



## RADFORD REVIEW

### Managing Relative TSR With Global Peers: The Impact of Currency Fluctuations

Performance-based equity awards using a Relative Total Shareholder Return (Relative TSR) metric are widely recognized as one of the fastest growing forms of equity compensation at Fortune 1000 companies. Radford's own research supports this observation, finding over 600 companies with Relative TSR plans adopted since 2005, of which, over 140 were implemented in or after 2011.

Moving in lock-step with the rising prevalence of Relative TSR plans is increased scrutiny of the development of appropriate comparator groups for determining relative performance. Ideally, a performance peer group should include companies affected by similar trends in both product and capital markets. Increasingly, due to global expansion, this means including peer companies headquartered outside of the United States or listed on a global exchange. This change reflects both the increased globalization of our markets and the need to find a suitable number of comparable companies influenced by similar forces. Recent plans implemented by [International Paper Company](#), [Chevron](#), and [NASDAQ OMX Group](#) highlight the growing movement toward global peer groups.

Although hard data is not available, our research suggests approximately 50% of Relative TSR plans in Europe already include global peers. Looking forward, it is our opinion that many US multinational companies will soon follow suit, finding it more and more essential to select global peers in order to best refine their comparator groups amid tighter shareholder supervision of compensation programs.

Given the growing likelihood of Relative TSR plans with global comparator groups, it is increasingly important for companies to begin considering new ways to measure TSR in a manner reflecting a broad range of economic and market factors. However, this is certainly easier said than done, as measuring TSR from one point in time to a future point in time across borders requires consideration of two critical inputs:

- (1) Company performance relative to the performance of comparator companies; and
- (2) Changes in the currencies underlying each comparator company's shares.

Consider this: If all comparator group companies come from the US, then on a relative basis, any changes in the value of the US Dollar will affect all peer group stock prices in a similar manner and yield a reasonable comparison at the end of the performance period. However, for performance comparisons using global companies, local currency changes can sway relative results— just like inflation in one country vs. another might alter the perceived value of goods purchased at the store. The solution to this challenge is to convert all currencies into a common currency. And while it takes work to balance the global playing field, this article highlights the value of taking appropriate steps to mitigate the impact of currency fluctuations when using Relative TSR plans.

## Blame the Coconuts

On occasion, it makes sense to use a light-hearted example to deal with a complex topic. For that reason, we begin our discussion of currency fluctuations with a funny, but informative story on the perils of ignoring currency movements when using a Relative TSR plan:

### ***A Coconut Corollary With Company D (Domestic) and Company F (Foreign)***

Company D manufactures and distributes widgets globally, and only has one competitor, Company F, which is located on a very small tropical island. The island is quite unique in that it uses coconuts as the sole medium of exchange for goods and services. Therefore, a share in Company F is currently worth 15 coconuts.

Given the competitive landscape, Company D decides to issue performance awards to its executives that only vest if Company D's TSR exceeds Company F's TSR at the end of three years. Over the next three years, the executives of Company D perform exceedingly well operationally, with revenue and profitability increasing by 300%, and they achieve a cumulative TSR of 75% over the same period. This compares to a return of 10% by the S&P 500. So, as you might expect, the executive team and shareholders are ecstatic with Company D's performance.

During the same period, Company F has not fared very well. They lost a large amount of market share to company D and their revenues were cut in half. You might thus assume their stock also performed poorly, but in this example, you would be incorrect.

Over the past three years, due to advances in technology and coconut farming, the supply of coconuts quadrupled. Since the demand for coconuts did not keep up with supply, the value of coconuts on the open market plummeted. However, because Company F's stock price is stated in terms of coconuts, and coconuts depreciated in value substantially, one share of Company F's stock is now worth 75 coconuts, producing a TSR of 500% in terms of the local currency. Compared against Company D in local currencies, Company F far exceeded Company D.

Since the performance award issued to Company D's executive team states the stock prices for competitors are to be kept in terms of local currencies, the awards do not vest, and the executive team of Company D does not get paid.

Although this story may seem a bit outlandish, it illustrates a very important point. Any global company that trades in a foreign currency will have a TSR that is not only based on the company's stock price performance, but also on the performance of the currency in which the company trades. As seen in this extreme example, currency fluctuations can have a huge impact on the payout of a Relative TSR plan. All one needs to do is to look at the historical currency fluctuations in economies like Russia (1998), Argentina (2002), Zimbabwe (2008), or even the modern Eurozone to understand the potential impact of ignoring this very real issue.

## From Coconuts to Dollars, Pounds and Euros

To bring this Relative TSR challenge back into the real world, we analyzed stock price performance for a single, global homogenous sector comprised of mega cap companies based in many different currencies— namely the oil industry. These companies all face very similar global market forces (e.g., shipping costs, conflict and the ebb and flow of energy consumption), but their respective home nations do not share similar economic outlooks and nor do their home currencies.

Let's assume executives at a US oil company are awarded performance shares that vest between 0% (for performance below the 25<sup>th</sup> percentile of the peer group) and 200% (for performance greater than the 75<sup>th</sup> percentile of the peer group) based on the final 30-calendar day average TSR ranking for the company against

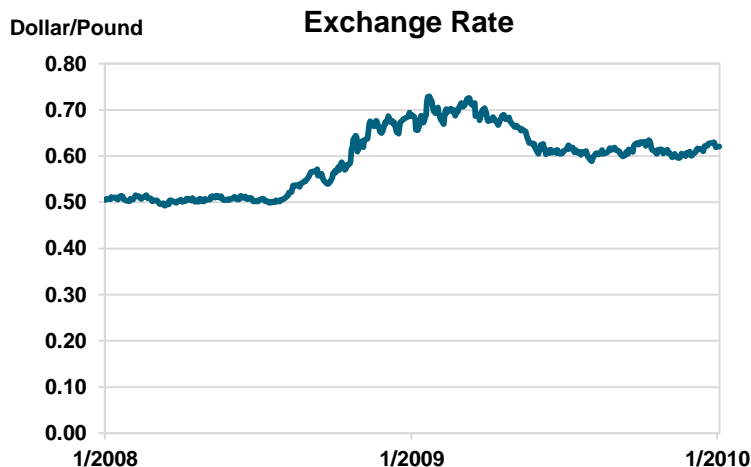
eight other global competitors between January 1, 2007 and December 31, 2009. For reference, the full comparison group is listed on the next page:

Company Name	Symbol	Currency	Average Price (Local)
Royal Dutch Shell	RDSA	British Pound	£ 18.00
ExxonMobil	XOM	US Dollar	\$ 76.59
British Petroleum	BP	British Pound	£ 5.75
Chevron	CVX	US Dollar	\$ 73.83
Total SA	FP	Euro	€ 243.20
PetroChina	857	HK Dollar	HK\$ 10.34
ENI	ENI	Euro	€ 25.22
Petrobras-Petroleo Brasil	PETR4	Brazilian Real	R\$ 203.62
Sinopec-China Petroleum	000554	RMB	¥ 6.08

At the end of the 3-year performance period (January 1, 2007 and December 31, 2009), the comparator companies yield the stock prices and returns listed in the table below. For all companies, outcomes are shown based on local results and based on common currency (i.e., the results are standardized to a single base currency, the US dollar).

Company Name	Average End Price (Local)	Average End Price (Common)	TSR (Local)	TSR (Common)	Rank (Local)	Rank (Common)
Royal Dutch Shell	22.21	36.01	23.39%	1.93%	3	4
ExxonMobil	74.88	74.88	-2.23%	-2.23%	7	8
British Petroleum	6.90	11.19	19.96%	-0.91%	4	7
Chevron	85.32	85.32	15.55%	15.55%	5	3
Total SA	224.11	306.82	-7.85%	-0.18%	8	6
PetroChina	10.50	1.35	1.47%	1.73%	6	5
ENI	20.50	29.86	-18.47%	-10.34%	9	9
Petrobras-Petroleo Brasil	350.37	200.11	72.07%	111.16%	2	1
Sinopec-China Petro	10.83	1.59	78.11%	104.14%	1	2

Upon closer examination, both British Petroleum (BP) and Royal Dutch Shell show significant differences in TSR results when local and common currency calculations are listed side-by-side. This is the case because the exchange rate between the US Dollar and the British Pound fluctuated significantly over the three-year performance period. As the chart below illustrates, from mid-2008 to early 2009, the British Pound lost value against the dollar, falling from roughly \$1 = £0.5 to \$1 = £0.72. This translates into more than a 40% decrease in currency value, which caused a large drop in Relative TSR for Royal Dutch Shell and BP.



Source: Capital IQ

Furthermore, if we assume an individual at one of the US-based companies was granted a target award of \$10,000 in performance shares with a Relative TSR metric, then each US company would yield the following payouts in local and common currencies:

Company Name	Awards Granted	Vesting (Local)	Vesting (Common)	Payout Measured in (Local)	Payout Measured in (Common)
Royal Dutch Shell	282	200%	150%	N/A	N/A
ExxonMobil	135	25%	0%	\$2,440	\$0
British Petroleum	892	150%	25%	N/A	N/A
Chevron	141	100%	200%	\$11,944	\$23,889
Total SA	33	0%	62.50%	N/A	N/A
PetroChina	7,045	62.50%	100%	N/A	N/A
ENI	295	0%	0%	N/A	N/A
Petrobras-Petroleo Brasil	98	200%	200%	N/A	N/A
Sinopec-China Petroleum	12,257	200%	200%	N/A	N/A

Consider Chevron in the above example. If final results are determined using local currencies, the award would payout at 100%, and the individual would earn \$11,900. However, the individual's payout would double if the award is measured in a common currency, with a final award of nearly \$23,900. More importantly, the improved payout is also probably more reflective of actual performance, which is the mission of Relative TSR after all— to align compensation with true relative performance.

## Long-Term Research

The real world example above illustrates potential fluctuations in payout yields over just a single performance period, ranging from January 1, 2007 and December 31, 2009 in this case. However, how might results change over longer periods of time, perhaps as multiple Relative TSR grants are made? To investigate this issue, Radford also studied 14 other performance periods in a longer term study, using the same component companies. Key elements of the analysis include:

- > The 14 additional overlapping 3-year performance periods range from an initial start date of October 1, 2005 through a final start date of April 1, 2009.
- > All TSR's are calculated with a 30-calender day average at the beginning and the end of the performance period, and TSR is calculated in both a local currency and a common currency (US Dollar). The methodology for calculating TSRs can be found in Appendix A.
- > The comparator group is consistent between all 15 distinct performance periods.

Using this steady-state peer group, the following results were generated across the full set of 15 performance periods:

Company Name	Average Absolute Change from Local to Common		
	TSR	Percentile Rank	Payout Percentage
Royal Dutch Shell	19.1%	16.1%	30.4%
ExxonMobil	0.0%	8.0%	23.2%
BP	14.2%	25.0%	50.0%
Chevron	0.0%	8.9%	14.3%
Total SA	10.2%	17.9%	38.4%
PetroChina	0.3%	8.0%	19.6%
ENI	7.6%	12.5%	19.6%
Petrobras-Petroleo Brasil	19.1%	6.3%	1.8%
Sinopec-China Petroleum	19.0%	13.4%	34.8%
<b>Average</b>	<b>9.9%</b>	<b>12.9%</b>	<b>25.8%</b>

Notably, the above table shows final payout percentages changed by an average of 26% when TSR outcomes were switched from local currencies to a common currency. As a result, an executive granted a \$1.0M target long-term incentive award with payouts based on Relative TSR in local currencies would receive an award that is “off” by nearly \$260,000 vs. a more accurate comparison based on a common currency. In sum, using a local currency does not systematically bias for or against executives, but it does weaken the overall link between pay and performance.

## Other Key Considerations

As we mentioned before, Relative TSR plans are still somewhat new in the US and continue to evolve very quickly. We can therefore look to Europe, where Relative TSR plans are more established, to gain perspective on how potential Relative TSR pitfalls might be addressed down the road. For example, in September 2011, the [Association of British Insurers](#) (the ABI) issued new policies and practices that might provide a framework for “best practices” in the design of performance equity within the US. In those guidelines, the ABI states:

*“Where TSR is used as a performance criterion and the chosen comparator group includes companies listed in overseas markets, it is essential that TSR be measured on a consistent basis. The standard approach should be for a common currency to be used. Where there are compelling grounds for the calculation to be based on local currency TSR of comparator group companies, then the reasons for choosing this approach should be fully explained.”*

Consistent with the ABI guidelines, we see very limited reasons for performance measurements to be calculated in local currencies. Rather, we believe the go-forward best practice should be to measure all companies using a common currency. This will strip out potential fluctuations due to unforeseen currency rate changes, and instead truly evaluate long-term relative performance. Setting the policy and defining the methodology at the start of the measurement period can also serve to provide greater transparency and clarity to plan participants.

## Conclusion

In today’s globalized economy, more companies are considering the inclusion of global peers when designing Relative TSR awards. And regardless if the base stock price of the issuing company trades in US Dollars, British Pounds, Renminbis, or coconuts, we believe it is critical to convert all comparator group stock prices into a common currency when calculating final TSR results. This is the only approach that ensures accurate relative performance assessments and maintains strong links between pay for performance. To learn more about these and other issues pertaining to Relative TSR plans, please visit our portal at [www.RelativeTSR.com](http://www.RelativeTSR.com).

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## Appendix A

### How-To Guide in Calculating Shareholder Return (Global Version)

We believe that the most common methodology for calculating TSR is using point-to-point periods, assuming that dividends will be reinvested on the ex-dividend date.

The three steps below will calculate the TSR at each time  $t$  during a Performance Period using an averaging period of  $x$  days. Note that time 0 represents the beginning of the Performance Period.

**Step 1:** Since dividends are assumed to be re-invested, it is required to calculate the number of shares purchased with dividends and accumulate the purchased shares until the measurement date  $t$ . Therefore, the accumulated shares purchased on measurement date  $t$  can be calculated as:

$$AP_t = \frac{D_t \times AP_{t-1}}{S_t} \quad (AP_{0-x} = 1)$$

Note that the averaging period before the Grant Date should also include dividends, since the ex-dividends are also part of the underlying asset of the share price at that time. Lastly, we need to calculate the value of the asset on each day,  $AV_t$ . As such, the formula below is the daily exchange rate (ratio of issuing entity's currency and peer company's local currency):

$$AV_t = \frac{S_t \times AP_t}{R_t}, \quad R_t$$

**Step 2:** Next, it is required to calculate the average of  $x$ -day Stock Prices. It can be calculated at any time  $t$  (including the Terminal measurement at the end of the Performance Period) as follows:

$$AS_t^x = \frac{\sum_{t-t-x}^t (AV_t)}{x}$$

**Step 3:** Finally, the TSR with an  $x$ -day averaging period at any time  $t$ ,  $TSR_t^x$  can be calculated as:

$$TSR_t^x = \frac{AS_t^x}{AS_0^x} - 1$$

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