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Department of
Economics and Finance

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57%',%'44#-#5,'1%`I>%2#11#5,%Q5)-"%57%.58()(4%25,4$0%!"(%9HK%'1$5%#,-)540.(4%#,%M':%R>=>%#-$%

<(.0)#-#($%M')3(-$%T)5N)'++(%?<MTB%'#+(4%'-%(,$0)#,N%-"(%70,.-#5,#,N%57%-"(%+5,(-'):%&

T5-()2'%',4%U'Q)(,.(%?=]SaB%750,4%-"'-%851'-#1#-:%#$%5,1:%Q('31:%$()#'11:%.5))(1'-(4/% #+&1:#,N%-"'-%$"5.3$%-5%851'-#1#-:%45%,5-%&()$#$-%',4%'77(.-%)(-0),$%5,1:%75)%)(1'-#8(1:%$"5)-% #,-()8'1$/%Q"#."%#+&1#($%-"'-%-"(%&55)%&()75)+',.(%57%$-5.3%&)#.($%40)#,N%-"(%=][>$%.',,5-%2(% '--)#20-(4%-5%851'-#1#-:6#,40.(4%#,.)('$($%#,%)#$3%&)(+#'0%V#,#."%',4%T'--()$5,%?=]SLB%750,4% ,5,61#,(')#-#($%#,%-"(%4'#1:%)'-($%57%)(-0),%57%=L%.5++5,%-5.3%0$#,N%'%+(-"54%2'$(4%5,%-"(% 2#$$&(.-)0+0%V5401'%',4%K#.3i)%?R>=aB%($-#+'-(4%$+'11%$.'1(%K':($#',%+54(1$%-5%(*'+#,(%-"(%)($&5,$(($%-5%$(8()'1%+'.)5(.5,5+#.%8')#'21($%57%-"(%G()+',%CDE%F>%',4%-"(%K)#-#$"%;!<9% =>>%#,4#.($P%-"(:%750,4%-"'-%-"(%KjD\%+54(1%50-&()75)+$%'%$-',4')4%jD\%+54(1/%Q#-"%-"(% 75)(.'$-#,N%'..0)'.:%#+&)58#,N%7)5+%Lk%-5%=Rk/%',4%-"'-%-"(%)#$3%&)(+#0+%"'$%'%,(N'-#8(% (77(.-0%A#+%(-%'10%?R>==B%.5,$#4()(4%-"(%5,(6+#,0-(%$()#($%75)%-"(%A5)(',%$-5.3%+')3(-%#,4(*%

.')):#,N%50-%-"(%K'#%',4%T())5,g$%?R>>FB%2)('3%-($-$P%-"(:%750,4%-Q5%2)('3$%#,%-"(%+(',%57%-"(% .5,4#-#5,'1%851'-#1#-:%57%25-"%4'#1:%',4%+5,-"1:%)(-0),$/%Q"#."%+5$-%1#3(1:%')(%'%.5,$(c0(,.(% 57%&51#.:%',4%)(N01'-#5,%."',N($%)'-"()%-"',%(.5,5+#.%.)#$($0%M("+(-%(-%'10%?R>=LB%#,8($-#N'-(4% Q"(-"()%-"(%4'#1:%$-5.3%&)#.(%#,4#.($%7)5+%=I%(+()N#,N%+')3(-$%75115Q%'%)',45+%Q'13%5)%'% +(',6)(8()-#,N% 15,N6+(+5):% &)5.($$P% -"(#)% 7)'+(Q5)3% 75)% ','1:$#,N% &()$#$-(,.(% #$% +5)(% N(,()'1%-"',%-"(%J?>B^J?=B%&')'4#N+%',4%'115Q$%75)%+01-#&1(%$-)0.-0)'1%2)('3$%'-%0,3,5Q,%4'-($0% !"(:%750,4%$0&&5)-%75)%-"(%)',45+%Q'13%":&5-"($#$%75)%'11%$-5.3%+')3(-$%(*.(&-%750)%75)%Q"#."% Q('3%(8#4(,.(%57%+(',6)(8()-#,N%15,N6+(+5):%2("'8#50)%Q'$%52-'#,(4P%0,#-%)55-$%Q()(%750,4% #,%'11%.'$($%(*.(&-%M(*#.5%(8(,%Q"(,%$-)0.-0)'1%2)('3$%Q()(%-'3(,%#,-5%'..50,-0%J,%5)4()%-5% ."(.3% -"(%)520$-,($$% 57% -"(#)%)($01-$/% -"(:% 0$(4% -"(% -Q56$-(&% 7('$#21(% (*'.-% 15.'1% l "#--1(% ?;9U l R<!B%($-#+'-5)%57%<"#+5-$0%?R>>aB/%Q"#."%'115Q$%75)%&51:,5+#'1%-)(,4$/%,5,6,5)+'1% 4#$-)#20-#5,$/% ',4% ,5,6$-'-#5,')#-:P% -"(%)($01-$% #,4#.'-(% -"'-% '11% $-5.3% &)#.(% $()#($% Q#-"% -"(% (*.(&-#5,%57%M(*#.5%')(%,5-%+(',6)(8()-#,N0%%

J,%'%)(1'-(4%$-04:/%G#16D1','%?R>>aB%0$(4%&')'+(-)#.%',4%$(+#6&')'+(-)#.%+(-"54$%-5% -($-%75)%-"(%5)4()%57%%5)4()%57%

$-'-#5, ')#-:%#$%750,4%5,1:%75)%-"(%&)#.(^4#8#4(,4%)'-#50% l "(,%-"(%.:.1#.'1%.5+&5,(,-%#$%'1$5%

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l (%$-')-%2:%($-#+'-#,N%75)%-"(%15NN(4%4'-'%-"(%+54(1%N#8(,%2:%(c0'-#5,%?RB%-"'-%'115Q$%75)%,5,6 1#,(')%-)(,4$0%!"(%)($01-$%75)%-"(%+5,-"1:/%Q((31:%',4%4'#1:%$()#($%)($&(.-#8(1:%')(%)(&5)-(4%#,% !'21(%I0%%

W&?A9=B!'<O79!V!<O;5B!S9=9Y%

% !"()(%#$%,5%(8#4(,.(%57%,5,61#,(')#-#($/%$#,.(%'11%-"(%p_R%',4%p_F% .5(77#.#(,-$%')(%,5-% $-'-#$-#.'11:%4#77()(,-%7)5+%f()50%D$%75)%-"(%7)'.-#5,'1%4#77()(,.#,N%&')'+(-()%4/%+5$-%57%#-$% ($-#+'-(4%8'10($%')(%$1#N"-1:%$+'11()%-"',%=/%',4%-"(%0,#-%)55-%,011%":&5-"($#$%.',,5-%2(%)(e(.-(4% #,%-"(%+'e5)#-:%57%-"(%.'$($0% !"(%5,1:%(8#4(,.(%57%+(',%)(8()$#5,%?#0(0/%4%$+'11()%-"',%=B%#$% 750,4%75)%Q((31:%4'-'%#,%-"(%.'$(%57%HDHI>%',4%;!<9=>>%Q#-"%Q((31:%4'-'%?4%2(#,N%(c0'1%-5% >0]R%#,%25-"%.'$($B%',4%MJKI>%Q#-"%4'#1:%4'-'%?4n>0]LB0%

W&?A9=B!'<O79!Z!<O;5B!S9=9Y!

G#8(,% -"(% (8#4(,.(%

T())5 , g$%?R>>FB%-($-$%75)% + 01-#&1(%2)('3$0% ! "(%)($01-$%

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K'#/%b0%',4%T0%T())5,%?R>>FB/%H5+&0-'-#5,%',4%','1:$#$%57%+01-#&1(%$-)0.-0)'1%."',N(%+54(1$/% b50),'1%57%D&&1#(4%9.5,5+(-)#.$/%=S/%=6RR%

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K#()(,$/%V0b0%?=]][B/%u!($-#,N%-"(%@,#-%\55-%Q#-"%C)#7-%V:&5-"($#$%'N'#,$-%d5,1#,(')%!)(,4% <-'-#5,')#-:% Q#-"% ',% D&&1#.'-#5,% -5% -"(% @0<0% T)#.(% U(8(1% ',4% J,-()($-% \'-(v/% *'()*+,-" (." /0(+(! 12*3045"*S=/%R]6aI0%

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K55-"/%G0P%A'(,/%;0\0%',4%A58(5$/%T090%?=]SRB/%T()$#$-(,-%C(&(,4(,.(%#,%G514%T)#.($0%b50),'1% 57%;#,',.#'1%\($(')."/%L/%?=B/%SL6]F0%

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H'+&2(11/%b0% _0%',4%<"#11()/% \0%b0%?=]S[B/%H5#,-(N)'-#5,%',4%-($-$%57%&)($(,-%8'10(%+54(1$/% b50),'1%57%T51#-#.'1%9.5,5+:/%]L/%=>aR6=>SS0%

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V'$$1()/%@0%',4%K0%M(11()/%R>==/%C(-(.-#,N%+01-#&1(%2)('3$%#,%15,N%+(+5):0%!"(%.'$(%57%@<% #,71'-#5,/%C#$.0$$#5,%T'&()%<()#($%=0%9.5,5+#.%<-04#($%Ra/%C(0-$."(%K0,4($2',30%

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V(1+$/% K0T0P% A'(,/% ;0\0% ',4% \5$(,+',/% \090% ?=]SIB/% uM(+5):% #,% .5++54#-:% 70-0)($% .5,-)'.-$v/%b50),'1%57%;0-0)($%M')3(-$%I/%I/%LL]tLa[0%

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V#,#."/% M0% ',4% T'--()$5,/% C0% ?=]SLB/% 98#4(,.(% 57% d5,6U#,(')#-:% #,% C'#1:% <-5.3% \(-0),$0% b50),'1%57%K0$#,($$% h%9.5,5+#.%<-'-#$-#.$0%F0%a]6

<+:-"/%G0A0%?=]]SB/%B(-:+(!3,-";CC*(D3! ,23(+/%b5",% l #1(:%h%<5,$/%U-4/%H"#."($-()W%@,#-(4%
A#,N45+0%

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!5+'$(8#./%d0M0%',4%!0%<-',#803%?R>>]B/%u\(N)($$#5,%D,'1:$#$%',4%D&&)5*#+'-#5,%2:%M(',$%
57%H"(2:$"(8%T51:,5+#'1v/%E+.(*! ,2(-(>3,/%IR/%=aa6=[R0%

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_0",/%A0V0%?=]]aB/%<-5.3%&)#.(%851'-#1#-:W%-($-$%75)%1#,(')%',4%,5,61#,(')%.5#,-(N)'-#5,%#,%-"(%
&)($(,-% 8'10(% +54(1% 57% $-5.3% &)#.($/% D&&1#(4% ;#,',.#'1% 9.5,5+#.$/% aWa/% IS[6I]I/% CZJW%
=>0=>S>^>]a>F=>]aFFF]FL0%

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_0-"',/%<0%',4%<0-"'Q',/%T0%?R>=RB/%<-)0.-0)'1%K)('3$%#,%<-5.3%\(-0),$%j 51'-#1#-:W%98#4(,.(%
7)5+%-"(%<-5.3%9*."',N(%57%!"'#1',40%9+&#)#.'1%9.5,5+(-)#.$%',4%{0',-#-'-#8(%9.5,5+#.$%
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JK9EFL|ZT9d%	R>LF%	L]L>/I>%	==[]S/L>%	]IIa/I]%		

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%	d%	M#,#+0+%	M'*#+0+%	M(',%	<-40%C(8#'-#5,%	D$: +&0%<#N0% ?R6-'#1(4B0% A51+5N5)586 <+#),58%!($-%
JK9EFL|ZT9d%	=R=%	a=>]/[>%	==]Sa/L>%	]a>S/L[%	=R>[/aS%	>/=[a%

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' <O79!VQ!#AB8 : <B9D!I ; 9FF8I89 ? BA!8 ? ! <! ? ; ? 78 ? 9<=!&_D`! : ; D97!F ; =!BS9!7 ; 6!>=8I9A!A9=89A!

#B%%%M5, -"1: %4'-'%					
<()#($%	4%	$p_{>}$%	$p_{=}$%	p_{R}%%? d UB%	p_{F}%%? d UB%
; \ D d H9%	>0] >% ?>0[[/%%=0>[B%	**aEMNKZ!** **_V [EZL`!**	6>0=a>F% ?6=0LaB%	>0>>] a% ?>0=aB%	>0>=FF% ?>0FFB%
G9 \ MD d _%	>0] =% ?>0[[/%%=0=>B%	**aEa \UV!** **_VUEV [`!**	**,LEKNZL!** **_,KEV \`!**	6>0> I aF% ?6>0[>B%	6>0>=>L% ?6>0RFB%
J ! DU _%	>0] >% ?>0[S/%%=0=>B%	**NE \Ma \!** **_VLEKU`!**	6>0> I R]% ?6>0F>B%	>0> I =F	

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' <O79!ZQ!#AB8 : <B9D!I;9FF8I89?BA!8?!<!?;?78?9<=!&_D`! : ;D97!F;=!BS9!=9B5=?!A9=89A!

#B%%M5,-"1:%4'-'%

<()#($%

' <O79! [Q! (5 : O9=! ; F!O=9<^A!8?!9<IS!A9=89A!5A8?6! 4 87, . 7<?<!_KLLa`!

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' <O79! \Q! # AB8 : <B9A! ; F!D!F ; =!9<IS!I ; 5 ?B=C!<?D!9<IS!A5OA< : >79! P8BS! 3 + (' b - c !D<B<!

H50 , -) : %	<02$' + &1($%	d 5%-() + $%	D , %# , -() . (&-%	D%1# , (')%-)(, 4%
% ; \DdH9%	=$-%$02$' + &1(%	>0] F%%?>0 [[/%=0= [B%	LENU!!_LE\U*!MEKU`!	>0] I %%?>0 [a/%=0RRB%
	R , 4%02 + &1(%	>0] R%%?>0 [R/%=0R=B%	LE [\!!_LEVK*!MELU`!	>0 [=%%?>0 I] /%=0> I B%
	F)4%02' + &1(%	>0SR%%?>0 I S/%=0RaB%	LE\U!!_LEVU*!MEML`!	>0 [R%%?>0 I L/%=0==B%
% G9 \ MDd _%	=$-%$02$' + &1(%	>0] F%%?>0 [[/%=0=aB%	>0SF%%?>0a=/%=0=] B%	LEaZ!!_LE [*!MEMa`!
	R , 4%02 + &1(%	>0] =%%?>0 [>/%=0R=B%	LE\Z!!_LEVV*!MEKZ`!	>0S>%%?>0LR/%=0R I B%
	F)4%02' + &1(%	>0S I %%?>0LL/%=0R I B%	LENZ!!_LE\K*!MEUM`!	>0] I %%?>0 [>/%=0F=B%
% J ! DU _%	=$-%$02$' + &1(%	>0Sa%%?>0aR/%=0R>B%	LE\ [!!_LEZL*!MEUM`!	>0 [a%%?>0 I] /%=0FRB%

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. >>9?D8I9A!

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. >>9?D8d!ME! 3 ; ?BS7C!AB; I^!8?D8I9A!

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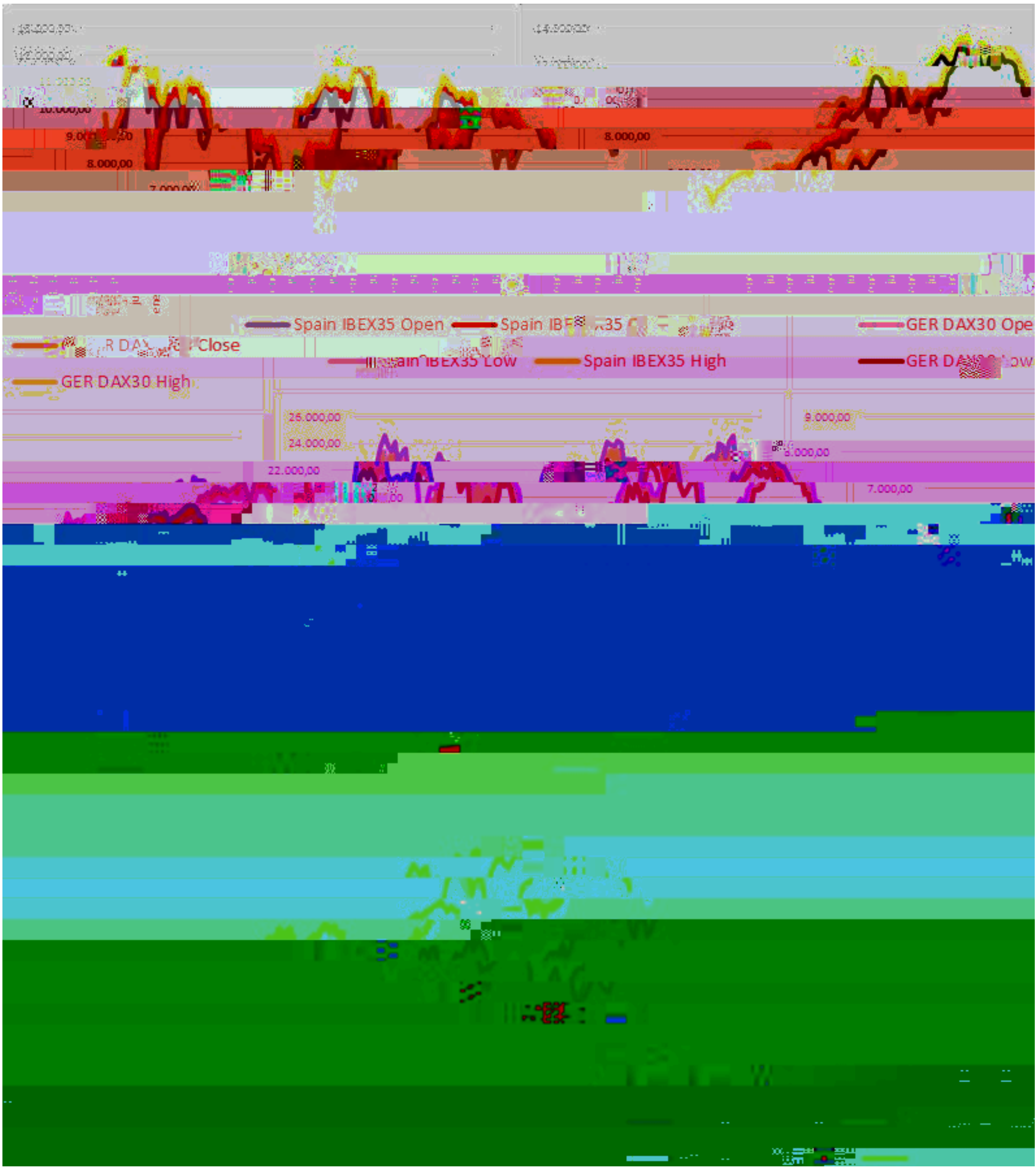

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. >>9?D8d!UE! / <87C!AB; I^!8?D8I9A!

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