to be more significant than in previous years. The tables below shows the relative importance of pension plans for S&P1500 companies since 2000 (figures based on December 31 data at each year end).

Balance Sheet Metrics

Year	Number of companies reporting defined benefit plans	Value of Plan Assets ($ trillion)	Value of Plan Liabilities ($ trillion)	Net Pension Surplus ($ trillion)	Funded Status	Liabilities (as a percent of market capitalization)
2000	793	1.34	1.10	0.24	122%	8.7%
2001	778	1.18	1.18	0.0	100%	10.3%
2002	798	1.04	1.28	(0.24)	81%	14.2%
2003	801	1.22	1.41	(0.19)	87%	12.2%
2004	803	1.36	1.55	(0.19)	88%	12.2%
2005	803	1.45	1.62	(0.17)	89%	12.3%
2006	805	1.57	1.63	(0.06)	96%	11.0%
2007	787	1.66	1.60	0.06	104%	10.7%
2008[4]	772	1.21	1.62	(0.41)	75%	17.4%

Earnings and Cash Flow Metrics

Year	Service cost ($ billion)	Net pension cost ($ billion)	Net pension cost (% of net income)	Employer contribution ($ billion)	Employer contribution (% of net cash flow)
2000	26.8	(12.7)	(2.6%)	17.3	2.2%
2001	27.9	(6.6)	(2.8%)	16.7	2.0%
2002	29.5	5.0	5.2%	49.1	5.2%
2003	32.2	30.9	6.1%	77.4	8.4%
2004	36.0	36.2	6.1%	63.3	6.0%
2005	37.8	40.9	5.5%	62.1	5.9%
2006	39.5	50.7	5.8%	54.0	5.4%
2007	38.4	34.8	4.7%	41.1	4.0%
2008[4]	38.0	10.0	n/a	n/a	n/a
2009[4]	38.0	70.0	n/a	n/a	n/a

[4] Estimated figures based on Mercer model that allows for adjustments to pension assets and liabilities in line with market indices, and incorporating other elements of pension expense.

The tables illustrate a number of points

- The reduction in the size of company balance sheets has not been matched by the reduction in the value of pension plan liabilities, resulting in an increased liability of pension liabilities to market capitalization. As a result, the funded status of pension plans will now have a more significant impact on the balance sheet, affecting capital ratios, leverage ratios and overall balance sheet strength.
- Pension expense in 2009 is estimated to be $35 billion higher than the reported 2007 figures and $60 billion higher than the estimated 2008 pension expense. This will affect net income, reducing earnings estimates for many companies. In particular, the last full calendar year data available for 2007 shows net income for the S&P1500 companies of $727 billion. An increase in pension expense of $60 billion would have been equivalent to an 8% reduction in profits in 2007.
- In line with the PPA funding requirements, companies will need to make additional contributions to their US plans starting in 2009 and continuing for up to seven years. The precise impact on company contributions is difficult to estimate given the smoothing options available under PPA.

Figure 6

2007

Relative size	Funding status		
	Poorly funded (< 80%)	Under-funded (80% - 95%)	Funded (> 95%)
Pension liability > 40% of market cap	1.0%	4.7%	5.6%
Pension Liability 10% - 40% of market cap	5.1%	12.3%	16.9%
Pension liability < 10% of market cap)	18.6%	18.2%	17.7%

2008

Relative size	Funding status		
	Poorly funded (< 80%)	Under-funded (80% - 95%)	Funded (> 95%)
Pension liability > 40% of market cap	19.9%	2.7%	0.6%
Pension Liability 10% - 40% of market cap	32.7%	4.5%	0.7%
Pension liability < 10% of market cap)	32.1%	3.9%	3.0%

Drawing on these metrics, a useful measure that allows companies to assess the likely business impact of their pension obligations is illustrated in Figure 6. The tables in Figure 6 show the ratio of pension liability to market capitalization (vertical axis) and funded status (horizontal axis). Companies are grouped based on the size of their pension plans relative to their market capitalization, and by the aggregate funded status, so for example at the end of 2007 there were 1.0% of companies who had a funded status of less than 80% and a pension liability greater than 40% or market capitalization. This would indicate that pension risk is very material. At the end of 2008, Mercer estimates that the proportion of companies falling into this category had increased to 19.9%. More generally, at the end of 2008 there are significantly more companies where the pension plans are a material corporate issue, as represented by the light blue boxes, and fewer companies where pension risk is unlikely to be material, as represented by the grey boxes.

Managing the Pension Plan Financials

What is clear from the last 12 months, and particularly so in the last quarter, is that markets have not only created a significant change in the funded status of pension plans, but that markets have been more volatile, and the funded status of pension plans has been more difficult to project.

Since 2000-2002, the last period of significant decreases in funded status, both the accounting standards and the funding standards have changed, moving towards a more mark to market methodology. This means that rather than being able to smooth volatility in pension plan finances, the market volatility is more directly reflected in company financial statements and in contribution requirements. In itself, this should lead corporate sponsors to review their ability to tolerate risk from their pension plans.

Indeed, unlike 401(k) plans, IRAs and similar retirement investment savings accounts, where workers have experienced significant losses in their retirement savings, any loss in the funded status of a pension plan is borne by the sponsor. The value of this guarantee - a safety net for retirement savings - should be even more apparent to workers after the turmoil of 2008. The result is that these losses must be recognized by sponsors through the balance sheet, earnings and cash.

The magnitude of the losses in the funded status of pension plans is driven by the level of investment risk chosen by the employer sponsoring the pension plan. In recent years, many sponsors of mature, well-funded pension plans took steps to reduce investment risk, and we expect that they will have fared better than average during 2008. With this past year serving as a stark reminder of the potential financial volatility for pension plans, we expect to see more employers consider the investment risk exposure accepted within the pension plan, and those that have already taken action will reevaluate their position. Aside from the volatility itself, there are three factors which make it imperative to manage the financial risks:

- the significant change in funded status over the last 12 months results in a different risk profile;
- plan sponsors themselves are likely facing different business challenges. Pension plan risk tolerances need to be reviewed in the new business environment; and
- the capital market outlook has changed significantly. Investment decisions taken need to be revisited to ensure the current investment strategy is appropriate given the current capital market outlook.

The economic environment for the corporate sponsors of defined benefit plans has changed significantly. As a result of the new environment, including the ‘mark to market’ accounting standards, corporate sponsors need to adapt and build the new reality into corporate financial planning. Although a return to historical ‘market norms’ would provide much welcome relief, the legislative requirements combined with investors and employees expectations will drive sponsors to start the journey to fill the estimated $409 billion hole that has opened up in the last 12 months. An assumption of a ‘return to norm’ would unfortunately fall into Paul Samuelson’s warning about placing too much reliance on inferences drawn from historical results.

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