Expanding the portfolio management toolkit

A primer on Credit Risk Transfer (CRT) solutions for North American banks

EXECUTIVE SUMMARY

Contents

Executive summary	3
North American bank balance sheets are facing growing headwinds	5
Banks are increasingly tapping external capital pools to manage credit portfolios	6
Credit Risk Transfers (CRTs) are expanding the portfolio management toolkit	7
The opportunity for CRTs in North America is vast	12
CRT operating models are maturing, with leading banks investing in analytics and risk management capabilities	14
Marsh McLennan is a leading provider of CRT solutions	16
Appendix A	19
Appendix B	20

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1 Source: OSFI, Moody’s Analytics

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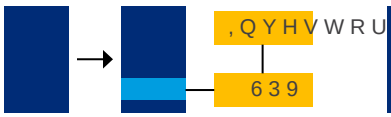
Banks are increasingly tapping ¡ ´ ° ¡ ® ª • ¨ Ÿ • ¬ ¥ ° • ¨ ¬ « « ¨ ¯ ° « © • a credit portfolios

7R FRQWLQXH VHUYLQJ FOLHQWV ¯QDQFLQJ QHHGV LQ WKH IDFH RI WKHVH SUHVVXUHV EDQNV DUH H[SDQGLQJ WKH

Credit Risk Transfers (CRTs) • ® ¡ ¡ ´ ¬ • ª ¥ ª £ ° ¤ ¡ ¬ « ® ° ¢ « ¨ ¥ « management toolkit

&57 VROXWLRQV KDYH EHHQ JDLQLQJ PRPHQWXP in North America as another mechanism for risk GLVWULEXWLRQ R®HULQJ VRPH PDWHULDO DGYDQWDJHV

Exhibit 4: Three primary transaction models of CRT solutions

	NON-PAYMENT INSURANCE	FUNDED CRTs/SRTs	UNFUNDED CRTs/SRTs
			
Scope	6LQJOH ORDQV VPDOO OHDJHG SRROV of HSRVXUHV	Large bank portfolios	
Products	0RVW FRPPRQ LQ &, &5(WUDGLWLRQDO FRPPRJLW\ ¯QDQFH SURMHFW ¯QDQFH IXQG ¯QDQFH OYJ ORDQV and derivative HSRVXUHV	63.1 <0037.3 <0004619.9 <0044>3-16 <00052>->5500030004>3-11.4 <004	

,QVXUHUV DQG UHLQVXUHUV W\SLFDOO\ KDYH WKH H[SHUWLVH DQG FDSDFLW\
WUDQFKHV EDVHG RQ D YDULHW\ RI IDFWRUV VXFK DV WKHLU H[LVWLQJ SRUW
DQG H[SHULHQFH LQ XQGHUZULWLQJ ULVN IRU D JLYHQ DVVHW FODVV 3ULYDW
DSSHWLWHV DQG DUH ZLOO[S

The evolution of the SRT market globally is a template for growth ¥ª • « ® ° ¤ America

7KH (XURSHDQ 6LJQL¯FDQW 5LVN 7UDQVIHUV 657V EHJDQ LQ WKH ODWH V DQG DFFHOHUDWHG LQ WKH HDUO\

,Q WKH 86 PDQ\ EDQNV KDYH EHHQ XVHUV RI 13, VLQFH WKH HDUO\ V PRVWO\ IRU VHFWRUDO DQG FRXQWHUSDUW\ limit management, and general risk management SXUSRVHV ,QLWLDOO\ FDSDFLW\ ZDV SULPDULO\ XWLOL]HG IRU WUDGH DQG FRPPRGLW\ ¯QDQFH VHFXUHG 5&)V DQG DVVHW EDVHG OHQGLQJ +RZHYHU WKH PDUNHW KDV HYROYHG WR WDNH FRQVLGHUDEOH YROXPHV RI SURMHFW ¯QDQFH DQG LQFUHDVLQJO\ WD[HTXLW\ WD[FUHGLW DQG R®WDNH ULVN HVSHFLDOO\ LQ WKH YDULRXV RQVKRUH 86 HQHUJ\ PDUNHWV DQG EXUJHRQLQJ UHQHZDEOHV market.

*XLGDQFH IURP WKH)H@€0•ROXW KDV °H p 0u

The opportunity for CRTs

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5:$ GHQVLW\ LV GH¯QHG DV WKH UDWLR RI 5:$ WR WRWDO DVVHW H[SRVXUH DQG PHDVXUHV WKH

5 The risk weight of the insured portion of the exposure can be substituted for the risk weight of the guarantor and will lead to reduced capital charges for the guaranteed exposure if the former's risk weight is higher than its substitute. As such, exposures with a risk weight below 35% OHDG WR PLQLPDO FDSLWDO UHOLHI EHQH¯WV +RZHYHU WKLV LV QRW D VWULFW FXW R® DV FH complex underwriting for certain loan exposures. Source: Basel Framework CRE 22.23

6 Source: Basel Framework CRE 20.82

7 Insurers have limited appetite for insuring loans with a rating above BB-ng loans wi. Sg !ca62-"rn_"ð â>¤C)RF¤Rl%ž8 # {2* 2 ,B$RB#P• M¤C)RX%l…%"â â ; # 6

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CRT operating models are ©•°±®¥ª£ ³¥°¤ ¨¡• ¥ª£ ž•ª§¯ investing in analytics and risk management capabilities

11 Based on previous Marsh McLennan experience supporting NPI and CRT/SRT transactions

Exhibit 9: Timeline of typical NPI transaction

13, WUDQVDFWLRQV DUH IDVWHU WKDQ &57 657 RQHV ZLWK LQLWLDO WUDQVD
ones GD\V

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provider of CRT solutions

0DUVK 0F/HQQDQ LV D OHDGLQJ SURYLGHU RI &57 VROXWLRQV EULQJLQJ XQSDUDOOHOHG FUHGLW ULVN H[SHUWLVH VWURQJ GLVWULEXWLRQ FDSDELOLWLHV WR LQVXUHUV DQG UHLQVXUHUV DQG D SURYHQ WUDFN UHFRUG RI VXFFHVVIXO H[HFXWLRQ RI &57 VROXWLRQV

0DUVK *X\ &DUSHQWHU DQG 2OLYHU :\PDQ collaborate WR GHVLJQ DQG GHSOR\ H®R UÀZWâXW@Q,VROXW LRP!Ô^• €R\P

4	&57 QRWL¯FDWLRQ DQG supervisory dialogue	• 3UHSDUH SUH QRWL¯FDWLRQ DQG ¯QDO QRWL¯FDWLRQ IRU WKH -6 • Prepare reporting templates • 6XSSRUW GXULQJ LQWHUDFWLRQ DQG 4 $ ZLWK WKH UHJXODWRU	
5	Internal approval	• U H v Â ǎapprovaÏ Q	Internal operational machine set-up Oliver : \ P D Q

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Exhibit 12: Sample case studies of NPI and CRT/SRT transactions executed by Marsh McLennan (Appendix B for reference)

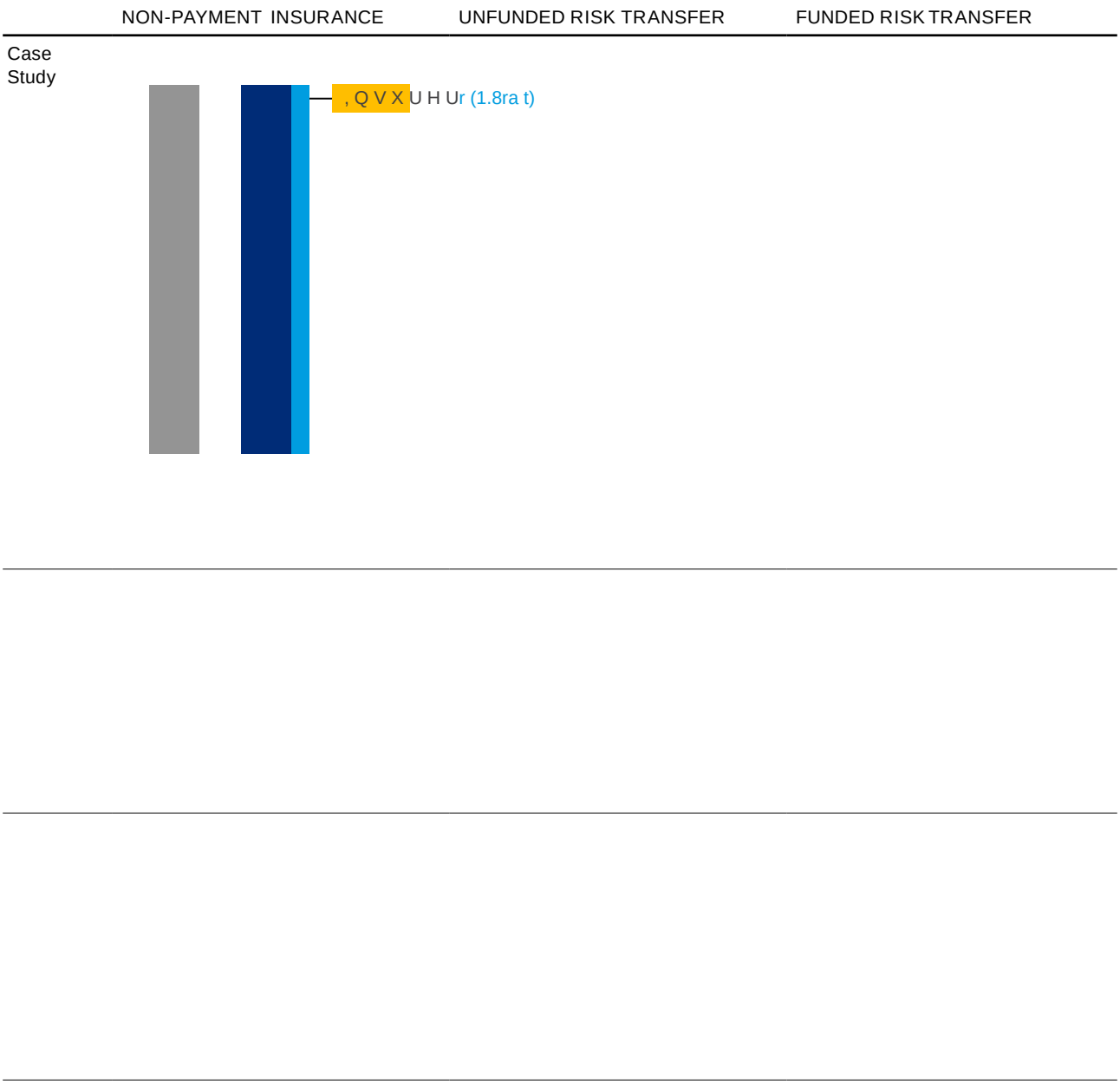

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Exhibit 13: Comparison of pre-GFC CDS to current capital markets and (re)insurance CRT solutions

	Pre-GFC derivatives	Capital markets	(Re)insurance
	Pre-GFC credit default swaps (CDS)	Funded (CRT)	Unfunded

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CASE STUDY ò

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CASE STUDY ó

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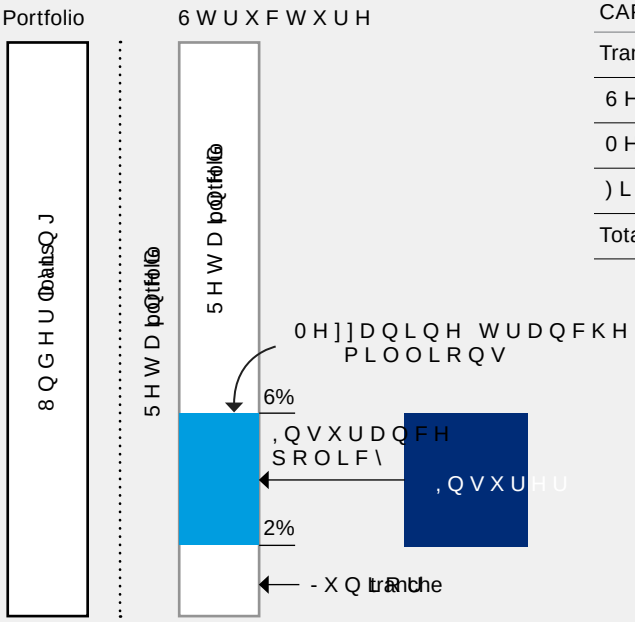
2OLYHU :\PDQ DQG 0DUVK DFWHG DV D VHOO VLGH DGYLVRU WR WKH bank

CONTEXT	KEY HIGHLIGHTS
• ,Q 'HFHPEHU D (XUR]RQH (XURSHDQ LWV LQDXJXUDO ELODWHUDO V\QWKHWLF XQGLVFORVHG LQVXUHU SURWHFWLQJ WKH PH]]DQLQH the VWUXFWXUH • 2OLYHU :\PDQ 0DUVK 0F/HQQDQ DGYLVHG DV D VROH VWUXFWXUHU DQG DUUDQJHU RQ transaction E\ 6WUXFWXULQJ WKH transaction 0RGHOOLQJ WKH FDSLWDO DQG VXSHUYLVRU\ UHTXLUHPHQWV 3URYLGLQJ WKH UHTXLUHG VHFXULWL]DWLRQ WRROV 6HWWLQJ XS WKH 657 IUDPHZRUN /HDGLQJ WKH UHJXODWRU\ DGYLVRU\ QRWL¯FDWLRQ process Placing the transaction • 7KLV WUDQVDFWLRQ EXLOGV RQ D VWURQJ WUDFN UHFRUG RI 657 WUDGHV DUUDQJHG VLQFH E\ 0DUVK 0F/HQQDQ	• 6LJQDOV WKH UHWXUQ RI DFKLHYHG E\ D FRVW H±FLHQW LQVXUHU SURWHFWLQJ WKH PH]]DQLQH WUDQFKH RI • ,PSURYHPHQW RI &(7 UDWLR E\ ESV DW D FRVW the bank's cost of H TXLW\ • 7UDGH DOORZHG WKH EDQN WR UHJDLQ DFFHVV WKH IXOO VFRSH RI WKLV FDSLWDO PDUNHWV LQ D FRQWH[W RI VLJQL¯FD credit markets. • %URDGHQHG WKH VRXUFHV RI SRWHQWLDO IXW LQYHVWRUV WKH EDQN 'V UHODWLRQVKLS DQG LWV UHXV FDSDELOLWLHV LQ WKH (XURSHDQ 657 market. • 7UDQVDFWLRQ ZDV H[HFXWHG LQ IRXU WR ¯YH process



CAPITAL STRUCTURE OF THE SYNTHETIC SRT

Tranche	Size (€ millions)	AP	Status
6HQLRU	940	6%	5HWDLQHG
0H]]DQLQH	40	2%	Protected
)LUVW	20	0%	5HWDLQHG
Total	1000		

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0DUVK 0F/HQQDQ 1<6(00*X\ &DUSHQWHU GHYHORSV DGYDQFHG ULVN UHLQVXUD
KHOS FOLHQWV JURZ SUR¯WDEO\ DQG SXUVXHGHHFOLYHQV DSSRFWDQGWLHVKQerR
VROXWLRQV WKDW KHOS RUJDQL]DWLRQV UHGH¯QH WKH ZRUOG RI ZRUN UHVKDS
XQORFN KHDOWK DQG ZHOO EHLQJ IRU D FKDQJLQJ ZRUNIRUFH 2OLYHU :\PDQ VH

)RU PRUH LQIRUPDWLRQ YLVLW PDUVKPFDZHQQDQ /LQNHG,Q