

~~YdflU'zHI FyfWss&Jc'&H'&H'&& !&&~~

7KH FU\SWR HFRQRP\ DQG W
FRPSHWHQFLHV DQ \$XVWUDOL

(OL]DEHWK. PRUWRQ#UPLW HGX DX &RUUHVSRCQ

\$EVWUDFW

7KLV VWXG\ H[DPLQHV KRZ WD[SUDFWLWLQRQHUV DUH UHVSRRQGLQJ WR FOLHQWV
RQ ~~WkHvWkHgjWg5wss~~ &WK &RGH RI 3URIHVVLRQDO &RQGXFW (PSOR\LQJ ERWK LQW
WKH VWXG\ LQYHVWLJDWHV FU\SWR HFRQRPLF DFWLYLWLHV XQGHUWDNHQ E\ FOL
7KHVH LQFOXGH FXUUHQW UHJXODWLRQ DQG JXLGDQFH DV ZHOO DV WKH LPSOLF
ODZ DFWLQJ ODZIXOO\ DQG DVFHUWDLQLQJ FOLHQW V DIIDLUV 7KH ILQGLQJV
JLYHQ WKH %RDUG RI 7D[DWLRQ\ UHYLHZ LQWR GLJLWDO DVVHWV DQG WUDQVD

.H\ZRUGEVORFNFKDLQ FU\SWR HFRQRP\ FU\SWRDVVHWV WD[SUDFWLWLQRQHUV 7
NQRZOHGJH \$XVWUDOLDQ 7D[DWLRQ 2IILFH WD[FRPSOLDQFH ZHE JXLGDQFH

6FKRRO RI \$FFRXQWLQJ ,QIRUPDWLRQ 6\VWHPV DQG 6XSSO\ &KDLQ
8QLYHUVLW\ (PDLO (OL]DEHWK PRUWRQ#UPLW HGX DX &RUUHVSRCQ
\$)\$\$1= IRU VXSSRUWLQJ WKLV SURMHFW WKURXJK DQ \$)\$\$1= 5RX
'HSDUWPHQW RI \$FFRXQWLQJ (FRQRPLFV DQG)LQDQFH 6FKRRO RI
6ZLQEXUQH 8QLYHUVLW\ RI 7HFKQRORJ\ (PDLO .GHYRV#VZLQ HGX DX
6FKRRO RI \$FFRXQWLQJ ,QIRUPDWLRQ 6\VWHPV DQG 6XSSO\ &KDLQ
8QLYHUVLW\ (PDLO *LOOLDQ YHVW\#UPLW HGX DX
6FKRRO RI \$FFRXQWLQJ ,QIRUPDWLRQ 6\VWHPV DQG 6XSSO\ &KDLQ
8QLYHUVLW\ (PDLO /DQ 1JX\HQ#UPLW HGX DX

H-RXUQDO RI 7D[5HVHDUFK 7KH FU\SWR HFRQRP\ DQG WD[SUDFWLWLRQHU FRPSHWHQFLHV

,1752'8&7,21

\$V WKH ZRUOG SURJUHVHV WRZDUGV LQFUHDVHG GLJLW
UHIOHFW RQ WKH ODJ EHWZHHQ GLJLWDO WUDQVIRUPDW
*HQHUDO RI 7D[DWLRQ ,*7 ZKLOVW DOVR HQVXULG

H-RXUQDO RI 7D[5HVHDUFK 7KH FU\SWR HFRQRP\ DQG WD[SUFWLWLQHUV FRPSHWHQFLHV

JHQHUDOO\ DQG SURYLGH LQVLJKW LQWR QRW RQO\ WKH
DFURVV WKH SDUWLFLSDQWV FOLHQW EDVH EXW DOVR W

H-RXUQDO RI 7D[5HVHDUFK 7KH FU\SWR HFRQRP\ DQG WD[SUDFWLWLRQHU FRPSHWHQFLHV

3%5V KDYH QR SURWHFWLRQ ZKDWRHYHU \$OWKRXJK S MXULVGLFWLRQV WR LQWURGXFH IRUPDO JXLGDQFH IRU SDFH DW ZKLFK FU\SWR DFWLYLWLHV DUH HYROYLQJ PHD FRPSOH[FU\SWR HFRQRP\ GR QRW KDYH IRUPDO L H SURWHFWLYH WD[JXLGDQFH RU WKH SURFHVV LV QRW \

8QOLNH WUDGLWLRQDO LQYHVWPHQW DFWLYLWLHV FU\SWR WUDQVDFWLRQV UHTXLULQJ D IUHTXHQW FRQYHUVLRQ FXUUHQF\ OHDGLQJ WR SRWHQWLDO XQLQWHQGHG JDLQV DQG &XUUDQ E S VXPPDULVH

,QVWHDG RI WKH WUDGLWLRQDO EDUWHU FRQWH\ FRQWHPSRUDU\ GLJLWDO GLVWULEXWHG WHFKQRO LQFUHDVLQJ SRSXODULW\ DQG IDPLOLDULW\ RI WUD \$XVWUDOLDQV UDLVHV LVVXHV QRW RQO\ IRU WKH DFWLYLWLHV DQG FRQVHTXHQWLDO WD[REOLJDWLRC SD\PHQW

\$OWKRXJK GHEDWHG ZLWKLQ WKH VFWRU FU\SWRDVVHV ZLWKLQ WKH VFRSH \$QW\KQR\W*FRQHULQHUG MRRU EH IRUHL QRQ EXVLQHVW WD[SD\HUV FU\SWRDVVHWV ZLOO RIWHQ E UHJLPH DSSO\LQJ

7KH GHF **GfN** ~~REXXOX7caalgdbfcZHUýþHUIýþH~~ > @ \$\$7\$
\$75 **GfN** UHLQIRUFHG WKH VWDQFH WKDW ELWF FXUUHQF\ +RZHYZU (O 6DOYDGRU\ V GHFLVLRQ LQ UHFRJQLVH ELWFRLQ DV OHJDO WHQGHU FUHDWHV UHQHZ WKH IRUHLJQ FXUUHQF\ UHJLPH IRU WD[SXUSRVHV ORUV JRYHUQPHQW\ V SRVLWLRQ WKDW IRUHLJQ MXULVGLFWI FKDUDFWHULVDWLRQ RI ELWFRLQ OHJLVODWLRQ ZDV LQW TXR UHDIIILUPLQJ WKH SRVLWLRQ &KDOPH

H-RXUQDO RI 7D[5HVHDUFK 7KH FU\SWR HFRQRP\ DQG WD[SUDFWLWLRQHU FRPSHWHQFLHV

PRUDO REOLJDWLRQV VHH IRU H[DPSOH 7VH 6LPV
7KH UHVXOWLQJ WD[LPSOLFDWLRQV UDLVH IXUWKHU XQF

H-RXUQDO RI 7D[5HVHDUFK

H-RXUQDO RI 7D[5HVHDUFK

H-RXUQDO RI 7D[5HVHDUFK 7KH FU\SWR HFRQRP\ DQG WD[SUDFWLWLRQHU FRPSHWHQFLHV

H-RXUQDO RI 7D[5HVHDUFK 7KH FU\SWR HFRQRP\ DQG WD[SUDFWLWLRQHU FRPSHWHQFLHV

H-RXUQDO RI 7D[5HVHDUFK 7KH FU\SWR HFRQRP\ DQG WD[SUFWLWLQRQHU FRPSHWHQFLHV

:H LQWHUYLHZHG SDUWLFLSDQWV ZLWK DQG RI
IHPDOH UHVSHFWLYHO\ DQG WKH PDMRULW\ DJHG EHWZH
UHSUHVHQWDWLRQ IURP 9LFWRULD DV ZHOO DV D ORZ
7KH ODWWHU LV FRPSDUDEOH WR SULRU UHVHDUFK
'HYRV HW DO D DQG PRUH JHQHUDOO\ WKH 73%
WD[SURIHVVLRQ 73% E DOWKRXJK QRWLQJ 3KDVH
WKH WD[SURIHVVLRQ LWVHOI EXW WKH EURDGHU EXV
LQWHUYLHZHH SDUWLFLSDQWV

H-RXUQDO RI 7D[5HVHDUFK 7KH FU\SWR HFRQRP\ DQG WD[SUDFWLWLRQHU FRPSHWHQFLHV

7KH HOHFWURQLF VXUYH\ ZDV GLVWULEXWHG WR \$XVWUD
RI DJH ZKR KDYH KDG DW OHDVW RQH FOLHQW ZKR KDV
HFRQRP\ ,Q GRLQJ VR ZH XVH D IRUP RI SXUSRVLYH VDF
SDUWLFLSDQWV UHIOHFWV WKH NQRZOHGJH DERXW WKH D

3ULRU UHVHDUFK VKRZV WKDW UHVSQRQH UDWHV FDQ EH
6DZ\HU 0DUVKDOO HW DO *XSWD 'XH W
EORFNFKDLQ WHFKQRORJ\ XQNQRZQ VWDWLVWLHV RQ
XQGHUWDNH EORFNFKDLQ UHODWHG DFWLYLWLHV DV ZH
SDQGHPLF RQ UHVSQRQH UDWHV DV VHHQ LQ 'HYRV HV
UHVSQRQH UDWH FRPSDUHG ZLWK SULRU UHVHDUFK LQYR
HQVXUHG DQ H[SDQVLYH GLVVHPLQDWLRQ SURJUDP WR U
PLQLPXP YLDEOH WKUHVVKROG

'LVVHPLQDWLRQ RI WKH VXUYH\ LQVWUXPHQW LQFOXGHG
LQFOXGLQJ GLUHFW HPDLO WR H[LVWLQJ FRQWDFWV KHO
7ZLWWHU WZHHWV HWF SURIHVVLRQDO ERG\ H QHZVOHV
DQG SXEOLFO\ OLVWHG WD[SUDFWLWLRQHU HPDLOV REV
SUDFWLWLRQHU ZHEVLWHV

7KH VXUYH\ ZDV RSHQ IRU DQ H[WHQGHG SHULRG EHWZH
\$ WRWDO RI UHVSQRQHV ZHUH UHFHLYHG 2Q UHYLHZL
HOLPLQDWLG GXH WR

L QRW SURJUHVVLQJ SUHYLHZLQJ WKH VXUYH\ RQ

LL QRW PHHWLQJ WKH UHTXLUHPHQWV RI WKH VX
VFUHHQLQJ TXHVWLRQV Q DQG

LLL LQVXIILFLHQW SURJUHVV OHVV WKDQ FRPSO
VHFRQGV Q

7KH ILQDO VDPSOH VLJH IRUPLQJ WKH EDVLV RI WKH DQD
ILQDO VDPSOH PLVVLQJ GDWD UDQJHG IURP UHVXOW
UDQJLQJ EHWZHHQ WR

7DEOH 6XUYH\ 6DPSOH DQG (OLPLQDWLRQ 6SUHDG

1DPH RI YDULDEBPLQDWLRQ 1XPEHU RI
6XUYH\ WRWDO 6DPSOH VLJH

'LVWULEXWLRQ3BKQHQZHO
6FUHHQLQJ TXHV

H-RXUQDO RI 7D[5HVHDUFK 7KH FU\SWR HFRQRP\ DQG WD[SUDFWLWLRQHU FRPSHWHQFLHV

UHODWHG LVVXHV :KLOVW SDUWLFLSDQWV DUH IUHTXHQV
DVVRFLDWLRQV WKH PRVW IUHTXHQV DVVRFLDWLRQV ZH
1HZ =HDODQG & \$\$1= FLWHG WLPHV & 3\$ \$XVWUDOLD
,QVWLWXWH 77, FLWHG WLPHV

ORUHRYHU WKH PDMRULW\ KDYH \HDUV RI WD[H[

H-RXUQDO RI 7D[5HVHDUFK 7KH FU\SWR HFRQRP\ DQG WD[SUDFWLWLQHUV FRPSHWHQFLHV

7DEOH 3URSRUWLRQ RI 7D[DEOH ,QFRPH &OLHQWV \$U
5HODWHG \$FWLYLWLHV

&XPXODWLYH
\$YHUDJH 3URS 1

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H-RXUQDO RI 7D[5HVHDUFK 7KH FU\SWR HFRQRP\ DQG WD[SUDFWLWLRQHU FRPSHWHQFLHV

RI UHGDFWHG IDF^W SDWWHUQV 7KLV LV GHVSLWH WKH D
DSSOLFDQWV RQO\ DQG GR QRW \LHOG SURWHFWLRQ QRU
)RU EDVLF DFWLYLWLHV LQWHUYLHZHHV LQGLFDWHG WK
ZRUNDEOH +RZH^YHU DV WKH FRPSOH[LW\ LQFUHDVHV W
VLJQLILFDQW FRVW EHQHILW LVVXH SOD\LQJ RXW 7KLV F
,QWHUYLHZHH VXPPHG XS RQ WKH SRLQW RI 3%5V

«>7@KHUH V VR PXFK RI WKH IDF^W SDWWHUQV EHLQJ

H-RXUQDO RI 7D[5HVHDUFK

H-RXUQDO RI 7D[5HVHDUFK

H-RXUQDO RI 7D[5HVHDUFK 7KH FU\SWR HFRQRP\ DQG WD[SUDFWLWLRQHU FRPSHWHQFLHV

7KHVH SHUVSHFWLYHV HFKR WKH ([SODQDW RU\ OHPRUDQO
LQ WKDW WD[SUDFWLWLRQHUV PXVW RSHUDWH ZLWK
UHTXLUHG LV EH\RQG WKLV WKH\ VKRXOG VHHN H[SHUW
DQG NQRZOHGJH WKURXJK SULYDWH VWXG\ DQG UHVHDUF
DQG FLUXPVWDQFH V RI WKH HQJDJHPHQW 73% D :K
WKH DYDLODELOLW\ DQG VRSKLVWLFDWLRQ RI PRGHUQ W
WKH FU\SWR HFRQRP\ WKH WHFKQRORJ\ LV WKH FHQWUDC
HQVXUH DZDUHQHV DQG XQGHUVWDQGLQJ FKDOOHQJLC
OHJDO DQG EXVLQHV GHYHORSPHQWV

H-RXUQDO RI 7D[5HVHDUFK 7KH FU\SWR HFRQRP\ DQG WD[SUDFWLWLRQHU FRPSHWHQFLHV

H-RXUQDO RI 7D[5HVHDUFK 7KH FU\SWR HFRQRP\ DQG WD[SUDFWLWLRQHU FRPSHWHQFLHV

WUDQVDFWLRQV 5HO\LQJ RQ FOLHQW V GRZQORDG

H-RXUQDO RI 7D[5HVHDUFK 7KH FU\SWR HFRQRP\ DQG WD[SUDFWLWLRQHU FRPSHWHQFLHV

UHVSRQVHV KHUH PD\ EH OLQNHG WR WKH GLVWLQFWL
FRPSOLDQFH VWHPPLQJ IURP LQWHQWLQDO RU XQLQWH
XQZLOOLQJ WR SURYLGH HYLGHQFH RQ WKHLU EORF
DJUHH VWURQJO\ DJUHH ZKLOVW DUH LQ WKH PLGGO
FOLHQWV FDQ EH XQZLOOLQJ WR ORGJH WD[UHWXUQV R
EORFNFKDLQ UHODWHG DFWLWLVHV LV DVFHUWDLQHG
DUH LQ WKH PLGGOH

\$V WKH 73% QRWHV HVWDEOLVKPHQW RI WKH FOLHQ
UHDVRQDEOH FDUH ± SURIHVVLQDO MXGJPHQW NQRZOH
UHVSHFW WR FRPSHWHQFLHV KDYH EHHQ FRQVLGHUHG D
UHIOHFW XSRQ WKH SHUVSHFWLYHV RI WKH WD[SUDFWLW
WKLV UHJDUG DV DOUHDG\ KLJKOLJKWHG WKHUH LV VX
XQGHUVWDQGLQJ RI WKH WHFKQRORJ\ DQG UHOHYDQFH W

:KLOH VRPH FOLHQWV DUH WU\LQJ WR DYRLG DQ\
XQWUDFHDEOH PRUH GRQ W SURYLGH WKH LQIRUPD

H-RXUQDO RI 7D[5HVHDUFK

H-RXUQDO RI 7D[5HVHDUFK 7KH FU\SWR HFRQRP\ DQG WD[SUDFWLWLRQHU FRPSHWHQFLHV

+RZHYHU PDQ\ WD[SUDFWLWLRQHUV LQGLFDWH PRVW
UHTXLVLWH LQIRUPDWLRQ ~~+WDFRUVWVWDFRUVW~~ LRQV DUH K
hyf VcWWq; wJg ibyg KfWmUgX >6XUYH\HG 7D[3UDFWLWL
'LVFORVXUH RIWHQ RFFXUV IROORZLQJ WKH H[DPLQDWLR
FKDOOHQJHV LQ PDQDWLFQDQZRDNNOORZV IURP LQFUHDVHG .

H-RXUQDO RI 7D[5HVHDFK 7KH FU\SWR HFRQRP\ DQG WD[SUDFWLWLRQHU FRPSHWHQFLHV

EH D WHPSRUDO FRQVLGHUDWLRQ UDWKHU WKDQ RYHUDU
:H VKRXOG UHIOHFW RQ WKH LQKHUHQW SDFH DW ZKLFK V
2WKHU SRWHQWLDO YDULDWLRQ VHHPV IURP JHQGHU DQG
RYHODOO IHPDOH SUDFWLWLRQHUV WHQG WR KDYH D VV
LV QRW ILW IRU SXUSRvh FRPSDUHG WR PDOH SUDFWLWL
ZKR LGHQWLII\ 606)V DV WKHLU PDLQ FOLHQWHOH FDWHJ
WKDW WKH UHJXODWLRQ DQG JXLGDQFH LV QRW ILW IRU
LGHQWLII\ RWKHU W\SH RI FOLHQWV 7KLV FRXOG UHODWH
IDFH

:LWK UHVSHFW WR SHUVSHFWLYHV RQ SUDFWLWLRQHU VN
PRUH FORVHO\ WKH GHPRJUDSKLF IDFWRUV DFURVV WKH
VXUYH\HG IHPDOH WD[SUDFWLWLRQHUV KDYH D VVURQ
SURSRVLWLRQV ZLWK UHVSHFW WR WD[SUDFWLWLRQHU
\$SSHQGL[' :LWK UHVSHFW WR SHUVSHFWLYHV RQ SUDFW
SRVVLEOH IDFWRUV WKDW PD\ LPSDFW WKLV LQFOXGH KD
DQG ILUPV ZLWK WZR WR ILYH SDUWQHUV

:LWK UHVSHFW WR DSSO\LQJ WKH ODZ DQG JHQGHU IHPDOH
D KLJKHU SHUFHQWDJH DYHUDJH RI DOO SHUVSHFWLYHV
WR PDOH DYHUDJH RI DOO SHUVSHFWLYHV H[FHSW IRU
RI LQFRPH WD[ODZ PHDQV LW LV PRUH DERXW KRZ \RX O
QRW EHLQJ ILW IRU SXUSRvh 2Q WKLV SURSRVLWLRQ WI
EHWZHHQ PDOH DQG IHPDOH SUDFWLWLRQHUV

:LWK UHVSHFW WR DFWLQJ ODZIXOO\ DQG DVFHUWDLQLQJ
WR \HDUV DSSHUV WR KDYH WKH VWURQJHVW PRVW
RI DJUHH VWURQJO\ DJUHH ZKLOH WKH DYHUDJH RI D
REVHUYH JHQHODOO\ WKDW DOO RI WKH DJH JURXSV DU
SURSRVLWLRQ WKDW GRFXPHQWDWLRQ JDWKHULQJ LV
o „v[R WI ODUHQ 'C4'2 VUHHLHQ PÀ@WvVvvVvvv •RFKDLQ U
DJUHH VWURQJO\ DJ o

)LQDO @•: ð ZH DHDLQ REEx HUYH SUÀØLPLQDU\ ILQGLQJV ZL
SUDFWLWLQJUDKU\ KLSKHM SHUFHQWDJH RI DJ o VWURQJO\
RQ DOO SHUVSHFW\Y\K DZQW\QH V\SHFUDWR DFW\QJH\QWZI\B
WKH SURSRVLWLRQ WKDW ZKHUH WKH FOLHQW ZDV PRWLY
WKH\ FDQ GHLEHUDWHO\ HYDGH ERWK WKH WD[V\VVWHP
XQGHUVWDQG WKH FOLH vVvp`V Er ðRFNFKDLQ UH

2XU ILQGLQJV VXJJHVW WKDW SUDFWLWLRQHU GHPRJUDSK
UHVSHFW WR WKH FU\SWR HFRQRP\ DQG WKH \$XVWUDOLD
UHVHDFK LV ZDUUDQWHG WR H[DPLQH DJH DQG JHQGHU
RI WKH WD[V\VVWHP ORUHRYHU IXUWKHU UH HDUFK ZLWK
H[DPLQH WKH UHHXODWRU\ FKDAPf1OHQJHV WKLV FRKRU
FRPSr ðLDQFH

H-RXUQDO RI 7D[5HVHDUFK 7KH FU\SWR HFRQRP\ DQG WD[SUDFWLWLRQHU FRPSHWHQFLHV

ODFN RI FOHDU VSHFLILF JXLGDQFH ZLWK UHVSHFW WR V
FOLHQWV ZLWKLQ WKH FU\SWR HFRQRP\ 7KLV LV GHVSLW

KDYLQJ VWURQJ JXLGDQFH WR VXSSRUW WKH WD[FRPSOL
7KH SHUVSHFWLYHV LQ WKLV SURMHFW VXJJHVW WKDW W
WD[FRPSOLDQFH FKDOOHQJLQJ IRU WD[SUDFWLWLRQHU

H-RXUQDO RI 7D[5HVHDUFK 7KH FU\SWR HFRQRP\ DQG WD[SUDFWLWLRQHU FRPSHWHQFLHV

, QVSHFWRU * HQHUD~~TY2lfydzqYUdZgdb~~ 6\GQH\ 1RYHPEHU
, QWHUQDWLRQDO (WKLFV 6WDQGDUGV %RDUG IRU \$FFRXQWDQWV
FKDQJHV WR WKH &RGH\ H[SRVXUH GUDIW SDS
KWWSV ZZZ HWKLVERDUG RUJ SXEOLFDWLRQV SURSRVHG W
. HQG 0 1JX\HQ / \$ μ%LJ GDWD DQDO\WLFV DQG RWKHU HPHI
\$XVWUDOKH 0

H-RXUQDO RI 7D[5HVHDUFK

H-RXUQDO RI 7D[5HVHDUFK 7KH FU\SWR HFRQRP\ DQG WD[SUDFWLWLRQHU FRPSHWHQFLHV

:RHOOQHU 5 μ7\$6\$ DQG WKH OLIH F\FOH RI D WD[SUDFWLWL
5gJUJbHI:cia YRO QR SS

\$33(1',; \$

7DEOH \$ 3URSRVLWLRQ 6HW

:LWK UHVSHFW WR WD[SUDFWLWLRQHU VNLOOV DQG FRPSHWHQF
x .H\ NQRZOHGJH LQ EORFNFKDLQ WHFKQRORJ\ DQG KRZ LW ZRUN
DEOH WR DSSO\ WD[SULQFLSOHV
x

H-RXUQDO RI 7D[5HVHDUFK 7KH FU\SWR HFRQRP\ DQG WD[SUDFWLWLRQHU FRPSHWHQFLHV

x 'HVSLWH WKH WUDQVSDUHQF\ RI EORFNFKDLQ UHODWHG DFWLY
SURYLGQLQJ DSSURSULDWH LQI FKDLQ DFWLYLWLHV
x &OLHQWV FDQ EH XQZLOOLQJ WR :UHODWHG DFWLYLWLHV

\$

H-RXUQDO RI 7D[5HVHDUFK 7KH FU\SWR HFRQRP\ DQG WD[SUFWLWLQHUV FRPSHWHQFLHV

\$33(1',; &

7DEOH \$ &RPPRQ 7D[,VVXHV WKDW \$ULVH IURP &OLH
\$FWLYLWLHV

5DQ &RPPRQ 7D[,VVXH

1

& DVHV
Q

:KHWKHU DFWLYLW\ IDOOV ZLWKLQ
&U\SWRDVVHW WUDGLQJ FDSSLWDO
5HFRUG NHHSLSQJ
&RVW EDVH YDOXDWLQR
&U\SWRDVVH WYH Q&B LQJF RXQW
,QYHVWRU RU WUDGHU"
&*Z 'LVERXOWLOI

FRPH RU &*7

6SHFLDO DVVHW FODVV DQG WUHD
) ,)2
&U\SWR DQG *67
,QWHUQDWLRQDO WD[LVVXHV
6SHFLDO DVVHW FODVV I
&U\SWR DQG VXSHU DQG RU 3\$<*
&U\SWR DQG)%7
&U\SWR DQG ZLWKKROGI
2WKHU

RQDO XVH

H-RXUQDO RI 7D[5HVHDUFK 7KH FU\SWR HFRQRP\ DQG WD[SUFWLWLQH U FRPSHWHQFLHV

\$33(1',;'

7DEOH 6XUYH\ 3DUWLFLSDQW 'HPRJUDSKLFV
)LJXUH &RPPRQ %ORFNFKDLQ 5HODWHG \$FWLYLWLHV WKDW
 8QGHUWDNH
)LJXUH &RPPRQ 7D[,VVXHV WKDW \$ULVH IURP &OLHQW\ V %
 5HODWHG \$FWLYLWLHV
)LJXUH DQG ~~HDESHFWLYHV~~ ZLWK 5HVSHFW WR 5HJXODWLRQ
 *XLGDQFH /HYHOV RI \$JUHHHDQFH DV WR 5HJXODWLRQ DQG *X
)LW IRU 3XUSRVH
)LJXUH DQG 7DEOH 3HUVSHFWLYHV ZLWK 5HVSHFW WR 7D[
 6NLOOV DQG &RPSHWHQFLHV /HYHOV RI \$JUHHHDQFH
)LJXUH DQG 7DEOH 3HUVSHFWLYHV ZLWK 5HVSHFW WR \$\$
 /HYHOV RI \$JUHHHDQFH
)LJXUH DQG 7DEOH 3HUVSHFWLYHV ZLWK 5HVSHFW WR \$FV
 \$VFHUWDLQLQJ &OLHQW\ V \$IIDLUV /HYHOV RI \$JUHHHDQFH

H-RXUQDO RI 7D[5HVHDUFK

7KH FU\SWR HFRQRP\ DQG WD[SUDFWLWLRQHU FRPSHWHQFLH\

7DEOH 6XUYH\ 3DUWLFLSDQW 'HPRJUDSKLFV

'HVFUL
\$JH

1

'HVFUL

1

H-RXUQDO RI 7D[5HVHDUFK

7KH FU\SWR HFRQRP\ DQG WD[SUDFWLWLRQHU FRPSHWHQFLH\

)LJ &R PPRQ %ORFNFKDLQ 5HODWHG \$FWLYLWLHV WKDW &OLHQWV 8QCH&[

H-RXUQDO RI 7D[5HVHDUFK

7KH FU\SWR HFRQRP\ DQG WD[SUDFWLWLRQHU FRPSHWHQFLH\

)LJ &R PPRQ 7D[,VVXHV WKDW \$ULVH IURP &OLHQW¶V %ORFNFKDLQ 5HODWHG

1RWH 7KH µ2WKHU ¶ FDWHJRU\ 7KHUHG IFDQLRXOXDWLQJWDWLRQ 7KHUHG IFDQLRXOXDWLQJWDWLRQ \$
FODVVLILFDWLRQ IRU 72)\$ 'LY & DQG &)& SXUSRVHV SHUVRQDO XVH DVVHW H[HPSWL
PDUNHW YDOXH RI WKH WLPHFYRSHU QLQHQHUSQHWHQH VVWDXWHOPHQWV FOLHQW GLVFORVX
7KHUHG IFDQLRXOXDWLQJWDWLRQ

H-RXUQDO RI 7D[5HVHDUFK

7KH FU\SWR HFRQRP\ DQG WD[SUDFWLWLRQHU FRPSHWHQFLH\

)LJ 3HUVSHFWLYHV ZLWK 5HVSHFW WR 7D[3UDFWLWLRQHU 6NLOOV DQG &RPS



H-RXUQDO RI 7D[5HVHDUFK

7KH FU\SWR HFRQRP\ DQG WD[SUDFWLWLRQHU FRPSHWHQFLH\

H-RXUQDO RI 7D[5HVHDUFK

7KH FU\SWR HFRQRP\ DQG WD[SUDFWLWLRQHU FRPSHWHQFLH\

† W 0 OJWJH HO & HRUW \$ 6JFpWHL\Y HV ZLWK 5HVSHFW WR V\$80KSa 0

H-RXUQDO RI 7D[5HVHDUFK

7KH FU\SWR HFRQRP\ DQG WD[SUDFWLWLRQHU FRPSHWHQFLH\

)LJ 3HUVSHFWLYHV ZLWK 5HVSHFW WR \$FWLQJ /DZIXOO\ DQG \$VFHUWDLQLQJ



H-RXUQDO RI 7D[5HVHDUFK

7KH FU\SWR HFRQRPI DQG WD[SUDFWLWLRQHU FRPSHWHQFLHV

7DEOH 3HUVSHFWLYHV ZLWK 5HVSHFW WR \$FWLQJ /DZIXOO\ DQG \$VFHUWDLQLC

7D[SUDFWLWLRQHU VNLOOV DQG FRPSHWHQFLHV 1 0HDQ 0DMRULW\
&OLHQWV FDQ EH XQZLOOLQJ WR UHODWHG DFWLYLWLHV 6' 0LQ 0D[3RVLWLRQ
\$JU
HVSLWH WKH WUDQVSDUHQF\ RI EORFNFKDLQ UHODWHG DFWLYLWLHV LW FDQ \$EJHU KCHLIL
DUH SURYLGLQJ DSSURSULDWH LFKDLQ DFWLYLWLHV