

of the

H 9'GC7-9MC: : 9@CKG'
8MCB'7C@9, 9'C: '5FHG'5BS'G7-9B79G'

.

of

.

6H['HSHQGHQW 'LIIHUHQFHV LQ WKH 3URGXFWLRQ RI W
6LJQDOLQJ 0ROHFXOH 3URVWDF\FOLQ

?f]h'6bYg': UW/miGdcbgf. 'F]UI da UWZD 8'

&RPSDULQJ \$QWLR[LGDQW \$FWLYLWLHV DPRQJ %LJHORZ

=gUYU6fUbx': UW/miGdcbgf. '9a Y!F]WAc^]WZD 8'

\$QWLR[LGDQW \$FWLYLW\ RI \$VKZDGJDQGKD 7HD 6DPSOH

>i]Y6c[UX': UW/miGdcbgf. '9a Y!F]WAc^]WZD 8'

&RPSDUDWLYH \$QDO\VLV RI \$QWLR[LGDQW \$FWLYLWLHV
IURP &HOHVWLD0

GM]b] '7UbxU'/: UW/miGdcbgf. '9a Y!F]WAc^]WZD 8'

\$QWLR[LGDQW \$VVHVPHQW RI 'LIIHUHQW /LSWRQ 7HD 6

9]hUW] 'SUym': UW/miGdcbgf. '9a Y!F]WAc^]WZD 8'

\$QDO\]LQJ WKH 0HFKDQLVP RI 0HODQRPD &HOO 'HDWK ,
,QKLELWLRQ LQ D ' &DQFHU 0RGHO

A]WUY': YFMH': UW/miGdcbgf. 'BUBW?fi WYZD 8'

&KHPLFDO &KDUDFWHUL]DWLRQ RI 'LIIHUHQW 6ROYHQW
3ROOHQ 6DPSOHV

B]WY; Uglf': UW/miGdcbgf. '9a Y!F]WAc^]WZD 8'

([SORULQJ WKH +HDOWK %HQHILWV RI 5HDG\ WR 'ULQN 7

8Ud bY< YfUbxn': UW/miGdcbgf. '9a Y!F]WAc^]WZD 8'

\$QWLR[LGDQW \$FWLYLW\ RI &RPPHUFLDOO\ \$YDLODEOH

>Ygg]W<] []bg': UW/miGdcbgf. '9a Y!F]WAc^]WZD 8'

7RZDUGV 1RYHO 'UXJ 'HOLYHU\ 6\WHPV 'HJUDGDWLRQ

'LVXOILGH &URVV OLQNHG)OXRUHVVFHQWO\ /DEHOOHG

LQ WKH 3UHVHQFH RI *OXWDWKLRQH DW 'LIIHUHQW 3+

5]<cm': UW/miGdcbgf. 'GM] Ym?Uu_cj ZD 8'

&U\SWRJUDSKLF .H\ ([FKDQJH

K]]Ud?ci 8VUfcg/ '8UW/miGdcbgf]8]Ua]B\$WU; i d]UZD 8'

\$QDO\VLV RI D 7RRWKDFKH 5HOLHYHU 3URGXFW

Fci bXUVY' . '5i a b|FYi b|cb'

:]fgh7cbWfYbh5ZMfcbcb'DbY'Gyggcbg%'h fci [\ *ž7cb]hi YX

6HVVLQRQ \$ 0HDVXULQJ 8S 0DUNHWV

9Wbca]g

7=J=7K) %%

&%!' .%da`

'HJUHHV DQG 'RZQWXUQV \$ 6WXG\ ,QYHVWLJDWLQJ W

*UDGXDWLRQ <H DU RQ (DUQLQJV DQG 3ULPDU\ -RE 3U

AU]la '9rc[\ Vm: UW]mGdcbgf: 'AUm?UhbVf] žD.8'

0HDVXULQJ WKH ,PSDFW RI &RPELQLQJ 6DYLLQJV 9HKL

;]Y'Y; Uf] U: UW]mGdcbgf: 'AUm?UhbVf] žD.8'

8QGHUVWDQGLQJ 7UDQVDFWLRQDO 7UL 3DUW\ 5HSR (

G fU'G Ufa U: UW]mGdcbgf: 'GU '6Uf W

,PSDFW RI 0DFURHFRQRPLFV 3ROLFLHV RQ WKH 5HDO

J] lcf]]UM] h g Yb_c/: UW]mGdcbgf: H- [h d]

6HVVLQRQ \$

9b]]g /`

DgWc`c[m

7=J=7K) \$`

&%!' .%da`

6HVVLQRQ \$

D]cgd nř

/ DWUbx

> i g]WGi X]g'

7=J=7K) %&

&%!' .%da`

.

'.%da' %UHD KUMG WYF b@ci b| Y5fUcb: A: `ccf`

'.' Sda' 6HFRQG &RQFXUUHQW \$IWHUQRRQ 3DQH: Q6: Hccf LRQV WR

.

6HVVLQR %

5fi/ '

D: HW'

GMbW

7=J=7K) % '

'.' S!(.' Sda'

.

GWbX7cbWffYb5ZMfcbcbDUbY'GYgcbg'+h fci [\ '% ž7cb]bi YX

6HVVLQR %

7ca a i b]W]cbg'

/ '9Wbca]g

7=J=7K) \$ ·

GWbX7cbWfYb5ZfbbcbDby'Gygcg+'h fci [\ '%ž7cb]bi YX

6HVLRQ % ,QWHUQDWLRQDO 'HYHORSPHQWV

D:HW'GMBW)RUHLJQ ,QWHUYHQWLRQ LQ /DRV \$ 3ROLWLFDO DQG
/ 'Wbca W 'HYHORSPHQW +DQGLFDS

7=J=7K)%% **A]WUY'7cbfUX': UW'hiGdcbgcf. '5a ni fYXa UbžD.8'**

'.' \$da' 'HJOREDOLJDWLRQ DQG WKH 5HFRQILJXUDWLRQ RI *C
\$VLD

Ei Ub| '<i mB|i mb/': UW'hiGdcbgcf. 'AU_ KY]gicWž769'

)LUP &KDUDFWHULVWLFV WKDW &DXVH (FRQRPLF 5HV
)LQDQFLDO &ULVLV \$Q \$QDO\VLV RI 7XUNLVK)LUPV
&ULVLV

H ca Ug'G Yb/': UW'hiGdcbgcf. 'AUm?UhbVM] žD.8'

: UW'hiAcXfUcf. 'AU_ KY]gicWž769'

(.' \$da' %UHDN

(.) da' \$ZDUGV &HUHP **P GDMbi7bHM**

DYg]b] ž>i X]h 'DUčD.8'

7\UfžGcV]micZ: Y'ckg'cZ8ngb'7c`Y Y

5BBCI B79A9BHG'5B8 I D7CA=B; '9J9BHG'

,QLWLDWLRQ &HUHPRQ\ :HHNHQG 6HPLQDU'
5dfj'%ž88& :f!Gi bžCVtVf'(!*ž88& '
*!, da žCbYDUWDUH @Wljb H65'
DUWI bjj YfglmžBYk Mf_

7UDQVDFWLRQV²&DOO IRU 3DSHUV

: i ~! Yb| h fYgUFW'dUdfg'UbXUhg|Wfc'Wlg'g Va jHXlc h Y(' fX5bbi U'AYM|b| '
|b' 88& ' UFY Wbg|XYX Zf' di V|W|cb' |b' Jci a Y & ' cZ HfUgUM|cbg" Gi Xblg'
|hMYg|X|b' V|b| ' di V|g\ YXUFY YbWi fu| YXlc' fy| gy'h Yf' 5bbi U'AYM|b| ' dUdfg'
k|h ' h Y\ Yd'cZH Yf'ZUW/hng|cbgcf'g'UbXg| Va |h Yf' cf| |bU'cf'fy| gy'XdUdfg'cf'
b|k' Yblf|Yg'g| W'Ug'\ cbcfg'h Yg'g'lc' gcZ| dUW'Y| 'Vm) ULGD\ 0D\ 'H'
VYfy| j|k|YXUbXWbg|XYXZf' di V|W|cbžkcf_ 'bYXg'lc' VY'Ya U|YXVmXU|b|Y"

H Y GcV|micZ: Y'ckg'V| Ub' |b' h YZU' cZ%, S'k|h 'UkYY_ YbXg|a |bU'Xj c|Xlc' ei Yg|cbg'|b'
Udd|YX Yh |g|" H Y žf|g|Wgg' cZ'Z'ckg' |bX W|X Uih Y Zfa U' |bU| | i fU|cb' cZ'h Y gcV|mi|b|'
8YWa V|f' %, %kUg' bUa YX U|f' Xg|b| | g| YX d|]cgpd\ Yf' UbX DUW ZUW/hnia Ya V|f' K|]Ua '
6UfYH' G|bW' h Yž Ub|k' Wgg'\ Ug' VYb' |bX W|X Ubi U'mUbXbUa YX U|f' Ua Ya V|f' cZci f'
gcV|mi|k\ c\ Uga UXYUg| |b|WbhWb|f|V|h|cb'lc' h Y|XUg'h U|kY\ c'X|a dcfU|b|H' X|Hža cfY'
h Ub'+ 88' gi XblgžZUW/hnžUbXUi a |b|\ c'Xh YXg|b|W|cb'cZ: Y'ck' cZ8ngcb'7c' Y| Y"

H Y GcV|micZ: Y'ckg'lg'h YdfYa |f'\ cbcfg'cf| Ub|U|cb' |b' 8ngcb'7c' Y| Y" H Y gcV|mi|Z'g|f'g'
X|Uc| i YUbXgWc'Ug| |d'U|cgg'h YZ'YXg'cZ'h YUhg'UbXg|WbWg'h fci [\ 'Yb|W|b| ' Y| d|f|YbWg'
Zf' gi Xblg' k|h ' Y| Wd|cbU' UW|Ya |WUbX Uhg|WU|]H|g" H Y GcV|micZ: Y'ckg' d|f|j |Xg'
gi Xblg' k|h ' cddcfli b|H|g' lc' Xj Ycd' |bY'W|U' |bMYg'g' UbX d|Yg|bi h Yf' fYgUFW' UbX
WYU|j |h|lc' h Yi b|j YfglmžWa a i b|h|A Ya V|f'g| |d' |b' h Y GcV|micZ: Y'ckg' [|j Yg'fYW| b|H|cb'lc'
Uj UbWX 'Yj Yg'cZ'gi Xblh|d|U|W|U|cb' UbXUW|Yj Ya Ybl|': UW/hnk\ c' dU|W|U|H' |b' GcV|micZ
: Y'ckg'Yj Yblg'UbXg|cbgcf' gi Xblg'Ug' fYW|j YfYW| b|H|cb'Ug'Z'ckg"

9UW'ZU' h Y GcV|micZ: Y'ckg'g|cbgcf'g'h Y :HHNHQG 6Hf|h' R|U|W' gi XblgžZUW/hnžUbX
Ui a |b| Yb| U| Y|b' XgWgg|cbg'cbUWcg|b' |cd|W|b' UWg| UžcZ'Z'Wa di gg|H|b| | i g| U'n|b| i dg|U|Y'
BYk Mf_ "5h|h Y \$QQXDO 0HcZ|Y'GcV|micZ: Y'ckgžk\ |W'lg'UcbY'X|ng| Xblh|Wb|Z|YbW'
\ YX|b' YU'fmg|f|b| ž gi Xblg' g' ckWg'Y' h Yf' ZUW/hnia YblcfYX gWc'U'nfYgUFW' UbX Uhg|W'
dfc'W|g" 7UDQVDFWLRQV²&DOO IRU 3DSHUV' di V|W|cb'cZ'h YZ'ckgžZU|h fYg'ci |g|UbX|b| 'kcf_ 'kf|H|b' Vni
DUWI bjj Yfg|ng| Xblg' i bXf' h Y g|cbgcf'g| |d' cZ'ZUW/hnia Ya V|f'gž'a U|nicZk\ ca 'UfY'Z'ckg"
BYk 'a Ya V|f'g'UfY'fYW| b|H|XUih Y ,QLWLDWLRQ '&YXU|H' f'UbXcZ'h Yg|f|b| 'g|a Yg|H'"