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High Grade
North America

US High Grade Strategy Focus

A signal wrapped in an enigma

- **Liability dollarization:** The world's experiment with unconventional monetary policy is beginning to reshape Asia's life insurers, which are rolling out the red, white and blue carpet to encourage sales of policies denominated in U.S. dollars and other foreign currencies. Regulators are taking notice, and some are even encouraging the steps. What might these developments mean for their US corporate bond investment flows?

- **Lift to the long-end?** Taiwan's life insurance regulator is raising the roof on foreign bond holdings while subjecting one class of USD bonds to new caps. For reasons we discuss, the shift is substance wrapped in a signal inside an enigma. In one scenario, the new policy proposal could usher in lower FX hedging needs, drop the investment yield hurdle, drive more lifer funds from EM into DM and flatten 10s30s spread curves particularly in BBB+ and better paper.

- **Clearer flow signals:** We introduce a novel approach to cleaning up the most comprehensive (and unfortunately, messiest) dataset on international inflows into credit, the U.S. Treasury International Capital (TIC) data. The results point to the lightest foreign inflows in five years. We also make some preliminary estimates of the sensitivity of spreads to flow shifts.

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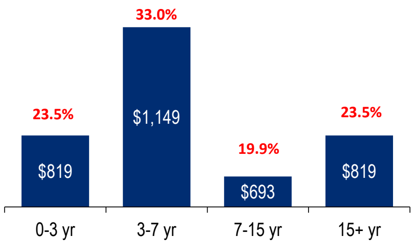
A flow by any other name

Figure 1. Maturity structure of foreign holdings of US-issuer corporate bonds

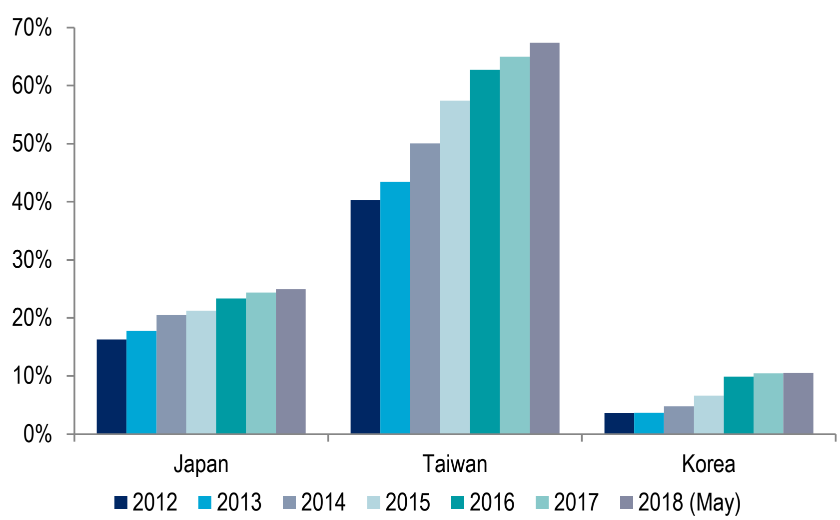


Source: Citi Research; Bloomberg Financial LP; US Treasury

Note: Market value of foreign holdings of US issuer corporate debt (all currencies) as of May 31, 2018 applied to most recently reported maturity structure of foreign corporate bond holdings (June 2017).

Some funny things are happening to the business model of Asia's life insurance companies as the global reach for yield approaches adolescence. In Taiwan's life insurance industry, which has $700 bn in invested capital, insurers just got the green light to sell more policies denominated in U.S. dollars. Regulators told the industry last week that if it can grow its share of policies denominated in foreign currencies to 35% (from the current limit of 25%), they will be permitted to buy as much as $40 bn[1] more in foreign bonds (and simultaneously reduce their portfolio-level FX hedging cost). In Japan, the $3 trillion life insurance sector is watching its premium income dwindle under oppressively low government bond yields, with the lone bright spot -- highlighted by the local regulator[2] – being the "increase of whole life insurance denominated in foreign currency." At one Japanese lifer, USD policies (which subject households to the risk of a depreciation in the U.S. dollar) grew to 22% of annualized premiums in the June 2018 quarter from 11 percent in the same period a year earlier. Why, all of a sudden, do Asian lifers seem so focused on selling policies that pay out benefits in foreign currencies? And what does this mean for inflows into credit, and for the households that absorb the currency risk? In this note, we aim to provide some perspective on the important trend of liability dollarization and the mechanism by which the trend can perpetuate inflows into US credit in the short term. We also provide additional detail on the Taiwan life insurance industry's latest regulatory developments, and introduce a novel approach to cleaning up the most comprehensive (and unfortunately, messiest) dataset on international inflows into credit, the U.S. Treasury International Capital (TIC) data.

Figure 2. Asia life insurers' share of assets in foreign securities, May 2018



Source: Citi Research; life insurance associations

Phase 3 of the global hunt for yield

The persistently high cost of hedging U.S. dollar assets against fluctuations in exchange rates has begun to contort the liability structure of some Asian insurance investors in a fashion that could prolong the flow of capital into the U.S. investment grade bond market well into the new year, while also raising financial stability

[1] Lifers with 25% foreign currency policies could exclude 25% * (1-45%(, or 13.75% of $ assets from the cap; under the new rule this grows to 35%*(1-45%) or 19.25%. A 5.5 percentage point increase on $700 bn in invested capital is roughly $38 bn in foreign bonds exempt from the limit.

[2] https://www.fsa.go.jp/en/news/2018/20180614-2/01.pdf

concerns as the risk of a depreciating U.S. dollar is shifted to households. The change, which has been acknowledged and even encouraged by regulators in parts of Asia, involves a push to underwrite more financial products denominated in foreign currencies such as U.S. dollars. Because the additional return that lifers are obligated to pay on these foreign currency policies can be substantially lower than the alternative of selling a local currency policy and hedging a USD asset held against it, the net effect of this transition toward shifting FX risk to households -- which we still see in its early stages – is a lower investment hurdle for Asian lifers' foreign bond investments. By sharing the burden of the FX mismatch with policyholders, lifers can substantially reduce their portfolio-level hedging cost and prolong their outward investments into US IG credit for another year, as global investors try to outwait an environment of oppressively low long-term yields on local currency assets.

The development opens a third and potentially destabilizing phase of the global reach for yield into US credit. In the first phase (2014-15), global investors could readily pick up 100 bps or more in yield over local risk-free alternatives with FX-hedged AA-rated US credit. Starting in 2016, as the Fed kicked off a string of rate hikes, the widening differential between short-term U.S. yields and those in the rest of the world roughly doubled the upfront cost of hedging dollars against the currencies of US credit's most important international investors in Europe, Japan and Taiwan. With few attractive alternative asset classes available, and with long-term policy obligations to meet, global investors, especially the life insurance companies, took these changes largely in stride, by simply taking more risk.

In 2016 and 2017, longer-duration investors in these regions began to tolerate a wide range of portfolio risks – shortening the tenor of currency hedges, taking naked USD positions when local currencies seemed rich, and more importantly, moving down in credit quality, from AA into mid-BBB paper. In this second phase of the global reach for yield, a positive feedback loop developed in which global investors' boosted their investment yields by progressively raising their tolerance for risker and longer maturity paper as spreads tightened and hedge costs rose, imbuing each dollar of foreign inflow with greater power to absorb credit risk.

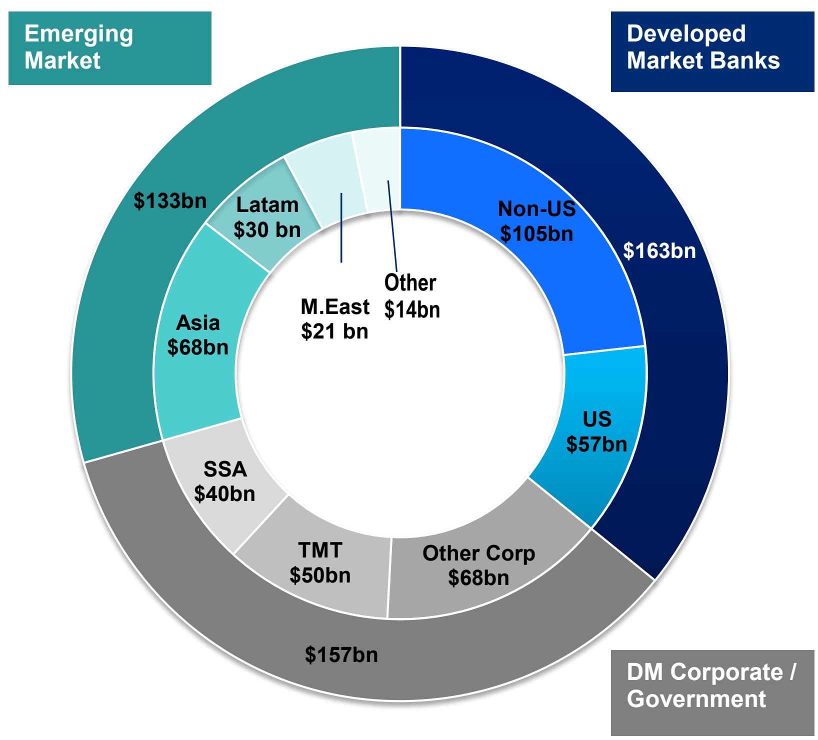
The second phase of the global reach for yield died in January 2018, when tight US credit spreads, a flattening US yield curve, and wider LIBOR-OIS rendered even the lowest rated and longest maturity high-grade US corporate bonds uneconomical after currency hedges were set. Net inflows into U.S. credit dried up, and spreads were whipsawed. By late January, a European investor immunizing U.S. IG credit portfolios to foreign exchange shocks for one year would have had to sell dollars forward at an upfront loss of 300 bps to buy IG credit yielding 390 bps. With local-currency risk-free yields at 70 bps, the decision was easy – stay home until spreads widen.

The story can and perhaps should end here – indeed, our European credit colleagues have made a strong case that the withdrawal of monetary accommodation will play through to wider credit spreads. However, we think phase three may allow these inflows to continue a while longer, perhaps for another year, as the world's experiment with unconventional monetary policy begins to reshape the liability side of the book.

Taiwan's new insurance rule: signal wrapped in an enigma

For Taiwanese lifers, last week brought welcome news as the insurance regulator provided relief on foreign bond holdings to an industry struggling to grow assets profitably. The broad contours of the proposal fit our earlier expectations, and our primary takeaway is that the rules will support continued expansion of USD credit portfolios if not immediately then into the new year, by allowing an additional 5.5 percentage points of headroom to total allowable foreign bond positions (which can now conceivably grow to 84.25%[3] of assets, provided households in Taiwan can be induced to buy policies that expose them to USD depreciation). Taiwanese lifers, with a 67% allocation to foreign securities out of $700 bn in invested capital, have been selling USD-denominated policies for years, but the rules create a strong incentive to grow them even further. The policy announcement, submitted as a draft that could take effect in Q4, is just the latest policy shift of several that have eased the burden on lifers as they have accumulated a war chest of dollar bonds, divided we think roughly evenly we believe between bank bonds, developed market corporate bonds, and emerging market bonds. The industry we estimate holds roughly a 45%/20% split between standard foreign bonds ("liquid") and locally listed bonds, known as Formosa bonds, which have no active secondary market and are typically structured as callable notes. The new rules restrict Formosa holdings (by adding a new 65% cap for foreign + Formosa), but were drawn up in a way that conformed with current positioning levels, meaning that lifers are not to a significant degree caught on the wrong side of the new rule, although at least one lifer has announced that it will take some months to adjust to the new constraints.

Figure 3. Estimated foreign exposures of Taiwan life insurance companies, extrapolated from regulatory filings of four financial holding companies, year-end 2017



Source: Citi Research

Over time, the rules are ultimately less restrictive, and will help lifers reduce their hedging costs by shifting currency risk to households at a fraction of the cost of FX derivatives. By migrating 10 percentage points of standard TWD policies to USD-denominated policies, lifers can reduce their portfolio level hedge costs by

[3] 45% foreign bonds + 20% Formosa + 19.25% exemption for foreign currency policies

approximately 20-30 bps depending on the marginal increase in those policies' cost of liability. That hedge cost reduction is equivalent at present levels to approximately one or perhaps two notches in credit rating for long-end IG paper. Applying a 30 bps reduction to a hypothetical 45% yield hurdle, lifers would be able to buy 30-year BBB1 bonds (which are not subject to a ratings-based cap) rather than buying BBB3 bonds (which are grouped with BB-rated bonds and strictly limited).

Figure 4. Developed-market IG yields

	AA	A1	A2	A3	BBB1	BBB2	BBB3
2y	2.73	2.83	2.96	3.00	3.13	3.20	3.45
3y	2.91	2.98	3.11	3.21	3.31	3.44	3.70
4y	3.06	3.15	3.26	3.34	3.50	3.60	4.03
5y	3.17	3.27	3.41	3.45	3.68	3.83	4.15
6y	3.35	3.44	3.58	3.74	3.88	4.09	4.45
7y	3.56	3.53	3.62	3.84	3.97	4.21	4.73
10y	3.51	3.60	3.74	3.85	4.17	4.45	4.69
20y	4.01	4.11	4.26	4.42	4.65	5.11	5.59
30y	4.02	4.09	4.20	4.43	4.66	4.92	5.00

Source: Citi Research

Lifers are eagerly marketing USD-denominated life policies. One pitch from Taiwan shows a young man holding in one hand a large gift box in $100 bill wrapping paper and tied up in a red ribbon. He stands beside a young woman holding up a small American flag design. Below, red text in English and Chinese warns "All payments and transactions will be denominated in US dollar." If lifers succeed in growing these policies to 35% of policy reserves, worth roughly $235 bn today in USD terms today, the household wealth shock of a 10%-20% depreciation of the USD would be equivalent to a portfolio shock of $23.5 bn to $47 bn in an economy with a GDP the World Bank places at close to $600 bn. We leave to economists the question around the prospects of such a currency shock and raise this simply as an illustration of the magnitude of the portfolio risks shifted to households in this development.

By pairing a higher theoretical foreign bond cap with tighter restrictions on Formosa, the regulator is following its previous pattern of tightening some aspects of foreign investments while loosening others. For example, regulators have in recent years set stricter ratings limits on subordinated bank bonds and required a minimum 5-year non-callable period on Formosa bonds, while at the same time expanding the band of ratings exempt from quality-based portfolio restrictions from single-A and better to BBB+ and better; and exempting locally listed bonds from the 45% foreign bond cap. The latter rule relaxation prompted an explosion of so-called Formosa bond issuance, exposing lifers to both call risk (Formosas are typically structured as callable instruments) and illiquidity. Ironically, the Formosa market's rapid growth appears to have prompted a debate in Taiwan's legislature that led to the latest rulemaking process.

Under the new rules, lifers will be permitted to exempt up to 19.25% of their foreign currency bond holdings from a 45% foreign asset cap (note that some lifers have been granted only a 35% limit, while others can buy up to 45% of foreign bonds). To earn the full 19.25% credit, lifers would need to boost their foreign currency policy mix to 35% from current ranges of between 12% and 25%. Under the old rules, lifers could exempt only 13.75% of their assets with a foreign currency policy share of 25%. At the same time, the regulator has reduced the incentive to allocate investments to illiquid, locally listed bonds known as Formosa bonds by introducing a combined 65% cap on foreign and Formosa bonds. (Our understanding of the proposed rules is that the19.25% exemption on foreign bonds applies only to liquid foreign bonds, not to Formosa bonds.)

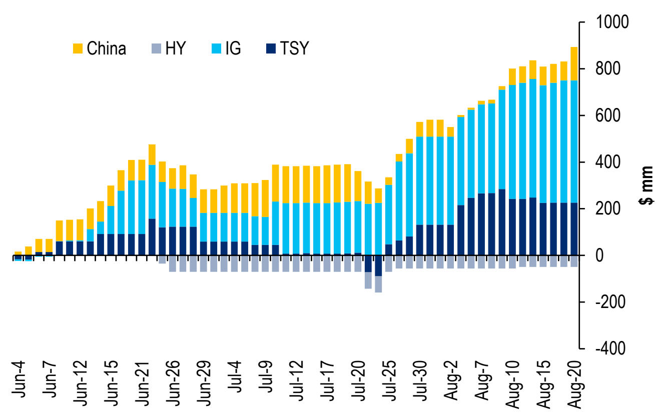
Formosa bonds offered three key advantages over global bonds until now – first, their exclusive availability to Taiwanese investors permitted lifers to grow their portfolios more rapidly than they could have in the global bond market alone; their callable structures provided some modest yield enhancement; and the primary benefit, their complete exemption from foreign bond caps. No longer fully exempt from a cap, Formosa bonds have lost their most attractive feature while retaining their somewhat menacing illiquidity.

One reasonable evolution of the Formosa market in our minds would be for insurers to hold standard foreign bonds at the full allowable limit (45% + currency exemption), while utilizing as much of their 20% Formosa portion for bonds, perhaps structured notes, that are inherently illiquid regardless of their listing status. The key takeaway for us is that the new Formosa cap incentivizes future growth in traditional corporate bond holdings in standard (non-Formosa) form, which could drive more 30Y demand than otherwise into the traded US bond market.

Most importantly, the shift toward foreign currency policies could provide relief on hedging costs. An additional 10 percentage points of foreign currency policies could effectively reduce portfolio-wide hedge costs by 30 bps, which could help to offset further hedge cost increases associated with further Fed hikes. A rapid increase in USD policies could rapidly cut hedging needs, lower the investment hurdle, and drive more funds from EM back into DM, flattening 10s30s spread curves particularly in BBB+ and better paper.

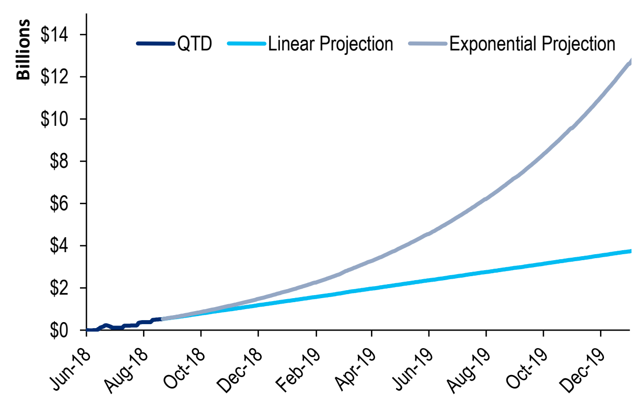
We view the regulatory change as substance wrapped in signal wrapped in an enigma. The substance is the higher foreign bond cap; the signal is the indication that regulations will continue to adapt to the needs of the lifers, and the enigma is how an industry that has now been granted a maximum potential foreign bond allocation of 84.25% (65% + 19.25% exemption) will manage in a credit down-cycle. Taiwan remains the hotbed of innovation in foreign bonds. Nearly a dozen new foreign bond ETFs (denominated in TWD but leaving foreign currencies unhedged) have listed on the Taipei exchange. Those ETFs are seeing inflows pile in at a rate that could bring in a cumulative $12 bn in new money by the end of next year. How such ETFs -- packaged as TWD equities but offering foreign currency denominated bond risk – would be classified by the Taiwan insurance regulator, and whether they would be exempt from foreign bond caps, is not immediately clear.

Figure 5. Cumulative inflows into Taipei foreign bond ETFs



Source: Citi Research

Figure 6. Taiwan's foreign corporate bond ETF inflows at trend



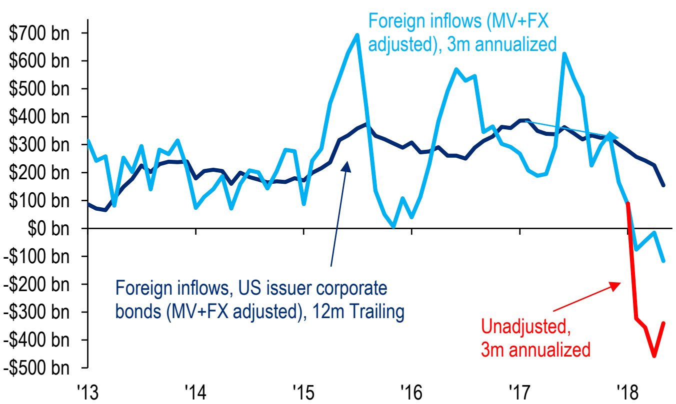
Source: Citi Research

Measuring international flows

We apply a two-stage valuation adjustment to the U.S. government's most authoritative source of global investors' U.S. corporate bond holdings to infer month-to-month flows into U.S. credit markets from abroad. The technique overcomes a critical shortcoming of raw Treasury International Capital (TIC) holdings data, which 1) covers both USD and non-USD holdings of bonds issued by US companies, and 2) is reported in market value, and thus subject to swings in bond yields and exchange rates. We apply to non-ABS TIC corporate market value a matrix of monthly performance for corporate bonds and currencies in an array of markets corresponding to US issuers' corporate debt loads, and infer flows from monthly changes in this valuation adjusted dataset. (Please contact us for more details on the methodology.) We plan to report this adjusted flow figure in Citi's monthly TIC report published by Citi's Rates strategy team.

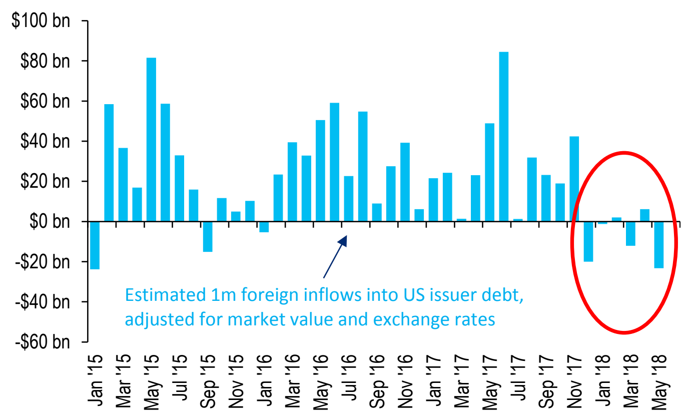
Our data provide further confirmation of a first-half 2018 global investor boycott of US credit following a three-year, $950 bn buying binge that helped drive US IG OAS to 15-year lows. The rate of inflows declined to $154 bn in the 12-months through May 2018, the latest period for which data is available. That's the lightest 12m rate of foreign bond buying in US credit since 2013, and down by half from the $316 bn per year that flowed in over the prior three years. (Failing to adjust for the rising value of the U.S. dollar and higher U.S. bond yields paints a misleadingly negative picture of the inflow picture; unadjusted 12m flows amounted to just $57 bn over the prior 12 months and suggest an *outflow* of $340 bn on a 3m annualized basis.) Our valuation adjustment also provides a superior fit with spread performance on US corporate bonds; since late 2016, global inflows over quarterly periods were highly correlated with quarterly spread changes in US IG, with quarterly inflows of less than $25 bn associated with flat to wider spreads.

Figure 7. Annualized rate of foreign inflows into US-issuer corporate bonds, adjusted for changes in market value and exchange rates



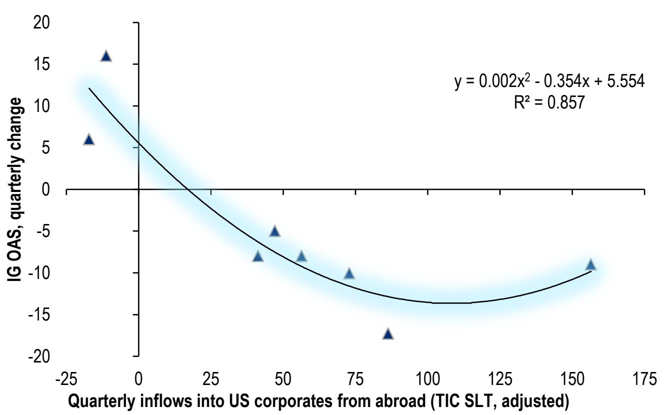
Source: Citi Research; US Treasury
Note: Data show changes in level of cross-border positions by non-US investors in corporate bonds of U.S. firms.

Figure 8. Monthly rate of foreign inflows into US-issuer corporate bonds, after adjusting for changes in market value and exchange rates



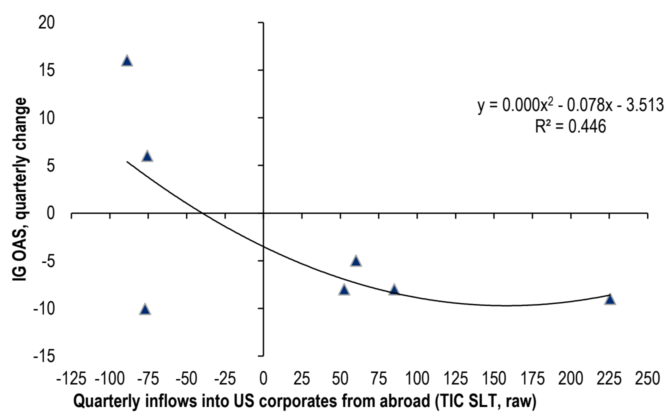
Source: Citi Research; US Treasury
Note: Note: Data show changes in level of cross-border positions by non-US investors in corporate bonds of U.S. firms.

Figure 9. A tighter relationship between foreign flows and credit spread changes emerge when Treasury data is FX and MV adjusted...



Source: Citi Research

Figure 10. ...as raw changes in foreign holdings of US corporate bonds show a less significant linkage



Source: Citi Research

Appendix A-1

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