

Massachusetts Institute of Technology  
Sloan School of Management

# **Consumption As A Leading Indicator**

*A Stocks, Bonds, Consumers Leading Index (SBCLI)*

Douglas T. Breeden\*

March 23, 2012, Asia

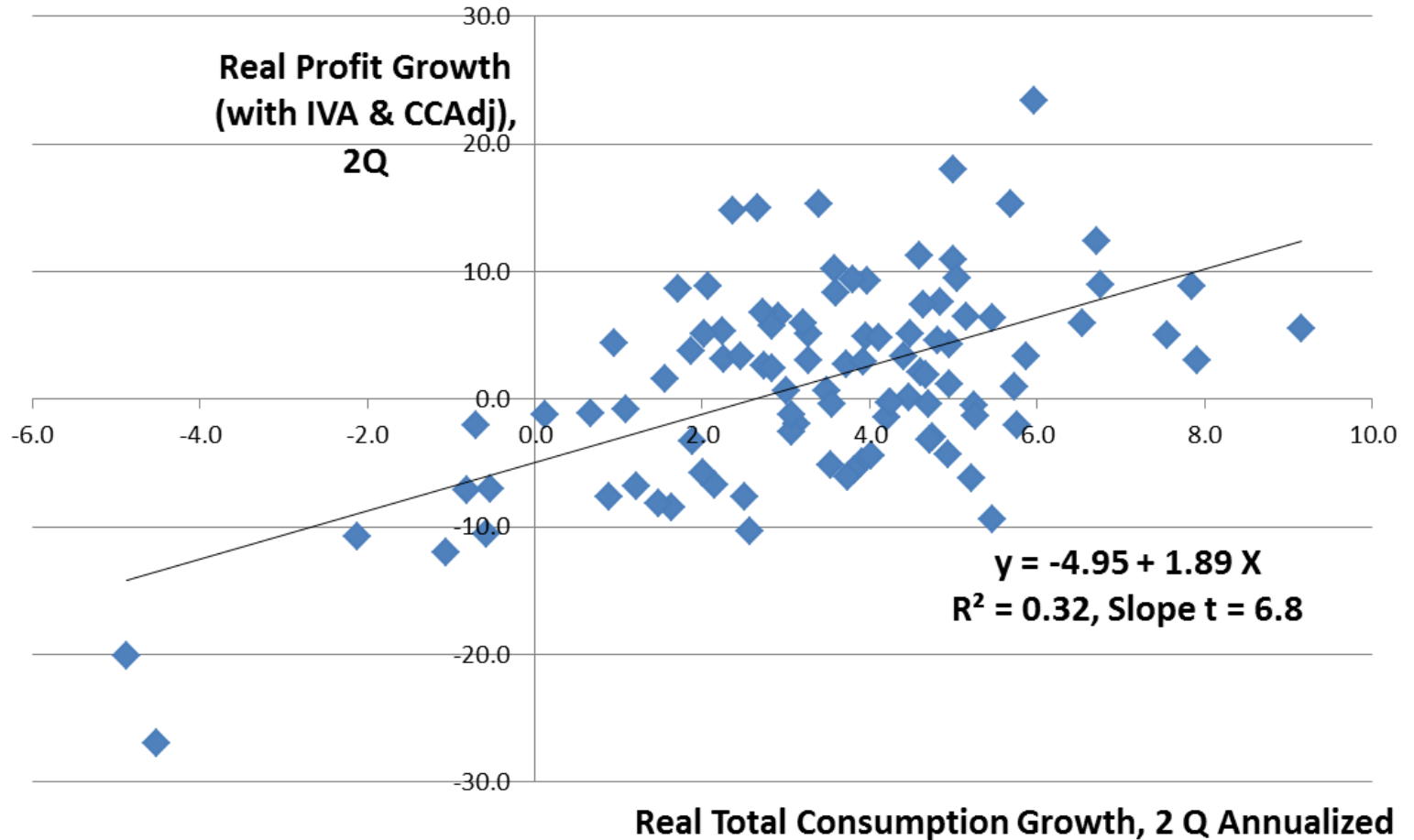
\*Fischer Black Visiting Professor of Financial Economics at MIT and William W. Priest Professor and Former Dean, Duke University, Fuqua School of Business. I thank Lina Ren, Jonathan Ashworth, Mark Breeden and LiAn Pan for their research assistance.

## Overview: Three Key Factors In Economic Forecasting

- S. **Stocks: Stock market returns** predict profits, which are related to economic growth.
  
- B. **Bonds: Term structure slope** predicts increases and slowdowns in economic growth.
  
- C. **Consumers**: Consumers make intelligent choices,  $C(W, \underline{s}, t)$ . **Consumption growth that is independent of stock market returns** reflects consumers' views of jobs, incomes and investment opportunities.

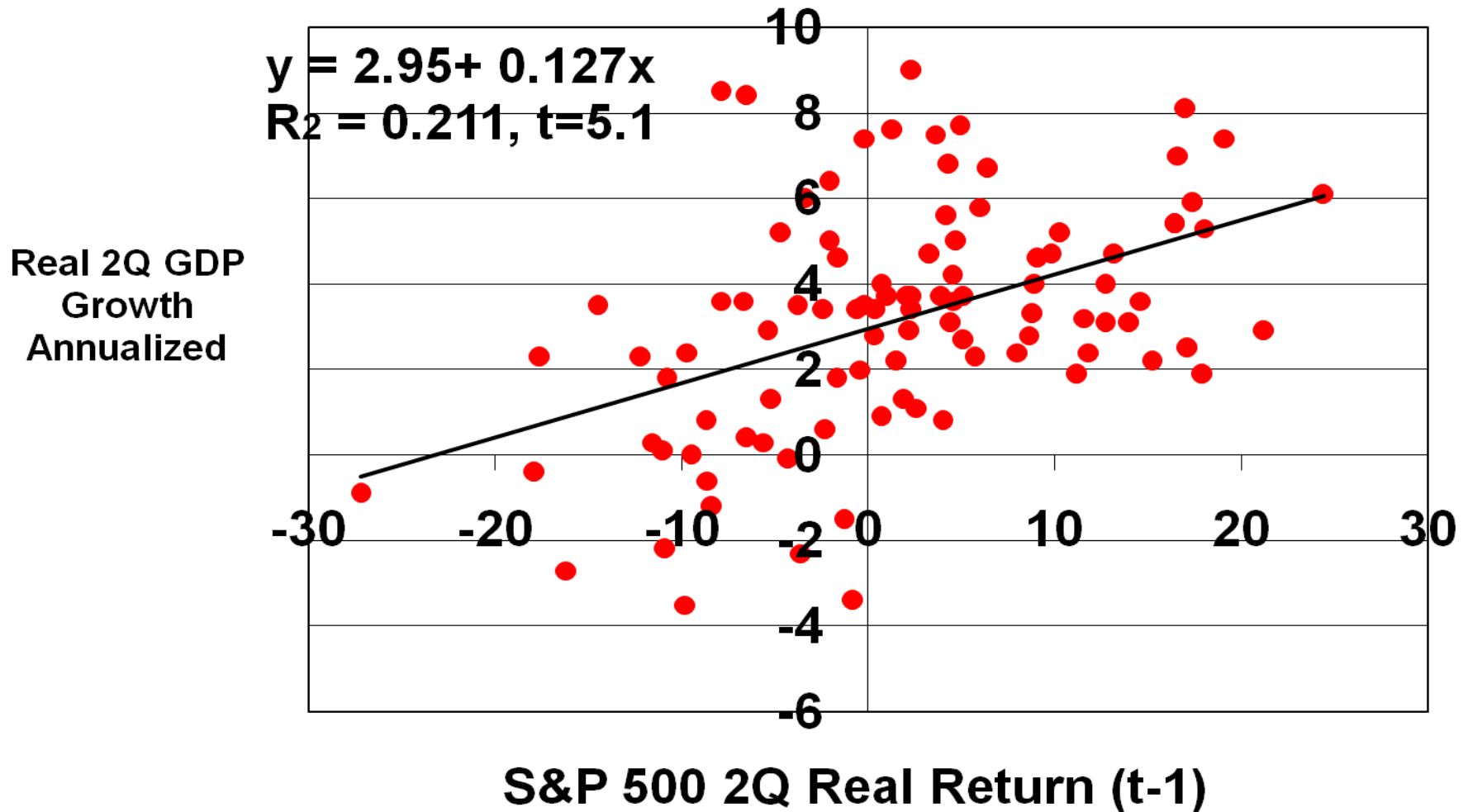
S. Stock Market Returns Predict Profits  
and Economic Growth.

**Profit Growth Strongly Related to**  
**Contemporaneous Real Total Consumption Growth**  
**2-Quarter Real Percentage Changes, 1960-2008**



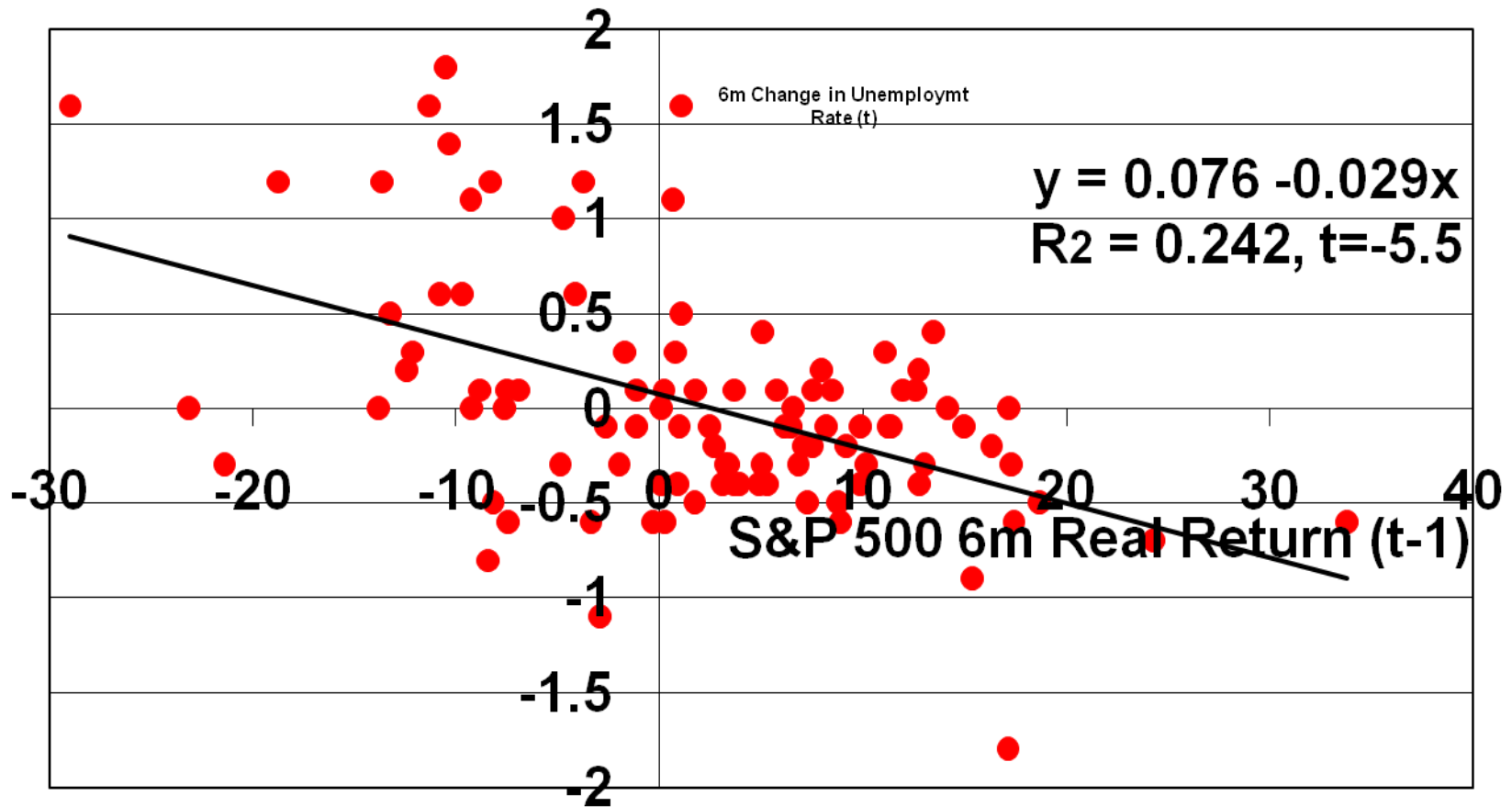
# S&P 500 Return Leads GDP Growth

2-quarter percentage changes, 1960-2008 (Q2/Q4).



# S&P 500 Return Leads Changes in Unemployment

6-month percentage changes, 1960-2008 (Dec-Jun-Dec).



# Summary on Stock Market Returns and the Economy

- Stock market returns are a leading indicator. They are more related to economic growth to come in the next 2 quarters than to current real economic growth.
- Similar results for stocks and changes in the unemployment rate. When stocks go up sharply, the unemployment rate tends to fall in the next 6 months.

B. Bond Market: The Slope of the Term Structure  
of Interest Rates Predicts Economic Growth



## Term Structure of Interest Rates Optimally Related to Changes in Real Economic Growth

- Breeden's, (1986 article following Fisher (1907), derived optimal relations of the term structure of interest rates with the term structures of expected consumption growth, volatility and inflation.
- Harvey (1988-1991) tested the model's predictions, found them to forecast economic growth better than many professional economists, working in many countries. In 1996, slope of the term structure was added to the index of leading economic indicators.

# Economic Growth and the Term Structure

- Basic Economic Insights

1. High real interest rates induce individuals to reduce consumption, save, and consume more later:

$$r \uparrow \implies C_{Today} \downarrow, C_{Future} \uparrow \implies \text{C-growth rate} \uparrow$$

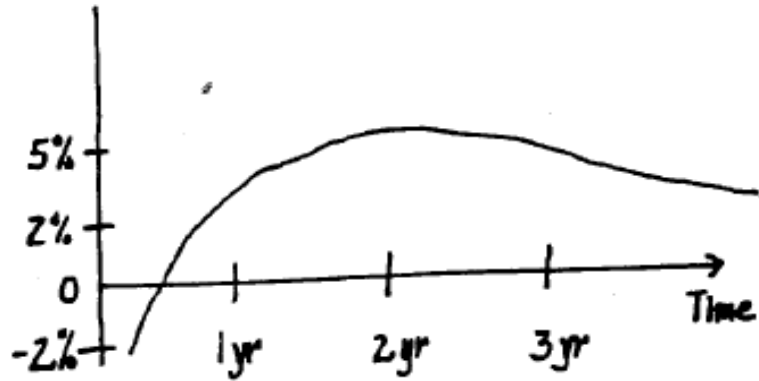
2. Normal risk aversion implies that individuals prefer to buy riskless assets (versus risky). This protects against uncertain futures:

$$\sigma_c \uparrow \implies \text{Riskless bond prices} \uparrow \implies \text{Interest rates} \downarrow$$

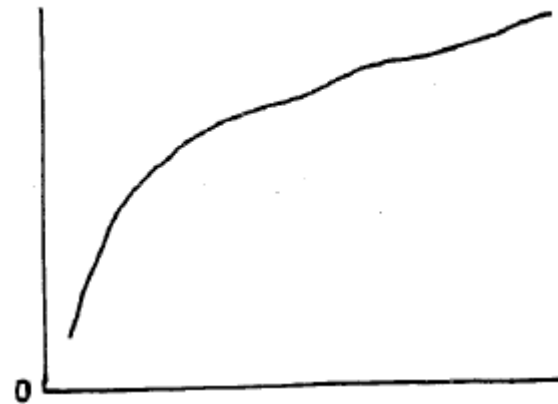
3. Countries with higher degrees of time preference (impatience to consume) have to have higher rates.

# At the Bottom of a Recession

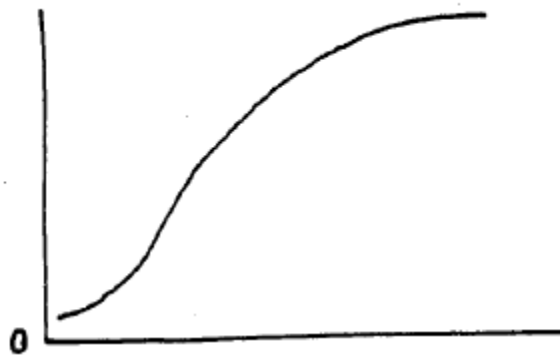
Expected Real Growth



Nominal Interest Rates



Inflation

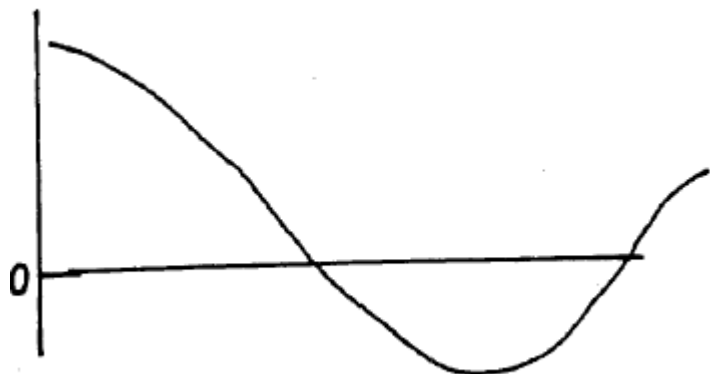


Real Interest Rates

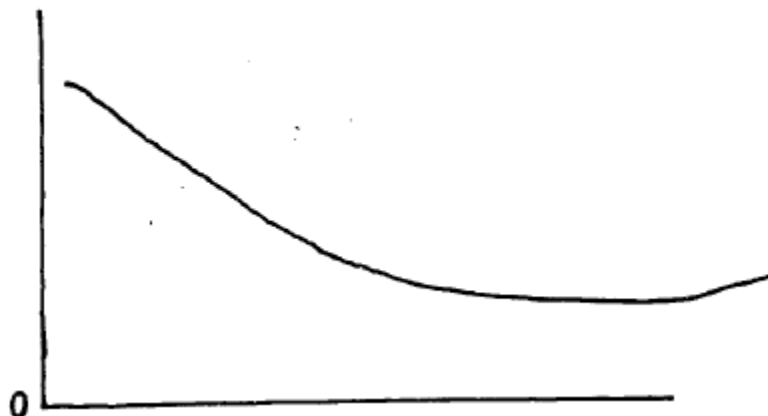


# At a Peak, Anticipating Recession (or slower growth)

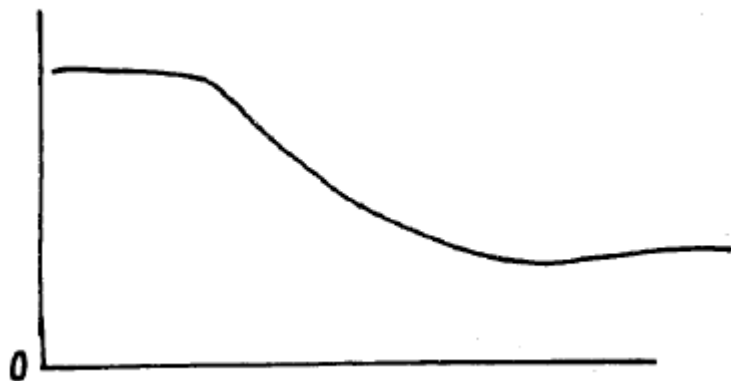
Expected Real Growth



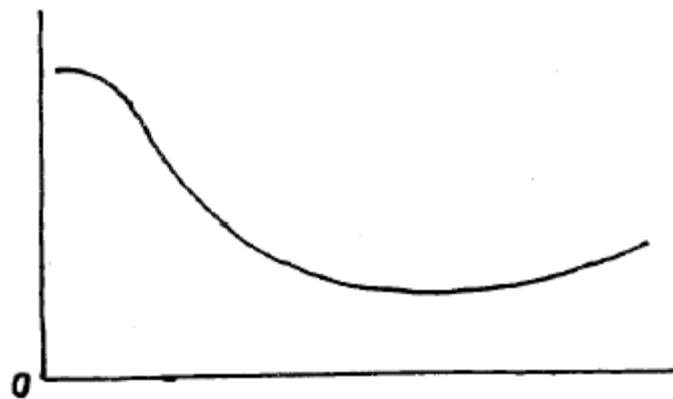
Nominal Term Structure of Interest Rates



Expected Inflation



Real Term Structure



## Fifty Years of 10-Year & 3-Month Treasury Yields: Semiannually Dec 31 1961 to Jun 30 2011 & Sep 6, 2011

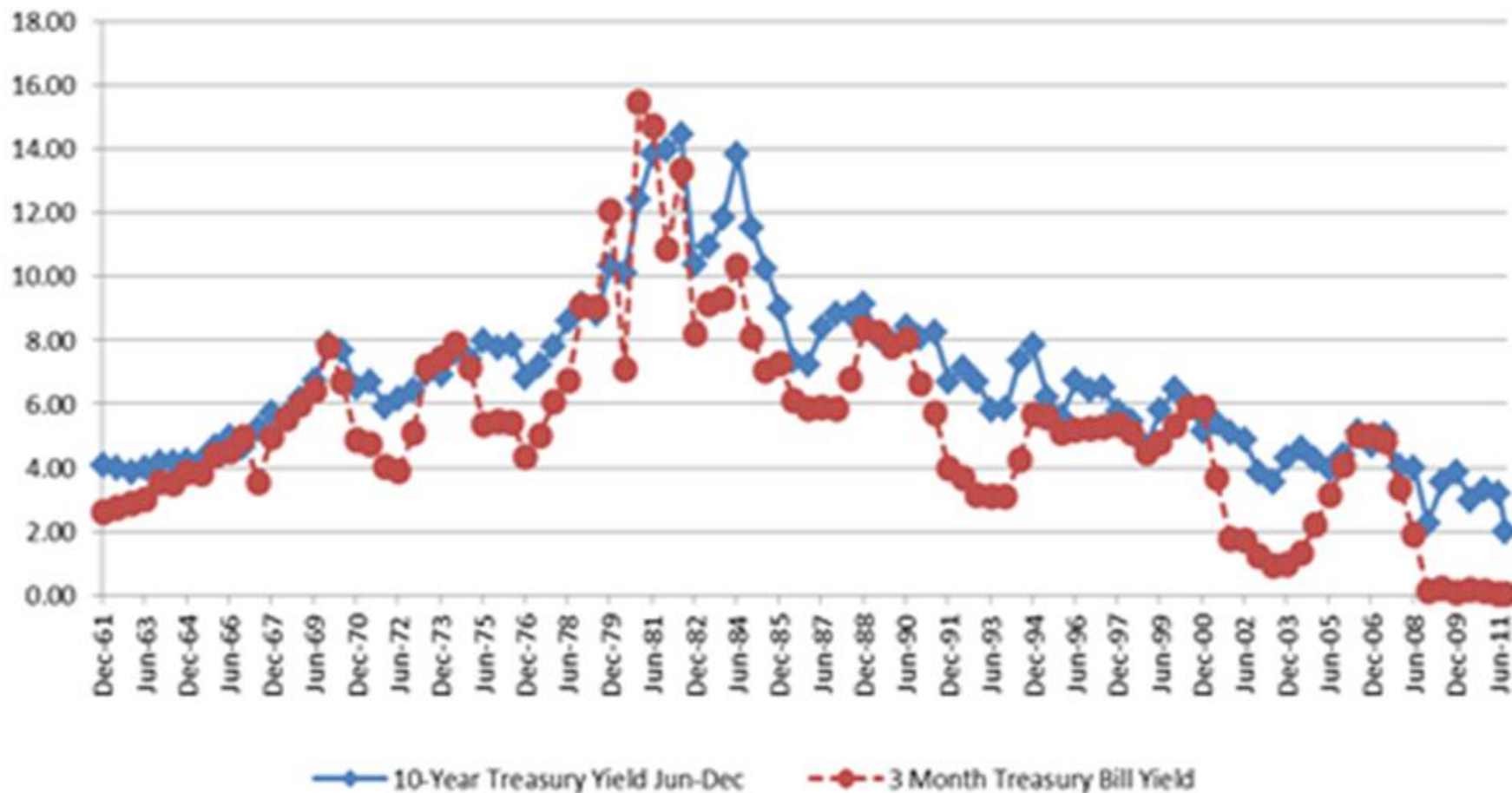


Figure 2

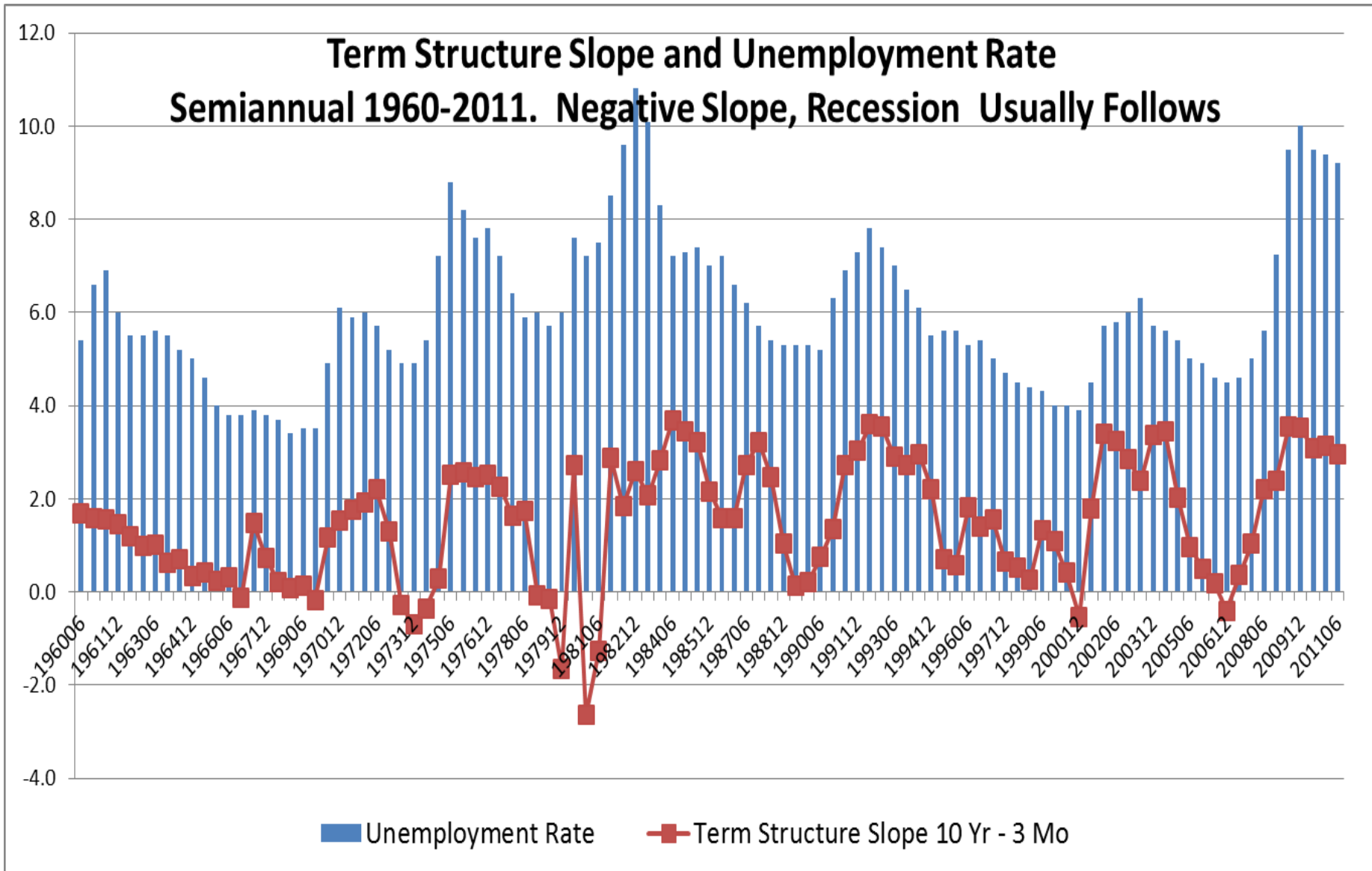
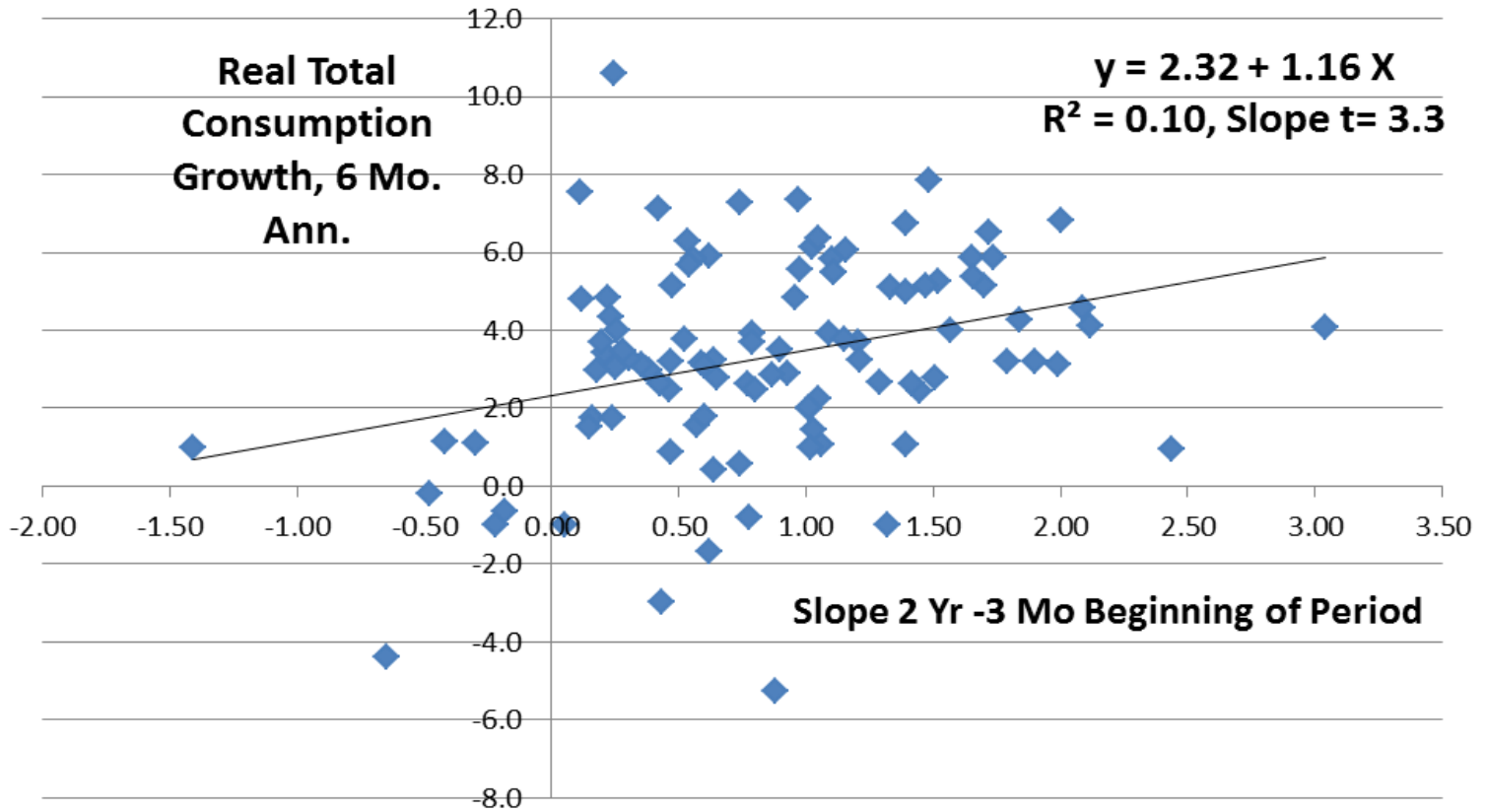


Figure 3

**2 Year - 3 Month Slope Leads Real Total Consumption Growth (6mo, Ann.) Semiannually 1960-June 2011**



C. Consumption Deviations from Wealth Predict  
Jobs, Income Growth and Investment  
Opportunities



# Consumption Deviations from Wealth Predict Income and Investment Opportunities

- Following Merton and Rubinstein, Breeden (1979, 1984) studied consumer behavior in a model where consumers plan their lifetime consumption and investments. Investors' consumption levels largely depend upon wealth, income (jobs and wages) and investment opportunities (risk and return).
- Consumption fluctuations with wealth effects eliminated should be indicators of job and wage prospects and the attractiveness of investments.

### 3 Global Mega-Economy Composites: Percentage Weights Trillion Dollar Economies (TDEs) with GDP/Capita>\$US 10,000

	1970	1990	2010
<u>Advanced America TDEs</u>	100.0%	100.0%	100.0%
United States	90.3	89.8	90.0
Canada	9.7	10.2	10.0
<u>Advanced Europe TDEs</u>	100.0%	100.0%	100.0%
United Kingdom	47.3	20.8	22.4
Germany	18.5	27.2	28.2
France	14.8	22.1	21.1
Italy	11.6	19.9	16.9
Spain	7.9	9.9	11.3
<u>Advanced AustralAsia TDEs</u>	100.0%	100.0%	100.0%
Japan	90.4	77.7	63.6
Australia (added 1970)	9.6	8.2	14.4
South Korea (added 1990)	0.0	7.0	11.8
Hong Kong, Singapore, Taiwan	0.0	7.1	10.2

### 3 Mega-Economies: Removing the Wealth Effect from Consumption:

#### Real Consumption Growth Predicted by Stock Returns

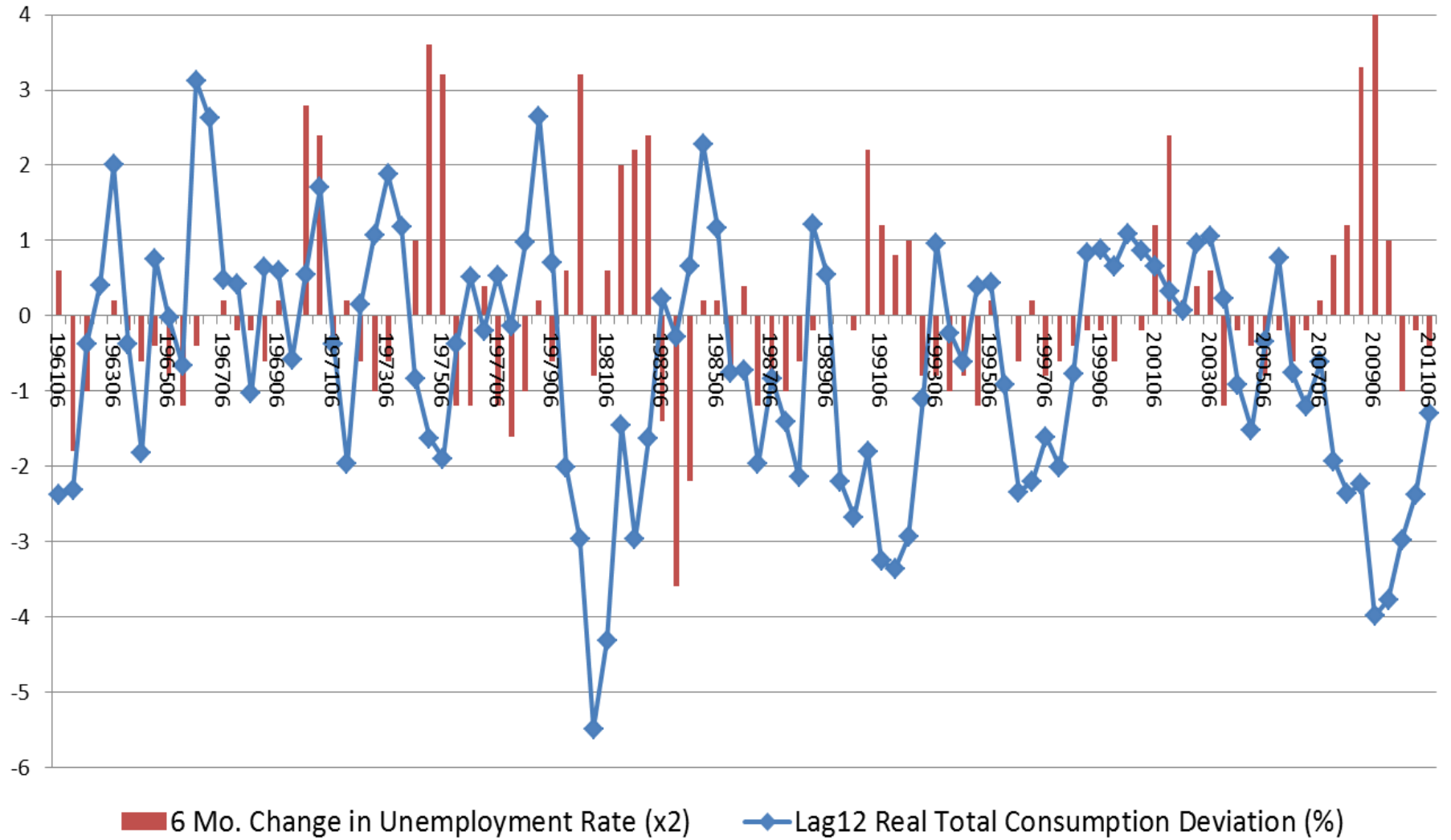
2 Quarter Changes (Q2-Q4-Q2). 50 Years: 1961 – Q2/2011

<u>Dependent Var</u> Real Total Consumption Growth (2Q%, Annlzd)	Real Stock Return 2Q% Curren t	Real Stock Retur n 2Q% Lag1	Real Stock Return 2Q% Lag 2	20 Yr Historic Trend Growth RI GDP	Corr RSQ
<b><i>Advanced Americas</i></b> 1961Q2-2011Q2	<b>0.093</b> <b>t=5.4</b>	<b>0.058</b> <b>t=3.3</b>	<b>0.041</b> <b>t=2.4</b>	<b>0.87</b> <b>t=4.6</b>	<b>0.39</b> <b>N=101</b>
<b><i>Advanced Europe</i></b> 1962Q2-2011Q2	<b>0.035</b> <b>t=3.0</b>	<b>0.032</b> <b>t=2.7</b>	<b>0.017</b> <b>t=1.4</b>	<b>1.15</b> <b>t=7.9</b>	<b>0.41</b> <b>N=97</b>
<b><i>Advanced AusAsia</i></b> 1961Q2-2010Q4	<b>0.051</b> <b>t=2.6</b>	<b>0.025</b> <b>t=1.3</b>	<b>0.022</b> <b>t=1.1</b>	<b>0.83</b> <b>t=8.5</b>	<b>0.46</b> <b>N=100</b>

## Consumption Growth Deviations and the Income and Investment Opportunity Set

- The lagged values of the residuals from the above regressions are examined for predictive ability with regard to income, wages, jobs and other macro variables.
- Specifically, we regress the growth rate of each variable on its own lag and the lagged consumption residuals, stock returns and term structure slope (reflecting information from the stock market, bond market, and consumers).

## Consumption Deviations Lead Next 6 Months Change in Unemployment Rate. Strong (-) Relation (Slope t = -2.7, RSQ=0.06) 1961-2011 Q2



# Advanced Americas: GDP, Employment Related to Stock Returns, Term Structure Slope, Consumption Deviations

Note: Coefficients of Trend and Lagged dependent variable not shown

Variable ( $Y_t$ )	Real Stock Return Lag 1	Real Stock Return Lag 2	Treas Slope 10y-3m, Lag 1	Total Real Consumption Deviation Lag 1 or *Lag 1,2 Avg	Corr. $R^2$
<b>Real GDP</b> 2Q Ann%Chg	0.12 (t=6.6)	0.06 (t=3.3)	0.73 (t=4.2)	0.36 (t=3.1)	0.56
<b>Unemployment Rate*</b> 2Q Change	-0.031 (t=-9.2)	-0.013 (t=-2.9)	-0.15 (t=-4.6)	-0.09* (t=-3.1)	0.70
<b>Total Employment*</b> 2Q Ann%Chg	0.065 (t=6.0)	0.042 (t=3.5)	0.27 (t=2.6)	0.35* (t=3.5)	0.63

# Advanced Europe: GDP and Employment Related to Stock Returns, Term Structure Slope and Consumption Deviations

Variable ( $Y_t$ )	Real Stock Return Lag 1	Real Stock Return Lag 2	Treas Slope 10y-3m, Lag 1	Total Real Consumption Deviation Lag 1 or *Lag 1,2 Avg	Corr. R <sup>2</sup>
<b>Real GDP</b> 2Q Ann%Chg	0.069 (t=6.0)	0.031 (t=2.7)	0.45 (t=3.2)	0.49 (t=4.7)	0.60
<b>Unemployment Rate</b> 2Q Change	-0.009 (t=-4.4)	-0.005 (t=-2.2)	-0.056 (t=-2.3)	-0.074 (t=-3.6)	0.60
<b>Total Employment</b> 2Q Ann%Chg	0.022 (t=3.1)	0.016 (t=2.3)	0.15 (t=1.7)	0.19 (t=2.8)	0.54

# Advanced AustralAsia: GDP, Employment Related to Stock Returns, Term Structure Slope, and Consumption Deviations

Variable ( $Y_t$ )	Real Stock Return Lag 1	Real Stock Return Lag 2	Treas Slope 10y-3m, Lag 1	Total Real Consumption Deviation Lag 1 or *Lag 1,2 Avg	Corr. $R^2$
<b>Real GDP</b> 2Q Ann%Chg	0.078 (t=3.5)	0.007 (t=0.3)	-0.01 (t=-0.0)	0.28 (t=2.4)	0.45
<b>Unemploymt Rate*</b> 2Q Change	-0.0054 (t=-4.0)	-0.0037 (t=-2.6)	-0.014 (t=-0.8)	-0.018* (t=-1.9)	0.29
<b>Total Employmnt YoY %Chg</b>	0.013 (t=3.5)	0.013 (t=3.2)	0.036 (t=0.7)	0.052 (t=2.6)	0.63



## Conclusion on Consumption Deviations and Job and Income Opportunities

- Test results show that, as consumption and portfolio theory predict, consumption choices do reflect knowledge about future income and investment opportunities.
- High consumption relative to wealth is usually followed by high wage and personal income growth, and by higher employment growth and lower unemployment. Low consumption/wealth reflects weak income and job opportunities.
- Consumption deviations from wealth are a leading indicator.

# A Stock, Bonds, Consumers Leading Indicator (SBCLI)

# Standardized Z-Scores for Real Stock Returns, Term Structure Slope, & Consumption Deviations

- For key variable  $k$  ( $k$  = Stocks return, bond slope, consumer deviation) at time  $t$ :

- $$Z_{kt} = \frac{(x_{kt} - \mu_k)}{\sigma_k}$$

For a normal distribution,  $Abs(Z) > 1$  about 1/3 time,  
 $Abs(Z) > 2$  about 5% time

# Stocks, Bonds, Consumers Leading Index (SBCLI)

- Using data from Advanced Americas, Advanced Europe and Advanced AustralAsia, found major macro variables most related to lagged stock returns, with weight on Z-score for stocks about 2x that for term structure slope and for consumption deviations.
- Simple Stocks, Bonds, Consumers (SBCLI) index proposed is:

$$\text{SBCLI} = 2 * Z(\text{RIStock}) + 1 * Z(\text{Slope}) + 1 * Z(\text{Cons Dev'n})$$

# Stocks, Bonds, Consumers Leading Indicator (SBCLI)

United States

**Douglas T. Breeden, March 2012**

**Massachusetts Institute of Technology and Duke University**

**1 Quarter Prior SBCLI Forecast Correlations**

SBCLI Correl= **0.79 0.84**

SBCLI MA2 **0.79 0.89**

**2 Quarters Prior SBCLI Forecast Correlations**

SBCLI Correl= **0.68 0.81**

SBCLI MA2 **0.61 0.73**

1961 to 2 RlStok Slope Cperp LEI Real Consumption Growth From 2Q Stock Returns:

Mean 2 1.18 0 2.9 Const Trend RlStok Lg1Stoc Lg2 Stock

StdDevr 11.4 1.23 1.7 6.0 -0.38 1 0.093 0.058 0.041

## **Stock Market**

## **Bond Market**

## **Consumers (Total)**

## **SBCLI**

## **Macroeconomic Data**

Quarter	Stock Market				Bond Market				Consumers (Total)					SBCLI		Macroeconomic Data				
	OECD	Inflation	Stocks	Real	Yield	Yield	Yield	Yield	RealTot	20 Yr	Expecte	Consumption			SBCLI	SBCLI	Real			
	QAVg	YoY	L 2Qtrs	Zscore	Short	LongRa	Slope	Slope	Growth	Growth	PCETot	PCETot	PCETot	PCETot	Total	MA2	GDP	Indust	Employr	Unempl
				MoAvg	MoAvg		Zscore	2Q%Ann	Trend	FromStk	2Q%Ann	Zscore	Zscore	Zscore	Zscore	2QAnn%	2QAnn%	2QAnn%	%	
200612	120.6	1.9	6.8	0.4	5.32	4.63	-0.69	-1.5	3.1	3.0	3.8	-0.8	-0.4	-1	-2	1.4	1.4	2.2	4.4	
200703	125.2	2.4	10.2	0.7	5.31	4.68	-0.63	-1.5	3.0	3.0	3.9	-0.9	-0.5	-1	-1	1.6	2.7	2.2	4.5	
200706	132.8	2.7	8.7	0.6	5.32	4.85	-0.47	-1.3	1.9	3.0	4.1	-2.2	-1.3	-1	-1	2.1	4.5	0.4	4.5	
200709	132.5	2.4	4.6	0.2	5.42	4.73	-0.69	-1.5	1.7	3.0	3.7	-2.0	-1.2	-2	-2	3.3	2.8	-0.2	4.7	
200712	134.7	4.0	-0.5	-0.2	5.02	4.26	-0.76	-1.6	1.5	3.0	3.3	-1.8	-1.1	-3	-3	2.3	0.6	0.6	4.8	
200803	122.4	4.1	-9.7	-1.0	3.23	3.66	0.43	-0.6	0.1	2.9	2.3	-2.2	-1.3	-4	-4	0.0	-0.5	0.4	5.0	
200806	125.2	4.4	-9.3	-1.0	2.76	3.89	1.13	0.0	-0.6	2.9	1.9	-2.5	-1.5	-4	-4	-0.2	-4.0	-0.4	5.3	
200809	111.9	5.3	-11.2	-1.2	3.06	3.86	0.81	-0.3	-2.0	2.8	1.0	-3.0	-1.8	-4	-4	-1.2	-9.7	-1.4	6.0	
200812	77.9	1.6	-38.5	-3.6	2.82	3.25	0.44	-0.6	-4.5	2.7	-1.9	-2.7	-1.6	-9	-7	-6.4	-14.5	-2.7	6.9	
200903	69.3	0.0	-38.1	-3.5	1.08	2.74	1.65	0.4	-3.4	2.5	-2.5	-0.9	-0.5	-7	-8	-7.9	-18.1	-5.1	8.3	
200906	77.8	-1.2	0.4	-0.1	0.62	3.31	2.70	1.2	-1.7	2.4	-0.5	-1.2	-0.7	0	-3	-3.8	-15.9	-5.1	9.3	
200909	88.2	-1.6	28.2	2.3	0.30	3.52	3.22	1.7	0.2	2.4	2.0	-1.8	-1.0	5	3	0.5	-3.5	-3.2	9.6	
200912	96.3	1.4	23.1	1.9	0.22	3.46	3.24	1.7	1.4	2.4	2.6	-1.2	-0.7	5	5	2.7	5.4	-2.8	9.9	
201003	97.8	2.4	9.7	0.7	0.21	3.72	3.51	1.9	1.6	2.4	3.0	-1.4	-0.9	2	4	3.8	6.7	-1.0	9.8	
201006	97.0	1.8	-0.2	-0.2	0.42	3.49	3.07	1.5	2.8	2.4	3.4	-0.6	-0.3	1	2	3.8	7.5	1.4	9.6	
201009	94.7	1.2	-3.7	-0.5	0.34	2.79	2.45	1.0	2.8	2.5	3.4	-0.7	-0.4	0	0	3.1	6.8	1.0	9.5	
201012	104.0	1.3	6.6	0.4	0.28	2.86	2.58	1.1	3.1	2.5	3.7	-0.6	-0.4	2	1	2.4	4.8	-0.4	9.6	
201103	112.2	2.1	17.4	1.3	0.28	3.46	3.18	1.6	2.8	2.6	4.0	-1.2	-0.7	4	3	1.3	3.9	0.4	9.0	
201106	113.4	3.4	7.3	0.5	0.22	3.21	2.99	1.5	1.4	2.6	3.2	-1.9	-1.1	1	2	0.8	2.7	0.8	9.0	
201109	103.2	3.8	-10.0	-1.0	0.29	2.43	2.14	0.8	1.2	2.6	2.1	-0.9	-0.5	-2	0	1.6	3.4	0.2	9.1	
201112	99.7	3.3	-13.7	-1.4	0.42	2.05	1.62	0.4	1.9	2.6	1.6	0.3	0.2	-2	-2	2.3	5.0	1.4	8.7	
201203			15.2	1.2	0.47	2.28	1.81	0.5		2.6	3.7		0.2	3	0				8.3	

# Stocks, Bonds, Consumers Leading Indicator (SBCLI)

Hong Kong

Douglas T. Breeden, March 2012

Massachusetts Institute of Technology and Duke University

1 Quarter Prior SBCLI Forecast Correlations

SBCLI Correl= 0.83 0.55

SBCLI MA2 0.73 0.66

2 Quarters Prior SBCLI Forecast Correlations

SBCLI Correl= 0.49 0.64

SBCLI MA2 0.34 0.68

	RIStok	Slope	Cperp	Real Consumption Growth From 2Q Stock Returns:				
Mean	2	0.76	0	Const	Trend	RIStock	Lg1Stoc	Lg2 Stock
StdDevn	19	1.08	2.5	-0.33	1	0.119	0.048	0

Stock Market					Bond Market				Consumers (Total)					SBCLI		Macroeconomic Data									
Quarter	OECD	Inflation	Stocks	Real	Yield	Yield	Yield	Yield	RealTot	10 Yr	Expecte	Consumption	SBCLI	SBCLI	Real	GDP	Indust	Employr	Unemply						
	OECD	YoY	RealRet	StkRet	Short	Long	Slope	Slope	Growth	Real	RIGrowt	Devatio			PCETotal					Total	MA2	Growth	Prodn	Growth	Rate
	QAVg	YoY	L 2Qtrs	Zscore	MoAvg	MoAvg		Zscore	2Q%Anr	Trend	FromStk	2Q%Anr			Zscore					Zscore	Zscore	2QAnn%	YoY	YoY	%
200503	13,930	0.3	10.0	0.4	2.66	4.36	1.70	0.9	2.0	3.1					5.6			2.1	6.2						
200506	13,878	0.7	1.7	0.0	3.31	3.55	0.24	-0.5	0.6	3.2					7.9			1.7	5.8						
200509	14,866	1.2	6.1	0.2	4.13	4.17	0.04	-0.7	4.8	3.5					9.9			2.3	5.6						
200512	14,825	1.3	6.2	0.2	4.16	4.18	0.02	-0.7	6.2	3.6					5.8			1.7	5.3						
200603	15,671	1.6	4.6	0.1	4.41	4.58	0.17	-0.6	7.5	3.6					6.8	7.1		1.7	5.1						
200606	16,185	2.1	8.1	0.3	4.48	4.83	0.35	-0.4	7.1	3.7					6.6	5.5		1.6	4.9						
200609	17,090	2.3	7.9	0.3	4.12	3.92	-0.20	-0.9	2.2	3.7	4.5	-2.3	-0.9	-1	5.2	-0.8		2.4	4.8						
200612	18,680	2.1	14.4	0.7	3.84	3.73	-0.11	-0.8	4.8	3.7	5.5	-0.7	-0.3	0	6.9	-1.6		2.8	4.5						
200703	19,880	1.6	15.5	0.7	4.12	4.20	0.08	-0.6	8.9	3.6	5.5	3.4	1.3	2	5.8	-1.4		-9.4	4.4						
200706	20,580	1.3	9.5	0.4	4.41	4.78	0.37	-0.4	10.7	3.6	5.1	5.6	2.2	3	5.8	-2.1		-9.1	4.3						
200709	23,876	1.6	19.3	0.9	5.06	4.39	-0.68	-1.3	12.2	3.7	6.4	5.8	2.3	3	7.3	-2.1		-9.2	4.1						
200712	29,158	3.5	40.0	2.0	3.31	3.44	0.13	-0.6	8.5	4.0	8.9	-0.4	-0.2	3	7.3	-0.3		1.5	3.6						
200803	24,373	4.6	-0.2	-0.1	1.90	2.58	0.68	-0.1	5.2	4.4	5.0	0.3	0.1	0	6.5	-4.5		15.3	3.3						
200806	24,255	5.7	-19.7	-1.1	2.15	3.47	1.32	0.5	-0.4	4.6	3.9	-4.3	-1.7	-3	1.0	-4.2		14.4	3.3						
200809	21,351	4.6	-14.7	-0.9	3.50	2.90	-0.60	-1.3	-3.8	4.7	2.6	-6.4	-2.6	-6	-4.2	-7.0		13.2	3.3						
200812	14,686	2.3	-40.6	-2.2	0.88	1.19	0.31	-0.4	-6.4	4.6	-1.5	-4.9	-2.0	-7	-6.6	-10.6		-0.1	3.8						
200903	13,357	1.7	-38.3	-2.1	0.75	1.95	1.20	0.4	-7.3	4.4	-1.2	-6.1	-2.4	-6	-11.2	-10.1		-0.8	4.9						
200906	16,556	-0.1	12.8	0.6	0.25	2.64	2.39	1.5	7.7	4.2	3.4	4.3	1.7	4	-0.2	-9.5		-0.9	5.3						
200909	19,988	-0.9	50.1	2.5	0.13	2.36	2.23	1.4	11.1	4.2	8.0	3.1	1.2	8	8.2	-8.6		-1.3	5.4						
200912	21,663	1.6	30.0	1.5	0.13	2.58	2.45	1.6	4.2	4.1	7.9	-3.7	-1.5	3	5.4	-5.0		-0.6	5.2						
201003	20,762	2.1	2.8	0.0	0.13	2.79	2.66	1.8	5.0	4.0	6.4	-1.4	-0.5	1	8.1	0.4		0.2	4.7						
201006	20,519	2.9	-6.7	-0.5	0.57	2.29	1.72	0.9	5.0	4.0	4.3	0.7	0.3	0	7.7	2.2		0.1	4.6						
201009	20,937	1.6	0.0	-0.1	0.32	1.99	1.67	0.8	7.1	4.1	3.9	3.2	1.3	2	5.6	5.4		1.2	4.3						
201012	22,934	2.7	10.4	0.4	0.32	2.86	2.54	1.6	11.3	4.1	4.7	6.7	2.7	5	5.2	5.8		2.1	4.1						
201103	23,356	3.8	9.7	0.4	0.32	2.68	2.36	1.5	8.6	4.3	5.1	3.5	1.4	4	9.5	3.6		2.3	3.6						
201106	23,456	5.1	-0.3	-0.1	0.32	2.27	1.95	1.1	7.4	4.4	4.6	2.9	1.1	2	5.0	1.9		3.4	3.5						
201109	20,990	6.5	-13.4	-0.8	0.32	1.26	0.94	0.2	10.5	4.5	3.0	7.5	3.0	2	-0.8				3.3						
201112	18,623	6.5	-23.8	-1.4	0.32	1.47	1.15	0.4	5.0	4.5	1.4	3.7	1.5	-1	0.8				3.3						
201203			3.8	0.1				0.4					1.5	2						30					

# Stocks, Bonds, Consumers Leading Indicator (SBCLI)

China

Douglas T. Breeden, March 2012

Massachusetts Institute of Technology and Duke University

1 Quarter Prior SBCLI Forecast Correlations

SBCLI Correl= 0.64 0.53

SBCLI MA2 0.77 0.74

2 Quarters Prior SBCLI Forecast Correlations

SBCLI Correl= 0.78 0.85

SBCLI MA2 0.80 0.90

	RIStok	Slope	Cperp	Real Consumption Growth From 2Q Stock Returns:				
Mean	2	0.76	0	Const	Trend	RIStock	Lg1Stoc	Lg2 Stock
StdDevr	20	1.08	2.5	-0.25	1	0.086	0.04	0

Stock Market					Bond Market				Consumers (Total)					SBCLI		Macroeconomic Data			
Quarter	OECD	OECD	RealRetr	RealStkRet	Yield	Yield	Yield	Yield	RealTot	10 Yr	Expecte	Consumption	SBCLI	SBCLI	Real				
	QAVg	YoY	L 2Qtrs	Zscore	CentBk	Govt 10	Curve	Curve	RetSlis	Real	RIGrowt	Deviatic	PCETotal	MA2	GDP	Indust	Employr	Unemply	
	QAVg	YoY	L 2Qtrs	Zscore	Short	Long	Slope	Slope	Growth	Growth	FromStk	2Q%Anr	Zscore	Total	Total	Growth	Prodn	Growth	Rate
	QAVg	YoY	L 2Qtrs	Zscore	MoAvg	MoAvg		Zscore	YoY	Trend	FromStk	2Q%Anr	Zscore	Zscore	Zscore	2QAnn%	YoY	YoY	%
200503	108.33	2.8			3.33	<b>5.42</b>	2.09	<b>1.2</b>	10.8	9.2						11.2	14.6		4.2
200506	97.63	1.7			3.33	<b>5.25</b>	1.92	<b>1.1</b>	10.7	9.2						10.8	16.5		4.2
200509	97.23	1.3	-10.9	<b>-0.6</b>	3.33	<b>5.24</b>	1.91	<b>1.1</b>	11.2	9.2						11.3	16.2		4.2
200512	96.80	1.4	-1.5	<b>-0.2</b>	3.33	<b>5.39</b>	2.06	<b>1.2</b>	10.8	9.2						11.7	16.4		4.2
200603	109.04	1.2	11.6	<b>0.5</b>	3.33	<b>5.26</b>	1.93	<b>1.1</b>	11.7	9.3						12.4	19.1		4.2
200606	131.13	1.4	34.8	<b>1.6</b>	3.33	<b>5.39</b>	2.06	<b>1.2</b>	12.3	9.4						13.7	18.0		4.2
200609	143.85	1.3	31.3	<b>1.5</b>	3.33	<b>4.68</b>	1.35	<b>0.5</b>	12.4	9.4	12.3	0.0	<b>0.0</b>	<b>3</b>	12.3	16.2		4.1	
200612	174.06	2.0	31.7	<b>1.5</b>	3.33	<b>3.97</b>	0.64	<b>-0.1</b>	<b>11.8</b>	9.5	13.4	-1.6	<b>-0.6</b>	<b>2</b>	<b>3</b>	12.5	14.8		4.1
200703	248.99	2.7	71.7	<b>3.5</b>	3.33	3.26	-0.07	<b>-0.8</b>	12.2	<b>9.6</b>	16.8	-4.6	<b>-1.8</b>	<b>4</b>	<b>3</b>	14.0	17.7		4.1
200706	333.41	3.6	89.8	<b>4.4</b>	3.33	4.13	0.80	<b>0.0</b>	11.8	9.7	18.5	-6.7	<b>-2.7</b>	<b>6</b>	<b>5</b>	14.9	18.3		4.1
200709	409.54	6.1	61.4	<b>3.0</b>	3.33	4.52	1.19	<b>0.4</b>	10.1	9.9	17.8	-7.7	<b>-3.1</b>	<b>3</b>	<b>5</b>	14.2	18.2		4.0
200712	463.80	6.6	35.8	<b>1.7</b>	3.33	4.87	1.54	<b>0.7</b>	11.3	10.0	16.4	-5.1	<b>-2.0</b>	<b>2</b>	<b>3</b>	13.8	17.5		4.0
200803	387.47	8.0	-9.4	<b>-0.6</b>	4.14	3.98	-0.16	<b>-0.9</b>	11.9	10.1	11.5	0.4	<b>0.2</b>	<b>-2</b>	<b>0</b>	11.3	16.4		4.0
200806	287.21	7.8	-42.0	<b>-2.2</b>	4.14	4.45	0.31	<b>-0.4</b>	13.5	10.2	7.7	5.7	<b>2.3</b>	<b>-3</b>	<b>-2</b>	10.7	15.9		4.0
200809	215.09	5.3	-47.1	<b>-2.5</b>	4.14	3.79	-0.35	<b>-1.0</b>	17.0	10.2	5.5	11.5	<b>4.6</b>	<b>-1</b>	<b>-2</b>	9.9	12.9		4.0
200812	167.21	2.5	-43.0	<b>-2.3</b>	2.79	2.70	-0.09	<b>-0.8</b>	17.3	10.2	4.6	12.7	<b>5.1</b>	<b>0</b>	<b>-1</b>	7.4	6.4		4.2
200903	183.45	-0.6	-14.4	<b>-0.8</b>	2.79	3.10	0.31	<b>-0.4</b>	15.9	10.1	6.8	9.2	<b>3.7</b>	<b>2</b>	<b>1</b>	6.6	5.7		4.3
200906	227.51	-1.5	36.8	<b>1.7</b>	2.79	3.21	0.42	<b>-0.3</b>	16.9	10.1	11.3	5.6	<b>2.2</b>	<b>5</b>	<b>3</b>	8.2	9.0		4.3
200909	264.14	-1.3	44.6	<b>2.1</b>	2.79	3.51	0.72	<b>0.0</b>	16.8	10.2	13.2	3.6	<b>1.4</b>	<b>6</b>	<b>6</b>	9.7	12.4		4.3
200912	269.85	0.6	18.3	<b>0.8</b>	2.79	3.63	0.84	<b>0.1</b>	15.4	10.3	13.1	2.3	<b>0.9</b>	<b>3</b>	<b>4</b>	11.4	17.9		4.3
201003	265.47	2.2	-0.6	<b>-0.1</b>	2.79	3.47	0.68	<b>-0.1</b>	15.8	10.4	11.9	3.9	<b>1.6</b>	<b>1</b>	<b>2</b>	12.1	19.6		4.2
201006	238.25	2.9	-13.2	<b>-0.8</b>	2.79	3.31	0.52	<b>-0.2</b>	15.3	10.4	9.8	5.5	<b>2.2</b>	<b>0</b>	<b>1</b>	10.4	15.9		4.2
201009	223.63	3.5	-17.5	<b>-1.0</b>	2.79	3.33	0.54	<b>-0.2</b>	14.4	10.4	8.7	5.7	<b>2.3</b>	<b>0</b>	<b>0</b>	9.7	13.5		4.1
201012	250.30	4.7	2.7	<b>0.0</b>	3.25	3.93	0.68	<b>-0.1</b>	13.1	10.5	10.0	3.1	<b>1.3</b>	<b>1</b>	<b>1</b>	9.9	13.3		4.1
201103	246.57	5.1	7.7	<b>0.3</b>	3.25	3.91	0.66	<b>-0.1</b>	10.8	10.5	10.3	0.6	<b>0.2</b>	<b>1</b>	<b>1</b>	9.7	14.4		4.1
201106	245.69	5.7	-4.7	<b>-0.3</b>	3.25	3.89	0.64	<b>-0.1</b>	11.0	10.6	10.0	1.0	<b>0.4</b>	<b>0</b>	<b>0</b>	9.5	14.0		4.1
201109	225.37	6.2	-11.7	<b>-0.7</b>	3.25	3.93	0.68	<b>-0.1</b>	10.5	10.6	9.7	0.8	<b>0.3</b>	<b>-1</b>	<b>-1</b>	9.1	13.8		4.1
201112	204.31	4.6	-19.1	<b>-1.1</b>		3.48		<b>-0.1</b>	12.0	10.6	8.5	3.5	<b>1.4</b>	<b>-1</b>	<b>-1</b>	8.9	12.8		31
201203			<b>-6.3</b>	<b>-0.4</b>				<b>-0.1</b>					<b>1.4</b>	<b>1</b>	<b>0</b>				

# Stocks, Bonds, Consumers Leading Indicator (SBCLI)

**Japan**

Douglas T. Breeden, March 2012

Massachusetts Institute of Technology and Duke University

**1 Quarter Prior SBCLI Forecast Correlations**

SBCLI Correl= 0.73 0.83

SBCLI MA2 0.70 0.72

**2 Quarters Prior SBCLI Forecast Correlations**

SBCLI Correl= 0.52 0.45

SBCLI MA2 0.47 0.34

	RIStok	Slope	Cperp	Real Consumption Growth From 2Q Stock Returns:				
Mean	2	0.76	0	Const	Trend	RIStock	Lg1Stoc	Lg2 Stock
StdDevr	13.7	1.08	1.7	-0.22	1	0.053	0.031	0.024

Stock Market					Bond Market				Consumers (Total)					SBCLI		Macroeconomic Data				
Japan					Yield	Yield	Yield	Yield	RealTot	20 Yr	Expected	Consumption		SBCLI	SBCLI	Real				
	Inflation	Stocks	Real	Treasy	Treasy	Curve	Curve	Consum	Real	RIGrowth	Deviatic PCETotal		Total	MA2	GDP	Indust	Employr	Unemploy		
Quarter	OECD	OECD	RealRet	3 Mo	10 Yr	Slope	Slope	Growth	Growth	PCETot	PCETotal	Zscore							Zscore	2QAnn%
	QAVg	YoY	L 2Qtrs	Zscore	MoAvg	MoAvg	Zscore	2Q%Anr	Trend	FromStks	2Q%Anr	Zscore	Zscore	Zscore	Zscore					
200612	127.7	0.3	-1.6	-0.3	0.50	1.68	1.19	0.4	0.7	2.1	2.8	-2.1	-1.2	-1	-2	2.4	4.0	1.0	4.0	
200703	136.2	-0.1	9.2	0.5	0.62	1.66	1.04	0.3	3.2	2.0	2.9	0.3	0.2	1	0	4.9	1.6	0.4	4.0	
200706	136.8	-0.1	7.1	0.4	0.68	1.76	1.08	0.3	1.1	1.9	2.2	-1.1	-0.7	0	1	2.2	0.8	0.8	3.8	
200709	129.5	-0.1	-4.8	-0.5	0.82	1.69	0.87	0.1	-0.4	1.8	1.5	-1.9	-1.1	-2	-1	-0.8	4.7	0.2	3.8	
200712	121.7	0.5	-11.3	-1.0	0.86	1.55	0.69	-0.1	-0.4	1.8	1.2	-1.6	-0.9	-3	-2	1.0	4.6	-0.2	3.9	
200803	102.3	1.0	-21.5	-1.7	0.85	1.37	0.52	-0.2	1.6	1.7	0.4	1.1	0.7	-3	-3	3.5	2.2	-0.2	3.9	
200806	106.3	1.4	-13.3	-1.1	0.85	1.66	0.81	0.0	-1.8	1.5	0.4	-2.2	-1.3	-3	-3	-1.0	-1.7	-0.6	4.0	
200809	97.3	2.1	-6.0	-0.6	0.86	1.48	0.63	-0.1	-3.3	1.3	0.0	-3.3	-2.0	-3	-3	-5.0	-8.4	-1.0	4.0	
200812	68.3	1.0	-36.3	-2.8	0.84	1.36	0.52	-0.2	-2.7	1.2	-1.6	-1.1	-0.6	-6	-5	-8.6	-27.4	-1.0	4.1	
200903	61.4	-0.1	-36.8	-2.8	0.69	1.29	0.60	-0.2	-4.0	1.1	-1.8	-2.3	-1.3	-7	-7	-13.7	-56.5	-0.6	4.5	
200906	69.3	-1.0	1.9	0.0	0.58	1.42	0.84	0.1	1.3	1.0	-0.6	1.9	1.1	1	-3	-4.5	-29.0	-3.2	5.1	
200909	73.6	-2.2	20.9	1.4	0.54	1.32	0.78	0.0	3.0	0.9	0.5	2.5	1.5	4	3	2.7	22.9	-2.8	5.4	
200912	69.4	-2.0	1.3	-0.1	0.50	1.31	0.81	0.0	2.6	0.9	-0.1	2.7	1.6	2	3	3.4	22.3	-0.6	5.3	
201003	72.8	-0.9	-0.7	-0.2	0.44	1.32	0.88	0.1	4.3	1.0	0.5	3.8	2.2	2	2	7.0	26.7	0.4	5.0	
201006	72.7	-0.7	5.1	0.2	0.39	1.21	0.82	0.1	2.1	1.0	1.1	1.0	0.6	1	2	5.5	15.9	-0.4	5.1	
201009	66.1	-1.0	-8.6	-0.8	0.36	1.00	0.64	-0.1	1.2	0.9	0.7	0.5	0.3	-1	0	3.4	-0.6	-0.4	5.0	
201012	67.5	-0.3	-7.0	-0.7	0.34	1.07	0.73	0.0	0.9	0.9	0.5	0.4	0.3	-1	-1	0.8	-2.3	0.6	5.0	
201103	72.3	-0.5	9.6	0.6	0.34	1.22	0.88	0.1	-2.0	0.8	0.8	-2.8	-1.7	0	-1	-3.8	-4.1	-2.2	4.7	
201106	65.9	-0.4	-2.3	-0.3	0.34	1.14	0.80	0.0	-1.6	0.7	0.3	-1.9	-1.1	-2	-1	-4.2	-11.7	-9.3	4.6	
201109	62.9	0.1	-13.1	-1.1	0.34	1.02	0.68	-0.1	2.7	0.7	-0.1	2.8	1.7	-1	-1	2.7	-0.6	-4.5	4.4	
201112	58.1	-0.3	-11.6	-1.0	0.34	1.02	0.68	-0.1	2.7	0.7	-0.4	3.0	1.8	0	0	2.2	7.2		4.5	
201203			13.1	0.8				-0.1				1.8		3	2					



# Stocks, Bonds, Consumers Leading Indicator (SBCLI)

Germany

Douglas T. Breeden, March 2012

Massachusetts Institute of Technology and Duke University

1 Quarter Prior SBCLI Forecast Correlations

SBCLI Correl= 0.76 0.77

SBCLI MA2 0.80 0.80

2 Quarters Prior SBCLI Forecast Correlations

SBCLI Correl= 0.70 0.69

SBCLI MA2 0.67 0.66

1961 to 2012 R1Stok Slope Cperp LEI Real Consumption Growth From 2Q Stock Returns:

Mean 2 1.15 0 1.8 Const Trend R1Stok Lg1Stoc Lg2 Stock

StdDevr 14 1.08 1.3 4.7 -0.17 1 0.035 0.032 0.017

**Stock Market**

**Bond Market**

**Consumers (Total)**

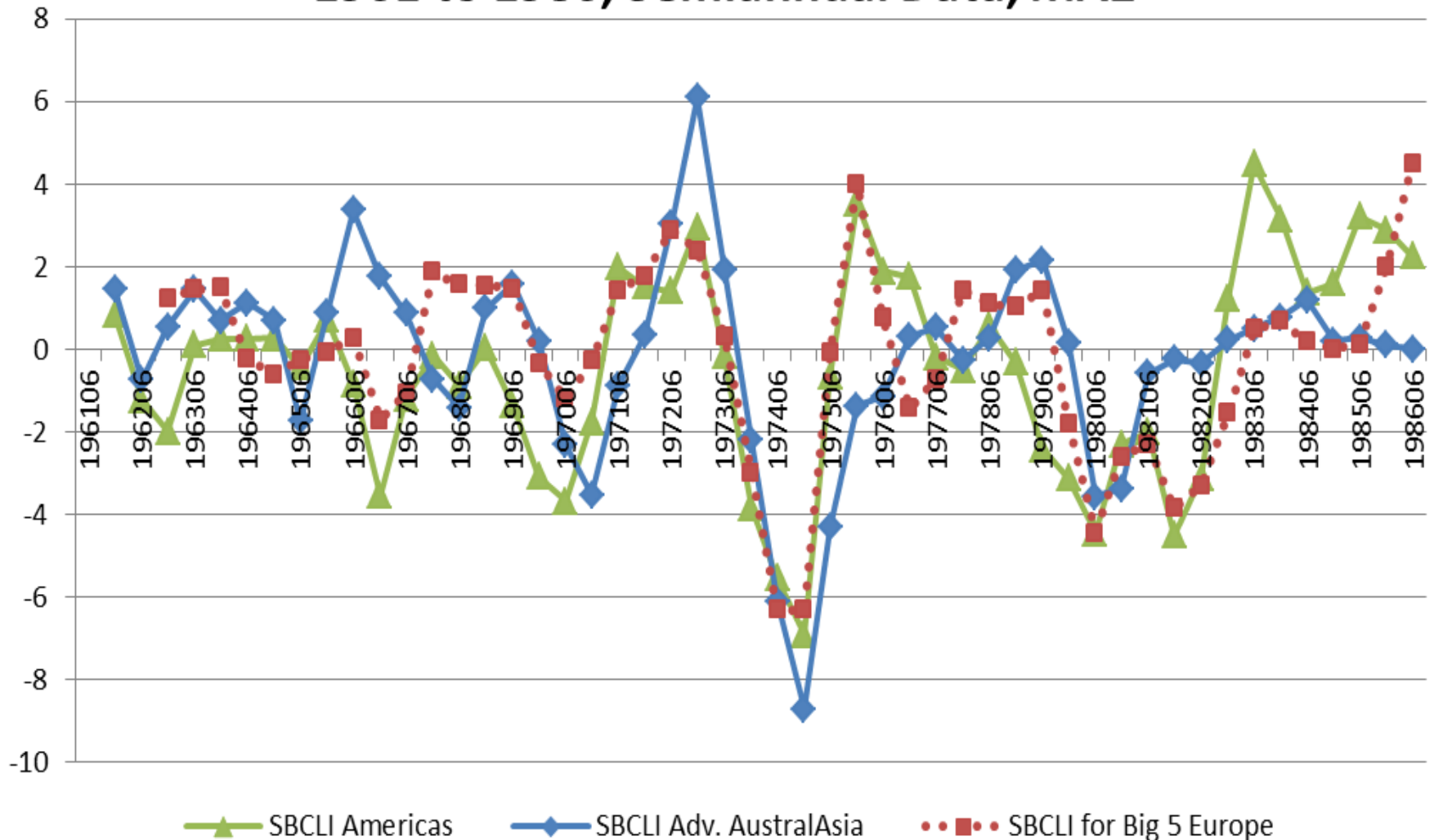
**SBCLI**

**Macroeconomic Data**

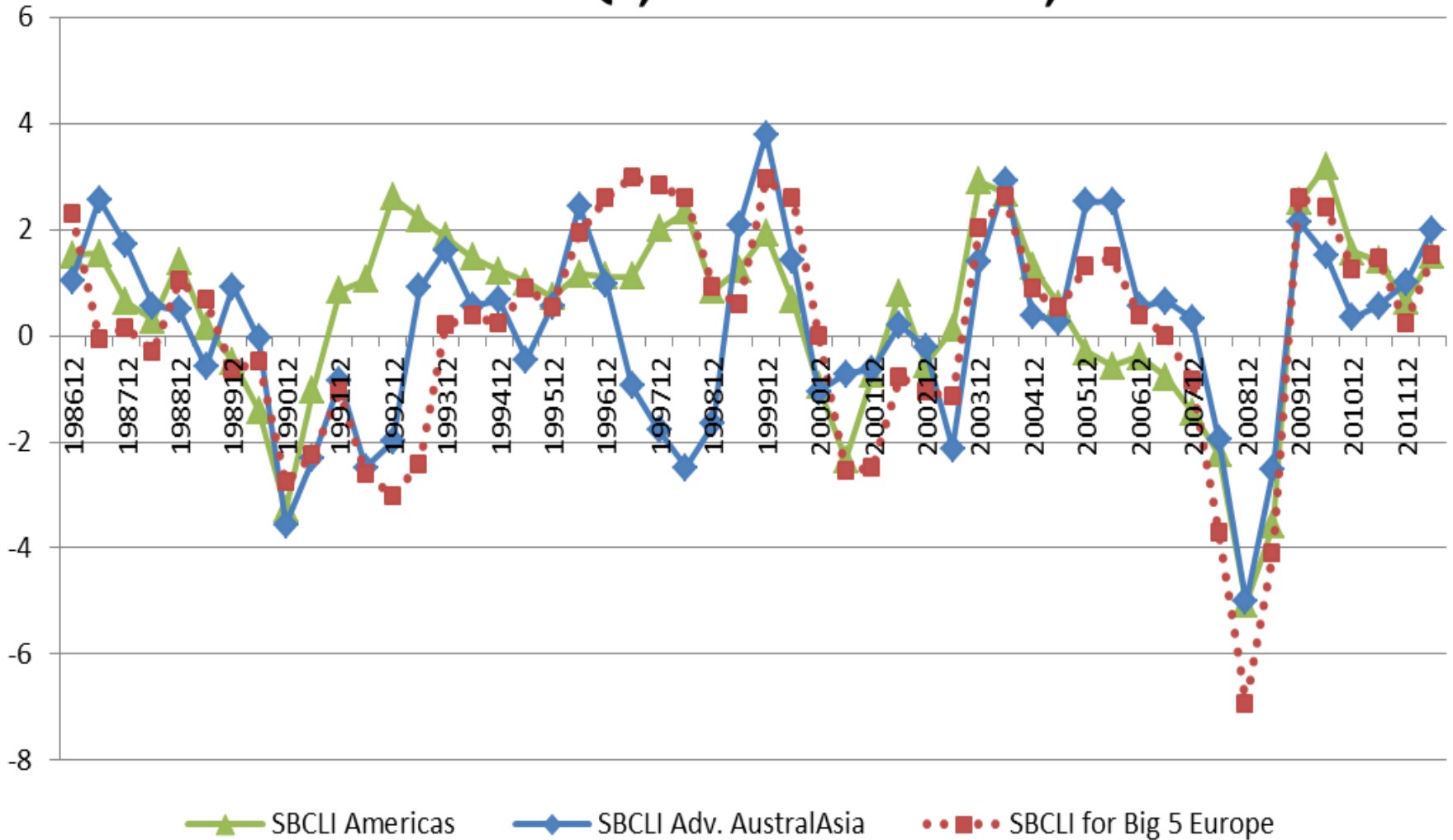
Quarter	Stock Market				Bond Market				Consumers (Total)				SBCLI		Macroeconomic Data				
	OECD QAvg	OECD YoY	RealRet L 2Qtrs	StkRet Zscore	Yield Treas Short MoAvg	Yield Treas Long Ra MoAvg	Yield Curve Slope	Yield Curve Slope Zscore	RealTot Consum Growth 2Q%Anr	20 Yr Real Growth Trend	Expecte RIGrowt FromStk	Consumption Deviatio 2Q%Anr	PCETtotal Zscore	SBCLI Total Zscore	SBCLI MA2 Total Zscore	Real Growth 2QAnn%	Indust Prodn 2QAnn%	Employr Growth 2QAnn%	Unemploy Rate %
200612	133.2	1.3	7.7	0.4	3.59	3.76	0.16	-0.9	2.8	2.0	2.7	0.1	0.1	0	-1	1.9	7.0	2.0	9.8
200703	143.4	1.8	17.9	1.1	3.82	4.00	0.18	-0.9	-1.7	2.1	2.8	-4.5	-3.4	-2	-1	2.8	6.7	2.1	9.2
200706	157.7	2.0	17.4	1.1	4.06	4.33	0.27	-0.8	-2.3	2.1	3.0	-5.3	-4.1	-3	-2	2.3	6.4	2.5	8.8
200709	157.7	2.3	8.9	0.5	4.50	4.34	-0.16	-1.2	2.9	2.0	2.7	0.2	0.1	0	-1	1.9	5.8	2.7	8.5
200712	161.0	3.0	0.5	-0.1	4.72	4.19	-0.53	-1.6	0.3	2.0	2.5	-2.3	-1.7	-4	-2	1.2	4.9	1.5	8.3
200803	140.3	2.9	-12.5	-1.0	4.48	3.93	-0.55	-1.6	-0.1	2.0	2.0	-2.1	-1.6	-5	-4	1.1	4.7	1.1	8.0
200806	137.9	2.9	-15.8	-1.3	4.86	4.25	-0.61	-1.6	0.5	2.0	1.6	-1.1	-0.9	-5	-5	-0.6	1.7	0.2	7.7
200809	124.3	3.1	-12.9	-1.1	4.98	4.26	-0.72	-1.7	0.6	1.8	0.9	-0.4	-0.3	-4	-5	-2.0	-3.8	2.1	7.2
200812	90.8	1.7	-35.0	-2.6	4.21	3.50	-0.72	-1.7	-0.4	1.8	-0.1	-0.3	-0.2	-7	-6	-3.5	-17.0	2.7	7.2
200903	80.2	0.8	-35.9	-2.7	2.01	3.07	1.06	-0.1	-0.2	1.5	-0.6	0.3	0.3	-5	-6	-6.0	-39.8	-1.1	7.6
200906	88.1	0.3	-3.0	-0.4	1.31	3.32	2.01	0.8	1.4	1.5	-0.2	1.6	1.2	1	-2	-3.0	-26.8	-1.7	7.9
200909	97.3	-0.2	21.4	1.4	0.87	3.30	2.43	1.2	-0.4	1.5	0.7	-1.1	-0.9	3	2	0.6	6.7	-2.1	7.9
200912	105.4	0.4	19.4	1.2	0.72	3.19	2.47	1.2	-1.6	1.5	1.3	-2.9	-2.3	1	2	1.8	9.4	1.7	7.7
201003	107.1	0.8	9.7	0.5	0.66	3.18	2.51	1.3	-0.3	1.5	1.7	-2.0	-1.6	1	1	1.4	7.1	3.1	7.5
201006	110.4	1.1	4.1	0.2	0.69	2.78	2.09	0.9	1.6	1.5	2.0	-0.4	-0.3	1	1	1.2	16.6	-0.2	7.2
201009	110.2	1.2	2.3	0.0	0.87	2.42	1.55	0.4	2.2	1.3	1.9	0.3	0.2	1	1	1.9	16.2	0.0	6.9
201012	121.5	1.5	9.3	0.5	1.02	2.60	1.58	0.4	2.0	1.3	1.9	0.1	0.1	2	1	1.5	9.8	0.4	6.7
201103	128.6	2.1	15.7	1.0	1.09	3.14	2.05	0.8	2.5	1.3	1.9	0.6	0.5	3	2	2.6	9.8	3.8	6.3
201106	129.1	2.3	5.0	0.2	1.41	3.10	1.69	0.5	-0.3	1.3	1.7	-2.0	-1.5	-1	1	1.7	8.4	4.9	6.0
201109	110.0	2.5	-15.7	-1.3	1.56	2.26	0.70	-0.4	0.9	1.3	1.1	-0.3	-0.2	-3	-2	0.5	7.8	1.8	5.8
201112	103.3	2.3	-21.1	-1.7	1.50	1.93	0.44	-0.7	1.9	1.3	0.7	1.2	0.9	-3	-3	1.1	-1.0		5.7
201203			23.7	1.6	0.87	1.96	1.09	-0.1		1.3	1.7		0.9	4	0				

DAX on March 18 2012 = 7158

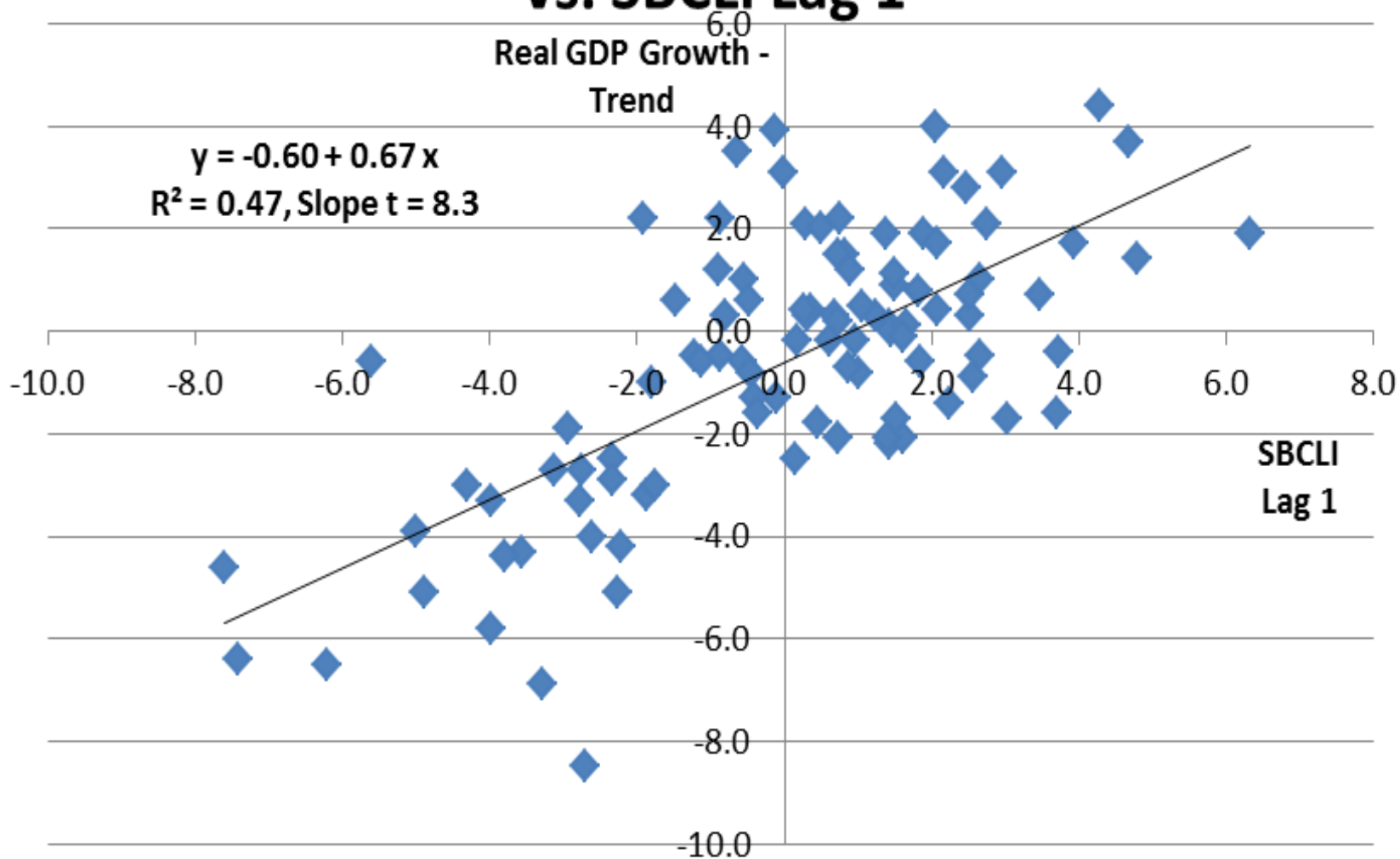
# SBCLI for Advanced Americas, Europe, AustralAsia 1961 to 1986, Semiannual Data, MA2



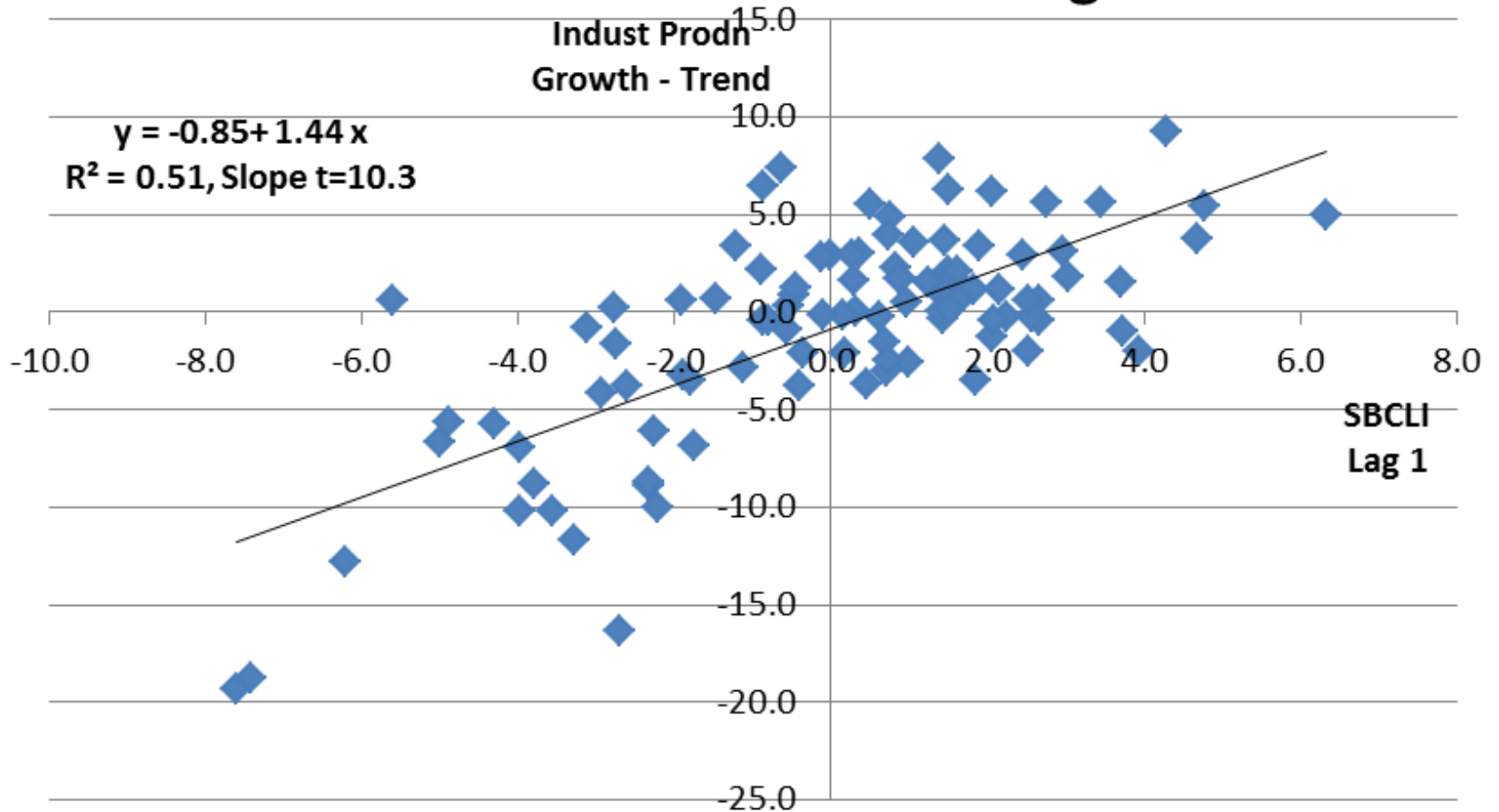
# SBCLI for Advanced Americas, Europe, AustralAsia 1986 to 2012 Q1, Semiannual Data, MA2



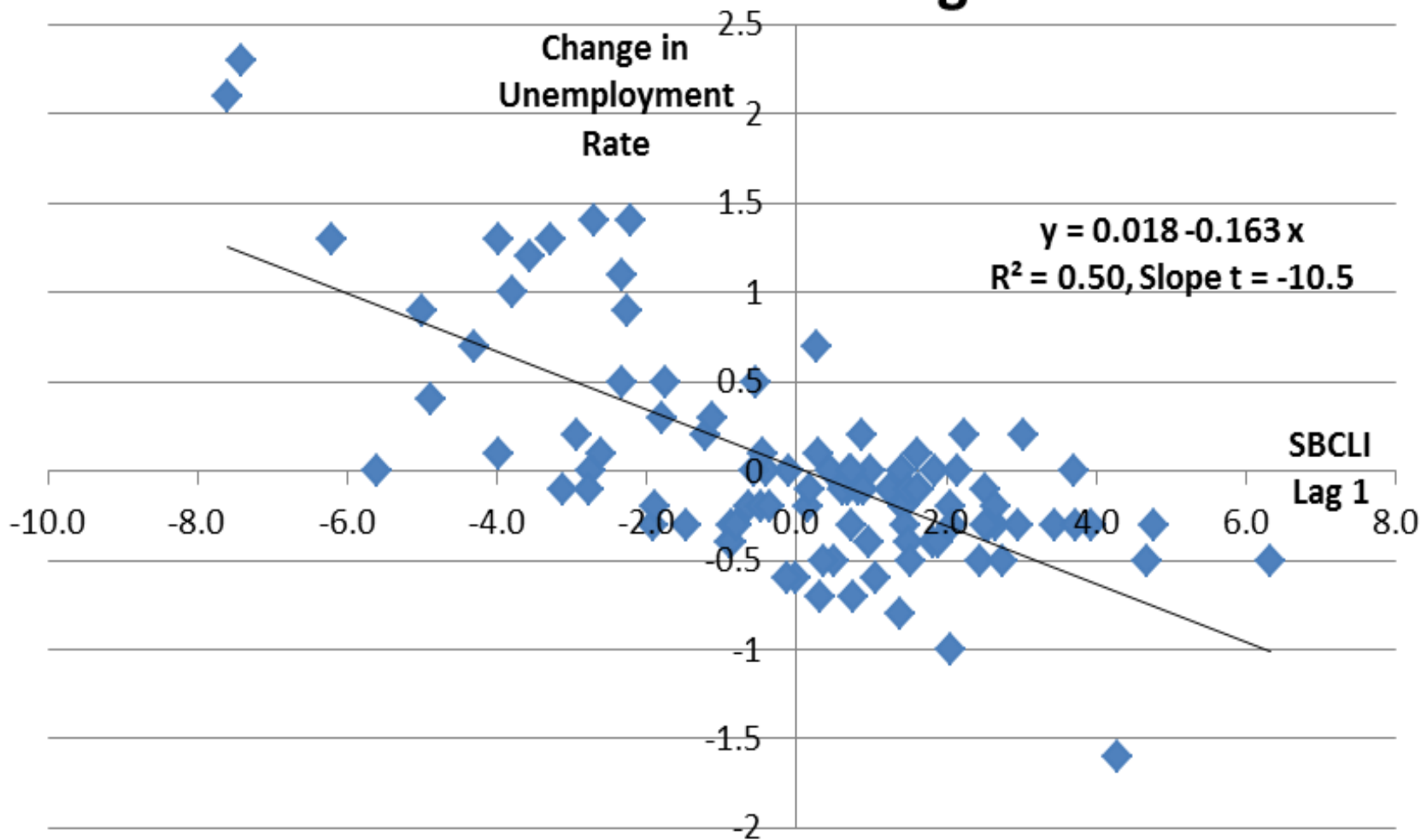
# AAmericas: Real GDP Growth - Trend vs. SBCLI Lag 1



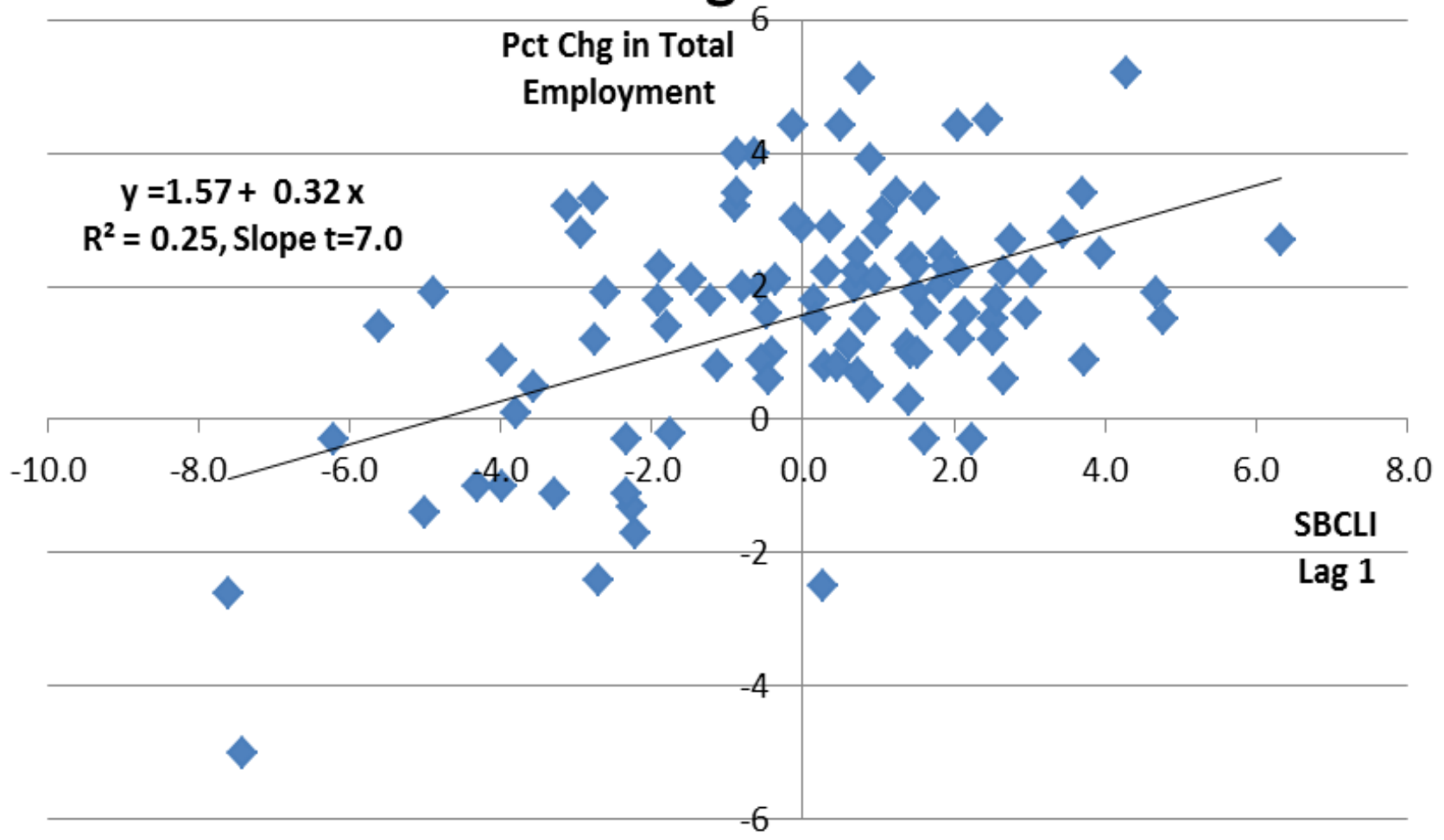
# AAmericas: Industrial Production Growth - Trend vs. SBCLI Lag 1



# Adv Americas: Unemployment Rate Change vs. SBCLI Lag 1



# Adv Americas: Total Employment Growth vs. SBCLI Lag 1



## Recent Behavior of the SBCLI

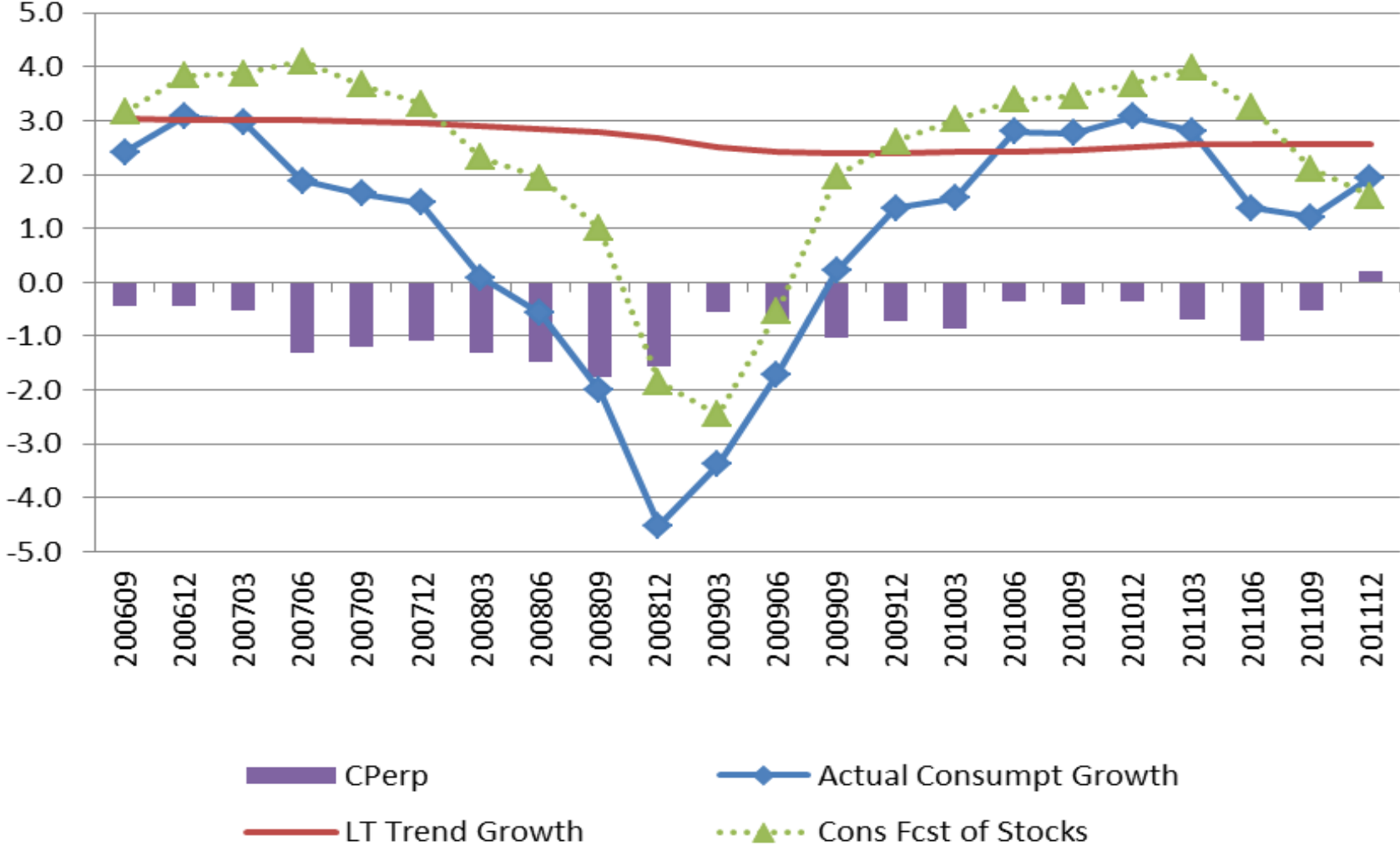
Q1: What readings did the SBCLI give during the last 5 years, including the “Financial Panic of 2008/9”?

Q2: What are the readings of the SBCLI at present?

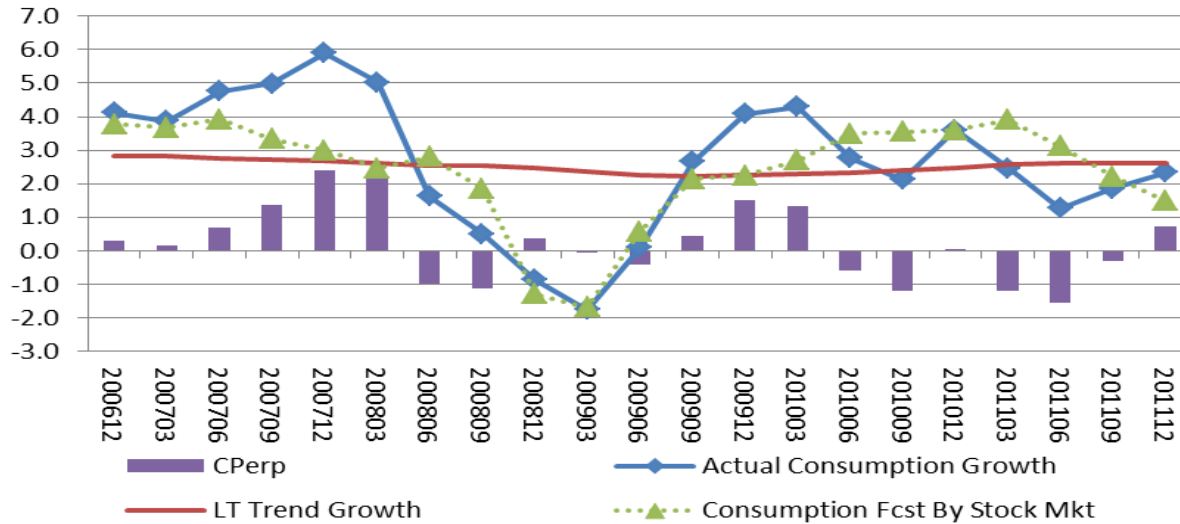
Q3: What signals are consumers sending in various countries?



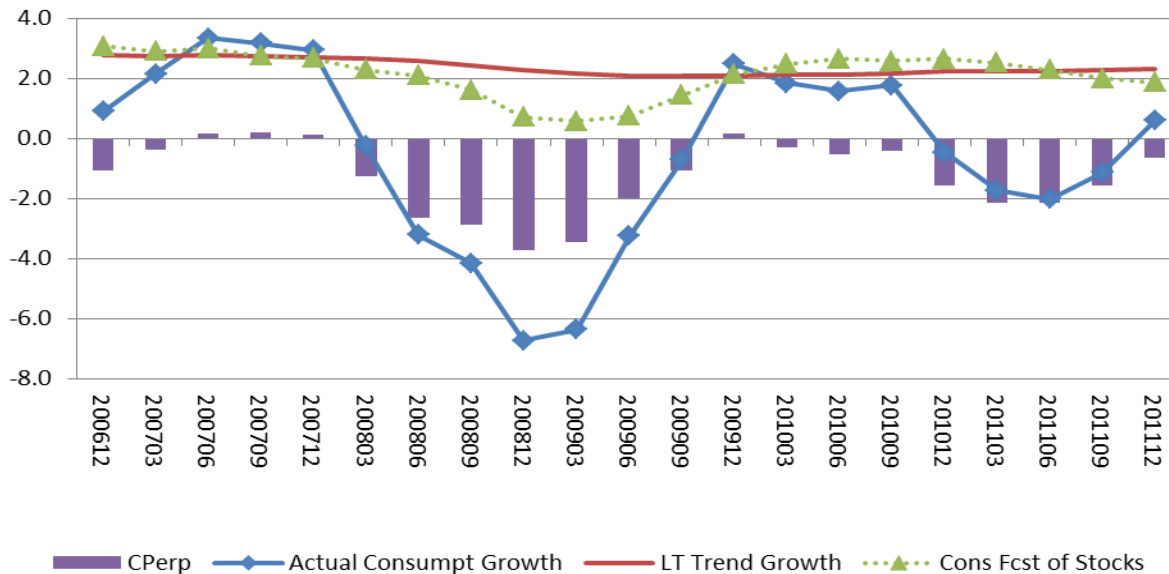
# USA Consumer Signal Turns Positive: Consumption Growth vs. Stock Forecast



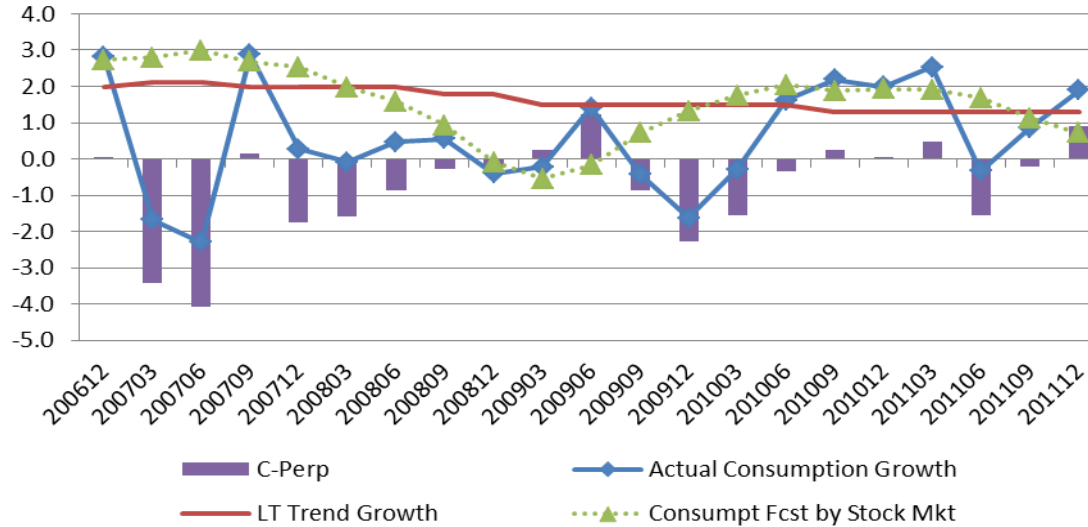
## Canada: After Holding Back, Consumers Turn Positive



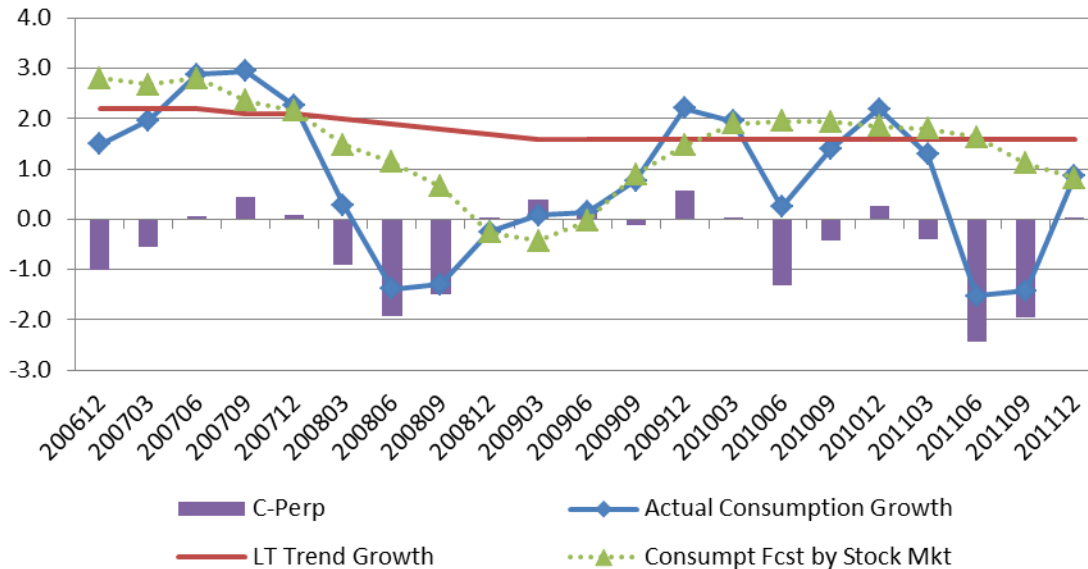
## UK Consumers Still Negative, But Improving: Consumption Growth vs. Stock Forecast



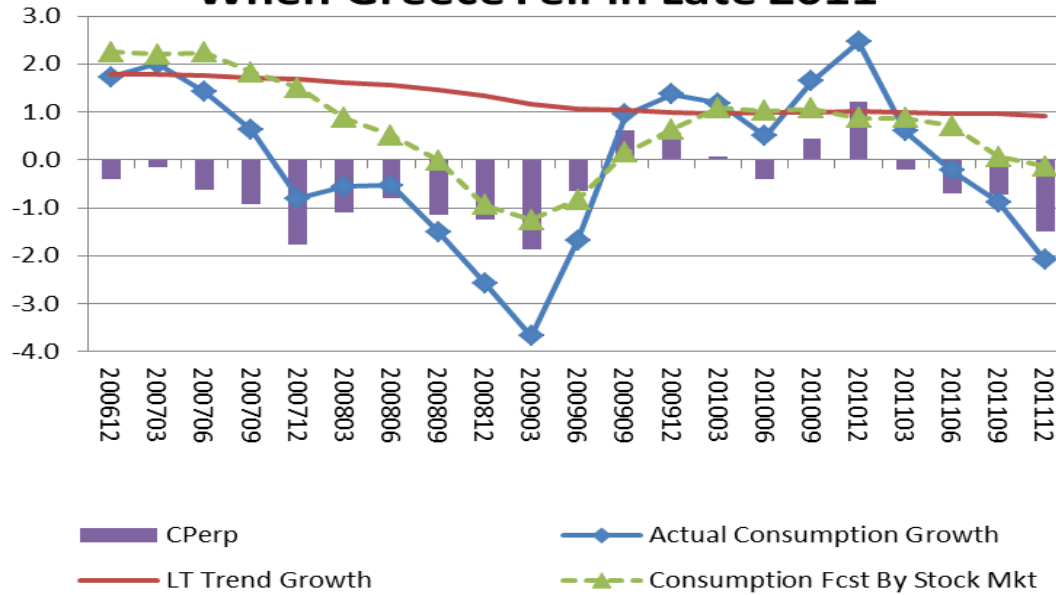
## German Consumer Signal Getting Positive: Consumption Growth vs. Stock Forecast



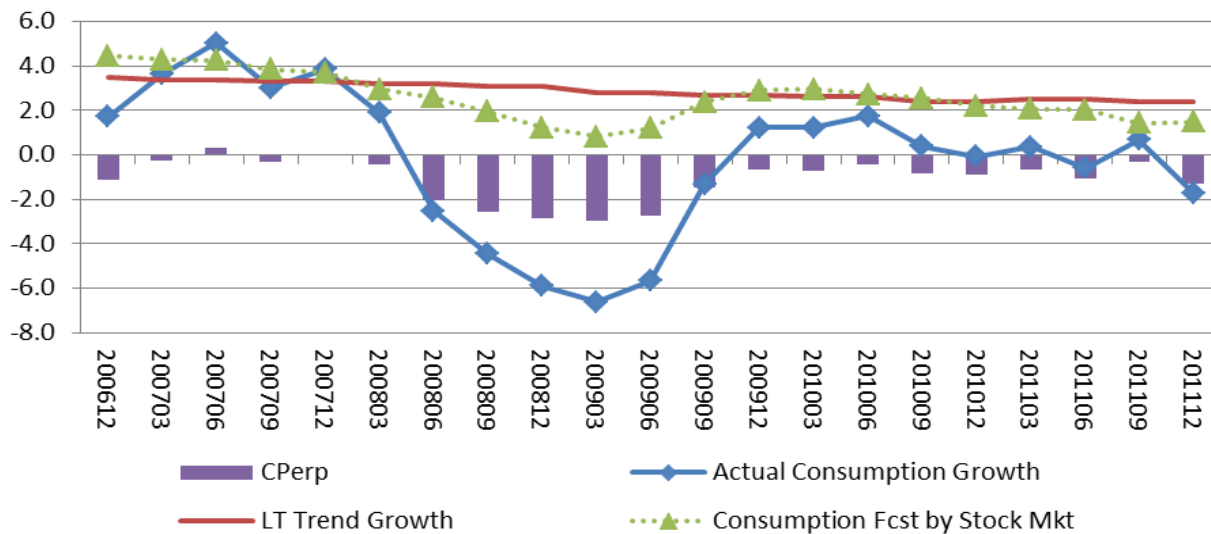
## French Consumers Were Negative in 2011. Consumption Growth vs. Stock Forecast



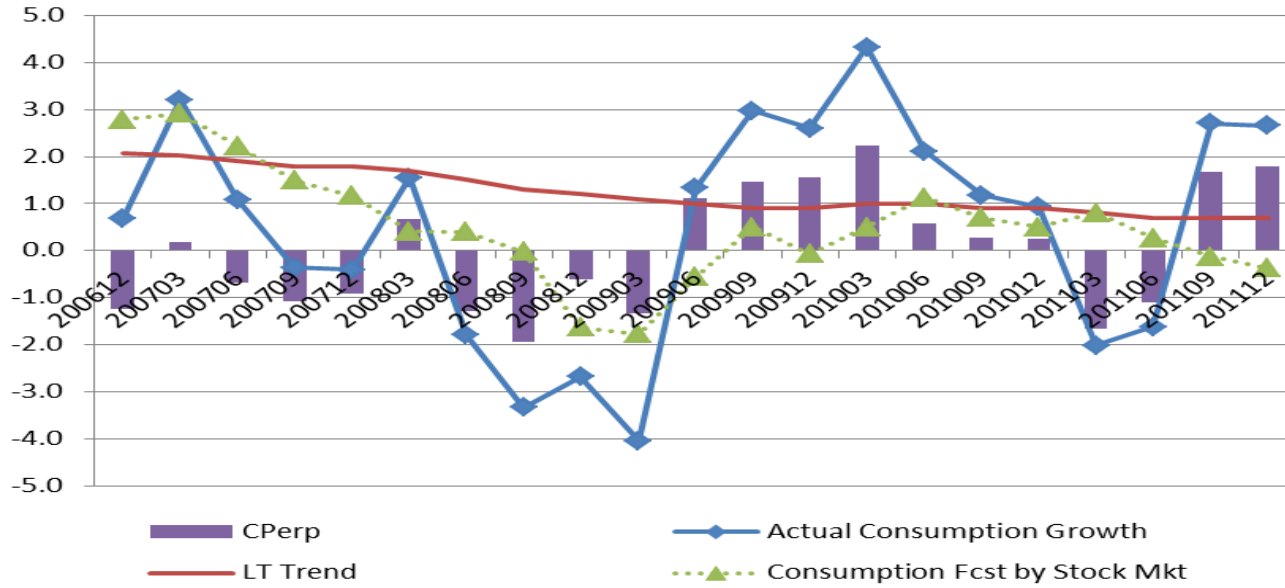
## Italy's Consumers Went Negative When Greece Fell in Late 2011



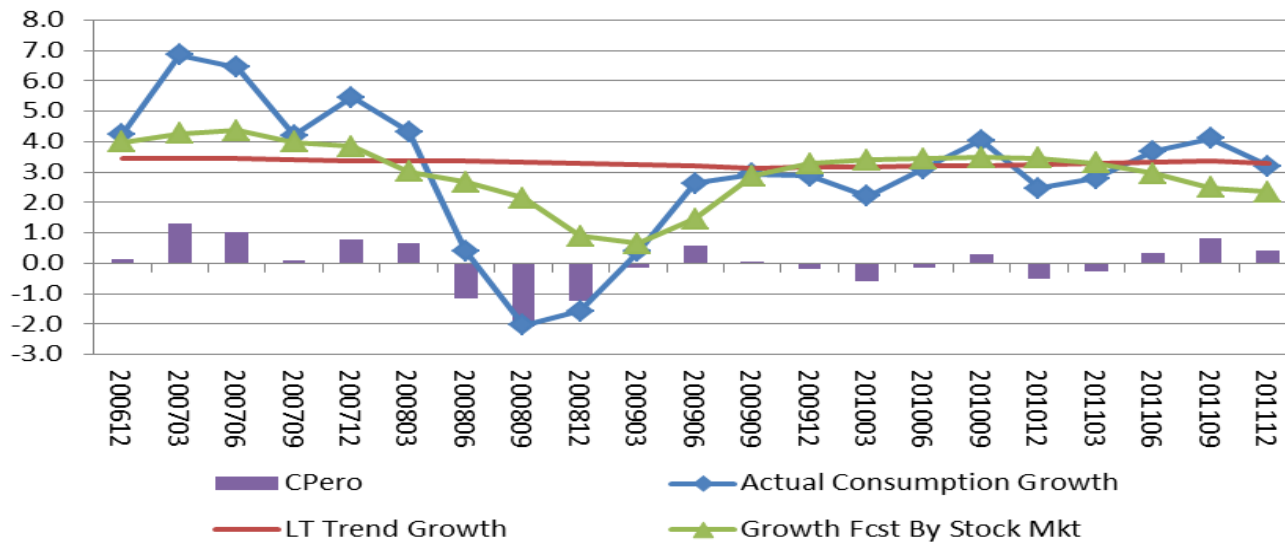
## Spain's Consumers Still Consistently Negative. Consumption vs. Stock Forecast



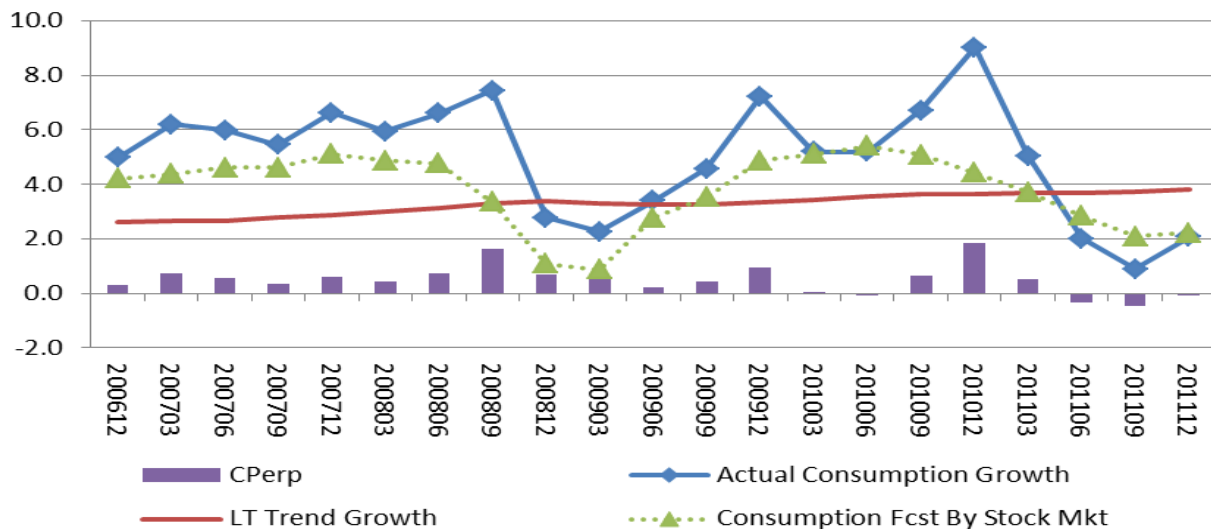
## Japanese Consumer Signal Very Positive: Consumption Growth vs. Stock Forecast



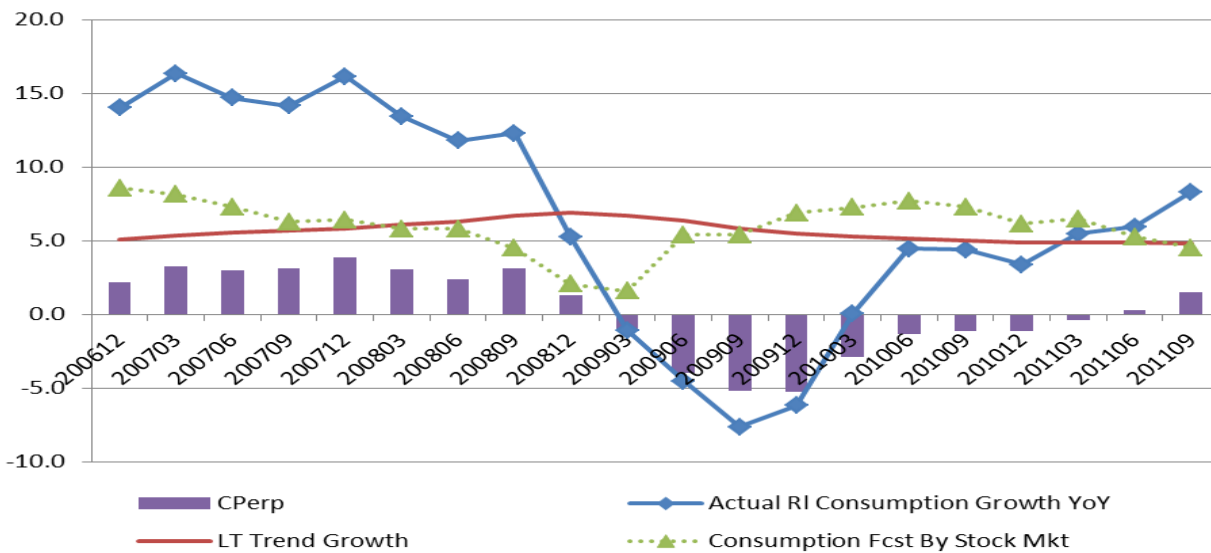
## Australian Consumer Spending Looks Solid Consumption Growth vs. Stock Forecast



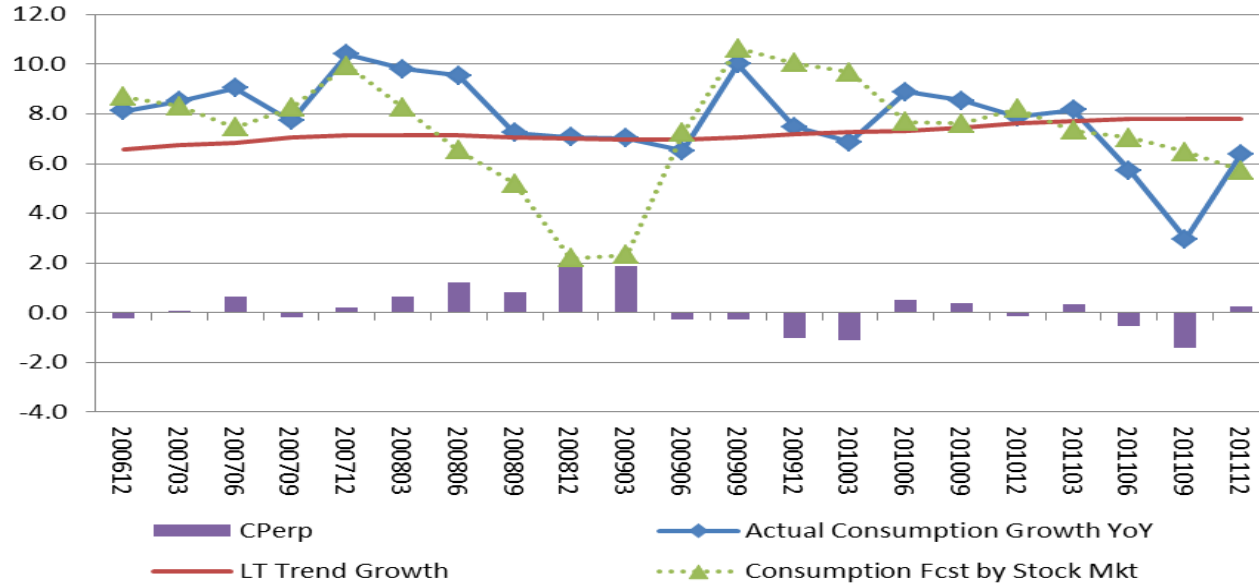
## Brazil Real Consumption Growth Slowing to Trend Adjusted for Stock Market Returns



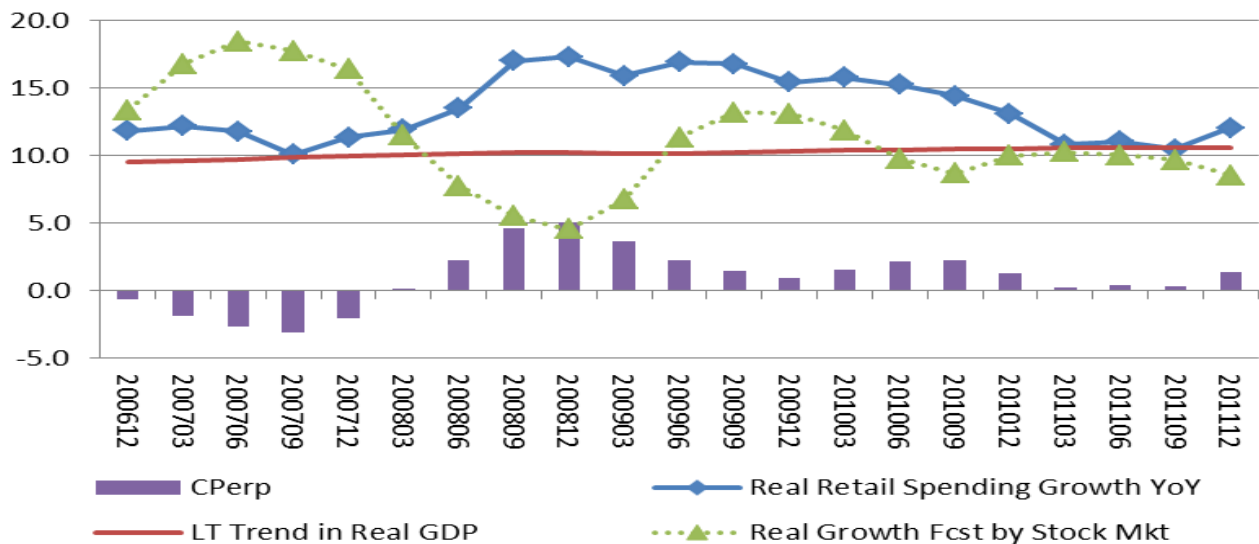
## Russian Consumers Sensitive to Oil Price More Than Stock Market? Strong Consumption Now



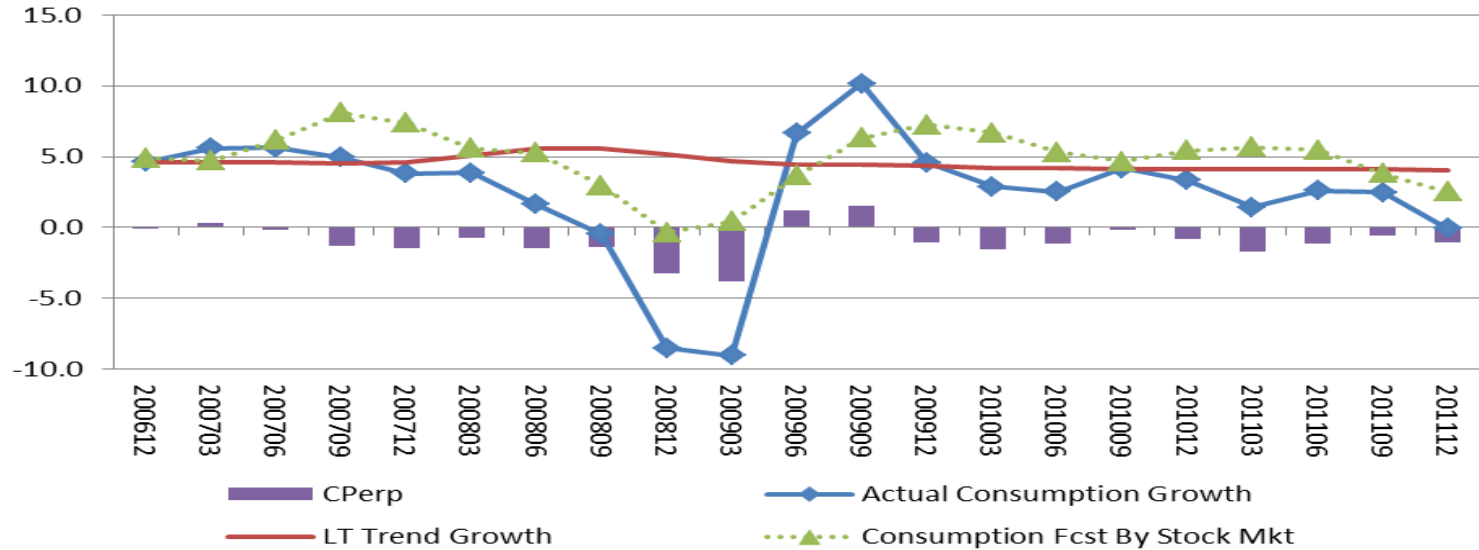
## India Real Consumer Spending Growth Holding Back vs Stock Market Forecast



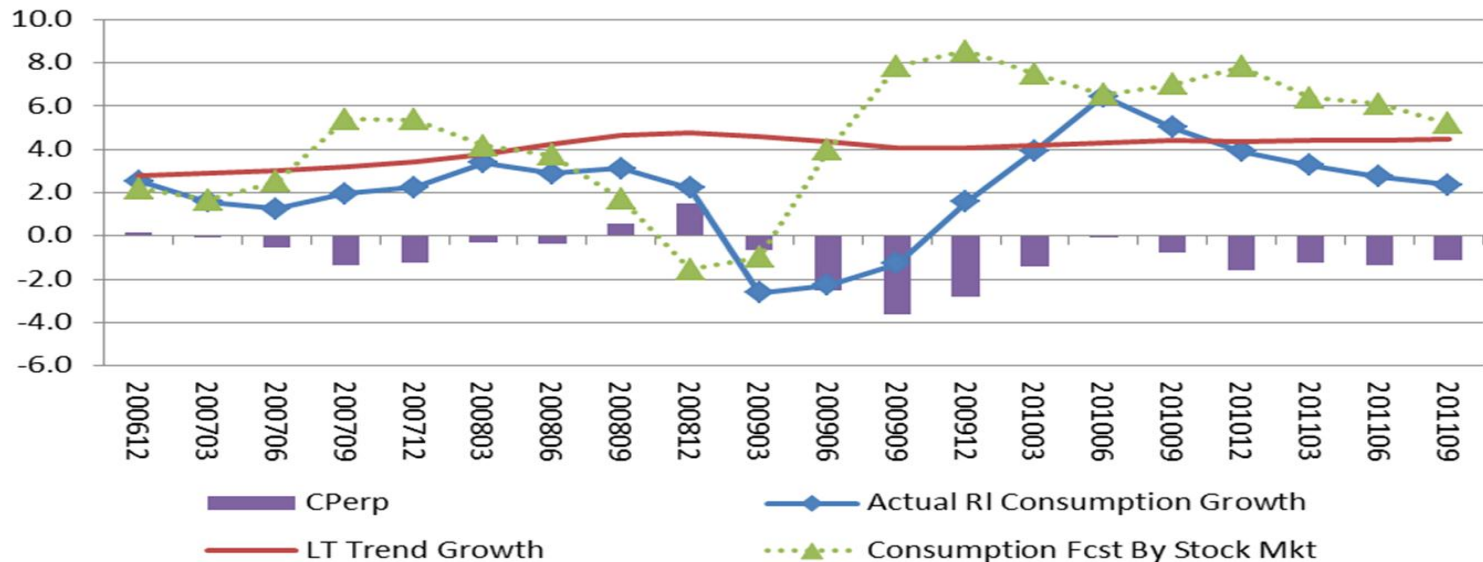
## China Real Retail Sales Growth Moderates, But Still Very Fast



## Korean Consumers Are Holding Back. Consumption Growth vs. Stock Market Forecast

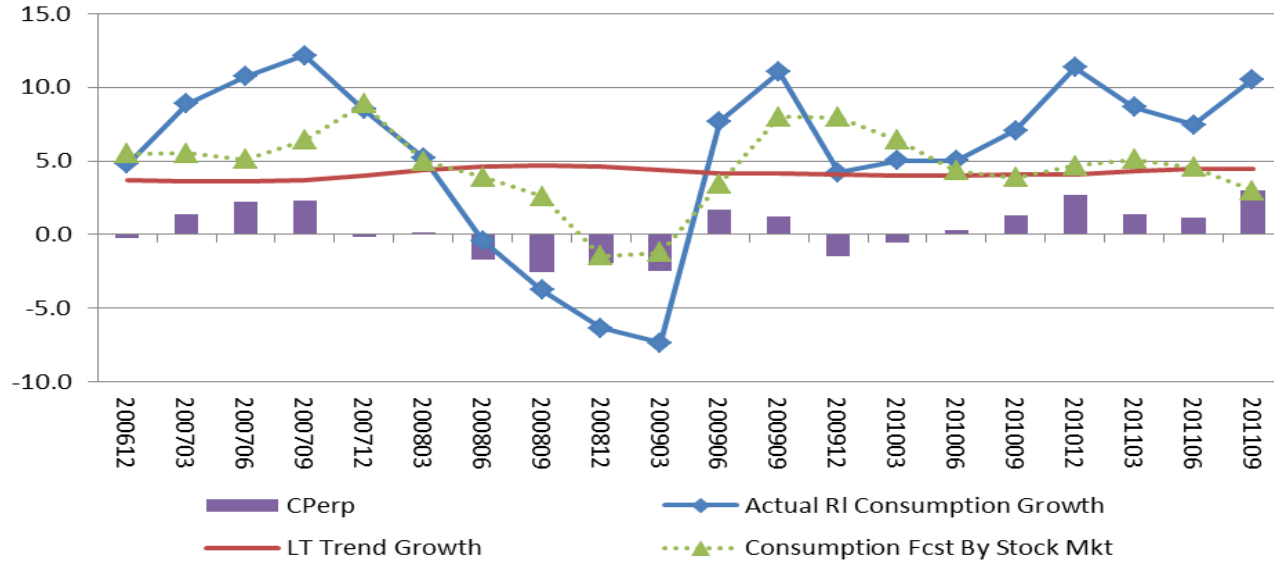


## Thailand Consumers Held Back Before Flood. Real Consumption Growth vs. Stock Forecast

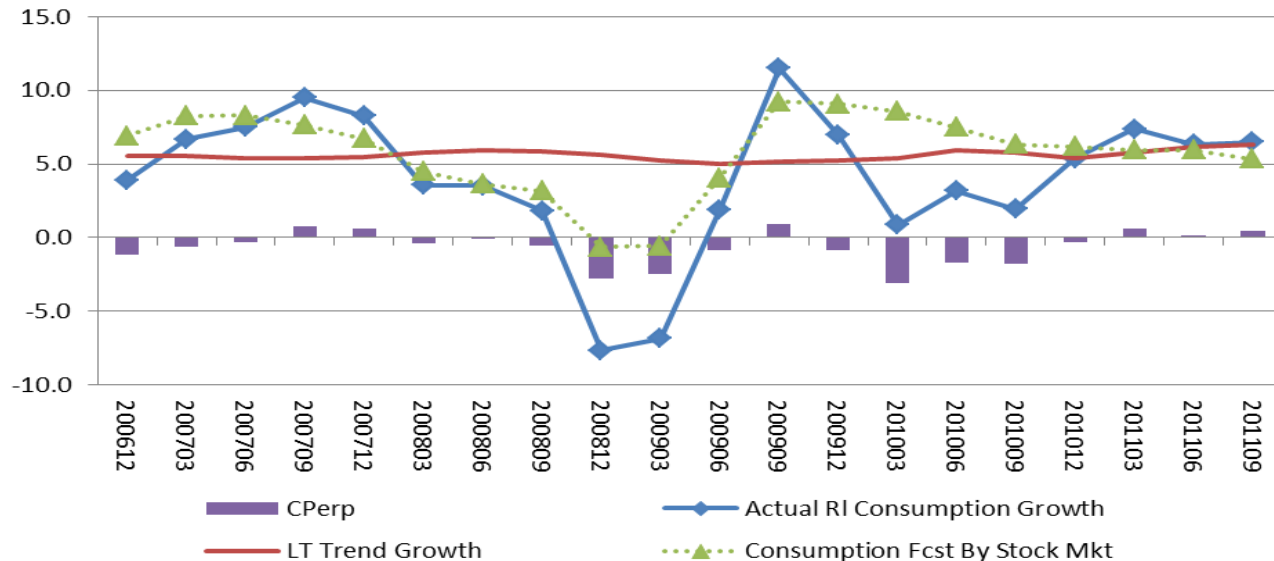




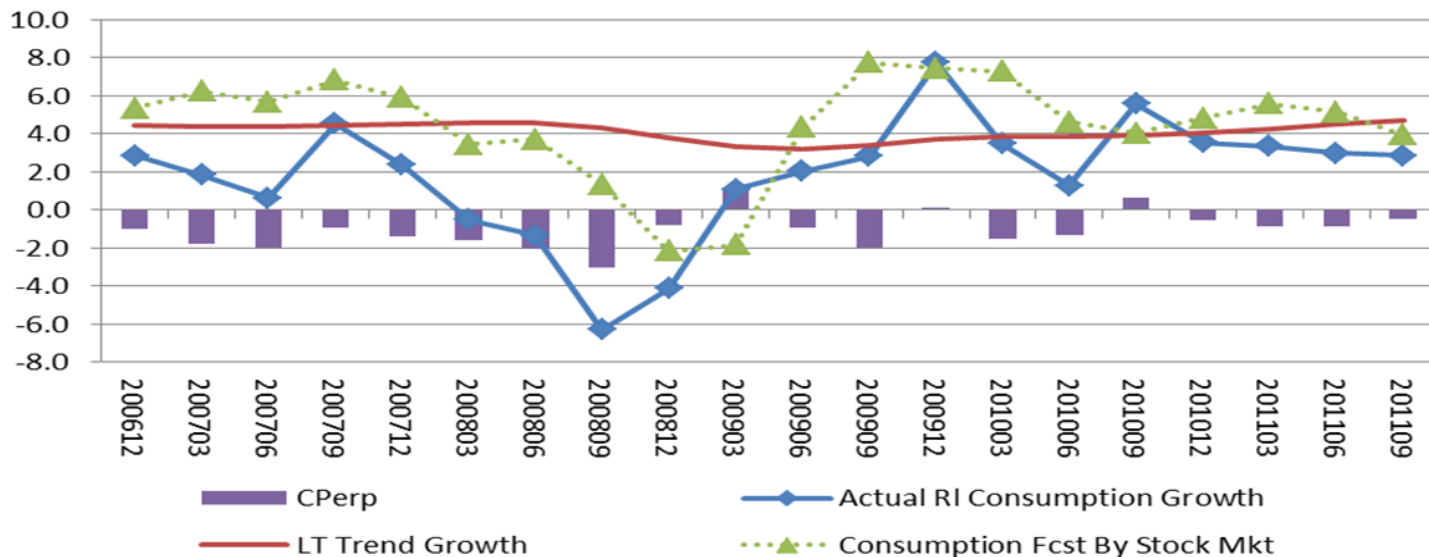
## Hong Kong Consumer Spending Growth Very Strong in 2010-2011 vs. Stock Forecast



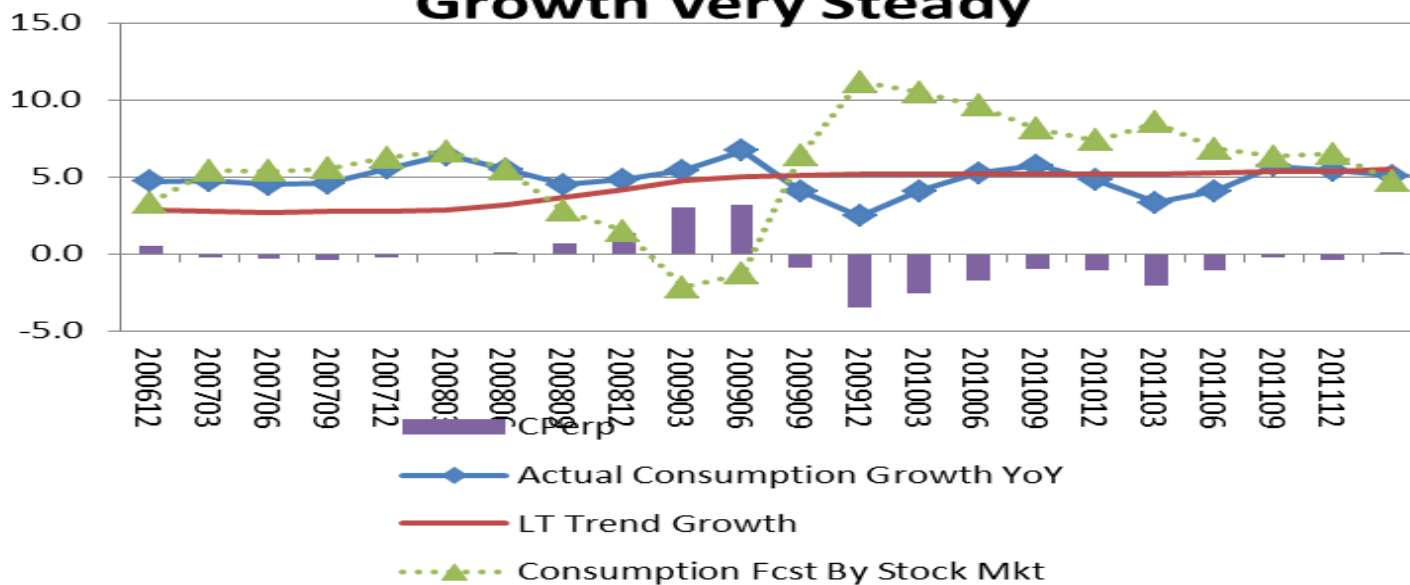
## Singapore Consumer Spending Strengthened in 2011. Consumption Growth vs. Stock Forecast



## Taiwan Consumers Hold Back. Consumption Growth vs. Stock Forecast



## Indonesia Real Consumer Spending Growth Very Steady



## Stocks, Bonds, Consumers Leading Index Components and Totals

Douglas T. Breeden, Massachusetts Institute of Technology and Duke University

March 2012

	<b>Stock Market Signal</b>		<b>Consumers' Signal</b>	<b>Stocks + Consumers</b>		<b>Bond Market Signal</b>	<b>SBCLI</b>	
	Last 6 Months		Last 2 Quarters	<b>Leading Index</b>				<b>Trend</b>
	Real	Stocks	Real Consumption	Positive: Above trend growth		Slope		<b>Growth</b>
<b>Country</b>	Stock		Deviation (Cperp)	Negative: Below trend growth				<b>Real GDP</b>
	Return	2*Z-Score	Z-Score	<b>2xStocks Z-Score + Cperp</b>		Z-Score	<b>Total</b>	
United States	15.2	2.4	0.2	<b>2.6</b>		0.5	<b>3.1</b>	2.6
Canada	-2.1	-0.6	0.7	<b>0.1</b>		0.5		2.6
Mexico	7.1	0.6	1.1	<b>1.7</b>				2.3
United Kingdom	10.6	1.4	-0.6	<b>0.8</b>		0.1	<b>0.9</b>	2.3
Germany	23.7	3.2	0.9	<b>4.1</b>		0.1	<b>4.2</b>	1.3
France	10.4	1.2	0.0	<b>1.2</b>				1.6
Italy	9.8	1.0	-1.5	<b>-0.5</b>				0.9
Spain	-2.2	-0.6	-1.3	<b>-1.9</b>				2.3
Japan	13.1	1.6	1.8	<b>3.4</b>		-0.1	<b>3.3</b>	0.7
Australia	-0.5	-0.4	0.4	<b>0.0</b>				3.3
South Korea	8.2	0.6	-1.0	<b>-0.4</b>				4.1
Hong Kong	3.8	0.2	1.5	<b>1.7</b>				4.5
Singapore	4.4	0.2	0.5	<b>0.7</b>				6.3
Taiwan	4.9	0.2	-0.4	<b>-0.2</b>				4.5
Thailand	11.2	0.8	-1.1	<b>-0.3</b>		Note: Pre-flood consumpt		4.3
Brazil	19.8	1.6	-0.1	<b>1.5</b>				3.8
Russia	3.1	0.0	1.5	<b>1.5</b>				4.8
India	6.0	0.4	0.3	<b>0.7</b>				7.8
China	-6.3	-0.8	1.4	<b>0.6</b>				10.6
Indonesia	5.2	0.2	0.1	<b>0.3</b>				5.5

# Conclusions

- Real consumer spending growth, with the stock market effect removed, adds to the ability of real stock market returns and the term structure slope to forecast growth of real GDP, industrial production, employment growth and unemployment rate changes.
- Growth for the coming year looks good globally, as the USA, Germany and Japan, three leading advanced economies, all seem to have strength. This is in addition to the strong emerging markets, which are slowing, but still growing rapidly.