

# Invoice Swaps: Margin Efficiencies at CME Clearing

By James Boudreault, CFA  
 Research and Product Development

## ***Clearing Invoice Swaps (or Swap Spreads) at CME Clearing Unlocks Substantial Capital Savings by Portfolio Margining Cleared Swaps with Futures***

### **Portfolio Margining: Interest Rate Swaps & Interest Rate Futures**

CME Clearing offers portfolio margining of Interest Rate Swaps (IRS) against its Interest Rate futures, for both house and customer accounts. This provides participants the ability to achieve new and potentially substantial capital savings by clearing Invoice Swaps at CME Clearing. Participants have also begun representing Swap Spreads as Invoice Swaps (CME Group cleared IRS vs. CME Group Treasury futures) to take advantage of the capital efficiencies. Swap Spreads represented as CME-cleared Invoice Swaps may eliminate a substantial portion of the Dodd-Frank margin costs. The following examples illustrate these capital efficiencies.

### **Invoice Swaps ...Swap Spreads using Treasury futures vs. CME-cleared IRS**

Invoice Swaps represent a substantial portion of daily transactions in the US Dollar IRS market. Each Invoice Swap, also known as an invoice spread, corresponds to a CME Group Treasury futures contract (Figure 1). It is a spread-trade consisting of a long (short) Treasury futures contract and a DV01 matched forward starting fixed-rate payer (fixed-rate receiver) IRS that begins on the last delivery day of the futures contract and matures on the maturity date of the futures underlying “cheapest to deliver” (CTD) Treasury security. An Invoice Swap that is long futures and a fixed-rate payer IRS profits if spreads widen, while short futures and a fixed-rate receiver IRS profits when spreads tighten.

**Figure 1: Invoice Swaps**

	Instrument	Notional (in \$ millions)	Eff Date	CTD Security/ Maturity	Fwd Yield/ Rate (% per yr)	Invoice Spread (bps per yr)	# Contracts	Position DV01 (\$ per bp)	Widener Strategy	Tightener Strategy
2Y	TUM2	92.4	5-Jul	T 1 3/4	0.2567	33.71	462	\$ 17,502	Long	Short
	IRS	100.0	5-Jul	3/31/2014	0.5938			\$ 17,510	Pay	Receive
5Y	FVM2	86.1	5-Jul	T 1	0.6408	32.35	861	\$ 43,448	Long	Short
	IRS	100.0	5-Jul	8/31/2016	0.9643			\$ 43,466	Pay	Receive
10Y	TYM2	82.0	29-Jun	T 2 3/4	1.1901	31.84	820	\$ 66,456	Long	Short
	IRS	100.0	29-Jun	2/15/2019	1.5085			\$ 66,473	Pay	Receive
Bond	USM2	85.1	29-Jun	T 6 3/8	2.4261	5.44	851	\$ 133,116	Long	Short
	IRS	100.0	29-Jun	8/15/2027	2.4805			\$ 133,074	Pay	Receive

(Source: Bloomberg, 5/9/2012)

### **Invoice Swap Margins**

Until now, an Invoice Swap position required margin to be posted to CME Clearing only for the Treasury futures leg of the trade, with the IRS left un-cleared. The result was a margin requirement based on the one-way directional risk of the futures to the clearing house. The introduction of portfolio margining at CME Clearing unlocks the door to substantial margin savings. Clearing both legs of the Invoice Swap at CME Clearing reflects lower risk, because the two legs together no longer represent one-way risk to the clearing house. Indeed, the total margin requirement for the Invoice Swap may be lower or roughly the same as the margin required for the Treasury futures leg alone. This is contrary, yet welcome, to the knee-jerk reaction

that clearing IRS will automatically increase margin requirements. In these instances, clearing an IRS alongside a matched Treasury futures position may lower margin requirements, or increase them only modestly.

In Figure 2, a market participant transacts in each of four Invoice Swaps, corresponding to 2-Year, 5-Year, and 10-Year Treasury Note futures and Treasury Bond futures. If only the Treasury futures legs are cleared, the total initial margin requirement would be \$4.0m.

If Treasury futures legs and IRS legs are both cleared at CME Clearing, the additional initial margin attributable to the IRS legs would be \$8.5m. But the risk offsets achieved through portfolio margining reduce the total initial margin to \$3.9m. This is 69% lower than the \$12.5m gross initial margin, before portfolio margining is applied. Remarkably, it is also 2% lower than the initial margin required for the Treasury futures alone.

**Figure 2: Invoice Swaps Margin Requirements**

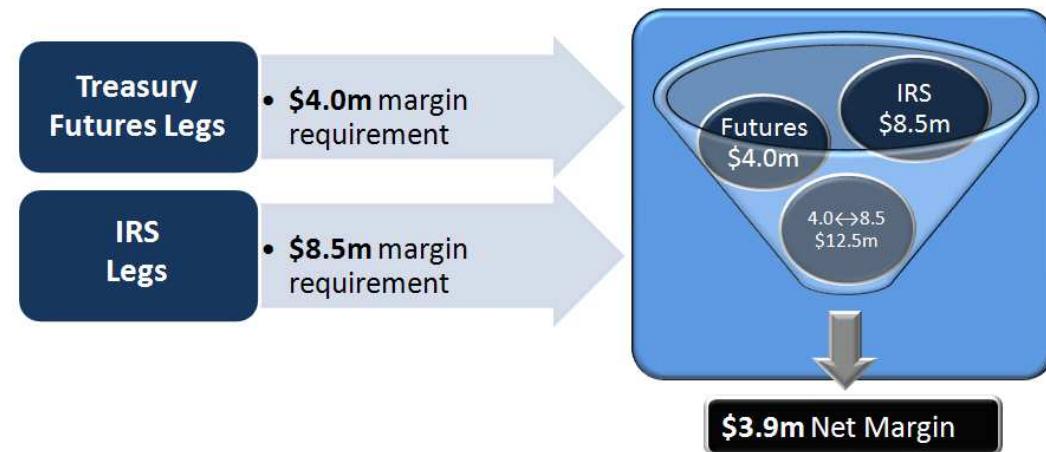
	Instrument	Notional (in \$ millions)	Margin (Before Offsets)	Total Invoice Margin	Margin Savings	Margin Offset	Net Margin, Invoice Swap	Net Margin, % of Not'l
2Y	TUM2	92.4	\$ 127,050	\$ 618,655	79%	\$ 488,738	\$ 129,918	0.1%
	IRS	100.0	\$ 491,605					
5Y	FVM2	86.3	\$ 559,650	\$ 1,822,004	66%	\$ 1,202,522	\$ 619,481	0.3%
	IRS	100.0	\$ 1,262,354					
10Y	TYM2	82.5	\$ 902,000	\$ 2,912,166	73%	\$ 2,125,881	\$ 786,285	0.4%
	IRS	100.0	\$ 2,010,166					
Bond	USM2	86.1	\$ 2,382,800	\$ 7,146,385	67%	\$ 4,788,078	\$ 2,358,307	1.3%
	IRS	100.0	\$ 4,763,585					
<b>TOTALS</b>		<b>\$747.3</b>		<b>\$ 12,499,210</b>		<b>\$ 8,605,219</b>	<b>\$ 3,893,991</b>	0.5%

(Source: CME Group CORE tool)

### Portfolio Margining Creates Substantial Capital Savings

As Figure 3 illustrates, clearing both legs of an Invoice Swap results in offsetting risks, creating the basis for massive capital efficiencies. Also gained are the protections and regulatory treatment of a cleared position.

**Figure 3: Portfolio Margining Invoice Swaps at CME Clearing**



**Portfolio margining resulted in a 69% margin savings**

**Portfolio Margin = \$3.9m**, which is 0.5% of the Invoice Swap notional value

## Swap Spreads

Swap spreads are another significant portion of daily transactions in the US Dollar IRS market. As mentioned earlier, swap spreads are similar to Invoice Swaps, except they combine IRS with a DV01 matched position in Treasury *securities*. Because Treasury securities are not impacted by the Dodd-Frank derivatives clearing mandate, new IRS margin requirements can significantly increase margin costs, as the cash securities fall outside the clearing house, creating the one-way risk discussed earlier, except this time it would be from the IRS leg. Accordingly, participants have started representing Swap Spreads as Invoice Swaps (CME-cleared IRS vs. Treasury futures) to take advantage of the capital efficiencies and may eliminate most of the Dodd-Frank margin costs.

## Conclusion and Additional Resources

CME Clearing offers the unique opportunity for unparalleled capital efficiencies via margin offsets of IRS positions against Eurodollar and Treasury Futures. This builds on the strength of CME Group's market leading interest rate products business, which had an average daily volume of \$3.6 trillion in 2011, and over \$28 trillion of notional outstanding. CME Clearing offers a wide range of eligible collateral for initial margin including some corporate bonds. CME Clearing currently clears Interest Rate Swaps in the following currencies: USD, EUR, GBP, JPY, CHF, CAD, and AUD.

### Additional Resources

OTC Clearing for Interest Rate Swaps

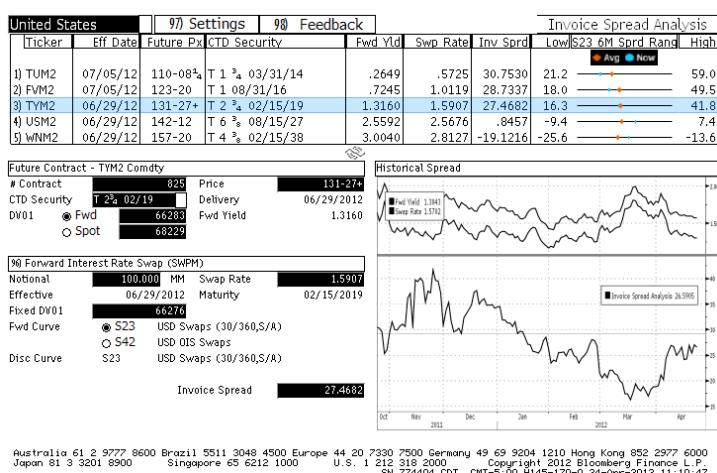
[www.cmegroup.com/irs](http://www.cmegroup.com/irs)

CME Clearing (acceptable collateral, margin requirements)

[www.cmegroup.com/clearing](http://www.cmegroup.com/clearing)

Subscribers to Bloomberg Professional® service can access the IVSP <GO> page for Invoice Swap analytics

**Figure 4: Bloomberg Professional® IVSP Screen**



**Bloomberg Professional® IVSP screen calculates:**

- Hedge Ratios
- DV01s
- Fwd CTD Yields
- Fwd Swap Rates
- Invoice Spreads

## Customer OTC Clearing Onboarding Resources

CME CORE

[www.cmegroup.com/clearing/cme-core-cme-clearing-online-risk-engine.html](http://www.cmegroup.com/clearing/cme-core-cme-clearing-online-risk-engine.html)

CME Onboarding Team: +1 312 338 7112

[onboarding@cmegroup.com](mailto:onboarding@cmegroup.com)



Futures trading is not suitable for all investors, and involves the risk of loss. Futures are a leveraged investment, and because only a percentage of a contract's value is required to trade, it is possible to lose more than the amount of money deposited for a futures position. Therefore, traders should only use funds that they can afford to lose without affecting their lifestyles. And only a portion of those funds should be devoted to any one trade because they cannot expect to profit on every trade. All references to options refer to options on futures.

CME Group is a trademark of CME Group Inc. The Globe logo, CME, Chicago Mercantile Exchange and CME Globex are trademarks of Chicago Mercantile Exchange Inc. CBOT and Chicago Board of Trade are trademarks of the Board of Trade of the City of Chicago, Inc. All other trademarks are the property of their respective owners.

The information within this document has been compiled by CME Group for general purposes only. CME Group assumes no responsibility for any errors or omissions. Additionally, all examples in this brochure are hypothetical situations, used for explanation purposes only, and should not be considered investment advice or the results of actual market experience.

All matters pertaining to rules and specifications herein are made subject to and are superseded by official CME, CBOT and NYMEX rules. Current rules should be consulted in all cases concerning contract specifications.

Copyright © 2013 CME Group. All rights reserved.