GLOBAL VOLATILITY SUMMIT

May 2016 NEWSLETTER

Dear Investor,

The Global Volatility Summit ("GVS") brings together volatility and tail hedge managers, institutional investors, thought-provoking speakers, and other industry experts to discuss the volatility markets and the roles volatility strategies can play in institutional investment portfolios. The GVS aims to keep investors updated on the volatility markets throughout the year, and educated on innovations within the space.

Morgan Stanley has provided the latest piece in the GVS newsletter series enclosed on behalf of True Partner Capital.

Cheers,

Global Volatility Summit

2016 EVENT

The 7th Annual GVS was held on March 16th in New York City. Joined by the other event sponsors, including banks and exchanges, ten volatility and tail hedge managers hosted a crowd of 350 attendees including senior investment representatives from the largest global pensions, sovereign wealth funds, endowments, foundations, and insurance companies.

2016 MANAGER PARTICIPANTS

Argentière Capital
BlueMountain Capital
Capstone Investment Advisors
Capula Investment Management
Ionic Capital Management
Man AHL
Parallax Volatility Advisors
PIMCO
Pine River Capital Management
True Partner Capital

KEYNOTE AND GUEST SPEAKERS

The 2016 keynote speakers were Barney Frank and Marcus Luttrell. Barney Frank served as a US Congressman for over 30 years and most recently as the Chairman of the House Financial Services Committee from 2007 through 2011. He was a key author of the Dodd-Frank Wall Street Reform and Consumer Protection Act. Marcus Luttrell is a decorated Navy Seal and best-selling author of Lone Survivor. You can access their biographies and more information about the event on the website: www.globalvolatilitysummit.com.

Morgan Stanley

MORGAN STANLEY RESEARCH

Morgan Stanley & Co. LLC

Mikhail Levin
Mikhail.Levin@morganstanley.com
+1 212 761-8556

Nicholas Kirschner
Nick.Kirschner@morganstanley.com
+1 212 296-5939

August 13, 2015

North America

US Interest Rate Strategy

Headwinds Ahead for Vega

Long-expiry long-tail volatility has traded well over the past few weeks, with 5y30y vol near a 4-month high as a result of the rally in rates and limited callable issuance. However, come September, there are likely to be headwinds to the recent strength, and therefore we recommend investors fade the local high in vega and shift to a short position in the bottom right of the surface.

The Looming Wall of Callability

Going into September, we foresee an increase in the amount of outstanding issuance that is called and believe we will see demand for new callable issuance from investors that will receive cash. September 2014 was the largest month for issuance in the recent history of USD callables. This September, many of these issues are eligible to be called for the first time. While it is difficult to say whether an issue will be called, $7.7bn of issuance is eligible in September vs. a YTD monthly average of $2.7bn. Moreover, while credit spreads have widened somewhat, the move lower in longer-term rates has more than offset the move in credit spreads. Thus, we expect an increase in issues getting called and, as a result, an increase in new callable issuance, pressuring vega lower.

The Macro Factors: Currencies and Rates

The Asia currency story adds another dimension to this discussion. To the extent that Taiwanese investors believe that TWD will continue to depreciate, demand for USD callables may increase. The decline in TWD rates is also bullish for issuance, and bearish for vega. Finally investors should consider the rates/vol correlation in long-expiry volatility. If long-end rates continue to rally, hedgers may drive vega higher. As a result, investors should consider a rate hedge against their short vega position.

Due to the nature of the fixed income market, the issuers or bonds of the issuers recommended or discussed in this report may not be continuously followed. Accordingly, investors must regard this report as providing stand-alone analysis and should not expect continuing analysis or additional reports relating to such issuers or bonds of the issuers.

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Headwinds Ahead for Vega

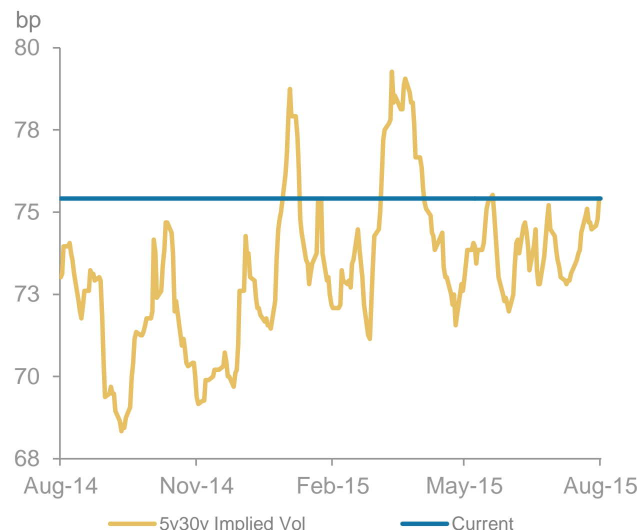
With the rally in rates, and limited callable supply, long-expiry vega has done quite well since mid-July and is currently sitting at local highs (**Exhibit 1**). However, investors who have benefited from this pick-up in volatility should not be complacent. Going into September, there are several headwinds presenting risks to long vega positions:

- The amount of issuance that is callable in September is almost triple the year-to-date average. As some of this issuance is called, there is likely to be investor demand for issuance of new callables, putting pressure on vega.
- To the extent that Taiwanese investors believe TWD depreciation (which began following the CNY policy changes) will continue, USD callables become a more attractive asset.
- Lower yields in Taiwan (20bp rally in the 10y over the last week) make yields on USD callables more attractive.

For these reasons, as well as the fact that vega is at a local high, **we recommend investors turn short vega**. There are risks to this view, including the potential of a further rally driving vega higher, the potential for fewer bonds than expected to get called (given wider credit spreads or other factors), and lower long-end yields in the US making callables less attractive. However, we believe the balance of risks favors being short at these levels.

For investors interested in the fundamentals of this market, we recommend they turn to our publication on the topic, *Understanding Vega: What's Driving the Moves?,* April 6, 2015. However, to briefly recap, the long-expiry long-tail market is generally driven by demand from Taiwanese insurers seeking to enhance yields by selling volatility. To hit their high yield targets, these investors turn to USD zero coupon callables given low domestic yields, the pickup from taking credit risk and selling embedded volatility, and the pickup by buying a zero rather than a coupon bond. By taking these risks, investors can attain a 4-5% nominal yield, although they lose that yield when the bond gets called (at lower prevailing yields). The demand for these bonds tends to drive the long-expiry vega market, given the lack of other natural market flows. When issuance picks up, the market sees a supply of long-expiry long-tail volatility, driving that part of the surface lower.

Exhibit 1
5y30y Implied Vol



Source: Morgan Stanley Research

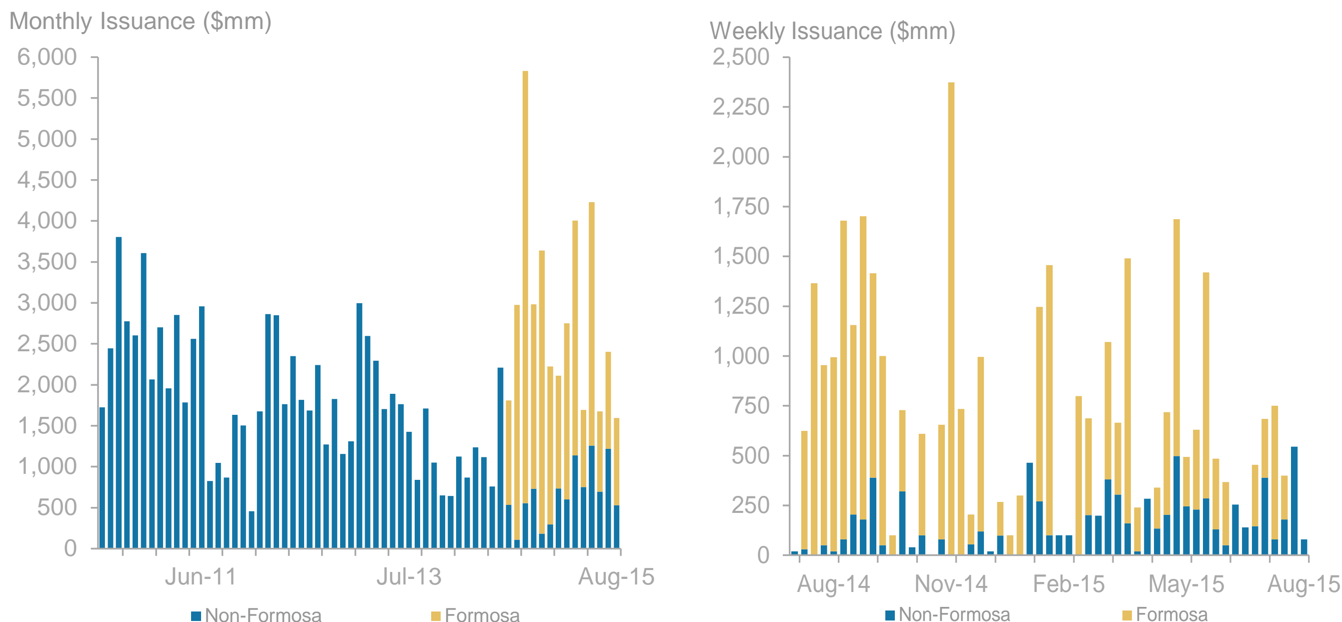
Currently, there are approximately $94bn of USD callable zeros and callable fixed rate bonds listed in Taiwan that have been issued since 2010 and are still outstanding. A large pickup in callable bond issuance occurred in September 2014 following rule changes that allowed Taiwanese insurers to increase holdings of foreign debt, as long as the bond was listed in Taiwan. **Exhibit 2** displays this dynamic, with bonds listed in Taiwan labeled "Formosa." September 2014 was far and away the largest month of issuance, with nearly $6bn issued, which is approximately double the surrounding months.

More recently, issuance has been subdued, with the last few weeks quite low when adjusting for the $1bn Intel issue, which is displayed in the table, but may not have resulted in a supply of vol to the market. Along with the rally in long-end rates, which increases vega demand through berm hedging, the low level of issuance has also likely contributed to the rally in vega. Whether issuance increases materially from the currently low levels will determine to a large part which direction vega moves from here.

As we discussed above, there was a large amount of these callables issued in September 2014. Many of these callables can be called annually, beginning next month. In **Exhibit 3**, we display the amount of outstanding debt (issued from 2010 onward) that can be called in each month going forward.

Exhibit 2

Monthly and Weekly Issuance of USD Callable Zeros and Callable Fixed Rate Formosas



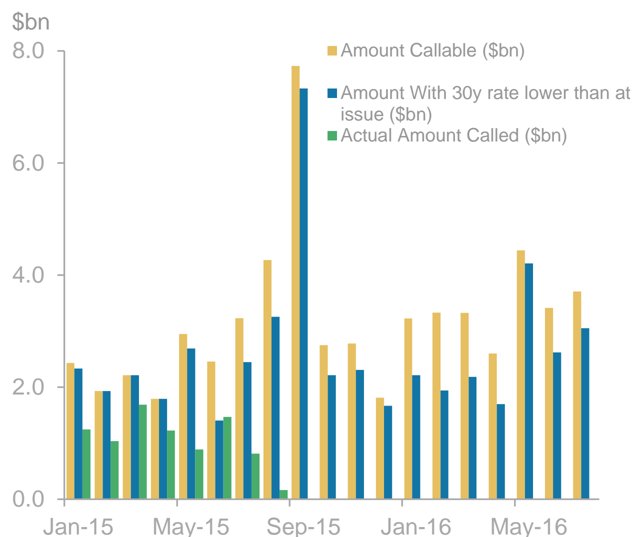
Note: Includes USD zeros, and fixed callables listed in Taiwan. Organized by issue date. Excludes some issues that most likely were not swapped. Source: Bloomberg, Morgan Stanley Research

While the decision to call clearly depends on more than just having an issue that's eligible, looking at the total call-eligible universe is a good first step in understanding potential demand for new issuance. Of issuance since 2010, there is a total of $7.7bn eligible to be called in September, not including bonds that can be continuously called. This is nearly 3 times the YTD monthly average of $2.7bn. In the exhibit, we also show the amount of issuance with a 30y swap rate at issue that is lower than the current 30y swap rate (which is nearly the case for all bonds eligible to be called), as well as the amount that was actually called in each month this year. Relative to issuance in September 2014, long-end rates are significantly lower, given that the 30y swap rate reached 3.37% in September vs. 2.64% today. The level of 30y swap rates clearly isn't the only relevant factor in whether an issue gets called, but it is certainly an important one, along with issuer credit spreads and call strikes.

In **Exhibit 4**, we display the issues with notionals >$100mm that are eligible to be called in September. We also show the precise change in the 30y rate and 5y CDS for each issuer from the date of issue to today. Generally credit spreads have widened from the issuance date of these callables, but for every single issue, the fall in 30y rates has significantly outpaced the increase in credit spreads. While we still cannot determine whether these issues will be called (an accurate answer would require modeling the details of the Bermudan callable and incorporating credit spreads in the process), the high amount eligible to be called and lower rates net of credit spreads make it likely that we'll see a material increase in issues called.

Exhibit 3

Amount of Issuance Callable in Each Month



Note: For issuance from 2010 onward; bonds counted for each call date. Source: Morgan Stanley Research

Exhibit 4

Largest Issues Eligible to Be Called

Issue Date	Next Call Date	Issuer	Notional ($mm)	Coupon	Chg from Issue 30y Swap	Chg from Issue 5y CDS
9/5/2014	9/5/2015	Goldman	974	ZERO	-55	12
9/23/2014	9/23/2015	Verizon	870	4.80	-58	25
9/19/2014	9/19/2015	UBS	750	ZERO	-63	22
9/9/2014	9/9/2015	Citi	600	ZERO	-57	13
9/10/2014	9/10/2015	Barclays	600	ZERO	-62	16
9/10/2014	9/10/2015	CS	400	4.00	-62	23
9/26/2014	9/26/2015	BNP	300	ZERO	-55	14
9/30/2014	9/30/2015	DBS Bank	230	ZERO	-55	-
9/19/2014	9/19/2015	Stnd Chartered	200	ZERO	-63	30
6/9/2015	9/9/2015	Credit Agricole	103	ZERO	-30	5
3/12/2013	9/12/2015	Citi	100	ZERO	-43	-17
3/13/2013	9/13/2015	BNP	100	ZERO	-43	-57
3/3/2015	9/3/2015	Barclays	100	ZERO	4	29

Note: For issuance from 2010 onward. Source: Morgan Stanley Research

Given this potential for a large increase in bonds that are called in the next few weeks, we see follow-on implications for issuance. **As these bonds are called, investors will receive their principal back, which they will need to reinvest to meet their high yield targets. As a result, we anticipate the increase in bonds called will lead to an increase in callable issuance to satisfy investor demand for yield, and as a result, put pressure on vega.**

While this callability dynamic is the primary driving factor for our vega view, there are several others that support our conclusion. In line with the depreciation of CNY, the Taiwanese dollar fell significantly this week (**Exhibit 5**). To the extent that Taiwanese insurers expect this depreciation to continue, and to the extent they do not hedge out their FX risk from these callables, USD assets are likely to present an attractive asset to hold, beyond the nominal yield pickup.

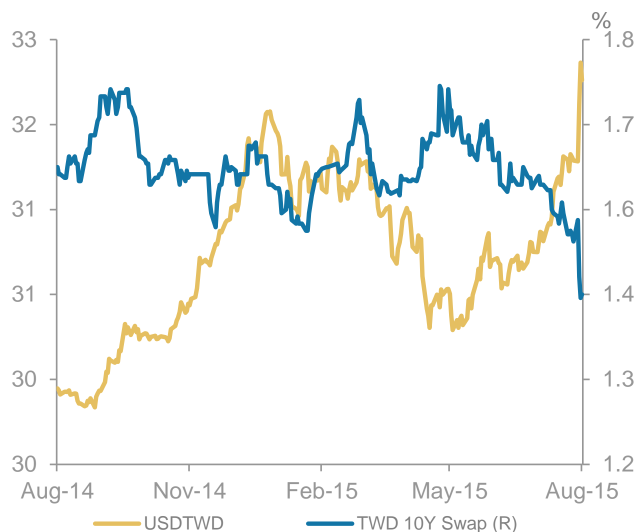
Moreover, along with this week's TWD depreciation, we saw a rally in Taiwan rates. While we have also seen US rates fall recently, the rally in rates in Taiwan further confirms that insurers there need to look externally to meet yield targets, which should also be a positive for callable demand, and a negative for vega.

While we recommend investors position short vega here, there are several risks to consider. First, as we discussed in detail in our April 6 vega publication, there is a negative rates/vol correlation given flows around Bermudan hedging and callable issuance. **Exhibit 6** displays the YTD history of weekly changes in 30y rates vs. weekly changes in 5y30y vol. The correlation between the two series is -0.45. Thus, if we see 30y rates move lower, we could see an increase in vega as berm books shorten and hedgers need to buy vol. However, investors worried about this scenario can receive fixed to hedge out their vega risk associated with rates moving lower.

Another risk associated with lower rates is that yield-oriented investors may wait to reload on callables until they can get higher yields. While we cannot rule out this possibility, at current rates, we believe they will be willing to reload on callables that they are called out of, rather than just hold cash.

Exhibit 5

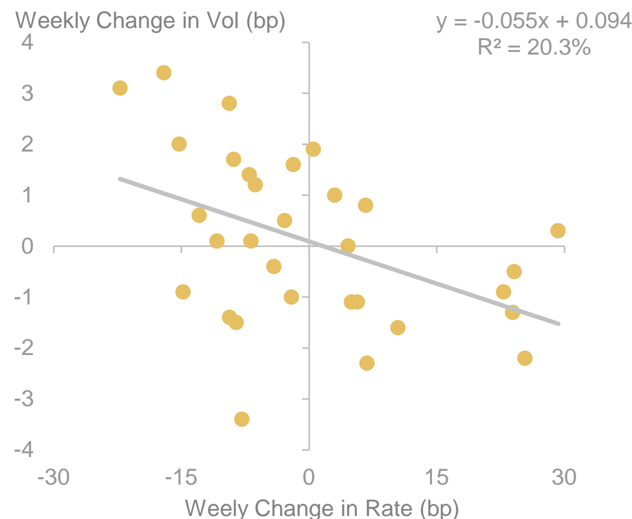
USDTWD and TWD 10-Year Swap Performance



Source: Morgan Stanley Research

Exhibit 6

YTD Relationship Between 30Y Rate and 5Y30Y Vol



Source: Morgan Stanley Research

Finally, there is clearly a risk in terms of the uncertainty of how much of the eligible issuance will be called. While we try to give a sense of the potential based on what is eligible, the move in rates, and the move in credit spreads, an accurate estimate of how much eligible issuance will be called is very difficult to generate, and thus there is risk to our outlook.

In Depth: How TWD Depreciation Could Affect Demand
Given that Formosa bonds are US dollar-denominated, but intended for Taiwanese investors with Taiwanese Dollar-denominated liabilities, a logical question to ask is what role, if any, currency fluctuations play in determining the value proposition for investors. This question is important because, given the relatively large moves of late and increased focus on currency risk, these considerations may play a more prominent role in determining the level of demand for USD-denominated callable bonds. The answer to the question is intimately linked to the extent to which Taiwanese lifers and other investors choose to hedge their holdings against currency risk.

In the absence of any hedging, TWD-based investors would have been carrying and would be continuing to carry long USD exposure, an exposure that would have served them quite well over the last several years. (**Exhibit 7**) However, we have heard anecdotally that some investors choose to hedge the currency risk with relatively short-dated FX forwards which they roll over. Of course, as with currency-hedging any security with mark-to-market risk there is a possibility that hedge notionals stray from asset values, but such a strategy would largely neutralize their exposure to the USDTWD cross.

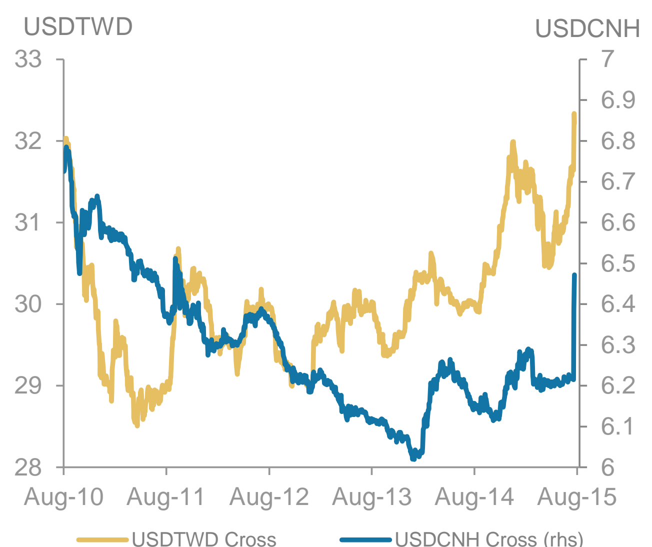
In practice, it is likely that there is a mix of buying on a hedged and unhedged basis, with the proportion of those hedging potentially changing over time. **In our view, the decision of whether to hedge is informed by the interaction of three primary factors – i) the market outlook of those tasked with investing the asset portfolios of the Taiwanese lifers; ii) investor risk mandates/controls; and iii) the 'costs' of hedging.**

While it is difficult to get a read on the first factor with much confidence, recent economic and currency trends as well as policy developments in each region might lead to a change in views which could affect the demand for USD exposure. To the extent it increases appetite for USD risk among TWD-based investors, it would be positive for Formosa demand from investors that do not hedge their currency risk. The second factor could arguably lead more investors to hedge their currency risk given the increase in currency volatility over the last week, and thus would cause more investors to examine Formosa bond value from this perspective.

Thinking about the value proposition of these securities from the perspective of an FX-hedged investor is more complicated than simply looking at the all-in yield offered in USD terms relative to domestic assets or the ability to attain a desired return bogey. Value will depend more on relative yield curve steepness across the two currencies rather than on outright rate level differentials (though of course the credit exposure and embedded sale of optionality provide additional yield pickup for the buyer of a Formosa). Said another way, it will be more about the carry offered by long duration positions relative to shorter funding tenors, because currency sales in the forward market will be done at a rate that takes into account the short term yield advantage of one currency versus the other.

The current environment is ideal for FX-hedged TWD-based buyers of USD-denominated securities since they are generally earning positive carry on both legs of the transaction (depending on the forward FX tenor and the onshore vs. offshore market). While the economics of each deal will vary, a look at USD and TWD swap rates at very short and longer maturities provides a stylized illustration of the value proposition currently offered to FX-hedged buyers of USD duration.

Exhibit 7
USD/TWD and USD/CNH Five-Year History



Source: Morgan Stanley Research

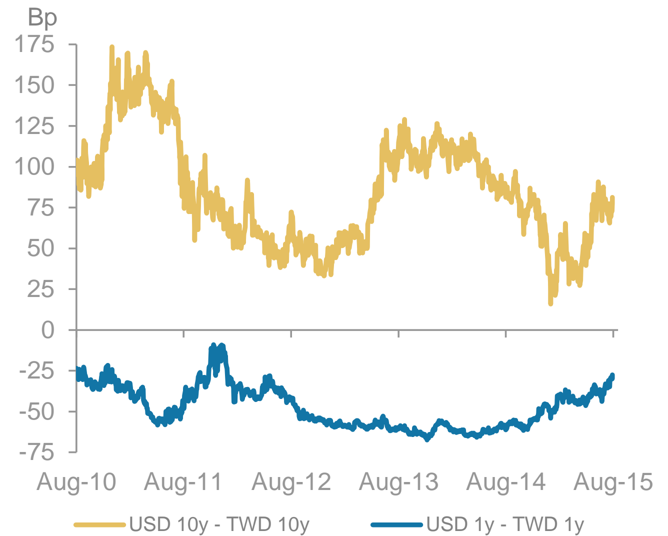
Exhibit 8 shows the spread between the respective USD and TWD (offshore) swap rates at the 1- and 10-year tenors. The spreads show that not only is there a nominal rate pickup by buying USD duration rather than TWD, but TWD-based investors can sell US dollars a year forward at a premium to spot levels since the USD/TWD 1-year swap rate spread is negative. However, the extent to which these spreads converge (that is, USD rate curves flatten relative to TWD) will determine the value seen by hedged buyers.

With the Fed appearing set to embark on hikes sometime this year, whether long duration US yields rise or fall may be ambiguous. However, in the absence of higher short rates in Taiwan, hedging costs will be more expensive. This presents a risk to our vega view, if FX-hedged Taiwanese investors are not willing to bear long USD exposure, the value offered by Formosas may erode over time if USD short rates move towards neutral and the curve flattens.

While there are certainly caveats to keep in mind to this FX-hedging analysis, in terms understanding the calculation of the FX-hedged callable buyer, the discussion above should be informative. While this does not apply to all buyers, it is certainly something to keep in mind in this time of increased currency volatility.

Exhibit 8

USD vs. TWD 10-Year and 1-Year Rates



Source: Morgan Stanley Research, Bloomberg

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(as of July 31, 2015)

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Morgan Stanley

The Americas
1585 Broadway
New York, NY 10036-8293
United States
Tel: +1 (1)212 761 4000

Europe
20 Bank Street, Canary Wharf
London E14 4AD
United Kingdom
Tel: +44 (0) 20 7 425 8000

Japan
1-9-7 Otemachi, Chiyoda-ku
Tokyo 100-8104
Japan
Tel: +81 (0) 3 6836 5000

Asia/Pacific
1 Austin Road West
Kowloon
Hong Kong
Tel: +852 2848 5200

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