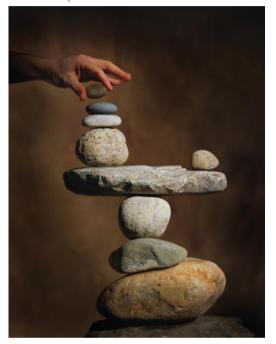
Deutsche Bank Markets Research



Fundamental, Industry, Thematic, Thought leading

Industrv **Righting the Ship**



F.I.T.T. for investors

How to Fix the Offshore Drilling Industry

The restructuring of the industry is at hand

The offshore drilling industry has been suffering much longer than the broader oilfield service sector, challenges we first highlighted nearly three years ago (see "Urban Renewal" - Nov 29, 2012) and again last year ("Rough Waters" - Aug 4, 2014). Although demand recovery is likely a 2017 event, we believe deepwater remains a long-term secular growth story. On the supply side, we think the industry is on the cusp of a major restructuring that should mark the bottom for pricing as valuation. We are therefore upgrading RIG and DO to HOLD from SELL.

Deutsche Bank Securities Inc.



Date 28 September 2015

North America United States Industrials Oil Services & Equipment

Mike Urban

Research Analyst (+1) 877 250-3113 Jason Bandel

Associate Analyst (+1) 212 250-1577 michael.urban@db.com iason.bandel@db.com

Chris Snyder

Research Associate (+212) 250 0165 chris.snyder@db.com

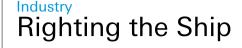
Deutsche Bank does and seeks to do business with companies covered in its research reports. Thus, investors should be aware that the firm may have a conflict of interest that could affect the objectivity of this report. Investors should consider this report as only a single factor in making their investment decision. DISCLOSURES AND ANALYST CERTIFICATIONS ARE LOCATED IN APPENDIX 1. MCI (P) 124/04/2015.

Deutsche Bank Markets Research

North America

United States

Industrials Oil Services & Equipment



How to Fix the Offshore Drilling Industry

The restructuring of the industry is at hand

The offshore drilling industry has been suffering much longer than the broader oilfield service sector, challenges we first highlighted nearly three years ago (see "Urban Renewal" - Nov 29, 2012) and again last year ("Rough Waters" - Aug 4, 2014). Although demand recovery is likely a 2017 event, we believe deepwater remains a long-term secular growth story. On the supply side, we think the industry is on the cusp of a major restructuring that should mark the bottom for pricing as valuation. We are therefore upgrading RIG and DO to HOLD from SELL.

Deepwater is far from dead...but it will take a while

The overwhelming consensus view is that "deepwater is dead" or structurally impaired. We strongly disagree. The tried and true path to long-term success in energy investing is to "go where the oil is" and that is in deepwater where reserve additions have outpaced shallow water by 3.2x and onshore by 45% (1.3x excluding oil sands). Our field by field analysis suggests long-term (10 year) demand for 320 floating rigs (vs. 225 currently active and a total fleet – including expected newbuild deliveries - of about 385 today). The bad news is that near-term demand remains weak with a rig-by-rig analysis suggesting demand will bottom at 194 rigs in 2H '16. A similar analysis of the jackup market implies trough demand of 328 by YE '16 (vs. a fleet of about 570 rigs).

Reality bites: Industry to tackle structural supply issues

Rig attrition has begun to take hold with 43 floaters retired in the current cycle to date and an additional 28 floating units cold-stacked with most of those unlikely to return to the market. Although a significant increase relative to the last several years, these actions have only removed 14% of deepwater capacity (23% including stacked units) even as roughly 75 newbuilds remain on order so the fleet will still see net growth absent more aggressive action. The news is worse on the shallow water front, where only 52 units have been retired and 57 stacked (10% and 20% of the global fleet, respectively). With the oil price testing new lows again recently, backlog dwindling and hopes for a near-term demand recovery fading rapidly, the industry now seems more realistic about the need to take more decisive action on capacity reduction. We see scope for as many as 70 floaters and 110 additional jackups to exit the fleet over the next 12-18 months, although we believe the floater market will come into balance sooner given its better secular demand outlook, higher degree of consolidation and greater differentiation between newbuild and older units.

Market leaders must act decisively

The key player in bringing the offshore market back into balance is RIG and, to a lesser extent SDRL. With a new management team in place, we believe RIG has a clean slate to take dramatic, comprehensive action by re-capitalizing the balance sheet and scrapping as many as 40 rigs (including currently stacked units). We would also not be surprised to see a significant restructuring/re-cap at SDRL. Were the industry's two largest players to act decisively, we believe it would put a floor in the offshore market by ensuring long-term viability, providing cover for smaller players to take similar actions and facilitate desperately needed consolidation.

Deutsche Bank Securities Inc.

Dedische Dank Securities Inc.

Deutsche Bank does and seeks to do business with companies covered in its research reports. Thus, investors should be aware that the firm may have a conflict of interest that could affect the objectivity of this report. Investors should consider this report as only a single factor in making their investment decision. DISCLOSURES AND ANALYST CERTIFICATIONS ARE LOCATED IN APPENDIX 1. MCI (P) 124/04/2015.

Date 28 September 2015

FITT Research

Mike Urban

Jason Bandel

Research AnalystAssociate Analyst(+1) 877 250-3113(+1) 212 250-1577michael.urban@db.comjason.bandel@db.com

Chris Snyder

Research Associate (+212) 250 0165 chris.snyder@db.com

Key Changes

Company	Target Price	Rating
RIG.N	6.00 to 10.00(USD)	Sell to Hold
ATW.N	38.00 to 39.00(USD)	-
DO.N	17.00 to 21.00(USD)	Sell to Hold
ESV.N	14.00 to 13.00(USD)	-
NE.N	20.00 to 17.00(USD)	-
ORIG.OQ	12.00 to 13.00(USD)	-
PACD.N	8.00 to 5.00(USD)	-
RDC.N	20.00 to 21.00(USD)	-
SDRL.N	12.00 to 13.00(USD)	-
Source: Deutsc	he Bank	

Companies Featured

Transocean (RIG.N),USD13.01	Hold
Diamond Offshore Drilling	Hold
(DO.N),USD19.35	
ENSCO International (ESV.N), USD14.65	Sell
Noble Corp. (NE.N),USD11.12	Hold
Ocean Rig UDW (ORIG.OQ),USD2.56	Buy
Pacific Drilling S.A. (PACD.N), USD1.45	Buy
Rowan Companies (RDC.N), USD16.32	Hold
Atwood Oceanics (ATW.N),USD15.20	Hold
Seadrill (SDRL.N), USD6.22	Hold
Source: Deutsche Bank	

This report changes rating, estimates and target prices. See pages 7 and 27-32.

Valuation & Risks

Our target prices are based on a DCF analysis. The primary risk is capacity growth. See pgs 8 and 22-32 for more details on valuation & risks.



Table Of Contents

Executive summary 3 The endgame is approaching 3 Deepwater remains a growth story; Near-term challenging 5 Recommendations – Bottom in sight 7 Key changes 7 Valuations finally becoming compelling 8 Risks 8
Offshore market outlook 9 Deepwater to resume secular growtheventually
The path forward 18 Markets leaders need to lead – RIG and SDRL are key 18 Is it realistic? 20
Recommendations 22 High quality floater exposure preferred 22
Valuation & Risks23Valuations becoming more reasonable23Valuation methodology25Risks26
Details on changes 27 Atwood Ocean (ATW, \$15.20, HOLD, \$39) 27 Diamond Offshore (DO, \$19.35, HOLD, \$21) 27 Ensco PLC (ESV, \$14.65, SELL, \$13) 28 Hercules Offshore (HERO, \$0.05, SELL, \$0) 28 Noble Corp (NE, \$11.12, HOLD, \$17) 29 Ocean Rig UDW (ORIG, \$2.56, BUY, \$13) 29 Pacific Drilling (PACD, \$1.45, BUY, \$5) 30 Rowan Drilling Companies (RDC, \$16.32, HOLD, \$21) 31 Seadrill Ltd (SDRL, \$6.22, HOLD, \$13) 31 Transocean Inc (RIG, \$13.01, HOLD, \$10) 32

Executive summary

The endgame is approaching

We have long held a negative view on the offshore drilling sector on the basis of structural over-capacity in the global rig market (see "Urban Renewal" - 27 November, 2012). By last summer, we noted that progress had been made but significant challenges remained and reiterated our negative stance (see "Rough Waters" – 4 August 2014). At that time, we laid out three criteria that, if realized, would suggest that the bottom was near.

Specifically, we noted that dayrates had to move below levels that incentivized further new construction. That happened very quickly in the floater (deepwater) market and the jackup (shallow water) market followed suit by early this year as oil prices rolled over. Second, we needed to see dayrates drop to cash flow breakeven or lower at the rig operating level. We have witnessed this dynamic in recent months in the floater market and believe it is imminent for jackups. Finally, we needed to see the jackup market (which has long held up better than deepwater) roll over which is now decisively occurring. Following the oil price collapse, we added an additional requirement which was distressed assets coming to market which has also begun in recent weeks.

Against this backdrop and with two failed rallies in oil this year, offshore drilling management teams are now faced with the harsh reality of almost nonexistent demand, dwindling backlogs and growing concerns around liquidity. We therefore think the time is ripe for more decisive action and believe we could see a dramatic restructuring of the industry over the next six to twelve months and advocate the following actions be taken by industry leaders Transocean (RIG) and Seadrill (SDRL):

- Re-capitalize balance sheets (aka "take zero off the table"): By issuing enough equity (or pursuing some other de-leveraging transaction) to ensure viability under nearly any scenario, management can make decisions based on what is in the best long-term interest of the company and its shareholders rather than what it can do within the constraints of an impaired balance sheet. Management teams are understandably hesitant to issue "dilutive" equity but with many stocks trading well below normalized (i.e. non-distressed) NAVs, the market is clearly pricing in significant liquidity/ bankruptcy risk, thereby significantly elevating the implied cost of capital.
- Right size the fleet (scrap don't stack): Natural attrition and the industry's actions to date are woefully insufficient to balance the market, even in a recovery scenario. We propose that RIG move to a pure high-spec fleet and announce the retirement (not stacking) of all currently stacked rigs and all non-newbuild rigs as they roll off contract without (excluding certain specialized assets like harsh environment). SDRL could participate in this exercise as well, but to a significantly lesser extent given its newer asset base.
- Improve pricing discipline: With the balance sheet fixed and rig supply rapidly and permanently reduced, the market leaders would have the flexibility and financial staying power to refuse to bid/ reject

History suggests the bottom is near

We believe these steps – if enacted as part of a comprehensive strategy – could effectively put a floor on offshore utilization and, by extension, rig rates and offer a path to the long-term viability, if not success, of the industry. Even with the further erosion in demand we expect in both the deep and shallow water markets through the end of 2016, these actions would stabilize industry marketed utilization (and even result in a slight increase in the case of the floater market – see figure 1).

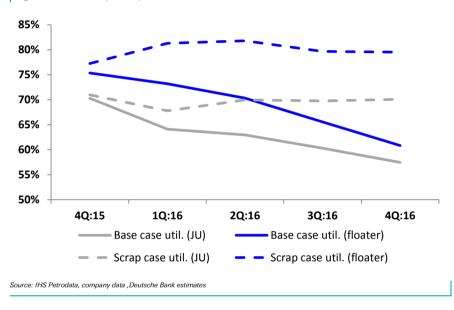


Figure 1: Industry can put a floor under utilization...even with weak demand

While the plan laid out in this report may make all the sense in the world on paper, implementing it in practice is a different story. Making the decision to scrap rigs representing billions of dollars of investment/ book value is difficult.

RIG has a new management team and therefore a clean slate without the baggage of decisions made by the previous team. RIG is also scheduled to hold an Extraordinary General Meeting (EGM) on October 29 to allow shareholders to vote on (among other things) the elimination of the dividend and a 99% reduction in the par value of its stock. While this action is necessary to account for an anticipated \$2B impairment charge, it also creates flexibility to issue equity. We also see the plan as accretive to RIG's EBITDA/ cash flow.

We also believe it is realistic for SDRL to take more aggressive action to move to a more sustainable footing. While straight equity issuance at the corporate level would be difficult given its complicated structure and shareholder base, we would not be surprised to see a structured solution that could relieve SDRL of its newbuild obligations and/ or create a vehicle to take advantage of distressed assets/ consolidation opportunities. There is significant precedent for such action as SDRL's largest shareholder (John Fredriksen) used a similar approach during the restructuring of the shipping/ tanker industry. A clean slate for RIG to take decisive action

History suggests SDRL could also move to support industry restructuring

Deepwater remains a growth story; Near-term challenging

Even with aggressive action on supply, it is hard to construct an outright bullish near-term story for the offshore drilling industry. We do, however, strongly disagree with the widely held view that "deepwater is dead" or somehow structurally impaired. The cardinal rule of energy investing is to follow the resource base or "go where the oil is" and that is clearly deepwater where deepwater discoveries have outpaced shallow by 3.2 to 1 and onshore by 45% (130% excluding oil sands) over the last 10 years.

We have updated our field by field build of global discoveries, which forms the basis for our long-term deepwater rig demand forecast. Following an expected bottom in 2H 2016, we see incremental demand for 126 floating rigs over the subsequent 10 years (see figure 2).

Figure 2: Estimated incremental deepwater rig demand (10 years post 2016)

Region	Reserve Additions ('05-'14) ¹	Additional Rigs Required
Middle East	657	8
East Africa	2,821	20
South East Asia	218	1
India	103	1
North Sea	465	3
West Africa	801	7
Brazil	3,688	55
Gulf Of Mexico	942	9
Rest of the World	2,299	22
Total	11,994	126
Newbuild order book	ζ.	74
Current available floa	aters	101
Implied total floater u	utilization	82.9%
Implied marketed flo	ater utilization	89.4%
 Last 10 years annualiz Reserve weighted aver conventional GOM dee 	age relative to	

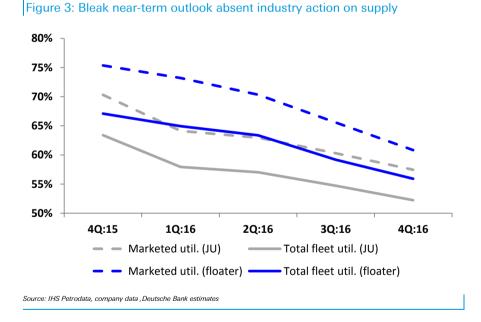
Source: Wood Mackenzie, US DOE/ EIA and Deutsche Bank

28 September 2015 Oil Services & Equipment Righting the Ship

The bad news, however, is that near-term demand in deepwater remains nearly non-existent. There are a handful of tenders in the market and low rig prices could entice a few operators to drill some exploratory wells but we see further net erosion in demand as rigs roll off contract. Our rig-by-rig analysis suggests demand will bottom at 194 rigs in 2H 2016 implying 61% marketed utilization and 56% total fleet utilization (see figure 3).

The shallow water market is tougher to balance and could see pervasive weakness absent more aggressive supply contraction from the industry. Unlike deepwater, the reserve base is declining with reserve additions the last five years 27% lower than the prior five, on average. The jackup market is also more fragmented with the top five rig owners controlling 32% of the fleet (vs. 47% for deepwater) and has de-consolidated. We also see less differentiation in the jackup market relative to the floater segment. Although the shallow water market is more commodity price sensitive than deepwater and could see a resurgence in the event of an oil price recovery, the near-term demand outlook is bleak.

A rig by rig analysis similar to the deepwater approach above sees jackup demand falling to 328 rigs by late 2016 implying 57% marketed utilization and 52% total fleet utilization (see figure 3). Although we would expect cyclical demand to recover from there on the back of higher commodity prices, the secular trend is clearly down.



Near-term demand outlook remains extremely weak



Recommendations - Bottom in sight

The weak near-term demand outlook makes a strong bull case difficult but we believe the increasing likelihood of aggressive industry restructuring/ recapitalization means that significant further downside is limited. This is particularly true in the floater space which is already further along in its supply reduction efforts and benefits from greater consolidation as well as what we continue to believe is a long-term secular demand growth story. We are therefore upgrading Diamond Offshore (DO) and Transocean (RIG) from SELL to HOLD.

In relative terms, we would prefer to own names with high quality floater exposure like Atwood (ATW) and Seadrill (SDRL) with the latter perhaps benefitting most from the potential restructuring scenario we detail above if leverage/liquidity concerns abate.

The 5th generation deepwater and shallow water markets (particularly the standard jackup market) remain extremely challenging and we therefore retain our SELL rating on ESV which has significant exposure to both.

Key changes

The industry has done a better than expected job of controlling costs, reducing expenses on both active and stacked rigs. With the industry facing at least another year of weak demand, cost deflation should continue. This generally causes modest increases in our estimates and target prices, offset in some cases by further degradation in underlying asset values (see figure 4).

Figure 4: Details on estimate, target price and ratings changes

Rating Stock Price Target Price 2015E EPS 2016E EPS 2017E EPS Ticker Company New Old 9/24/2015 New Old New Old New Old New Old Atwood Oceanics ATW Hold \$15.20 \$39 \$38 \$7.21 \$7.22 \$5.02 \$4.90 \$1.05 \$0.35 Diamond Offshore Inc. DO Hold Sell \$19.35 \$21 \$17 \$2.34 \$2.35 \$1.28 \$1.59 \$1.15 \$1.10 Ensco Plc ESV \$0.35 Sell \$14 65 \$13 \$14 \$4.11 \$4 19 \$2.28 \$2.33 \$0.65 Hercules Offshore **HERO** Sell \$0.05 (\$1.57) (\$1.51) (\$1.87) (\$1.80) (\$1.60) (\$1.75) \$0 \$17 Noble Corp. NE Hold \$11.12 \$20 \$2.78 \$2.66 \$1.34 \$1 11 \$0.00 (\$0.60)Ocean Rig ORIG Buy \$2.56 \$13 \$12 \$1.54 \$1.49 \$1.63 \$1.25 \$0.75 \$0.20 Pacific Drilling PACD Buy \$1.45 \$5 \$8 \$0.60 \$0.91 (\$0.17)\$0.01 (\$0.45)(\$0.65) RDC \$16.32 \$21 \$20 (\$0.35) (\$0.90) Rowan Companies Hold \$3.05 \$3.01 \$2.33 \$2.09 Seadrill I td SDRL Hold \$6.22 \$13 \$12 \$2.61 \$2.60 \$1.26 \$1.20 \$0.15 (\$0.10) Hold \$3.47 (\$0.85) (\$2.60) Transocean Inc. RIG Sell \$13.01 \$10 \$3.29 \$0.23 (\$0.44)\$6

Source: Deutsche Bank

A strong bull case is difficult but we believe downside is limited

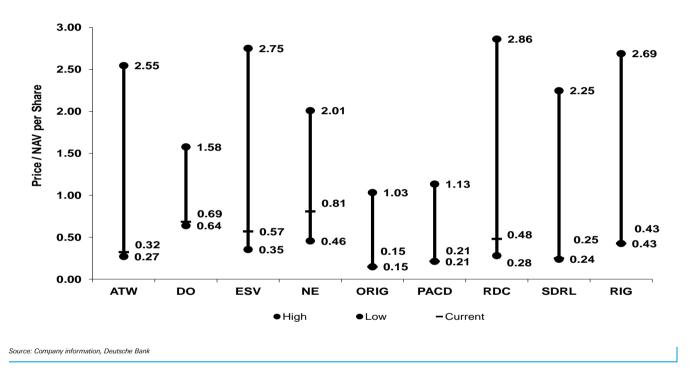


Valuations finally becoming compelling

One reason for remaining negative in the "Rough Waters" piece was our view that, despite the decline in the stocks, they were not cheap on realistic asset values. We have further adjusted our rig by rig asset valuations based on a DCF of what a buyer might realistically be willing to pay for a (non-distressed) asset. More specifically, we have reduced on underlying NAV's by nearly 40% since their post financial crisis peak. Even with those reductions, most stocks and the group as a whole are trading at or near record lows (see figure 5). With valuations at these levels, the market is clearly discounting significant levels of distress across the industry. We believe this dynamic only underscores the importance of taking decisive action on liquidity and capacity.

Distressed valuations underscore the need to take action on liquidity and capacity

Figure 5: Asset valuations at or near record lows for most companies



For offshore drillers, our target prices are based on our proprietary DCF analysis. We determine the price target based on a discounted cash flow of the contracted and un-contracted cash flows. Un-contracted cash flows have been assigned a "base case" value depending on asset class and location. Our cost of capital is based on a current cost of debt and a cost of equity. The cost of equity is based on a ten-year raw beta, the 10-year T-bond rate and a historical risk premium of stocks over treasury bonds. Terminal/ residual value is based on secondary market transactions and market estimates from rig brokers.

Risks

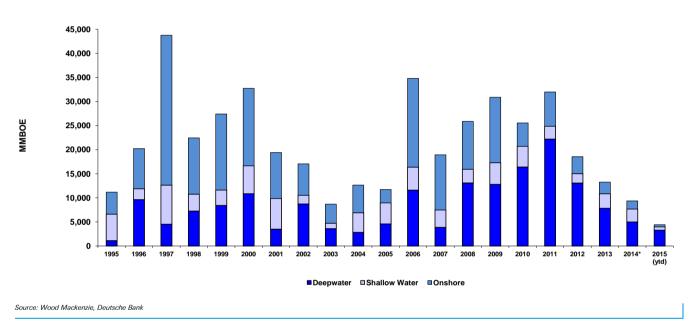
The biggest risk for offshore drillers is newbuild supply growth and the related potential for rig obsolescence. Low commodity prices are another significant risk due to its impact on rig demand. The lingering effect of the Macondo incident in the Gulf of Mexico (GoM) creates regulatory risk and the potential for higher costs and downtime. Liquidity is becoming a growing concern.

Offshore market outlook

Deepwater to resume secular growth...eventually

The overwhelming consensus view is that "deepwater is dead" or at least structurally impaired. We strongly disagree. The tried and true path to long-term success in energy investing is to "go where the oil is" and that is in deepwater where reserve additions have outpaced shallow water by 3.2x and onshore by 45% (1.3x excluding oil sands) over the last 10 years (see figure 6).

Figure 6: Deepwater continues to lead in global reserve additions



At a very basic level, oil & gas companies must invest and produce wherever the resource base takes them. While there is little doubt that costs need to come down for offshore/ deepwater, the industry has a long track record of ultimately making the economics work and we disagree with the widely held view that operators will only drill US onshore unconventional wells with deepwater now the marginal barrel.

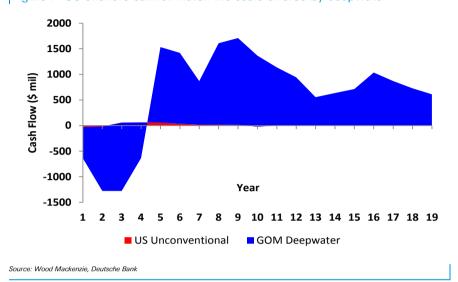
Costs have to come down but operators have to follow the resource base

This view (only drilling apparent highest IRR well) misses several key points:

Scale (aka NPV vs. IRR) – On paper, US onshore certainly looks appealing but several variables can greatly alter the equation. The majors and many NOCs typically require significant scale to generate sufficient returns across their organizations. Even a top tier unconventional oil well might produce a few thousand barrels/ day whereas it would not be unusual for a deepwater well to produce ten times that amount. Decline rates for unconventional are also notoriously steep as compared to deepwater wells which can sustain high levels of production for several years. An operator would have to drill thousands of onshore wells on an ongoing basis (to offset declines) to match the production of one deepwater development.

While the IRR of deepwater may indeed be lower (although this may change given enough time), its NPV dwarfs anything in US onshore and with the lower cost of capital typically enjoyed by the majors, the real/ net return profile may be similar (see figure 7).

Figure 7: US onshore cannot match the scale offered by deepwater



Time and the cycle – US onshore costs have corrected rapidly to the downside. The onshore vs. offshore argument, to some extent, seems to imply that onshore costs have come down in isolation and permanently. While much of the improvement onshore is indeed structural, a significant portion is cyclical as a result of severe pricing degradation. For instance, US pressure pumping pricing (which represents the largest cost for an unconventional well) is at levels which are driving cash negative margins for most contractors, clearly an unsustainable situation. Although deepwater costs will take longer to correct (both as a function of longer cycle/ contract times and the nature of the operators), they are already well on their way with rig pricing (~50% of well cost and ~25% of total project cost) having come down 50% or more at the leading edge (see figure 8).

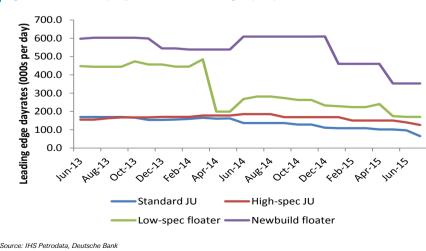


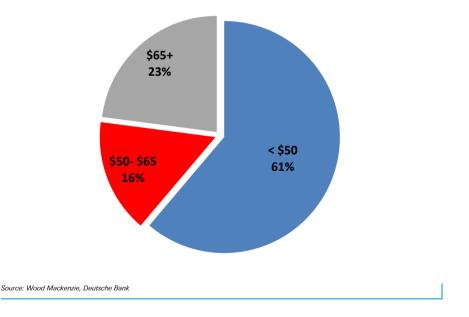
Figure 8: Offshore project costs are falling rapidly

- Access and diversification As noted previously, in a perfect world, operators may indeed prefer to drill US onshore unconventional wells but access to acreage (especially in core areas) is limited and unequal. Perhaps, more importantly, the majors prize portfolio diversification and risk mitigation and would therefore never put all their "eggs" in the unconventional "basket."
- Execution Success in unconventional plays requires flexibility and rapid innovation/ experimentation which has generally favored independent E&Ps whereas the majors have historically struggled in US unconventional which Shell at least implicitly acknowledged in its effort to acquire BG.

Given this backdrop and the fact that the resource base dictates it (again "go where the oil is"), we believe that deepwater will not only be part of the long-term production mix but a growing part of the mix, restoring its position as a secular growth story. With its surprisingly rapid downward cost adjustment, US onshore is indeed taking share but at the expense of the true marginal barrels: shallow water and high cost international onshore developments. For example, even with costs still in the process of adjusting downward, more than 34 of global deepwater developments are NPV positive at \$65 oil or less with more than 60% requiring \$50 or lower oil (see figure 9).

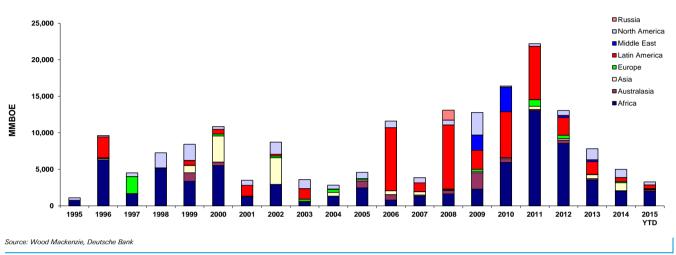
We see shallow water and international onshore as the marginal barrels, not deepwater

Figure 9: Oil price breakevens for global deepwater production



We have updated our field by field build-up of deepwater discoveries globally (see figure 10). Although it is not surprising to see a sharp drop in discoveries over the last couple of years, deepwater discoveries in 2014 still outpaced the long-term average for shallow water with 2015 on pace for similar levels. Africa has led the way the last few years with large scale gas discoveries in East Africa supplementing West African oil.





This discovery data forms the basis for our long-term (10 year) deepwater rig demand forecast. In keeping with our qualitative assessment earlier in this report, we believe the long-term demand outlook is relatively robust. We see demand for an additional 126 deepwater rigs once demand growth resumes in 2017. With about 195 rigs of demand expected by the end of 2016, we see total demand at ~320 floating rigs which would imply marketed utilization of 89% and total fleet utilization (including stacked rigs) of 83% (see figure 11).

Figure 11: Estimated incremental deepwater rig demand (10 years post 2016)

Region	Reserve Additions ('05-'14) ¹	Additional Rigs Required
Middle East	657	8
East Africa	2,821	20
South East Asia	218	1
India	103	1
North Sea	465	3
West Africa	801	7
Brazil	3,688	55
Gulf Of Mexico	942	9
Rest of the World	2,299	22
Total	11,994	126
Newbuild order book		74
Current available float	ters	101
Implied total floater ut	ilization	82.9%
Implied marketed floa	ter utilization	89.4%
 Last 10 years annualized Reserve weighted avera conventional GOM deep 	ge relative to	
Source: Wood Mackenzie, US DOE/ EIA and Deutsche Bank		

28 September 2015 Oil Services & Equipment Righting the Ship

The bad news is, however, is that near-term demand remains nearly nonexistent. There are a handful of tenders in the market and low rig prices could entice a few operators to drill some exploratory wells but we see further net erosion in demand as rigs roll off contract. Our rig-by-rig analysis suggests demand will bottom at around 194 rigs in 2H 2016 (see figure 12). We expect a combination of modestly higher oil prices and lower full cycle costs to allow for the positive long-term story detailed earlier to kick-in by 2017.

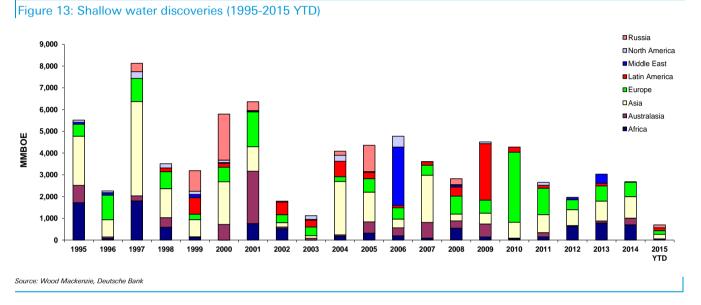
Figure 12: Near-term deepwater fundamentals likely to continue to weaken

	<u>4Q:15</u>	<u>1Q:16</u>	<u>2Q:16</u>	<u>3Q:16</u>	<u>4Q:16</u>
Beginning contracted rigs	211	214	213	211	200
Rigs rolling off contract	(20)	(27)	(11)	(14)	(13)
Existing commitments commence	4	4	2	0	0
Tenders, net	5	9	4	(2)	2
Assumed rig-specific extensions	5	2	0	1	1
Evergreen region assumed recontracted	1	0	0	1	0
Assumed incremental demand, spot work/ rollovers	7	7	1	1	0
Contracted newbuild startups	1	4	2	2	4
Ending contracted rigs	214	213	211	200	194
Supply					
Marketed supply	284	291	300	305	310
Newbuild deliveries	7	9	5	5	9
Ending marketed supply	291	300	305	310	319
Base case cold-stacked rigs	28	28	28	28	28
Base Case marketed utilization	75.4%	73.2%	70.3%	65.6%	60.8%
Base Case total utilization	67.1%	64.9%	63.4%	59.2%	55.9%
Source: IHS Petrodata, company data , Deutsche Bank estimates					



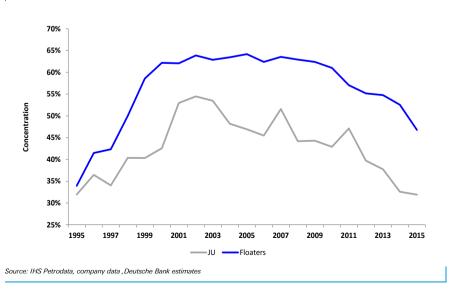
While we can see a light at the end of the tunnel for deepwater, the shallow water market could see pervasive weakness absent more a more aggressive supply contraction from the industry. Unlike deepwater, the reserve base is flat at best with average annual discoveries 17% lower over the last ten years as compared to the previous ten years (1995-2004). The trend continues to worsen at the leading edge with reserve additions the last five years 27% lower than the prior five, on average (see figure 13).

Shallow water reserve base is declining



The jackup market is also more fragmented than the floater market with the top five rig owners controlling 32% of the fleet (vs. 47% for deepwater). The market has also de-consolidated in recent years with the top five share declining from nearly 55% in the early 2000s as several large players moved to spin/ sell older assets and speculative players entered the market (see fig. 14).





We also see less differentiation in the jackup market relative to the floater segment. Whereas newer deepwater rigs have greater water depth capability and offer significantly enhanced efficiency relative to older units, the differences in jackups are less pronounced. Although newer jackups do offer some advantages (deck space, hook load capacity, pressure control), there is a greater ability to offset these benefits with price as the owners of older assets try to remain competitive.

Although the shallow water market is more commodity price sensitive than deepwater (driven by shorter lead times, lower absolute costs and proximity to infrastructure) and could see a resurgence in the event of an oil price recovery, the near-term demand outlook is bleak. A rig by rig analysis similar to the deepwater analysis above sees demand falling to 328 rigs by late 2016 (see figure 15). Although we would expect cyclical demand to recover from there on the back of higher commodity prices, the secular trend is down.

Cyclical and secular decline in the jackup market

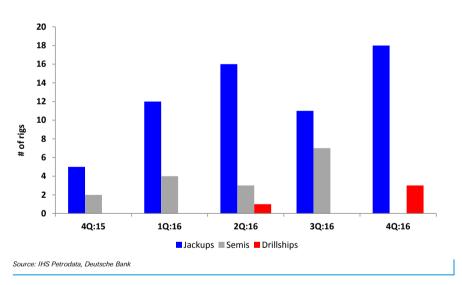
Figure 15: Deterioration in shallow water accelerating

	<u>4Q:15</u>	<u>1Q:16</u>	<u>2Q:16</u>	<u>3Q:16</u>	<u>4Q:16</u>
Beginning contracted rigs	345	367	343	345	337
Rigs rolling off contract	(49)	(52)	(25)	(25)	(11)
Existing commitments commence	12	2	0	0	0
Tenders, net	7	12	13	1	(3)
Assumed rig-specific extensions	5	3	4	9	1
Evergreen region assumed recontracted	14	4	2	0	0
Flat rig count regions	28	6	7	3	4
Owner operated recontracted, spot work/ rollovers	4	1	0	0	0
Contracted newbuild startups	1	0	1	4	0
Ending contracted rigs	367	343	345	337	328
Supply					
Marketed supply	484	522	535	548	559
Newbuild deliveries	38	13	13	11	12
Ending marketed supply	522	535	548	559	571
Base case cold-stacked rigs	57	57	57	57	57
Base case marketed utilization	70.3%	64.1%	63.0%	60.3%	57.4%
Base case total utilization	63.4%	57.9%	57.0%	54.7%	52.2%
Source: IHS Petrodata, company data ,Deutsche Bank estimates					

Offshore bulls have long held out hope that the attrition of the aging rig fleet would offset the record supply of newbuild rigs ordered in recent years. We have repeatedly disagreed, noting that the perfectly rational macro calculation to stack/ scrap an old rig is much more complicated at the individual corporate level and would take much longer than expected. In general, older assets are relatively high returning for their owners as they are often heavily depreciated. Operating costs tend to be relatively low given the lack of the "bells and whistles" associated with newbuild rigs. Scrap value is also low, if not zero, given the costs associated with demobilizing and disposing of the rig in an environmentally friendly manner.

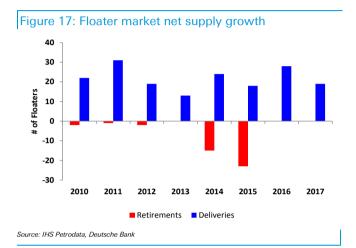
Knowing an older rig is unlikely to ever return from a prolonged absence, contractors are incentivized to bid pricing down to cash breakeven levels or worse, a dynamic we have seen play out even in the ultra-deepwater market in recent months. With an almost complete lack of demand and faced with the decision to inject capital into a 30 year-old asset in order to be competitive or to comply with regulatory survey requirement, the long-awaiting acceleration in stacking/ scrapping may finally be at hand (see figure 16).

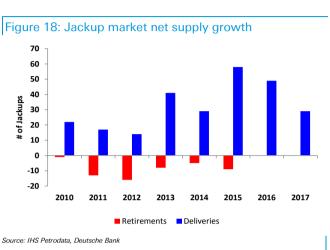
Figure 16: Special survey schedule for 30+ year old rigs



Attrition story finally taking hold...

Indeed, rig attrition has finally begun to take hold with 43 floaters retired to date and an additional 28 floating units cold-stacked with most of those unlikely to return to the market. Although a significant increase relative to the last several years, these actions have only removed 14% of deepwater capacity (23% including stacked units) even as roughly 75 newbuilds remain on order so the fleet will still see net growth absent more aggressive action. The news is worse on the shallow water front, where only 52 units have been retired and 57 stacked (10% and 20% of the global fleet, respectively–see figures 17 & 18).





With the oil price testing new lows again recently, backlog dwindling and hopes for a near-term demand recovery fading rapidly, the industry now seems more realistic about the need to take more decisive action on capacity reduction. Figures 19 and 20 highlight the magnitude of the problem. Balancing the market as demand bottoms in 2016 would require 30-40% of the currently viable floater fleet and 20-30% of viable jackup units to be removed from the market including a significant majority of the non newbuild/ high-spec rigs. While an admittedly an extreme case as we see 2016 as trough demand, it underscores the point that natural attrition alone will not fix the supply side.

...but natural attrition alone cannot balance the market

Figure 19: Floater retirements needed to balance market

<u>Floaters</u>		
2016 average demand	206	
Floaters on order	74	
Contracted 6G	83	
Available 6G	21	
 Total high-spec	178	-
Marketed 5G	74	
Cold-stacked 5G	9	
Marketed 4G and below	110	
 Total other floaters	193	-
Attrition required for 90% utilization	tion	142
Attrition required for 80% utilization	tion	113
*Assumes all 4G and below stacked rigs	are retired	

Jackups		
2016 average demand	344	

Figure 20: Jackup retirements needed to balance market

Loro average demand		
Jackups on order	129	
Contracted high-spec	131	
Available high-spec	39	
Marketed Harsh Env	73	
Total high-spec	372	
Marketed standard	140	
Marketed commodity	18	
Total other jackups	158	
Attaition required for 0.0% utilized	[140
Attrition required for 90% utilizat		148
Attrition required for 80% utilizat	tion I	100

*Assumes all non high-spec stacked rigs are retired

Source: IHS Petrodata, Deutsche Bank

Source: IHS Petrodata, Deutsche Bank

The path forward

Markets leaders need to lead – RIG and SDRL are key

The scope of implied asset rationalization detailed earlier is impossible to realize via attrition alone. Even though we do believe stacking/ retirements will accelerate as rigs face required regulatory surveys without the prospect of follow-on work, this is a multi-year process during which industry liquidity will become increasingly stressed.

Even in the relatively bullish scenario for long-term deepwater demand outlined earlier in this report, floater utilization would only reach 83% without any additional further reductions in the fleet. One should keep in mind that this is a long-term (10 year) and likely back end loaded post 2016 view in which we assume that the industry sufficiently reduces costs to allow for discoveries made during the boom years to be economically drilled and produced. In short, the industry should not expect any help from the market any time soon.

With both the supply and demand sides of the equation offering little prospect for short to intermediate term relief, we believe the industry must act decisively to ensure its long-term viability by right-sizing capacity underpinned by re-capitalized balance sheets (as necessary) to create staying power. To do so, the market leaders – RIG and SDRL – must do just that; lead. We believe the following steps – if enacted as part of a comprehensive strategy – could effectively put a floor on offshore rig rates and offer a path to the long-term success of the industry.

Re-capitalize balance sheets (aka "take zero off the table"): With share prices down dramatically over the past few years (roughly 85% from post-financial crisis highs for both RIG and SDRL), management teams are understandably hesitant to issue "dilutive" equity. With many stocks trading well below normalized (i.e. non-distressed) NAVs, the market is clearly pricing in significant liquidity/ bankruptcy risk, thereby significantly elevating the implied cost of capital.

By issuing enough equity (or pursuing some other de-leveraging transaction) to ensure viability under nearly any scenario, management can make decisions based on what is in the best long-term interest of the company and its shareholders rather than what it can do within the constraints of an impaired balance sheet. Even if a significant discount is required to place the shares, we still see significant value creation. In the case of RIG, any reasonable discount to its current price around \$13 would be significantly accretive to our previous target price of \$6.

We do not believe the recent failed offering by WFT should deter the offshore drillers from raising equity. We believe that deal suffered from a lack of specificity (raising money for an acquisition that may or may not happen) and lack of a comprehensive plan (WFT would have likely needing additional funding in the event of a successful bid for assets coming out of the BHI-HAL deal). Although the capital markets remain challenging for the energy industry, we believe that funding remains available for market leaders, especially when presented in the context

Demand recovery won't save the industry...

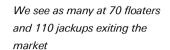
...requiring a comprehensive strategy from the market leaders

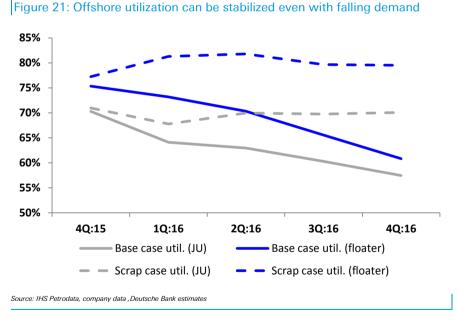
Equity issuance must be part of a comprehensive plan

of a broader, comprehensive plan (acquisition or restructuring) that ensures long-term success/ viability. Somewhat counter-intuitively, the bigger the deal the better if it removes liquidity concerns from the equation. One should keep in mind that the offshore space remains heavily shorted so a transaction could find natural buyers via covering.

Right size the fleet (scrap don't stack): As we have noted repeatedly in this report, natural attrition and the industry's actions to date are woefully insufficient to balance the market, even in a recovery scenario. Rigs that have been cold stacked/ likely to be stacked over the next 18 months are unlikely to return under nearly any scenario.

We propose that RIG move to a pure high-spec fleet and announce the retirement (not stacking) of all currently stacked rigs and all non-newbuild rigs as they roll off contract without follow-on work (excluding certain specialized assets like harsh environment). This would include most (if not all) of the 5th generation fleet which finds itself squeezed between similar cost but more capable newbuild units and lower cost older generation units which will retain some niche demand. SDRL could participate in this exercise as well, but to a significantly lesser extent given its newer asset base. We see scope for as many as 70 floaters and 110 additional jackups to exit the fleet over the next 12-18 months, although we believe the floater market will come into balance sooner given its better secular demand outlook, higher degree of consolidation and greater differentiation between newbuild and older units (see figure 21).





Improve pricing discipline: With balance sheets fixed and rig supply rapidly and permanently reduced, the market leaders would have the flexibility and financial staying power to refuse to bid/ reject contracts without acceptable returns or that at least cover the fully loaded (as opposed to cash operating) cost of the rig. Although admittedly difficult to effect in a commodity industry (especially with demand so weak), a consistent and sustainable stance on pricing from the market leaders would send a clear message to customers.

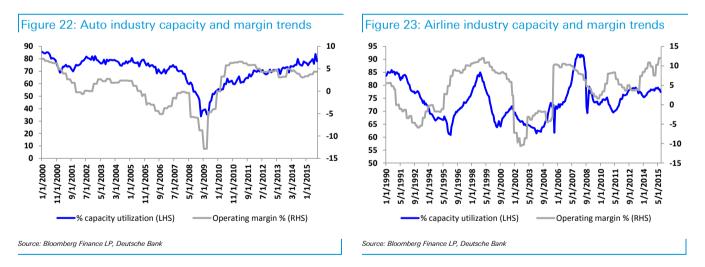
28 September 2015 Oil Services & Equipment Righting the Ship

We believe that if RIG and/ or SDRL pursue this plan (or something substantially similar), it would almost immediately put a floor under offshore dayrates and the stocks. It would send a clear message to operators and with a pricing umbrella in place perhaps coax out some demand if customers believe that costs have bottomed. It provides cover for the rest of the industry to take similar action on supply by eliminating the possibility of assets returning (share loss concerns) and facilitates consolidation as balance sheets would be in better shape as industry players could more confidently assess asset values with greater confidence in/visibility on pricing and cash flow.

Is it realistic?

While the plan laid out in this report may make all the sense in the world on paper, implementing it in practice is a very different story. Making the decision to scrap rigs representing billions of dollars of investment/ book value is difficult as it forces an admission that previous decisions were wrong. It also caps upside in the event that the market unexpectedly recovers. Without aggressive action on supply, however, there will be no recovery to have leverage to (in our view).

Faced with the reality of structural over-capacity, we believe it is the right decision. Other high-fixed cost, cyclical industries have found success by implementing similar "shrink to grow" strategies. Notable recent examples include the US auto and airline industries where profitability has rebounded sharply following capacity reduction in response to secular capacity concerns (see figures 22 and 23).



The ability to issue equity in the current environment is far from a sure thing as WFT learned. Undertaking a (mathematically) dilutive offering goes against everything an executive has learned since "Finance 101" and a powerful instinct to dilute shareholders only as an absolute last resort. Equity issuance at current levels, however, is not dilutive if the alternative is zero. We would urge management teams not to mistake the relative calm in the credit markets for a vote of confidence in the long-term outlook. As offshore market conditions continue to deteriorate and the longer that commodity prices remain depressed, that complacency can turn to panic in an instant. It is a truism of modern capital markets that one should raise money when one can, not when one has to.

We urge the industry to raise capital while it can...not when it has to On a company specific basis, we think these actions make sense in practice as well. RIG has a new management team and therefore a clean slate without the baggage of decisions made by the previous team. RIG is also scheduled to hold an Extraordinary General Meeting (EGM) on October 29 to allow shareholders to vote on (among other things) the elimination of the dividend and a 99% reduction in the par value of its stock. While this action is necessary to account for an anticipated \$2B impairment charge, it also creates flexibility to issue equity.

In terms of fleet rationalization, RIG has already stacked or retired 26 rigs and recently detailed plans to potentially idle several more. In addition to the change in industry sentiment and the other benefits detailed above, pursuing our plan to move to an all high-spec fleet and scrap (not stack) all other units has a more tangible near-term benefit. Even without any assumed pricing uplift, shedding the costs of currently stacked and idled rigs has the effect of enhancing RIG's earnings and cash flow profile (see figure 24).

Figure 24: RIG cash flow improves with smaller fleet

\$ in millions	<u>201</u>	<u>6E</u>	<u>201</u>	<u>7E</u>
	<u>EBITDA</u>	<u>Op CF</u>	<u>EBITDA</u>	<u> Op CF</u>
Previous estimate	1,359	1,109	634	223
Current estimate	1,450	1,430	969	750
Scrap case estimate	1,674	1,727	1,224	918
Source: Deutsche Bank estimates				

We also believe it is realistic for SDRL to take more aggressive action to move to a more sustainable footing. While straight equity issuance at the corporate level would be difficult given its complicated structure and shareholder base, we would not be surprised to see a structured solution that could relieve SDRL of its newbuild obligations and/ or create a vehicle to take advantage of distressed assets/ consolidation opportunities. There is significant precedent for such action as SDRL's largest shareholder (John Fredriksen) used a similar approach during the restructuring of the shipping/ tanker industry. Aggressively culling the fleet also provides a near-term cash flow benefit

Recommendations

High quality floater exposure preferred

The weak near-term demand outlook makes a strong bull case difficult but we believe the increasing likelihood of aggressive industry restructuring/ recapitalization means that significant further downside is limited. This is particularly true in the floater space which is already further along in its supply reduction efforts and benefits from greater consolidation as well as what we continue to believe is a long-term secular demand growth story. We are therefore upgrading Diamond Offshore (DO) and Transocean (RIG) from SELL to HOLD.

In relative terms and amongst the larger players, we would prefer to own names with high quality floater exposure like Atwood (ATW – retain HOLD) and Seadrill (SDRL – retain HOLD) with the latter perhaps benefitting most from the potential restructuring scenario we detail above if leverage/ liquidity concerns abate.

The 5th generation deepwater and shallow water markets remain extremely challenging and we therefore retain our SELL rating on Ensco ESV, although it remains one of the most likely (and able) consolidators along with Noble (NE).

Speaking of NE (retain HOLD), it enjoys the best cash flow profile in the industry having been a first mover on its newbuild program and could also be a player in consolidation but is currently trading at the highest P/NAV in the group and could suffer an overhang from litigation risk surrounding the spin PGN (not rated).

Rowan (RDC - retain HOLD) is well positioned with a strong balance sheet and a high-spec, well contracted fleet but is still heavily exposed to the jackup market which we see taking longer to balance.

Pure newbuild ultra-deepwater plays Ocean Rig (ORIG) and Pacific Drilling (PACD) retain long-term BUY ratings although near-term catalysts are admittedly limited. Recent bids for distressed deepwater assets in the \$300MM range would imply little equity value if applied to ORIG and PACD, but we do not see the situations as comparable. Managing liquidity will be the determining factor as to whether our more optimistic scenario is realized.

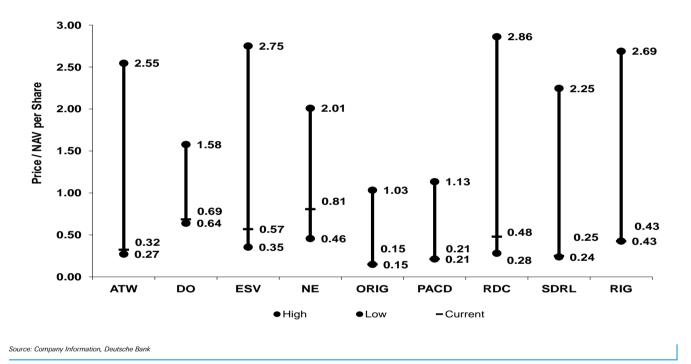
ATW and SDRL are our (relative) preferred plays amongst the larger names

Valuation & Risks

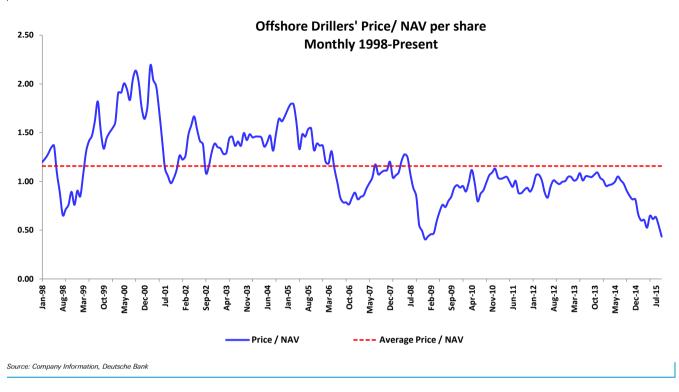
Valuations becoming more reasonable

One reason for remaining negative in the "Rough Waters" piece was our view that, despite the decline in the stocks, they were not cheap on realistic asset values. We have further adjusted our rig by rig asset valuations based on a DCF of what a buyer might realistically be willing to pay for a (non-distressed) asset. More specifically, we have reduced underlying NAV's by nearly 40% since their post financial crisis peak. Even with those reductions, most stocks and the group as a whole are trading at or near record lows (see figs. 25 & 26).

Figure 25: Asset values at or near historical lows for most companies...







With valuations at these levels, the market is clearly discounting significant levels of distress across the industry. We believe this dynamic only underscores the importance of taking decisive action on liquidity and capacity.

Figure 27: Offshore driller valuation

(\$ in millions, except per-share data)							
	DB	Price	Target		Equity	Net	
<u>Company</u>	Rating	<u>9/24/2015</u>	Price	Shares 5 1 1	Mkt.Cap.	Debt	EV
Atwood Oceanics (ATW)*	HOLD	\$15.20	\$39	65.1	\$990	\$1,642	\$2,632
Diamond Offshore (DO)	HOLD	\$19.35	\$21	137.2	\$2,655	\$2,508	\$5,163
Ensco plc (ESV)	SELL	\$14.65	\$13	232.2	\$3,402	\$4,627	\$8,029
Hercules Offshore (HERO)	SELL	\$0.05	\$0	161.5	\$8	\$1,068	\$1,076
Noble Corporation (NE)	HOLD	\$11.12	\$17	242.0	\$2,691	\$4,591	\$7,282
Ocean Rig (ORIG)	BUY	\$2.56	\$13	166.4	\$426	\$3,990	\$4,416
Pacific Drilling	BUY	\$1.45	\$5	211.1	\$306	\$2,899	\$3,205
Rowan Companies, Inc.(RDC)	HOLD	\$16.32	\$21	125.4	\$2,047	\$2,658	\$4,705
Seadrill Ltd. (SDRL)	HOLD	\$16.40	\$13	493.0	\$8,085	\$10,239	\$18,324
Transocean Inc. (RIG)	HOLD	\$13.01	\$10	363.0	\$4,723	\$6,246	\$10,969

Estimated Peer Group Summary Valuation Data

Replacement		EBITDA			CFPS		
Value	NAV	2015E	2016E	2017E	2015E	2016E	2017E
\$3,531	\$3,050	\$750	\$598	\$339	\$8.80	\$7.61	\$3.87
\$6,078	\$3,873	\$982	\$823	\$819	\$3.65	\$4.93	\$4.87
\$10,519	\$4,973	\$1,949	\$1,541	\$1,116	\$6.45	\$4.97	\$3.38
\$1,755	\$333	(\$22)	(\$22)	\$53	(\$0.65)	(\$0.91)	(\$0.61)
\$7,430	\$3,330	\$1,705	\$1,311	\$914	\$5.40	\$4.04	\$2.74
\$7,284	\$2,843	\$965	\$956	\$830	\$3.91	\$4.09	\$3.27
\$4,443	\$1,433	\$550	\$418	\$392	\$1.76	\$1.17	\$0.97
\$7,237	\$4,258	\$979	\$902	\$531	\$6.18	\$5.60	\$2.91
\$18,507	\$12,240	\$2,252	\$1,620	\$1,241	\$4.19	\$2.99	\$2.05
\$17,191	\$11,063	\$2,926	\$1,450	\$969	\$1.37	\$2.37	\$1.12
	Value \$3,531 \$6,078 \$10,519 \$1,755 \$7,430 \$7,284 \$4,443 \$7,237 \$18,507	Value NAV \$3,531 \$3,050 \$6,078 \$3,873 \$10,519 \$4,973 \$1,755 \$3333 \$7,430 \$3,330 \$7,284 \$2,843 \$4,443 \$1,433 \$7,237 \$4,258 \$18,507 \$12,240	Value NAV 2015E \$3,531 \$3,050 \$750 \$6,078 \$3,873 \$982 \$10,519 \$4,973 \$1,949 \$1,755 \$333 (\$22) \$7,430 \$3,330 \$1,705 \$7,284 \$2,843 \$965 \$4,443 \$1,433 \$550 \$7,237 \$4,258 \$979 \$18,507 \$12,240 \$2,252	Value NAV 2015E 2016E \$3,531 \$3,050 \$750 \$598 \$6,078 \$3,873 \$982 \$823 \$10,519 \$4,973 \$1,949 \$1,541 \$1,755 \$333 (\$22) (\$22) \$7,430 \$3,330 \$1,705 \$1,311 \$7,284 \$2,843 \$965 \$956 \$4,443 \$1,433 \$550 \$418 \$7,237 \$4,258 \$979 \$902 \$18,507 \$12,240 \$2,252 \$1,620	Value NAV 2015E 2016E 2017E \$3,531 \$3,050 \$750 \$598 \$339 \$6,078 \$3,873 \$982 \$823 \$819 \$10,519 \$4,973 \$1,949 \$1,541 \$1,116 \$1,755 \$333 \$220 \$2000 \$53 \$7,430 \$3,330 \$1,705 \$1,311 \$914 \$7,284 \$2,843 \$965 \$956 \$830 \$4,443 \$1,433 \$550 \$418 \$392 \$7,237 \$4,258 \$979 \$902 \$531 \$18,507 \$12,240 \$2,252 \$1,620 \$1,241	Value NAV 2015E 2016E 2017E 2015E \$3,531 \$3,050 \$750 \$598 \$339 \$8.80 \$6,078 \$3,873 \$982 \$823 \$819 \$3.65 \$10,519 \$4,973 \$1,949 \$1,541 \$1,116 \$6.45 \$1,755 \$333 (\$22) (\$22) \$53 (\$0.65) \$7,430 \$3,330 \$1,705 \$1,311 \$914 \$5.40 \$7,284 \$2,843 \$966 \$830 \$3.91 \$4,443 \$1,433 \$550 \$418 \$392 \$1.76 \$7,237 \$4,258 \$979 \$902 \$531 \$6.18 \$18,507 \$12,240 \$2,252 \$1,620 \$1,241 \$4.19	Value NAV 2015E 2016E 2017E 2015E 2016E \$3,531 \$3,050 \$750 \$598 \$339 \$8.80 \$7.61 \$6,078 \$3,873 \$982 \$823 \$819 \$3.65 \$4.93 \$10,519 \$4,973 \$1,949 \$1,541 \$1,116 \$6.45 \$4.97 \$1,755 \$3333 (\$22) (\$22) \$53 (\$0.65) (\$0.91) \$7,430 \$3,330 \$1,705 \$1,311 \$914 \$5.40 \$4.04 \$7,284 \$2,843 \$965 \$956 \$830 \$3.91 \$4.09 \$4,443 \$1,433 \$550 \$418 \$392 \$1.76 \$1.17 \$7,237 \$4,258 \$979 \$902 \$531 \$6.18 \$5.60 \$18,507 \$12,240 \$2,252 \$1,620 \$1,241 \$4.19 \$2.99

Peer Group Valuation Multiples

	EV/	Price/	EV/EBITDA			P/CF		
<u>Company</u>	Replacement	NAV	2015E	2016E	2017E	2015E	2016E	2017E
Atwood Oceanics*	0.75	0.32	3.5	4.4	7.8	1.7	2.0	3.9
Diamond Offshore	0.85	0.69	5.3	6.3	6.3	5.3	3.9	4.0
Ensco International	0.76	0.68	4.1	5.2	7.2	2.3	2.9	4.3
Hercules Offshore	0.61	0.02	NM	NM	20.3	NM	NM	NM
Noble Drilling Corporation	0.98	0.81	4.3	5.6	8.0	2.1	2.8	4.1
Ocean Rig	0.61	0.15	4.6	4.6	5.3	0.7	0.6	0.8
Pacific Drilling	0.72	0.21	5.8	7.7	8.2	0.8	1.2	1.5
Rowan Companies, Inc.	0.65	0.48	4.8	5.2	8.9	2.6	2.9	5.6
Seadrill Ltd.	0.99	0.66	8.1	11.3	14.8	3.9	5.5	8.0
Transocean Inc.	0.64	0.43	<u>3.7</u>	<u>7.6</u>	<u>11.3</u>	<u>9.5</u>	<u>5.5</u>	NM
Mean Premium Drillers	0.76	0.47	4.9	6.4	8.9	2.9	2.9	4.0
Mean Total Drillers	0.76	0.45	4.9	6.4	9.8	3.2	3.0	4.0

Source: Deutsche Bank

Valuation methodology

For offshore drillers, our target prices are based on our proprietary DCF analysis. We determine the price target based on a discounted cash flow of the contracted and un-contracted cash flows. Un-contracted cash flows have been assigned a "base case" value depending on asset class and location. Our cost of capital is based on a current cost of debt and a cost of equity. The cost of equity is based on a ten-year raw beta, the 10-year T-bond rate and a historical risk premium of stocks over treasury bonds. Terminal/ residual value is based on secondary market transactions and market estimates from rig brokers.

Risks

The biggest risk for offshore drillers is newbuild supply growth and the related potential for rig obsolescence. Low commodity prices are another significant risk due to its impact on rig demand. Liquidity is becoming a growing concern for many companies as well. The lingering effect of the Macondo incident in the Gulf of Mexico (GoM) creates regulatory risk and the potential for higher costs and downtime.

Details on changes

Atwood Ocean (ATW, \$15.20, HOLD, \$39)

ATW has a young, well-diversified fleet including two un-contracted ultradeepwater units under construction. ATW is one of the better positioned offshore drillers to weather the down-turn due to the company's high-quality fleet and good contract coverage. The soft contract coverage on the jackup fleet remains a concern but we view ATW's Australia exposure favorably and expect ATW will maintain utilization in the region. The two un-contracted newbuild drillships on order continue to be an overhang as demand for these rigs appears very limited. Our 2015 estimate rises slightly to \$7.22 from \$7.21 but our 2016 and 2017 estimates increase to \$5.02 and \$1.05 from \$4.90 and \$0.35, respectively, to reflect our reduced cost estimates. We maintain our HOLD rating

Valuation

Our target price increases to \$39 from \$38 to reflect our reduced cost assumptions. Our valuation is based on a DCF analysis (WACC of 6.3%). We determine the price target based on a discounted cash flow of the contracted and uncontracted cash flows. Un-contracted cash flows have been assigned a "base case" value depending on asset class and location. Our cost of capital is based on a current cost of debt and a cost of equity. The cost of equity is based on a ten-year raw beta, the 10-year T-bond rate and a historical risk premium of stocks over treasury bonds. Terminal/ residual value is based on secondary market transactions and market estimates from rig brokers.

Risks

The primary downside risk is a decline in dayrates and/or utilization due to continued weakness in the global deepwater drilling market. Execution on newbuilds remains an additional risk. A related risk is the ongoing capacity growth in the jackup market causing dayrates to decline. Upside risk could come from an unexpected re-acceleration of midwater and / or deepwater demand and dayrates. Upside risk could also come from better-than-expected cost control and better execution on ATW's newbuild program.

Diamond Offshore (DO, \$19.35, HOLD, \$21)

Deepwater demand remains a good long-term story but limited near-term demand and a growing available capacity continue to put downward pressure on dayrates and utilization, particularly for the older assets to which DO is disproportionately exposed. Weak contract coverage at a time when there is very little demand in the market will weigh on results. We like DO's deepwater exposure and the company's relatively strong balance sheet will allow them to remain flexible during the downturn. Our 2015 and 2016 estimates fall slightly to \$2.34 and \$1.28 from \$2.35 and \$1.59, respectively, to reflect the soft near-term demand. Our 2017 estimate increases to \$1.15 from \$1.10 due to our reduced cost estimates. We are upgrading DO to HOLD from SELL.

Valuation

Our target price increases to \$21 from \$17 to account for our reduced cost assumptions Valuation is based on DCF analysis (WACC of 6.9%). We

28 September 2015 Oil Services & Equipment Righting the Ship

determine the price target based on a discounted cash flow of the contracted and un-contracted cash flows. Un-contracted cash flows have been assigned a "base case" value depending on asset class and location. Our cost of capital is based on a current cost of debt and a cost of equity. The cost of equity is based on a ten-year raw beta, the 10-year T-bond rate and a historical risk premium of stocks over treasury bonds. Terminal/ residual value is based on secondary market transactions and market estimates from rig brokers.

Risks

Upside risk could come from an unexpected re-acceleration of midwater demand and dayrates to which DO is disproportionately exposed. Downside risk could come from continued falling utilization from soft demand.

Ensco PLC (ESV, \$14.65, SELL, \$13)

With near record high jackup supply growth expected over the next 24-36 months, we have a very pessimistic outlook for the shallow-water market. In addition, over 90% of the newbuild jackups on order are un-contracted which will continue to put pressure on both rates and utilization. We remain concerned about the company's exposure to the South East Asia shallow-water market as we expect many of the un-contracted newbuild jackups to end up there given the low barriers to entry and proximity to the shipyards. Soft demand causes our 2015 and 2016 estimates to fall to \$4.11 and \$2.28 from \$4.19 and \$2.33, respectively. Our 2017 estimate increases to \$0.65 from \$0.35 to account for our lowered cost forecast. Given our negative outlook for the jackup market, we maintain our SELL rating for ESV.

Valuation

Our target price falls to \$13 from \$14 as ESV continues to burn through its backlog. Valuation is based on DCF analysis (WACC of 6.9%). We determine the price target based on a discounted cash flow of the contracted and uncontracted cash flows. Un-contracted cash flows have been assigned a "base case" value depending on asset class and location. Our cost of capital is based on a current cost of debt and a cost of equity. The cost of equity is based on a ten-year raw beta, the 10-year T-bond rate and a historical risk premium of stocks over treasury bonds. Terminal/ residual value is based on secondary market transactions and market estimates from rig brokers.

Risks

Specific to ESV, the standard jackup market holding up better than expected would put our negative thesis at risk. Upside risk could come from an unexpected re-acceleration of midwater and / or deepwater demand and dayrates. Upside risk could also come from better-than-expected cost control.

Hercules Offshore (HERO, \$0.05, SELL, \$0)

Shallow-water rig demand in the US GOM continues to make new lows and this has resulted in a growing number of idle and stacked rigs in HERO's fleet. HERO's international fleet will continue to see utilization pressured due to newbuild supply growth. Leading edge dayrates continue to fall and thus we are lowering our 2015 and 2016 estimates to (\$1.57) and (\$1.87) from (\$1.51) and (\$1.80). Our cost deflation forecast causes our 2017 estimate to improve to (\$1.60) from (\$1.75). We maintain our SELL rating.

Our target price remains at \$0. Our valuation is based on a DCF analysis (WACC of 8.6%). We determine the price target based on a discounted cash flow of the contracted and un-contracted cash flows. Un-contracted cash flows have been assigned a "base-case" value depending on asset class and location. Our cost of capital is based on a current cost of debt and a cost of equity. The cost of equity is based on a ten-year raw beta, the 10-year T-bond rate and a historical risk premium of stocks over treasury bonds. Terminal/ residual value is based on secondary market transactions and market estimates from rig brokers.

Risks

Upside risk could result from a recovery in Gulf of Mexico shallow water drilling rig demand, to which HERO has significant exposure. Reduced newbuild supply growth could also support a recovery in the shallow water market and result in upside. Likewise, a recovery in the International liftboat market, where project delays have been endemic, could drive upside risk.

Noble Corp (NE, \$11.12, HOLD, \$17)

NE has dramatically shifted its exposure to the more attractive high specification market which will continue to benefit from the bifurcation of new and older assets. Since Noble recapitalized its fleet sooner than peers, they will be one of the only companies to generate cash in the near-term which will allow them to pursue attractive opportunities. We expect NE's semi fleet will come under pressure as the majority of the rigs are old with soft contract coverage and we see little demand for these rigs when they come available. Our 2015, 2016 and 2017 estimates improve to \$2.78, \$1.34 and \$0.00 from \$2.66, \$1.11, (\$0.60), respectively, to reflect our expectation of cost deflation. We maintain our HOLD rating.

Valuation

Our reduced NAV estimate causes our target price to fall to \$17 from \$20. Our valuation is based on a DCF analysis (WACC of 6.0%). We determine the price target based on a discounted cash flow of the contracted and un-contracted cash flows. Un-contracted cash flows have been assigned a "base-case" value depending on asset class and location. Our cost of capital is based on current cost of debt and cost of equity. The cost of equity is based on a ten-year raw beta, the 10-year T-bond rate and a historical risk premium of stocks over treasury bonds. Terminal/residual value is based on secondary market transactions and market estimates from rig brokers.

Risks

The primary downside risk is a continued decline in dayrates and/or utilization as the industry attempts to absorb significant newbuild supply growth. An unexpected re-acceleration of offshore drilling demand is an upside risk along with better than expected cost control. Another downside risk could come from litigation surrounding the Paragon Offshore spin-off.

Ocean Rig UDW (ORIG, \$2.56, BUY, \$13)

ORIG is one of only two ultra-deepwater pure plays and we remain supporters of the deepwater secular growth story. Ocean Rig has one of the youngest fleets in the industry, making it well positioned to take advantage of the 28 September 2015 Oil Services & Equipment Righting the Ship

increasing customer preference for newer, more advanced rigs. The company's ability to extend existing contracts and defer the delivery of uncontracted newbuild reduces pressure on cash flow and helps position ORIG to survive the downturn. We are introducing our 2Q estimate of \$0.24. Our reduced cost estimates cause our 2015, 2016 and 2017 estimates to increase to \$1.54, \$1.63 and \$0.75 from \$1.49, \$1.25 and \$0.20, respectively. Given our preference for young assets and ultra-deepwater exposure, we maintain our BUY rating.

Valuation

Our reduced cost forecast causes our target price to increase to \$13 from \$12. Our valuation is based on a DCF analysis (WACC of 7.1%). We determine the price target based on a discounted cash flow of the contracted and uncontracted cash flows. Un-contracted cash flows have been assigned a "base case" value depending on asset class and location. Our cost of capital is based on a current cost of debt and a cost of equity. The cost of equity is based on a ten-year raw beta, the 10-year T-bond rate and a historical risk premium of stocks over treasury bonds. Terminal/ residual value is based on secondary market transactions and market estimates from rig brokers.

Risks

Deepwater (to which ORIG is entirely and uniquely exposed) capacity is rising significantly. Should the expected demand growth fail to materialize, significant downward pressure on day rates could emerge. Execution on remaining newbuild rigs remains a risk.

Pacific Drilling (PACD, \$1.45, BUY, \$5)

PACD is a pure play on the ultra-deepwater market, a market which we believe will to provide strong long-term secular growth. All the rigs in PACD's fleet are young, high-spec rigs that will operate for a long time and we continue to take a long-term view in valuing these rigs. While demand remains soft and the two un-contracted rigs in the company's fleet will likely remain idle for a while, we think PACD's new generation fleet will be in high demand when the market rebounds. Our 2015 and 2016 estimates fall to \$0.60 and (\$0.17) from \$0.91 and \$0.01, respectively, as we are increasing our downtime assumptions for the company's idle rigs. Our 2017 estimate improves to (\$0.45) from (\$0.65) on our reduced cost assumptions. We maintain our BUY rating.

Valuation

Our target price falls to \$5 from \$8 as we are increasing our downtime estimates on the company's idle rigs. Our valuation is based on a DCF analysis (WACC of 8.2%). We determine the price target based on a discounted cash flow of the contracted and uncontracted cash flows. Uncontracted cash flows have been assigned a "base case" value depending on asset class and location. Our cost of capital is based on a current cost of debt and a cost of equity. The cost of equity is based on a ten-year raw beta, the 10-year T-bond rate and a historical risk premium of stocks over treasury bonds. Terminal/ residual value is based on secondary market transactions and market estimates from rig brokers.

Risks

Deepwater (to which PACD is entirely and uniquely exposed) capacity is rising. With continued weakness in the global offshore drilling industry, significant

downward pressure on day rates could emerge. Ability to maintain utilization and the potential of contract terminations are additional risks. Execution on remaining new build rigs is also a risk.

Rowan Drilling Companies (RDC, \$16.32, HOLD, \$21)

Rowan has done a good job maintaining utilization for its high-spec fleet but the high number of rigs coming off contract over the next 12 months presents a significant challenge. Even if the company can maintain utilization, dayrates and thus margins will come down sharply. We think RDC remains one of the top M&A candidates in the group because of its high-spec jackup fleet and heavily contracted drillship fleet. We view the company's Middle East exposure favorably as the region has been the most active charterer of jackups. Our 2015, 2016 and 2017 estimates increase to \$3.05, \$2.33 and (\$0.35) from \$3.01, \$2.09 and (\$0.90), respectively, to reflect our reduced cost assumptions and our more favorable view for Middle East jackups. Maintain HOLD rating.

Valuation

Our reduced cost estimates increases our target price to \$21 from \$20. We determine the price target based on a discounted cash flow of the contracted and un-contracted cash flows (WACC of 8.1%). Un-contracted cash flows have been assigned a "base case" value depending on asset class and location. Our cost of capital is based on a current cost of debt and a cost of equity. The cost of equity is based on a ten-year raw beta, the 10-year T-bond rate and a historical risk premium of stocks over treasury bonds. Terminal/ residual value is based on secondary market transactions and market estimates from rig brokers.

Risks

The primary downside risk is deterioration in the international jackup market due to newbuild capacity growth given RDC's significant exposure to the sector. Further reduction in Gulf of Mexico drilling rig demand, whether by result of weaker commodity prices or operators shifting geographic preferences, is also a risk to the story. Upside risk could come from an even better-than-expected jackup demand and dayrates. Upside risk could also come from better-than-expected cost control.

Seadrill Ltd (SDRL, \$6.22, HOLD, \$13)

With a heavily contracted, young fleet that is highly exposed to deepwater and a plan to survive the downturn, SDRL fits the bill of companies we prefer however we maintain our HOLD rating due to the high number of uncontracted newbuilds on order and a particularly high debt load. While we think SDRL is well positioned to survive the downturn and has the high-spec assets to take advantage in the eventual recovery, it is too early in the cycle to recommend shares. We are lowering our 2Q estimate to \$0.58 from \$0.61 to reflect the Saudi dayrate reductions. Our 2015, 2016 and 2017 estimates increase to \$2.61, \$1.26 and \$0.15 from \$2.60, \$1.20 and (\$0.10), respectively, to reflect our expectation of cost deflation. Maintain HOLD.

Valuation

Our reduced cost assumptions increase our target price to \$13 from \$12. We determine the price target based on a discounted cash flow of the contracted

28 September 2015 Oil Services & Equipment Righting the Ship

and un-contracted cash flows (WACC of 5.4%). Un-contracted cash flows have been assigned a "base case" value depending on asset class and location. Our cost of capital is based on a current cost of debt and a cost of equity. The cost of equity is based on a ten-year raw beta, the 10-year T-bond rate and a historical risk premium of stocks over treasury bonds. Terminal/ residual value is based on secondary market transactions and market estimates from rig brokers.

Risks

Key downside risk is SDRL's significant financial leverage which is well above industry norms. Execution on the aggressive newbuild program is also a risk. Upside risk could come from an even better-than-expected deepwater demand and dayrates or a re-acceleration in the jackup market. Upside risk could also come from better-than-expected cost control.

Transocean Inc (RIG, \$13.01, HOLD, \$10)

We continue to believe in the long-term deepwater secular growth story, to which RIG is highly exposed. The company will take delivery of five newbuild drillships in 2016, all of which have long-term lucrative contracts and will provide much needed cash flow. We continue to think RIG must take action to right-size its fleet as its current operations are structurally cash-flow negative. Given the high number of new generation rigs entering the market and rolling-off contracts, a significant portion of RIG's fleet will be unable to remain competitive and we think these rigs must be retired. The lack of near-term demand causes our 2015 estimate to fall to \$3.29 from \$3.47. Our 2016 and 2017 estimates improve to \$0.23 and (\$0.85) from (\$0.44) and (\$2.60), respectively, to reflect our reduced cost assumptions. We upgrade RIG to HOLD from SELL.

Valuation

Our reduced cost assumptions increase our target price to \$10 from \$6. We determine the price target based on a discounted cash flow of the contracted and un-contracted cash flows (WACC of 6.9%). Un-contracted cash flows have been assigned a "base case" value depending on asset class and location. Our cost of capital is based on a current cost of debt and a cost of equity. The cost of equity is based on a ten-year raw beta, the 10-year T-bond rate and a historical risk premium of stocks over treasury bonds. Terminal/ residual value is based on secondary market transactions and market estimates from rig brokers.

Risks

Dramatic near-term improvement in deepwater dayrates/renewed acceleration in dayrates or improved visibility in the global shallow water markets (ability of the market to absorb new capacity at current market rates) could drive upside. Potential for additional shareholder activism is also an upside risk. The main downside risk is continued deterioration of offshore dayrates and utilization due to newbuild supply growth and soft commodity prices.

Appendix 1

Important Disclosures

Additional information available upon request

*Prices are current as of the end of the previous trading session unless otherwise indicated and are sourced from local exchanges via Reuters, Bloomberg and other vendors. Other information is sourced from Deutsche Bank, subject companies, and other sources. For disclosures pertaining to recommendations or estimates made on securities other than the primary subject of this research, please see the most recently published company report or visit our global disclosure look-up page on our website at http://gm.db.com/ger/disclosure/DisclosureDirectory.eqsr

Analyst Certification

The views expressed in this report accurately reflect the personal views of the undersigned lead analyst about the subject issuers and the securities of those issuers. In addition, the undersigned lead analyst has not and will not receive any compensation for providing a specific recommendation or view in this report. Mike Urban

Equity rating key

Buy: Based on a current 12- month view of total share-holder return (TSR = percentage change in share price from current price to projected target price plus pro-jected dividend yield), we recommend that investors buy the stock.

Sell: Based on a current 12-month view of total shareholder return, we recommend that investors sell the stock

Hold: We take a neutral view on the stock 12-months out and, based on this time horizon, do not recommend either a Buy or Sell.

Notes:

1. Newly issued research recommendations and target prices always supersede previously published research.

2. Ratings definitions prior to 27 January, 2007 were:

Buy: Expected total return (including dividends) of 10% or more over a 12-month period Hold: Expected total return (including dividends) between -10% and 10% over a 12month period Sell: Expected total return (including dividends) of -10% or worse over a 12-month period

Regulatory Disclosures

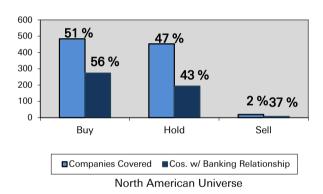
1.Important Additional Conflict Disclosures

Aside from within this report, important conflict disclosures can also be found at <u>https://gm.db.com/equities</u> under the "Disclosures Lookup" and "Legal" tabs. Investors are strongly encouraged to review this information before investing.

2.Short-Term Trade Ideas

Deutsche Bank equity research analysts sometimes have shorter-term trade ideas (known as SOLAR ideas) that are consistent or inconsistent with Deutsche Bank's existing longer term ratings. These trade ideas can be found at the SOLAR link at <u>http://gm.db.com</u>.

Equity rating dispersion and banking relationships



Additional Information

The information and opinions in this report were prepared by Deutsche Bank AG or one of its affiliates (collectively "Deutsche Bank"). Though the information herein is believed to be reliable and has been obtained from public sources believed to be reliable, Deutsche Bank makes no representation as to its accuracy or completeness.

Deutsche Bank may consider this report in deciding to trade as principal. It may also engage in transactions, for its own account or with customers, in a manner inconsistent with the views taken in this research report. Others within Deutsche Bank, including strategists, sales staff and other analysts, may take views that are inconsistent with those taken in this research report. Deutsche Bank issues a variety of research products, including fundamental analysis, equity-linked analysis, quantitative analysis and trade ideas. Recommendations contained in one type of communication may differ from recommendations contained in others, whether as a result of differing time horizons, methodologies or otherwise. Deutsche Bank and/or its affiliates may also be holding debt securities of the issuers it writes on.

Analysts are paid in part based on the profitability of Deutsche Bank AG and its affiliates, which includes investment banking revenues.

Opinions, estimates and projections constitute the current judgment of the author as of the date of this report. They do not necessarily reflect the opinions of Deutsche Bank and are subject to change without notice. Deutsche Bank has no obligation to update, modify or amend this report or to otherwise notify a recipient thereof if any opinion, forecast or estimate contained herein changes or subsequently becomes inaccurate. This report is provided for informational purposes only. It is not an offer or a solicitation of an offer to buy or sell any financial instruments or to participate in any particular trading strategy. Target prices are inherently imprecise and a product of the analyst's judgment. The financial instruments discussed in this report may not be suitable for all investors and investors must make their own informed investment decisions. Prices and availability of financial instruments are subject to change without notice and investment transactions can lead to losses as a result of price fluctuations and other factors. If a financial instrument is denominated in a currency other than an investor's currency, a change in exchange rates may adversely affect the investment. Past performance is not necessarily indicative of future results. Unless otherwise indicated, prices are current as of the end of the previous trading session, and are sourced from local exchanges via Reuters, Bloomberg and other vendors. Data is sourced from Deutsche Bank, subject companies, and in some cases, other parties.

Macroeconomic fluctuations often account for most of the risks associated with exposures to instruments that promise to pay fixed or variable interest rates. For an investor who is long fixed rate instruments (thus receiving these cash flows), increases in interest rates naturally lift the discount factors applied to the expected cash flows and thus cause a loss. The longer the maturity of a certain cash flow and the higher the move in the discount factor, the higher will be the loss. Upside surprises in inflation, fiscal funding needs, and FX depreciation rates are among the most common adverse macroeconomic shocks to receivers. But counterparty exposure, issuer creditworthiness, client segmentation, regulation (including changes in assets holding limits for different types of investors), changes in tax policies, currency convertibility (which may constrain currency conversion, repatriation of profits and/or the liquidation of positions), and settlement issues related to local clearing houses are also important risk factors to be considered. The sensitivity of fixed income instruments to macroeconomic shocks may be mitigated by indexing the contracted cash flows to inflation, to FX depreciation, or to specified interest rates - these are common in emerging markets. It is important to note that the index fixings may -- by construction -- lag or mis-measure the actual move in the underlying variables they are intended to track. The choice of the proper fixing (or metric) is particularly important in swaps markets, where floating coupon rates (i.e., coupons indexed to a typically short-dated interest rate reference index) are exchanged for fixed coupons. It is also important to acknowledge that funding in a currency that differs from the currency in which coupons are denominated carries FX risk. Naturally, options on swaps (swaptions) also bear the risks typical to options in addition to the risks related movements. to rates

Derivative transactions involve numerous risks including, among others, market, counterparty default and illiquidity risk. The appropriateness or otherwise of these products for use by investors is dependent on the investors' own circumstances including their tax position, their regulatory environment and the nature of their other assets and liabilities, and as such, investors should take expert legal and financial advice before entering into any transaction similar

to or inspired by the contents of this publication. The risk of loss in futures trading and options, foreign or domestic, can be substantial. As a result of the high degree of leverage obtainable in futures and options trading, losses may be incurred that are greater than the amount of funds initially deposited. Trading in options involves risk and is not suitable for all investors. Prior to buying or selling an option investors must review the "Characteristics and Risks of Standardized Options", at http://www.optionsclearing.com/about/publications/character-risks.jsp. If you are unable to access the website please contact your Deutsche Bank representative for a copy of this important document.

Participants in foreign exchange transactions may incur risks arising from several factors, including the following: (i) exchange rates can be volatile and are subject to large fluctuations; (ii) the value of currencies may be affected by numerous market factors, including world and national economic, political and regulatory events, events in equity and debt markets and changes in interest rates; and (iii) currencies may be subject to devaluation or government imposed exchange controls which could affect the value of the currency. Investors in securities such as ADRs, whose values are affected by the currency of an underlying security, effectively assume currency risk.

Unless governing law provides otherwise, all transactions should be executed through the Deutsche Bank entity in the investor's home jurisdiction.

United States: Approved and/or distributed by Deutsche Bank Securities Incorporated, a member of FINRA, NFA and SIPC. Non-U.S. analysts may not be associated persons of Deutsche Bank Securities Incorporated and therefore may not be subject to FINRA regulations concerning communications with subject company, public appearances and securities held by the analysts.

Germany: Approved and/or distributed by Deutsche Bank AG, a joint stock corporation with limited liability incorporated in the Federal Republic of Germany with its principal office in Frankfurt am Main. Deutsche Bank AG is authorized under German Banking Law (competent authority: European Central Bank) and is subject to supervision by the European Central Bank and by BaFin, Germany's Federal Financial Supervisory Authority.

United Kingdom: Approved and/or distributed by Deutsche Bank AG acting through its London Branch at Winchester House, 1 Great Winchester Street, London EC2N 2DB. Deutsche Bank AG in the United Kingdom is authorised by the Prudential Regulation Authority and is subject to limited regulation by the Prudential Regulation Authority and Financial Conduct Authority. Details about the extent of our authorisation and regulation are available on request.

Hong Kong: Distributed by Deutsche Bank AG, Hong Kong Branch.

Korea: Distributed by Deutsche Securities Korea

South Africa: Deutsche Bank AG Johannesburg is incorporated in the Federal Republic of Germany (Branch RegisterNumberinSouthAfrica:1998/003298/10).

Singapore: by Deutsche Bank AG, Singapore Branch or Deutsche Securities Asia Limited, Singapore Branch (One Raffles Quay #18-00 South Tower Singapore 048583, +65 6423 8001), which may be contacted in respect of any matters arising from, or in connection with, this report. Where this report is issued or promulgated in Singapore to a person who is not an accredited investor, expert investor or institutional investor (as defined in the applicable Singapore laws and regulations), they accept legal responsibility to such person for its contents.

Japan: Approved and/or distributed by Deutsche Securities Inc.(DSI). Registration number - Registered as a financial instruments dealer by the Head of the Kanto Local Finance Bureau (Kinsho) No. 117. Member of associations: JSDA, Type II Financial Instruments Firms Association, The Financial Futures Association of Japan, and Japan Investment Advisers Association. Commissions and risks involved in stock transactions - for stock transactions, we charge stock commissions and consumption tax by multiplying the transaction amount by the commission rate agreed with each customer. Stock transactions can lead to losses as a result of share price fluctuations and other factors. Transactions in foreign stocks can lead to additional losses stemming from foreign exchange fluctuations. We may also charge commissions and fees for certain categories of investment advice, products and services. Recommended investment strategies, products and services carry the risk of losses to principal and other losses as a result of changes in market and/or economic trends, and/or fluctuations in market value. Before deciding on the purchase of financial products

and/or services, customers should carefully read the relevant disclosures, prospectuses and other documentation. "Moody's", "Standard & Poor's", and "Fitch" mentioned in this report are not registered credit rating agencies in Japan unless Japan or "Nippon" is specifically designated in the name of the entity. Reports on Japanese listed companies not written by analysts of DSI are written by Deutsche Bank Group's analysts with the coverage companies specified by DSI. Some of the foreign securities stated on this report are not disclosed according to the Financial Instruments and Exchange Law of Japan.

Malaysia: Deutsche Bank AG and/or its affiliate(s) may maintain positions in the securities referred to herein and may from time to time offer those securities for purchase or may have an interest to purchase such securities. Deutsche Bank may engage in transactions in a manner inconsistent with the views discussed herein.

Qatar: Deutsche Bank AG in the Qatar Financial Centre (registered no. 00032) is regulated by the Qatar Financial Centre Regulatory Authority. Deutsche Bank AG - QFC Branch may only undertake the financial services activities that fall within the scope of its existing QFCRA license. Principal place of business in the QFC: Qatar Financial Centre, Tower, West Bay, Level 5, PO Box 14928, Doha, Qatar. This information has been distributed by Deutsche Bank AG. Related financial products or services are only available to Business Customers, as defined by the Qatar Financial Centre Regulatory Authority.

Russia: This information, interpretation and opinions submitted herein are not in the context of, and do not constitute, any appraisal or evaluation activity requiring a license in the Russian Federation.

Kingdom of Saudi Arabia: Deutsche Securities Saudi Arabia LLC Company, (registered no. 07073-37) is regulated by the Capital Market Authority. Deutsche Securities Saudi Arabia may only undertake the financial services activities that fall within the scope of its existing CMA license. Principal place of business in Saudi Arabia: King Fahad Road, Al Olaya P.O. 301809, Faisaliah Tower 17th District, Box Floor, 11372 Rivadh, Saudi Arabia. _

United Arab Emirates: Deutsche Bank AG in the Dubai International Financial Centre (registered no. 00045) is regulated by the Dubai Financial Services Authority. Deutsche Bank AG - DIFC Branch may only undertake the financial services activities that fall within the scope of its existing DFSA license. Principal place of business in the DIFC: Dubai International Financial Centre, The Gate Village, Building 5, PO Box 504902, Dubai, U.A.E. This information has been distributed by Deutsche Bank AG. Related financial products or services are only available to Professional Clients, as defined by the Dubai Financial Services Authority.

Australia: Retail clients should obtain a copy of a Product Disclosure Statement (PDS) relating to any financial product referred to in this report and consider the PDS before making any decision about whether to acquire the product. Please refer to Australian specific research disclosures and related information at https://australia.db.com/australia/content/research-information.html

Australia and New Zealand: This research, and any access to it, is intended only for "wholesale clients" within the meaning of the Australian Corporations Act and New Zealand Financial Advisors Act respectively. Additional information relative to securities, other financial products or issuers discussed in this report is available upon request. This report may not be reproduced, distributed or published by any person for any purpose without Deutsche Bank's prior written consent. Please cite source when quoting.

Copyright © 2015 Deutsche Bank AG



David Folkerts-Landau Group Chief Economist Member of the Group Executive Committee

Raj Hindocha Global Chief Operating Officer Research

> Michael Spencer Regional Head Asia Pacific Research

Marcel Cassard Global Head FICC Research & Global Macro Economics

Ralf Hoffmann Regional Head Deutsche Bank Research, Germany

Deutsche Bank AG

Tel: (852) 2203 8888

International Commerce Centre,

1 Austin Road West, Kowloon,

Filiale Hongkong

Hong Kong

Steve Pollard Global Head Equity Research

Andreas Neubauer Regional Head Equity Research, Germany

Deutsche Securities Inc.

Chiyoda-ku, Tokyo 100-6171

2-11-1 Nagatacho

Sanno Park Tower

Tel: (81) 3 5156 6770

Japan

International locations

Deutsche Bank AG Deutsche Bank Place Level 16 Corner of Hunter & Phillip Streets Sydney, NSW 2000 Australia Tel: (61) 2 8258 1234

Deutsche Bank AG London 1 Great Winchester Street London EC2N 2EQ United Kingdom Tel: (44) 20 7545 8000 Deutsche Bank AG Große Gallusstraße 10-14 60272 Frankfurt am Main Germany Tel: (49) 69 910 00

Deutsche Bank Securities Inc. 60 Wall Street New York, NY 10005 United States of America Tel: (1) 212 250 2500