

July 13, 2010



R.J. Cruz, CFA
Senior Vice President
U.S. Fixed Income

Fixed Income Commentary

Macondo Impact on Drillers, Servicers and Producers

Introduction

The Macondo oil spill in the Gulf of Mexico is likely to become a pivotal event for long-term energy policy in the U.S. It is a potential industry game-changer due to the inevitable higher costs from more stringent regulation and possible higher taxes. There is obvious uncertainty surrounding the potential impact for several companies directly impacted by the spill. Relationships between operators, partners and service providers are currently being redefined, separating responsibilities between parties, and may pave the way for consolidation in select cases.

Impact on Drillers, Servicers and Producers

The explosion of the Deepwater Horizon and subsequent spill has been clearly at the forefront of the energy sector. Whether they like it or not, those with direct or peripheral exposure to the spill have become household names: BP owns 65% of the well and operated the rig, Transocean (RIG) owns the rig, Halliburton (HAL) did the cementing work, Anadarko (APC) is a passive 25% owner of the well, while Cameron International (CAM) supplied the blow out preventer. Containment efforts continue as BP tries to increase collection capacity. As of June 21, the LMRP containment cap has been capturing over 21,000 barrels per day. Leak estimates have escalated to the range of 35,000-60,000 barrels per day.

Much attention has been directed to the relief wells. BP began drilling the first relief well on May 2, and the second one on May 16. Work on the first relief well is nearly complete having reached 17,810 feet on July 11. The company appears to be making steady progress, with July looking like the completion date of the first relief well rather than August.

Still, there are many skeptics of the effort who suggest that intersecting the Macondo well is the equivalent of finding a needle in a haystack. In this instance however, it should be noted that BP is aided by high-tech detection equipment. The Macondo well has metal casing (pipe) all the way to the bottom and sensors will be employed to detect the existing casing (likely magnetic and/or conductivity measurement tools) to determine the proximity of the relief well to the blowout. It is unlikely that the relief well will intersect Macondo on the first try but it will be able to close in eventually and, via a series of sidetracks, ultimately intersect and control the well. A potential monkey wrench to ongoing containment efforts is the upcoming hurricane season. Fortunately, tropical storm Alex inflicted very minimal damage as it weakened from a Category 3 to a Category 1 system before making landfall in Mexico on June 30.

Post the Macondo accident, President Obama announced new regulatory measures for offshore drilling, a 6-month moratorium on Gulf of Mexico (GoM) drilling and permits, cancellation of lease sales and suspension of offshore drilling on deepwater exploration wells. More stringent guidelines for offshore drilling are expected to emerge from the Administration. Nevertheless, a recent decision by a Louisiana federal court judge to lift the moratorium will likely lead to further tensions between the energy sector and the government.

Equity and debt market reaction to the oil spill names has been extremely volatile. Uncertainty in the market remains with the final legal, economic, and long-term reputation issues for BP and other spill names continuing to be predicted in a very wide range.

Fixed Income Commentary

Macondo Impact on Drillers, Servicers and Producers (cont'd)

Thus far, BP has agreed to set up a \$20 billion claims fund over the next 3.5 years. While the payments are being made, BP will pledge \$20 billion in U.S. assets to make up the deficit. As BP puts money into the fund, the assets will then be released back to the company. The fund does not cap BP's liabilities and does not account for potential clean up, other fines and penalties, punitive or criminal charges. While establishment of this fund is a step in the right direction (i.e., setting the floor), the ceiling still remains unknown. Additionally, BP has cancelled its dividend for 2010 and has increased planned divestitures to \$10 billion. Rumors with respect to its bankruptcy seem exaggerated yet cannot be completely dismissed given lack of clarity surrounding its total spill liabilities.

Ratings agency reaction has been varied with Fitch taking immediate action to take BP to "BBB" while Moody's and S&P have opted to downgrade BP to "A." Recently, Anadarko was lowered to Ba1 by Moody's based upon the company's "potential 25% share" of cleanup costs and the increasing revisions of the magnitude of the spill. Additionally, Transocean's credit ratings have been placed on negative watch by S&P due to potential liquidity strain from litigation costs, dividend payout, convertible redemption, and pricing pressure from the moratorium. Barring any new information, the next ratings triggers will likely be focused on the success/failure of the relief wells. If the relief wells fail in containing 100% of the leak, further downgrades may follow.

The consequences of this incident will ripple through the industry for years to come. Macondo continues to stir an array of wide-ranging changes to the energy industry, its regulators, policymakers and the public attitude toward energy markets. The current deepwater moratorium is just the immediate effect. More stringent offshore drilling regulations are possible and the scrutiny may eventually be directed towards onshore drillers. We believe a longer-term effect will be increased M&A and consolidation among E&P and oil service companies. There will potentially be large asset sale packages on the block. Smaller companies may not be able to survive the higher cost and liability environment. Margins of players in the GoM will likely

experience downward pressure. Producers will likely rotate capital spending onshore as offshore drilling costs increase.

GOM Exposure – Services and Drillers

Drillers	Deepwater % Revenue	GOM % Backlog	GOM fleet
Transocean (RIG)	21%	29%	12 of 75
Diamond Offshore Drilling (DO)	15%	13%	6 of 33
Noble Corp. (NE)	26%	30%	6 of 17

Services	% GOM Revenues
Baker Hughes (BHI)	4%
Halliburton (HAL)	10%
Hornbeck (HOS)	20-25%
Schlumberger (SLB)	4%
Weatherford (WFT)	2%

Source: Company reports, Moody's, Barclays and JP Morgan estimates

GOM Exposure – Producers

Company	GOM Production share (%)	GOM Reserve share (%)
Anadarko (APC)	26%	12%
Apache Corp. (APA)*	25%	16%
ATP Oil & Gas (ATPG)	89%	68%
BP Plc (BP)	11%	N/A
Chevron (CVX)	8-9%	N/A
ConocoPhillips (COP)	2-3%	N/A
Exxon Mobil (XOM)	4%	N/A
Hess (HES)	13%	N/A
Marathon Oil (MRO)	7%	N/A
Murphy Oil (MUR)	17%	11%
Newfeld Exploration (NFX)	11%	5%
Nexen (NXY)	9%	5%
Noble Energy (NBL)	10%	4%
Plains Exploration (PXP)	10%	4%
Stone Energy (SGY)	99%	99%
WTI Offshore (WTI)	99%	99%

Source: Company reports, Moody's, Barclays and JP Morgan estimates

*PF for acquisition of Mariner Energy

The Obama administration's six-month drilling ban, which is set to expire after the November midterm elections, is a definite negative overhang for the industry. Furthermore, it is unlikely that the government will relax its restrictions

Fixed Income Commentary

Macondo Impact on Drillers, Servicers and Producers (cont'd)

until the well is capped. As mentioned previously, U.S. District Judge Feldman lifted the drilling ban and ruled that the moratorium's restrictions on water depth and timing were arbitrary, and thus the restrictions did not differentiate between different types of drilling activities. An exploratory well into a new reservoir, like the Macondo well, carries greater risk than a developmental or appraisal well into a known reservoir, for example. There is a substantial difference between drilling from a floating drilling rig in thousands of feet of water and drilling from a fixed platform anchored to the seafloor at a depth of, say, 600 feet to 1,000 feet.

The government indicated they will immediately appeal judge Feldman's ruling to the Fifth Circuit Court. Interior Secretary Salazar asked to delay implementing the legal judgment and was reportedly pushing to get a revised deepwater ban in place. This sounds as if some compromise may be in the works. Perhaps the next ban will be more focused on new well drilling and allow workovers to continue. Or perhaps development wells could be drilled (less risky because formation pressures are known). Any sign of compromise is obviously a positive for the industry, particularly for small oilfield-services companies like Hornbeck Offshore and smaller E&P companies like Stone Energy, which derives 99% of its production from the GoM. While the moratorium directly affects drilling, the Macondo blowout and concerns about new regulations have created a knock-on effect for all activities in the Gulf.

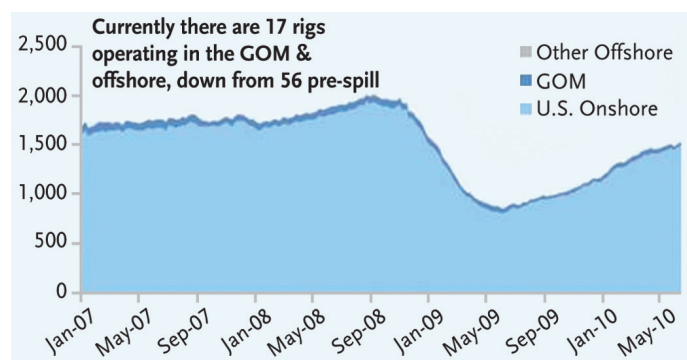
Large drillers, which so far have been unaffected by the moratorium because their rigs are under long-term contracts, are coming under greater pressure to lower their day rates because of the moratorium. Last week, Noble agreed to lower its "standby" day rate until mid-December but then extended the contract termination to account for the moratorium, a sign of increasing pressure on the deepwater drillers to lower day rates, which, in turn, will reduce their backlogs and ultimately their cash flow.

With the fervor the government is exhibiting to protect the drilling ban, producers and drillers are obviously hamstrung. For now, their only recourse is to table any plans to drill in

deepwater. Deepwater drilling is not a quick process. It takes long-term planning and logistics. Frankly, the energy sector has no other choice except to wait for clarity. Any early lifting of the deepwater moratorium will be a political resolution, not a legal resolution. Understanding what happened at Macondo is an important piece of the puzzle in the government's discovery process and Macondo-like exploration wells are off the table until that information has been received (expected by year end). Even though the industry is anxious to get back to work, it needs to lobby and convince the government that safeguards are in place. Unfortunately, politicians are stuck in the quagmire of being "tough on oil and gas" with little recognition that the GoM region continues to suffer from the ill effects of the spill. That said, drilling in the near term remains an uphill battle, regardless of what the courts say. There are roadblocks and hurdles the government can impose to affect or even stretch out the moratorium.

The obvious immediate fallout from the Deepwater Horizon incident is lower GoM deepwater activity. Currently, there are 17 rigs operating in the gulf, down from 56 pre-spill. Even if the moratorium is lifted after six months, deepwater activity may not quickly rebound to pre-spill levels as a number of rigs have left or are in the process of leaving the GoM for other regions. Also, players moving out of GoM may face pricing pressure due to excess capacity in new venues. For the remaining rigs, a transition period is expected as projects are re-evaluated, permits re-submitted and people and equipment are mobilized.

Gulf Rig Count



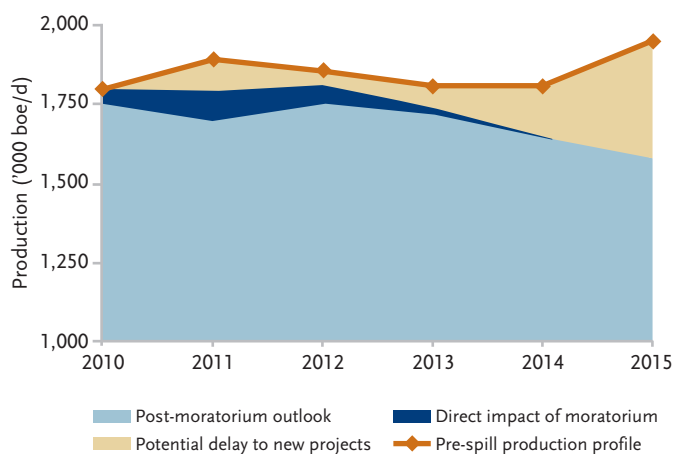
Source: Baker Hughes

Fixed Income Commentary

Macondo Impact on Drillers, Servicers and Producers (cont'd)

Longer term, it seems certain that more stringent safety and regulatory requirements will be imposed. With a more rigorous permitting process, more inspections and the potential for greater redundancies/ more conservative well construction, exploration and development costs in the deep GoM are likely to rise. Material cost increases, however, imply weaker project economics and less activity in the deepwater GoM.

The current six-month drilling moratorium is expected to have little effect as current production (and related production maintenance activities) is continuing. An analysis by Wood Mackenzie suggests that 2011 deepwater GoM production could be about 93 kboe/d, 5% lower as a direct result of the moratorium (see figure below).



Source: Wood Mackenzie

The larger and longer lasting impact will be driven by the changes that will be mandated by regulators. A significant component of expected growth in GoM production is driven by “frontier” developments like the Lower Miocene and Lower Tertiary which are generally in deeper water, further offshore and often more complex than the Macondo well. The operators of these plays now face a great deal of uncertainty and are unlikely to go forward with these projects until the ground rules are clarified. Also detailed in the figure above, the combined impact of the moratorium plus potential project delays is estimated to be 193 kboe/d (10% reduction) in 2011, rising to 340 kboe/d by 2015 or a 17% reduction versus

pre-incident estimates. More stringent requirements and/or a longer moratorium could drive these estimates higher.

Prior to the Macondo accident, the U.S. had one of the lightest regulatory burdens among major offshore markets. In part, this was due to the lack of major accidents that have occurred in offshore operations in other countries (Piper Alpha in the North Sea, Roncador in Brazil). In each of these cases, public outrage was significant and regulations were tightened. Two lessons can be gleaned from these prior incidents. First, once the well in the GoM is capped and emotions cool, the regulatory (and therefore cost) burden on the industry will rise, but to levels that it can tolerate. Second, an increase in U.S. regulations to global standards is more likely than a significant rise in global regulations and costs.

Risks specific to servicers include potential shrinkage in GoM customer base, heightened sensitivity in certain geographic markets, increased pricing competition in activity markets and higher operating costs. When drilling is allowed to resume in the GoM, independents may be forced out. In 2009, independent operators accounted for \$1.3 billion of offshore drilling revenue, or 28% of the total. However, the potential liability cap under the Oil Pollution Act of 1990 may be raised to \$10 billion, which would force all but the largest companies out of the market. Additionally, service companies may be reluctant to work with operators who do not have the financial wherewithal to provide full indemnification. The ongoing Macondo spill will likely herald material changes to drilling regulations worldwide. New safety regulations have been introduced in offshore Canada and in Norway in January 2011. The changes in GoM safety requirements may include (1) more stringent safety cases on rigs; (2) more capable blowout preventers; (3) more stringent well construction standards and (4) more regular rig inspections. Even with new regulations, operators are expected to impose higher standards for service companies. With 35 GoM floating rigs and associated services looking for alternative markets, the international offshore market may experience pricing pressure. The international rig count is less than 3% below the 2008 peak, suggesting high capacity utilization.

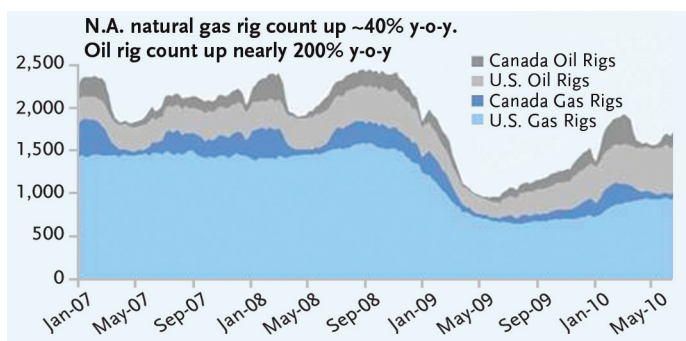
Fixed Income Commentary

Macondo Impact on Drillers, Servicers and Producers (cont'd)

While there are signs that the international market can absorb some additional capacity, there is risk that margins could be worse than expected. Finally, several factors will contribute to higher costs for servicers going forward, including higher insurance, increased maintenance, and additional regulatory requirements.

With the prospect of higher costs in the GoM and the heightened perception of risk in offshore drilling, the strategic value of onshore E&P assets may benefit as a result. Much of the M&A activity in the sector in recent months has been aimed at acquisition of technology. The countless joint ventures that have been signed lend credence to this view as buyers seem to be more interested in gaining the technical expertise of the sellers versus owning the assets outright. The industry may rethink this strategy as onshore assets now appear attractive as long lived, low risk opportunities to produce both oil and natural gas. Instead of forming joint ventures, acquisitions may become more attractive to certain strategic buyers.

N.A. Oil and Gas Rig Count



Source: Baker Hughes

As of 7/20/10, the U.S. land rig count stood at 1,557 rigs—a gain of almost 68% from a year ago but still 21% below peak levels. The question, then, is how much higher can the rig count climb, given pricing headwinds and rising political animus caused by recent spill? Answering this question is complicated. The majority of the U.S. land rig count is natural-gas directed, which makes these rigs sensitive to natural gas prices. Some of the shale plays (such as

the burgeoning Haynesville Shale or Marcellus Shale) have economies of scale that work even at low natural gas prices. As noted by the Land Rig Newsletter, a leading industry publication, “Rig productivity—a rough measure of production per gas rig—hit a recent peak of 11.4 mmcf/d in 2008 and is poised to jump even further, to 17.5 mmcf/d in 2010. In short, thanks to the blazing success that is shale drilling today, the U.S. may soon double the volume of gas production per rig versus just 3 to 5 years ago ... don’t be surprised if another downturn in the gas rig count emerges.”

In contrast, the oil-directed plays continue to rise in prominence with oil futures in the mid \$70/barrel range. Since the bottoming of the rig counts in mid-June 2009, oil-directed rig counts have climbed 228%, while natural gas-directed rig counts are up a mere 44%. Overall, oil-directed rigs have accounted for roughly 58% of the total incremental gain in rig count since the bottom, despite being only 38% of the current U.S. rig count. The ratio of crude oil prices to natural gas prices, which has averaged about 8.9x since 1998, currently stands at 16-to-1, or nearly three standard deviations from the mean, which may be a reflection of relatively stronger oil fundamentals. Taken all together, we expect continued growth in oil-directed activity on land, and some pullback in gas-directed activity, mainly in conventional gas and the higher-cost shale plays. Ultimately, there could be a modest uptick in land rig count in 2010, from the recent level of 1,557 working rigs.

Impact on Oil and Gas Prices

The immediate impact on West Texas Intermediate (WTI) crude oil prices of the Macondo incident and the subsequent drilling moratorium will be rather muted in the context of the global oil market. In 2009, the GoM represented 1.5 million b/d of oil, which equated to 17% of total U.S. production and fulfilled about 1.8% of the global market. Deepwater production in the GoM is roughly 85% of the total output in the area. What matters most in the short run is the decline rate in the GoM as existing production is not affected by the moratorium.

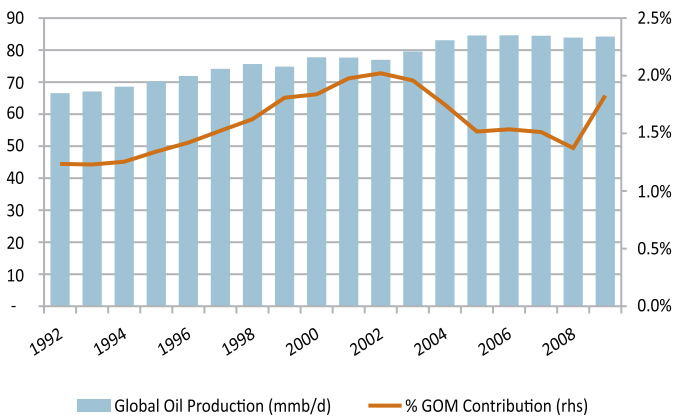
Fixed Income Commentary

Macondo Impact on Drillers, Servicers and Producers (cont'd)

According to Bank of America, GoM production decline rates are running at around 20%, suggesting that lost production could theoretically amount to as much as 340,000 b/d after three years. Nevertheless, the total amount of lost oil will likely be much lower as the moratorium could redirect capital to existing projects in more shallow areas or other parts of the world. Crude production will likely be more impacted than natural gas, since deepwater drilling is mainly focused on oil. GoM natural gas production is about 6.7 bcf/d, or 10% of Lower 48 gas production, and roughly 45% is considered deepwater or ultra-deepwater.

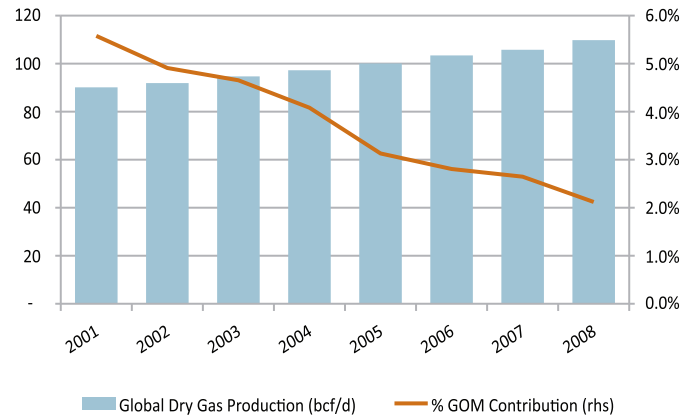
With decline rates in the GoM running at 28% in the deepwater, volumes from the region are expected to fall for the remainder of the year. In the next six months, U.S. production could fall by up to 1%, likely lending some support to U.S. natural gas prices. Still, the impact on global natural gas balances will be small as GoM production represents only 2% of the global gas market.

GoM represents 17% of total U.S. production, 1.8% of the global market.



Source: U.S. Energy Information Administration (EIA)

The impact on global natural gas balances will be small as GoM production only represents 2% of global dry gas market.



Source: U.S. Energy Information Administration (EIA)

Despite the potential for a significant pullback in production over the medium term, note that the output in the GoM will not immediately decline over the next three months due to the ongoing pipeline of projects. Moreover, the global oil supply and demand balance is loose enough to absorb the shock of lower, not to mention slower, GoM oil production. Onshore gas production, the overhang in inventories, and the availability of coal-to-gas switching can cover any immediate disruptions to U.S. supply relatively easily. Globally, contributions from projects in Brazil and Russia as well as OPEC crude and natural gas liquids (NGLs) should be able to fill any supply gaps on the global front. As such, the current six-month moratorium should not switch the balance from loose to tight and the upside to prices will be limited.

OPEC crude will continue to fill any supply gaps

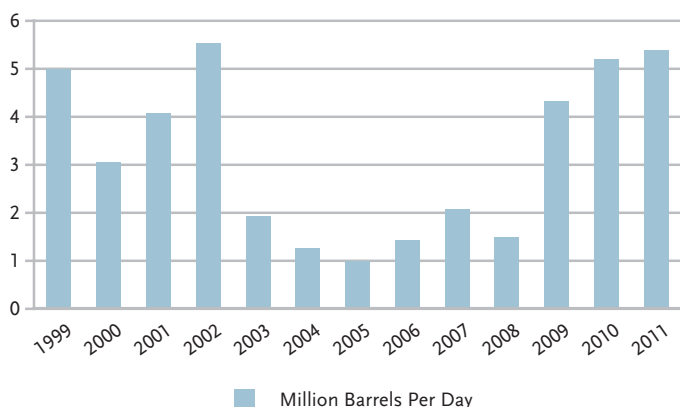
EIA projects that OPEC, which did not change its production targets at its March meeting, will keep its crude oil production largely unchanged for the remainder of 2010. The countries that have the bulk of OPEC's spare capacity – Saudi Arabia, Kuwait, and the United Arab Emirates – have maintained their quota discipline at current

Fixed Income Commentary

Macondo Impact on Drillers, Servicers and Producers (cont'd)

levels for an extended period and are expected to continue doing so barring significant changes in the world oil market outlook. OPEC crude oil production is projected to increase by 0.5 million b/d in 2011 as new capacity is added in countries such as Angola. Surplus crude oil production capacity is not expected to increase significantly in 2010-2011 from first-quarter 2010 levels. Per EIA's short-term energy outlook, OPEC's spare capacity is projected to be 5.2 million b/d in 2010 and 5.4 million in 2011, 6.1% and 6.2% of total supply respectively.

OPEC Surplus Crude Oil Production Capacity



Source: U.S. Energy Information Administration (EIA)

Conclusion

The Macondo incident will change the “rules of the game” but has limited impact on global oil and gas prices. Policy developments hold the key to the industry’s future prospects. A significant extension of the moratorium beyond six months or expansion of the moratorium to cover shallow

water permits could play out in a very dramatic manner. Rather than the GoM oil spill, a more muted global demand recovery (given the ongoing European sovereign debt crisis) poses the biggest threat to oil prices. On the gas side, onshore gas production, inventory overhang, contributions from Brazilian and Russian projects, and NGLs should fill any supply gaps in the U.S. and globally relatively easily. Specific to servicers, risks going forward include potential shrinkage in their customer base, heightened sensitivity in certain geographic markets and increased pricing competition. For drillers, more stringent safety and regulatory requirements will likely be imposed in the long run. This could increase operating costs of participants materially, weaken project economics, and lessen deepwater activity. With the prospect of higher costs in the GoM, the strategic value of onshore E&P assets may benefit and spur greater M&A activity in the sector.

This publication is for information purposes only. While the information and statistical data contained herein are based on sources believed to be reliable, we do not represent that it is accurate and should not be relied on as such or be the basis for an investment decision. Any opinions expressed are current only as of the time made and are subject to change without notice. TCW assumes no duty to update any such statements. Copyright TCW 2010