



&DUGLRSURWHFWLYH (IIHFWV RI ,QWHUPLWWH

+RQJ[LQ⁰=KQG /LQ +H
 %LR ; ,QVWLWXWHV .H\ /DERUDWRU\ IRU WKH *HQHWLFV RI 'HYHORSPHQWDO DQG 1HXURSV\FKLDWULF 'I
 &KLQD
 &RUUHVSRRGLQJ#RDXVLCR#KX %LR ; ,QVWLWXWHV .H\ /DERUDWRU\ IRU WKH *HQHWLFV RI 'HYHORSPHQW
 6KDQJKDL -LDR 7RQJ 8QLYHUVLW\ 6KDQJKDL 35&KLQ#VMMX HGX FQ (PDLO
 5HFHLYHG)GBWH \$FFHSWHDG FGDWH 3XEOLVKHG GDWH 0DUFK
 &RSULJKW =KX + 7KLV LV DQ RSHQ DFFHVV DUWLFOH GLVWULEXWHG XQGHU WKH WHUPV RI WKH &UH
 GLVWULEXWLRQ DQG UHSURGXFWRQ LQ DQ\ PHGLXP SURYLGHG WKH RULJLQDO DXWKRU DQG VRXUFH D

\$EVWUDFW

&DORULH UHVWULFWLRQ D GLHWDU\ UHJLPHQ UHGXFQJ HGHUJ\ LQWDNH ZLWKR
 H[HUWV PHGLFDO DQG KHDWK EHQHILW VXFK DV ORZHULQJ PHWDEROLF ULVN I
 FKURQLF FRQGLWLRQV ,QWHUPLWWHQW IDVWLQJ ,) D W\SH RI FDORULH UHVWUL
 LW LV FRVW HIIHFWLYH DQG PRUH DFFHVVLEOH ZKLOH H[HUWLQJ WKH VDPH RU HY
 GLVHVVH LQ ODERUDWRU\ DQLPDOV DQG KXPDQV ,Q WKLV UHYLHZ ZH IRFXV RQ W
 KHDUW GLVHVVHV LQFOXGLQJ P\FDUGLDO LVFKHPLF LQMXU\ DJH UHODWHG F
 FDUGLWR[LFLW\ DQG FRURQDU\ KHDUW GLVHVVH ULVN IDFWRUV 7KH ILQGLQJV
 SKDUPDFRORJLFDO QRQ JHQHWLF SUHYHQWLYH RU WKHUDSHXWLF LQWHUYHQWLRQ

- %5 -RXUQDO RI &OLQLFDO 'LDJQRVLV D 5HVHDFK

WUDQVORFDWLRQ RI 7)(% D PDVWHU UHJXODWR
 H[SUHVVLRQ QHWHZRRUWHFRQIUUV SURWHFWLRQ W
 DJDLQVW LVFKHPLF LQMXU\ LQ H[SHULPHQWDO D

,) DQG \$JH 5HODWHG &DUGLDF +\SHUWU

- &OLQ 'LDJQ 5HV DQ RSHQ DFFHVV ,RSURYHV PDUNHUV IRU DJH UHODWHG FDUK
 ,661 IDLOXUH LQ UDWV LQFOXGLQJ LQFUHDVHG FDUK
 DQG HOHYDWHG %13 LQ WKH KHDUW DQG SDV
 FDUGLDF SDUDPHWHUWUHQFCHGGLWUOH ZHLJKV
 ERG\ ZHLJKW DQG FURVV VHFWRQDO DUHD R

FRURQDU\ KHDUW GLVHVDH LQ REHVH PHQ DQG ZRPHQ LQFOXGLQJ UHGXFLOJ
ERG\ ZHLJKW ZDLVW FLUFXPIHUHQFH IDW PDVV ORZ GHQVLW\ OLSRSURWHLQ
FKROHVWHURO '/' & DQG WULDF\OJO\FHURO > @ ,Q DGGLWLRQ ,) FDORULH
UHVWULFWLRQ ZLWK OLTXLG GLHW LV PRUH FDSDEOH RI UHGXFLOJ ULVN IDFWRU
FRURQDU\ KHDUW GLVHVDH FRPSDUHG ZLWK ,) FDORULH UHVWULFWLRQ ZLWKRX
OLTXLG GLHW LQ REHVH ZRPHQ > @ ,) ZLWK KLJK SURWHLQ DQG ORZ
FDORULH GLHW UHGXFHV ERG\ ZHLJKW %0, EORRG OLSLGV DQG HQKDQFHV
DUWHULDO FRPSOLDQFH LQ REHVH PHQ DQG ZRPHQ > @ 5HGFWLRQ RI
FRURQDU\ KHDUW GLVHVDH ULVN IDFWRUV E\ ,) LV DVVRFLDWHG ZLWK PRGXODWL
RI DGLSRNLQHV > @

&RQFOXVLRQV

&DORULF UHVWULFWLRQV LQFOXGLQJ UHGXFLOJ DQG
FKURQLF FRQGLWLRQV LQ DQLPDO PRGHV DQG KXPDOV +RZHYHU ORQJ WHUP
FDORULF UHVWULFWLRQV LQ \$OWKRXJK FDORULH UHVWULFWLRQ
PLPHWLFV DUH PRUH SURWHLQDQFH RI FDSDEOH DQG
HVFHWLRQV UHVWULFWLRQ WR EH UHDOLJHG LQ KXPDOV DQG WKXV UHFHLYHV
FRQVLGHUDEOH DWWHQWLRQ ,PSRUWDQWO\ ,) KDV EHHQ VKRZQ WR LPSURYH
LVFKHPLF FDUGLDF LQMXU\ DJH UHODWHG FDUGLDF K\SHUWURSK\ GR[RUXELFLQ
LQGXFHG FDUGLRWR[LFLW\ DQG ULVN IDFWRUV IRU FRURQDU\ KHDUW GLVHVDH
HUHURPD\ EH FRQVLGHUHG DV D SRWHQWLDO LQWHUYHQWLRQ IRU FHUWDLQ
IRUPV RI KXPDO KHDUW GLVHVDH +RZHYHU WKHUH DUH VRPH OLPLDWRQV LQ
FXUUHQW UHVHDUFK RQ FDUGLRSURWHFWLRQ RI ,) LQ WHUPV RI SUDFWLFDO
DSSOLFDELOLW\)LUVW ,) LV QRW VZHGXO\ FDUGLDF DGYHUVH
GLDVWROLF FRPSOLDQFH DQG GLPLQLVKHG V\WROLF UHVHUYH LQGXFHG E\
FKURQLF ,) LQ DQLPDO PRGHV KDYH EHHQ UHSRUWHG > @ 6HFRQG WKH
EHQH]HFDQV ,) RQ P\FDUGLDO LVFKHPLF LQMXU\ DJH UHODWHG
FDUGLDF K\SHUWURSK\ DQG GR[RUXELFLQ LQGXFHG FDUGLRWR[LFLW\ KDYH RQO\
EHHQ VKRZQ LQ SUHFOLQLFDO VWXGLHV DQG LW UHPDLQV XQNQRZQ LI WKH UHVX
FDQ EH WUDQVODLW E\ \$OWKRXJK IRU VXVWDLQDEOH HWKLF
LVVXH VKRXOG EH FRQVLGHUHG IRU WKH H[FXWLRQ RI ORQJ WHUP ,) LQ
KXPDOV PHGLFDOO\ VXSHUYLVHG FOLQLFDO WULDOV VKRXOG EH GHVLJQHG