

H-RXUQDO RI 7D[ 5HVHDFK ñŽ 6%†0ÀPudC€@UDE (PLUDWHV 8\$( UDWLILHG WKH 8QLILHG

LPSRVLQJ 9\$7 DQG PDQGDWHG HDFK \*& PHPEHU VWDWH WR LQWURGXFH D 9\$7 E  
LQWURGXFHG 9\$7 QDPHO\ 6DXGL \$UDELD 8\$( %DKUDLQ DQG 2PDQ 1RQH RI W  
WKH LQWURGXEK€K€VHDP DQG DSSOLHG VVFFHVIXOO\ WR DVVHV 9\$7 FRPSOLDQ

ZKLOH WKH IRXU \*& FRXQWULHV EHORQJ WR WKH PHGLXP 9\$7 FRPSOLDQFH EXU  
FRXQWULHV 0RUH VSHFLILFDOO\ WKH\ SHUIRUP DERYH WKH )7\$ DYHUDJH LQ PL  
SROLF\ FRPSOH[LW\ DQG DGPLQLVWUDWLRQ FRPSOH[LW\ EXW EHZ )7\$ DYHUDJ  
VHUYLFH DQG FRPSOLDQFH QHGV \$ VPDOO QXPEHU RI SROLF\ UHFRPPHQGDW  
LPSURYLQJ WKH JRRG SHUIRUPDQFH RI \*& FRXQWULHV LQ WHUPV RI 9\$7 FRPSO  
LPSRUWDQFH RI WD[ V\VWHP VLPSOLFLW\ LL XVH RI 9\$7 'LDJQRVWLF 7RRO )DFW  
RI 9\$7 SROLF\ DQG DGPLQLVWUDWLRQ LLL UHVWUDLQW IURP PDNLQJ 9\$7 SRO  
HYLGHQFH DQG LY FDSDFLW\ EXLOGLQJ LQ WD[ DGPLQLVWUDWLRQ

.H\ZRUGV

H-RXUQDO RI 7D[ 5HVHDFK \$VVH [REDACTED] YDOXH DGGHG WD[ FRPSOLDQFH EXUGHQ LQ \*XO

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H-RXUQDO RI 7D[ 5HVHDFK \$VVHVVLQJ YDOXH DGGHG WD[ FRPSOLDQFH EXUGHQ LQ \*XOI

WD[ ZKHUHDV WKH PDLQ LQGLUHFV WD[ LV 9\$7 DOWHUQ  
7D[ \*67 7KRVH WD[HV UHSUHVHQW WKH PDMRU FRPSRQ  
VRXUFHV RI WD[ UHYHQXH 1HYHUWKHOHVV WKH VLWXDW  
WKDW LQ RWKHU FRXQWULHV DV WKH PDMRU VRXUFH RI \*  
WKH K\GURFDUERQ VHFWRU ZKLOH WKH FRQWULEXWLRQ  
UHPDLQV ORZ )RU H[DPSON UHFHQW ,QWHUQDWLRQDO 0  
WKDW WKH WD[ WR \*URVV 'RPHVWLF 3URGXFW \*'3 UDWL  
,0) E 6DXGL \$UDELD ,0) F DQG 8\$( ,0) G LQ  
DQG UHVSHFWLYHO\ 7KH EXON RI WD[ U  
FRUSRUDWH LQFRPH WD[ RQ RLO DQG JDV FRPSDQLHV DG

7KH GHSHQGQHFH RQ RLO DQG JDV UHYHQXH DFFRPSDQ  
UHYHQXH WR WRWDO JRYHUQPHQW UHYHQXH PDNHV JRY  
FD p ~~YX-09-VG-03-20-01~~ WR IOXFXWDWLRQV LQ RLO DQG JDV SULFHV  
D UHVXOW WKH ,0) KDG EHHQ DG YLVV LQJ \* & & FRXQWULHV  
UHYHQXH WKURXJK UHVWUXFWXULQJ WKHLU WD[ PL[ \$FF  
WD[ UHIRUP WKURXJK WKH LQWURGXFWRQ RI D EURDG E  
\* & & 8QLILHG 9\$7 \$JUHHPHQW LQ 7KH IROORZLQJ V  
GHVFULSWLRQ RI 9\$7 LQ HDFK RI WKH IRXU \* & & FRXQWULHV

8QLILHG 9\$7 IUDPHZRUN IRU \* & & FRXQWULHV

,Q 0D\ WKH \* & & FRXQWULHV UDWLILHG WKH 8QLILHG  
WKH JHQHUDO SULQFLSOHV IRU LQWURGXFWRQ 9\$7 LQ HD  
LQFOXGH WKH IROORZLQJ

- x WKH XVH RI WKH GHVWLQDWLRQ SULQFLSOH IRU W
- x D OLVW RI JRRGV DQG VHUULFHV WD[DEOH XQGHU
- x 9\$7 UHJLVWUDWLRQ WKUHVKROGV HTXDO WR 6\$5  
DFFRUGLQJ WR WKH DYHUDJH -XQH H[FKD
- x \$ 9\$7 VWDQGDUG UDWH RI LQ DOO PHPEHU VWDW
- x ]HUR UDWLQJ DSSOLFDEOH RQ H[SRUWV
- x WD[LQJ LPSRUWV DW WKH ILUVW HQWU\ FRXQWU\
- x VSHFLDO 9\$7 UXOHV IRU D QXPEHU RI VHFWRUV V  
H & & FR, @ VW @ AQ VHDO\ LDDWLQ IRO H p J D '€

H-RXUQDO RI 7D[ 5HVHDFK \$VVHVVLQJ YDOXH DGGHG WD[ FRPSOLDQFH EXUGHQ LQ \*XOI

DW WKH WLPH DQG WKH 9\$7 VWDQGDUG UDWH LV D

H-RXUQDO RI 7D[ 5HVHDFK \$VVHVVLQJ YDOXH DGGHG WD[ FRPSOLDQFH EXUGHQ LQ \*XOI

,W LV DSSDUHQW WKDW DOO \*& FRXQWULHV ]HUR UDWH  
ZKLFK DOLJQV ZLWK WKH 8QLILHG 9\$7 \$JUHHPHQW +HDO  
6DXGL \$UDELD 8\$( DQG %DKUDLQ EXW WKH\ DUH VXEMHF  
WKDW KHDOWK FDUH PD\ EH H[HPSWHG RU ]HUR UDWHG L  
DUH WD[HG LQ ERWK 6DXGL \$UDELD DQG WKH 8\$( EXW D  
2PDQ 7KHVH GLIIHUHQFHV LQ WD[ WUHDWPHQW RI PHULW  
WKH GLIIHUHQW WD[ SROLFLHV LPSOHPHQWHG E\ HDFK FR  
\$JUHHPHQW

7D[DEOH SHULRG DQG WD[ UHWXUQ

7D[DEOH SHULRG UHIHUV WR WKH SHULRG IRU ZKLFK WKH  
WR WKH WD[ DXWKRULW\ RQ LWV 9\$7 REOLJDWLRQ 7KH C  
WKH IUHTXHQF\ IRU ILOLQJ WD[ UHWXUQ 6FKHQ 7KXU  
LPSRUWDQW DVSHFW IRU PDQDJLQJ 9\$7 FRPSOLDQFH LV  
UHWXUQ \$UWLFOH RI WKH 8QLILHG 9\$7 \$JUHHPHQW SUP  
FRXQWU\ WR GHWHUPLQH WKH WD[DEOH SHULRG ,Q WKLV



H-RXUQDO RI 7D[ 5HVHDFK \$VVHVVLQJ YDOXH DGGHG WD[ FRPSOLDQFH EXUGHQ LQ \*XOI

VRXUFHV ,W LV ZLGHO\ DFNQRZOHGJHG WKDW WKHUH DU  
SUREOHPV LQ HVWLPDWLQJ WD[ FRPSOLDQFH FRVWV

(VWLPDWHG WD[ FRPSOLDQFH FRVWV GHULYHG IURP HPSL  
LQ GROOMU WHUPV IRU H[DPSOH DYHUDJH 9\$7 FRPSOLDQ  
9\$7 FRPSOLDQFH FRVWV IRU DOO 9\$7 SD\HUV RU UHOD  
SHUFHQWDJH RI EXVLQHVV WXUQRYHU RI WKH FRUHVSR  
FRPSOLDQFH FRVWV WKHUH DUH DOVR PFK VLPSOHU PI  
([DPSOHV RI WKHVH QDwYH PHDVXUHV LQFOXGH

- x SHUFHQWDJH RI ILUPV LGHQWLI\LQJ WD[ DGPLQLV  
GHULYHG IURP :RUOG %DQN¶V (QWHUSULVH 6XUYH
- x WKH QRZRRQ RVR PÀU

H-RXUQDO RI 7D[ 5HVHDFK \$VVHVVLQJ YDOXH DGGHG WD[ FRPSOLDQFH EXUGHQ LQ \*XOI

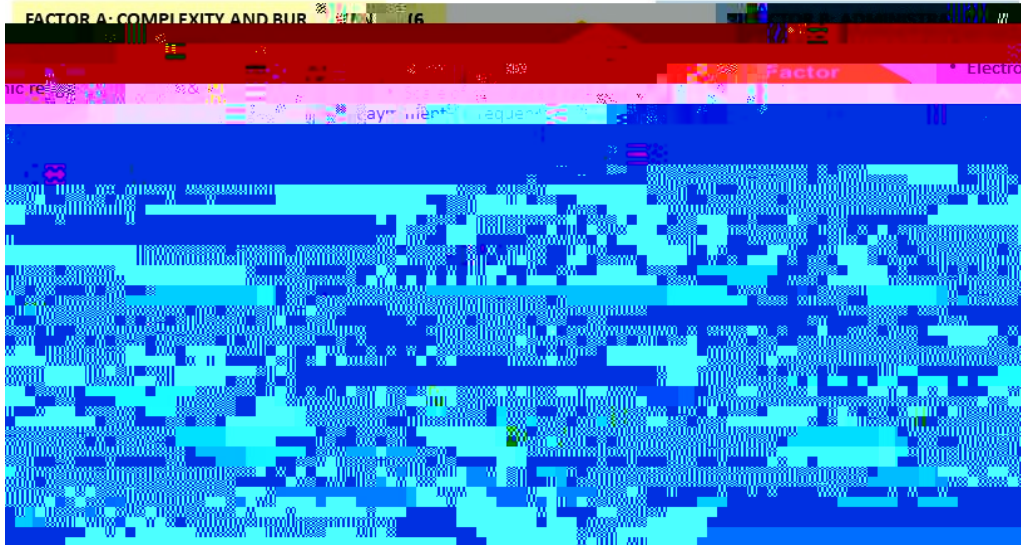
IDFWRUV DQG LQGLFDWRUV DUH FRPELQHG WR DUULYH DW  
RQ PHWKRGRORJLFDO LVVXH UHODWLQJ WR WKH FRQVW  
LQGH[ LQWHUHVWHG UHDSHUV DUH UHIHUUHG 7UDQ 1DP





H-RXUQDO RI 7D[ 5HVHDFK \$VVHVVLQJ YDOXH DGGHG WD[ FRPSOLDQFH EXUGHQ LQ \*XOI

)LJ 9\$7 'LDJQRVWLF 7RRO[V )DFWRUV DQG ,QGLFDWRU



6RXU[FDQV HW DO S

(DFK LQGLFDWRU ZDV MXVWLILHG E\ UHIHUHQFH WR D  
REMHWLYH DLPHG DW PLQLPLVLQJ WKH 9\$7 FRPSOLDQF  
LQGLFDWRU PHDQV D KLJKHU FRPSOLDQFH EXUGHQ )RU H  
REMHWLYH LV µ7KH WD[ KDV D VLP SOH UDWV VWUXFWXU  
LQGLFDWRU µ7KH 9\$7 UDWV VWUXFWXUH¶ ZLWK IRXU FDW  
WKDQ D µ]HUR UDWH¶ IRU H[SRUWV VFRUH RQH UH  
UHGXFHG UDWHV DSSO\ VFRUH DQG WKUHH RU PRUH  
UHGXFHG UDWHV LQFOXGH µ]HUR UDWHG¶ JRRGV DQG VH  
H[DPSOH XQGHU )DFWRU % LV WKH REMHWLYH µ7HFKQF  
9\$7 UHJLVWUDWLRQ¶ 7KH FRUUHVSRQGLQJ LQGLFDWRU L  
IRXU FDWHJRULHV EXVLQHVVHV FDQ UHJLVWHU HOHFWU  
VFRUH EXVLQHVVHV FDQ UHJLVWHU HOHFWURQLFDOO  
EXVLQHVVHV FDQ UHJLVWHU HOHFWURQLFDOO\ DQG OH  
DQG EXVLQHVVHV UHTXLUH WR UHJLVWHU PXVW ILOH DS

:HLJKWLQJ

\$ Qrupdolvhg zhljkwlqj vfkhrq d rwrdu v rps vlwh r k  
srvlwlyh z qxpehu zkrvh vxp ht, xdwk xgdwh ri wkh 9\$  
'LDJQRVWLF 7RRO' WKH ZHLJKWV UHIOHFW WKH UHODWLY  
DQG ' LQ GHWHUPLQLQJ WKH 9\$7 FRPSOLDQFH EXUGHQ  
HIIHFWRU WKH RYHUDOO FRPSRVLWH LQGH[ VR ZHLJKW  
FRQWHQWLRXV DVSHFW RI FRPSRVLWH LQGH[ FRQVWUX  
WHFKQLTXHV IRU DVVLJQLQJ ZHLJKWV 2(&' SS  
ODUJHO\ QRW DSSOLFDEOH WR GLDJQRVWLF WRROV ,Q

ODWKHPDWLF ZOHSHSHNLQJ WKH SDUWLQDUHRIQFWKRIFRBRVLWH LQG  
DOO RWKHU IDFWRUV FRQVWDQW

H-RXUQDO RI 7D[ 5HVHDFK \$VVHVVLQJ YDOXH DGGHG WD[ FRPSOLDQFH EXUGHQ LQ \*XOI

ZHLJKWLQJ VFKHPHV WKDW DUH DYDLODEOH WR UHVHD  
ZHLJKWLQJ

(TXDO ZHLJKWLQJ PHDQV DOO IDFWRUV DQG LQGLFDWRUV  
LQGH[ ,W GRHV QRW LPSO\ WKHUH DUH μQR ZHLJKWV†  
NQRZOHGJH DERXW WKH FDXVDO UHODWLRQV KLS RU D C  
([SHUW ZHLJKWLQJ UHIHUV WR D ZHLJKWLQJ VFKHPH WK  
H[SHUWV ZKR DUH IDPLOLDU ZLWK WKH ILHOG EHLQJ VWX  
LQGHSHQGHW SHUVRQV SDUWLFLSDWLQJ LQ WKH VWXG\  
H[SHUW ZHLJKWLQJ LV LWV WUDQVSDUHQW DQG VWUDLJK

H-RXUQDO RI 7D[ 5HVHDFK

H-RXUQDO RI 7D[ 5HVHDFK \$VVHVVLQJ YDOXH DGGHG WD[ FRPSOLDQFH EXUGHQ LQ \*XOI

\$FFRUGLQJO\ ZH VWDUW ZLWK DQ H[DPLQDWLRQ RI HDFK  
'7

)DFWRU \$ WD[ ODZ FRPSOH[LW\

)DFWRU \$ FRUHVSRQGV WR WKH SHUFHLYHG GHJUHH RI  
UHVXOWLQJ IURP FRUH HOHPHQWV RI WKH 9\$7 SROLF\ 7K  
ZLWKLQ )DFWRU \$ IRU WKH IRXU \*& FRXQWULHV LV VXPP

7DEOH )DFWRU \$ ,QGLFDWRUV \*& &RXQWULHV

&RPSOLDQFH EXUGHQ LQGLFDWRUV 5DQJH  
\$UDELD  
VFRUH



H-RXUQDO RI 7D[ 5HVHDFK \$VVHVVLQJ YDOXH DGGHG WD[ FRPSOLDQFH EXUGHQ LQ \*XOI





H-RXUQDO RI 7D[ 5HVHDFK \$VVHVVLQJ YDOXH DGGHG WD[ FRPSOLDQFH EXUGHQ LQ \*XOI

2YHUDOO UHVXOWV

7KH DERYH GLVFXVLRQV LQGLFDWH WKDW LQ FRPSDULV  
\*&¶V 9\$7 V\ VWHPV DUH RQ DYHUDJH OHVV EXUGHQVRPH  
SROLF\ DQG DGPLQLVWUDWLRQ FRPSOH[LW\ EXW PRUH  
FDSDELOLWLHV )XUWKHU ERWK )7\$ DQG \*& 9\$7 V\ VWHP  
LQ UHODWLRQ WR PRQHWDU\ FRVWV DQG EHQHILWV DVVR  
:KLOH WKH XOWLPDWH DLP RI WKH 9\$7 'LDJQRVWLF 7RR  
QHYHUWKHOHVV KHOSIXO IURP WKH 'ZLDQV W\ V\ V\ SHUVSH  
RI WKH IRXU \*& FRXQWU\ XQGHU VWXG\ IRU WKH SXUSR

H-RXUQDO RI 7D[ 5HVHDFK \$VVHVVLQJ YDOXH DGGHG WD[ FRPSOLDQFH EXUGHQ LQ \*XOI

7DEOH 9\$7 &RPSOLDQFH %XUGHQ \*URXSLQJ )7\$ DQG \*&

9\$7 &RPSOLDQFH %XUGHQ *URXSLQJ EDVHG,RQ	&RXQWULHV
9HU\ ORZ C	6LQJI

/RZ WR OHVV WKDQ &RVWD 5LFD 1HZ =HDOD







H-RXUQDO RI 7D[ 5HVHDFK \$VVHVVLQJ YDOXH DGGHG WD[ FRPSOLDQFH EXUGHQ LQ \*XOI  
6FKZDE . 3RUWHU 0 ( /RSH & JORLEDO \$RPSHWLWLYHQHVV UHS

H-RXUQDO RI 7D[ 5HVHDFK \$VVHVVLQJ YDOXH DGGHG WD[ FRPSOLDQFH EXUGHQ LQ \*XOI

\$33(1',; 9\$7', \$\*1267, 722/ 48(67,211\$,5(

5HFRUG D VLQJOH VFRUH IRU HDFK LQGLFDWRU DV LW UH  
\HDU

\$ 7D[ /DZ &RPSOH[LW\ DQG %XUGHQ 5HVXOWLQJ IURP &  
3ROLF\

&RPSOLDQFH EXUGHQ LQGLFDWRUV	5HOHYDQW VFRUH
7KH 9\$7 UDWH VWUXFWXUH 1RUHGXFHHSO\ 2QHGH UDMHSOLHV	

H-RXUQDO RI 7D[ 5HVHDFK \$VVHVVLQJ YDOXH DGGHG WD[ FRPSOLDQFH EXUGHQ LQ \*XOI

| ± R W E X V L W D [ S D R I S X C L V H J L V W H U S U S | |  
± RI WKH EXVLQHVV WD[SD\HU SRSXODWLRQ LV UHJLVWHU  
R R U R W K H



H-RXUQDO RI 7D[ 5HVHDFK \$VVHVVLQJ YDOXH DGGHG WD[ FRPSOLDQFH EXUGHQ LQ \*XOI

&RPSOLDQFH EXUGHQ LQGLFDWRUV	5HOHYDQW VFRUH
'RFXPHQWDWLRQ UHTXLUHPHQWV IRU H[SRUWHG J	RRGV DQG VHUYLFH
7KHUH DUH QR DGGLWLRQDO GRFXPHQWDWLRQ UHTXLUHPHQWV LQ	

H-RXUQDO RI 7D[ 5HVHDFK \$VVHVVLQJ YDOXH DGGHG WD[ FRPSOLDQFH EXUGHQ LQ \*XOI

7KH RYHUDOO QXPEHU RI 9\$7 YHULILFDWLRQ DFWLRQV	HDFK \HDU
RI WKH UHJLVWHUHG 9\$7 SD\HU SRSXODWLRQ	
7KH RYHUDOO QXPEHU RI 9\$7 YHULILFDWLRQ DFWLRQV	HDFK \HDU
WKH UHJLVWHUHG 9\$7 SD\HU SRSXODWLRQ	
<sup>3</sup> 9HULILFDWLRQ DFWLRQV LQFOXGH DOO W\SHV RI DFWLRQV WDNHQ E	
WD[SD\HUV UHSRUWHG OLDELWLHV H J GRFXPHQW YHULILFDWLRQ	
ZULWWHQ DQG SKRQH LQTXLULHV	
7KH OHYHO RI GLVSXWHG 9\$7 DVVHVPHQWV	
7KH QR RI 9\$7 DVVHVPHQWV GLVSXWHG HDFK \HDU LV	RI WKH
7KH 9\$7 DVVHVPHQWV GLVSXWHG QR 9\$7 YHULILFDWLRQV	

H-RXUQDO RI 7D[ 5HVHDUFK \$VVHVVLQJ YDOXH DGGHG WD[ FRPSOLDQFH EXUGHQ LQ \*XOI

7KH UHYHQXH ERG\¶V UDQJH RI 9\$7 UHODWHG VHUYLEFHV WDUJHWH  
EXVLQHVVHV DUH RI D UHDVRQDEOH VWDQGDUG

H-RXUQDO RI 7D[ 5HVHDFK \$VVHVVLQJ YDOXH DGGHG WD[ FRPSOLDQFH EXUGHQ LQ \*XOI

' 0RQHWDU\ &RVWV %HQHILWV \$VVRFLDWHG ZLWK WKH \$F

&RPSOLDQFH %XUGHQ ,QGLFDWRUV	5HOHYDQW VFRUH
7KH SD\PHQW RI LQWHUHVW RQ GHOD\HG UHIXQGV ,QWHUHVW [FH\$VFUHGQSDIVRQFRQVCRUH ,QWHUHVW [FH\$VFUHGGLWZRRQRVCRUH ,QWHUHVW [FH\$VFUHGGLWZRRQRVCRUH ,QWHUHVW LV QRW JHQHUDOO\ SDLG RQ H\FHVV 9\$7 FBHG #RU	

bro RV

H-RXUQDO RI 7D[ 5HVHDFK

\$VVHVVLQJ YDOXH DGGHG WD[ FRPSOLDQFH EXUGHQ LQ \*XOI

H-RXUQDO RI 7D[ 5HVHDFK

\$VVHVVLQJ YDOXH DGGHG WD[ FRPSOLDQFH EXUGHQ LQ \*XOI

)LJ )DFWRU %

6RXUFHV \$XWKRUV¶ FDOFXODWLRQV EDVHG RQ SULPDU\ GDWD FROOHFWHG DQG VHF

H-RXUQDO RI 7D[ 5HVHDFK

