

# HIP: A Look @ Hotel Industry Biz Cycles

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- The missing link
- HIP
- Historical Trends
- What's Next

# Agenda

- When studying business trends for an industry, it's useful to have an aggregate measure that is available in a timely way and in high frequency, preferably monthly
- It provides a unique tool to analyze the past, assess the present and better explore future possibilities for optimal decision making and planning
- Our search for a hotel industry aggregate measure came up with...

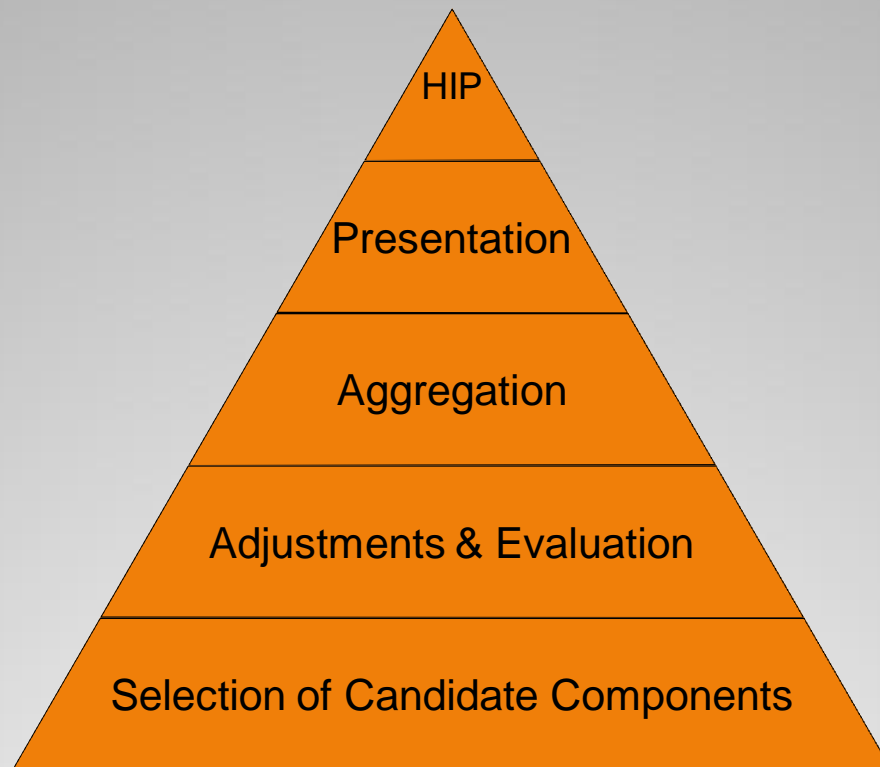
## The missing link



...nothing

- Aim - fill the gap by making a composite index that measures the Hotel Industry's Pulse (HIP)
- Real time on a monthly basis
- Captures and clearly IDs the sequences of expansions and contractions of the industry
- Positions the industry within the national and international business cycles

Here comes the HIP



The black box

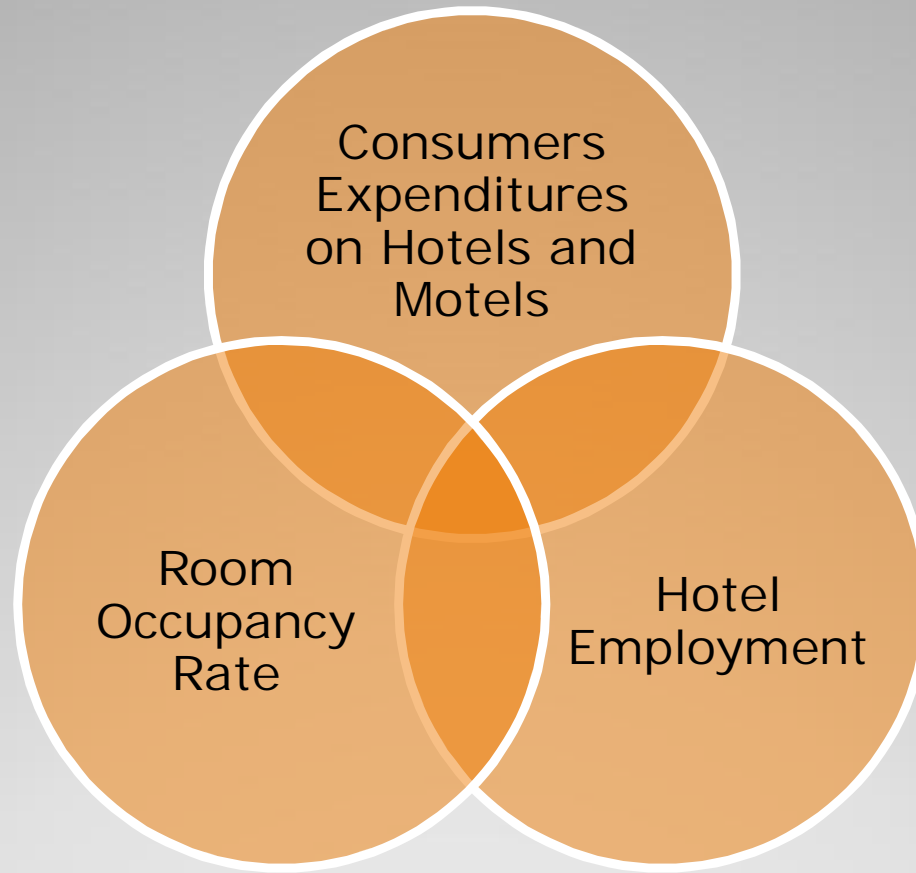
- adequately reflect biz fluctuations of industry or its key activities – economic content
- be available on monthly basis to ID and predict turning pts with sufficient precision - frequency
- be available in real time to offer early signals of changes in direction of biz activity & provide a timely basis of forecasts of what's ahead - timeliness
- not be subject to unimportant revisions, or limited to only a few to keep dating biz cycle stable - revisions

Components must...

- Seasonal Adjustment
- Outlier detection (shocks like 9/11, Katrina, Olympics)
- Smoothing (high frequency noise)
- Adjustments for inflation
- Turning point identification
- Cyclical conformity



Raw ore-in, steel-out ...



What's in the HI P?

- Invariably pro-cyclical w/industry – reflects level of income all persons use in making consumption decisions for spending on lodging when away from home
- Comparable measure to 'manufacturing and trade sales' - used by Conference Board in traditional national current conditions (coincident) index
- Data collected as part of national income
- Monthly, millions of \$, SA, annual rates
- We deflate data by chain-type price index for personal consumption expenditures to obtain real expenditures in constant dollars

Consumer expenditures on hotels/motels

- Comparable to industrial capacity utilization (% level of usage of tangible productive resources) used by Conference Board for the national coincident indicator
- Needed to link different vintages of historical data to create unique 40 year series of occupancy
- Seasonally adjusted and smoothed by efc



## Room occupancy rate

- Number of all employees in hotels and motels, excluding casino hotels, is industry's counterpart of 'payroll employment' which is used by NBER for dating recessions and by the Conference Board as  $\frac{1}{4}$  components for national coincident index
- Changes in monthly series reflect actual net hiring and firing
- Produced monthly by BLS, in thousands of employees
- Seasonally adjusted by efc



## Hotel employment

m/m changes computed for ea component

m/m changes adjusted to equalize volatility of ea component

Aggregation of above

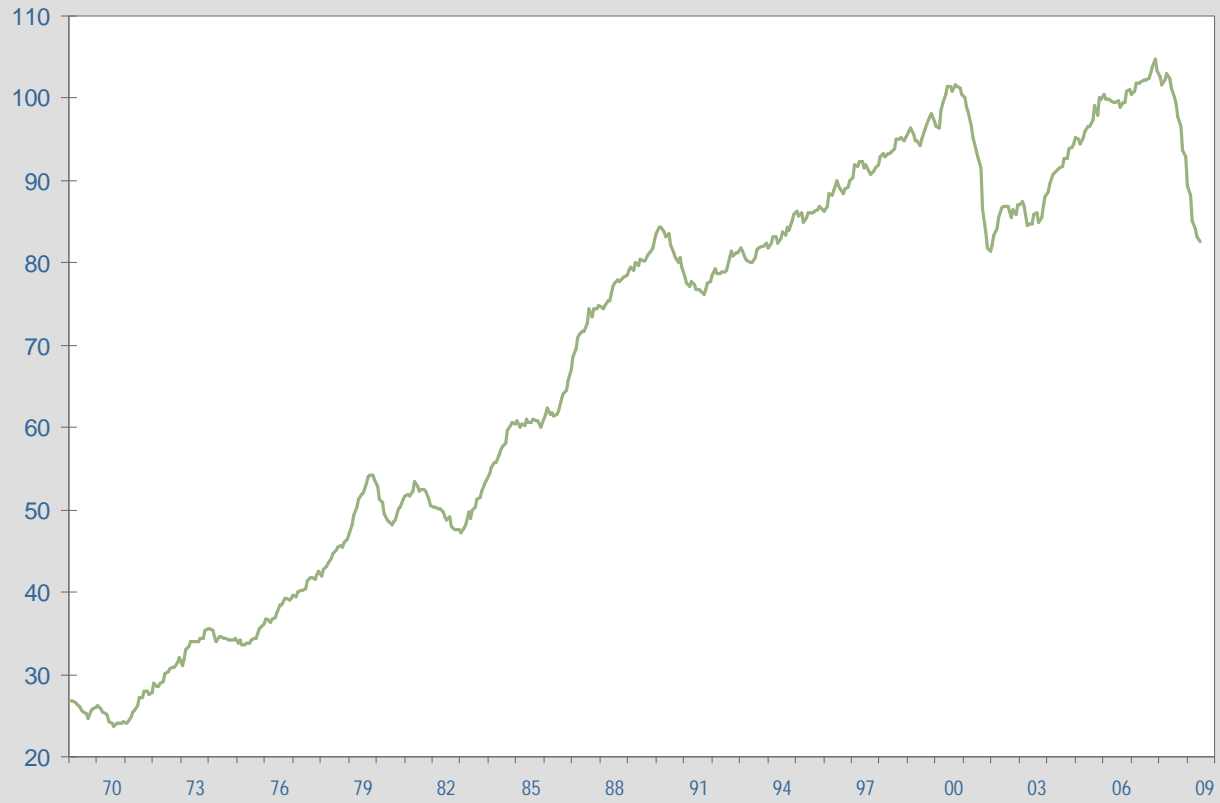
Computation of raw composite

# Putting pieces together

- Adjust the long-trend of the raw index to be the same as the industry's growth derived from annual real GDP
- Rebase the monthly index to be equal to 100 in 2000
- Finally, you get...

The final product

## U.S. Hotel Industry's Pulse Index



a look @ HIP

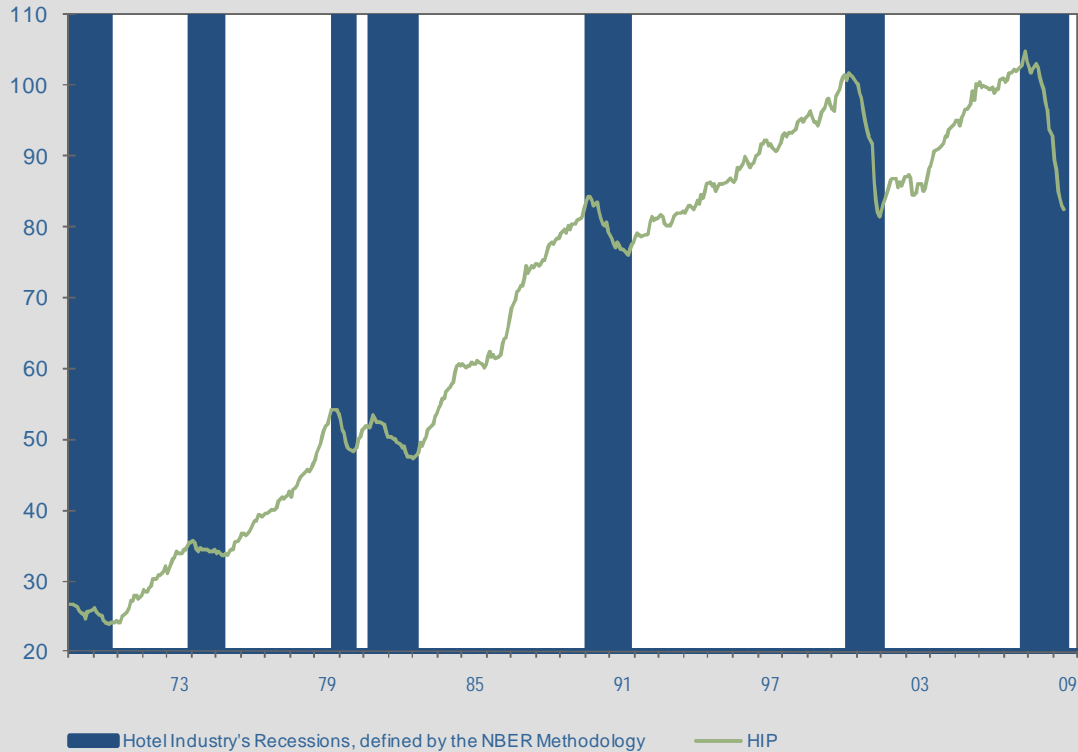
### U.S. Hotel Industry: Business Cycle Reference Dates

Peak	Trough	Contraction	Expansion	Cycle Duration	
Month and Year	Month and Year	Peak to Trough	Previous Trough to this Peak	This Trough from Previous Trough	This Peak from Previous Peak
	August 1970				
January 1974	March 1975	14	41	55	
November 1979	July 1980	8	56	64	70
May 1981	January 1983	20	10	30	18
February 1990	September 1991	19	85	104	105
September 2000	December 2001	15	108	123	127
November 2007	June 2009	19	71	90	86
<b>Average Six Cycles 1974-2009</b>		<b>16</b>	<b>66</b>	<b>82</b>	<b>81</b>

Source: Authors calculations using Hotel Industry Pulse (HIP) index and NBER's business cycle dating methodology.

# How many hotel recessions?

### U.S. Hotel Industry's Pulse Index



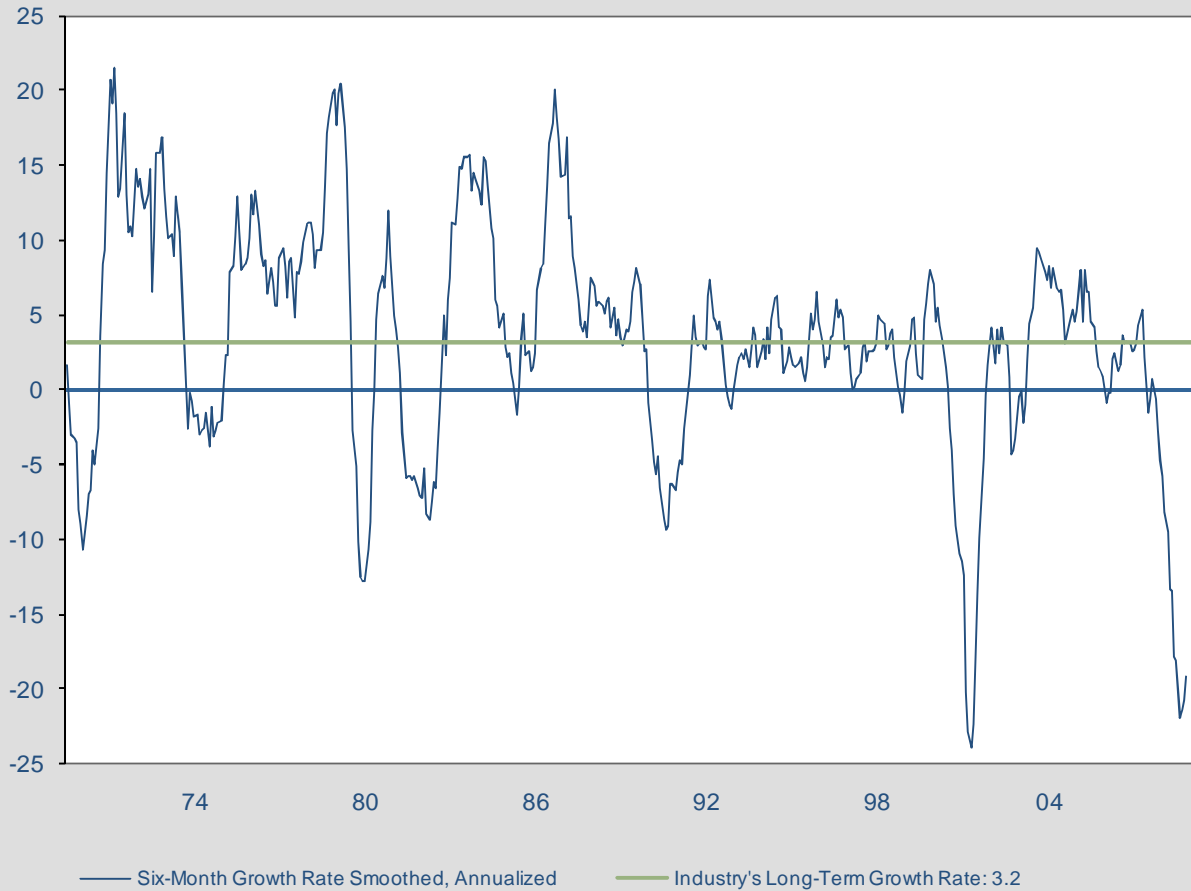
HIP linked w/industry's biz cycle

## Positioning the Hotel Industry in the National Business Cycle

Business Cycle Peaks		Months of Hotel Industry Peak Before(-) or After(+) National Peak	Business Cycle Troughs		Months of Hotel Industry Trough Before(-) or After(+) National Trough
Hotel Industry	National		Hotel Industry	National	
Month & Year	Month & Year		Month & Year	Month & Year	
			August 1970	November 1970	-3
January 1974	November 1973	+2	March 1975	March 1975	0
November 1979	January 1980	-2	July 1980	July 1980	0
May 1981	July 1981	-2	January 1983	November 1982	+2
February 1990	July 1990	-5	September 1991	March 1991	+6
September 2000	March 2001	-6	December 2001	November 2001	+1
November 2007	November 2007	0			
<b>Average number of months Hotel Industry Leads(-) or Lags(+) National Recessions</b>		<b>-2</b>	<b>Average number of months Hotel Industry Leads(-) or Lags(+) National Expansions</b>		<b>2</b>

Source: Authors' dating of the business cycle in the Hotel Industry and NBER's dating for the national economy.

# Hotel industry vs US biz cycle



HIP @ 82.5 in June

Down 0.7% m/m

Six-mo growth down  
19.2%

Recession probability:  
89.7%

# Current reading of HIP

HIP @ 82.5

- Remember, HIP is an index set equal to 100 in 2000
- Using 2000 as a reference, the index gives you the impression of how biz fares compared with 2000

Down 0.7% m/m

- Month to month changes give indication of how indicator is moving
- We see it is down, also helpful to see it is less than 1% to determine magnitude of change

Six-mo growth  
down 19.2%

- Six-mo growth rate is important in seeing depth of recession/expansion; helpful to know long-term trend
- When rate is above trend – expansion; below trend-recession

Recession  
probability 89.7%

- Probability of recession shows if industry in growth phase, recession

Closer look @ HIP reading

- Now that an established real-time indicator for the hotel industry has been tested, the next step is a leading indicator





What's next?

- HIL is the first leading indicator for the hotel industry
- Leading indicator will help determine the future direction of the hotel industry
- Like HIP, it will be a composite indicator made up components that have historically led the industry

Meet HIL



- Leading indicators @ the national level widely used in predicting future turning points in economic activity
- Business executives look to leading indicators to find answers to the following:
  - When in a downswing  when the recession will end?
  - When in an upswing  is a recession coming?

Why HIL?

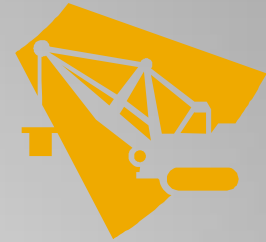
- Selection of a target indicator
- What will it lead?
- HIP, the established and tested real-time indicator for the hotel industry's current business conditions

Step 1 / 3 in making HI L: lead what?

- Selection of components that historically and consistently predict turning points in the target indicator:
  1. Hours-worked in industry
  2. Hotel profit margins
  3. US travel plans index
  4. International tourism demand for visiting US
  5. National employment conditions
  6. Oil prices
  7. Financial market conditions
  8. Incoming orders for high-ticket items
  9. Housing market conditions

Step 2/3 in making HIL: components

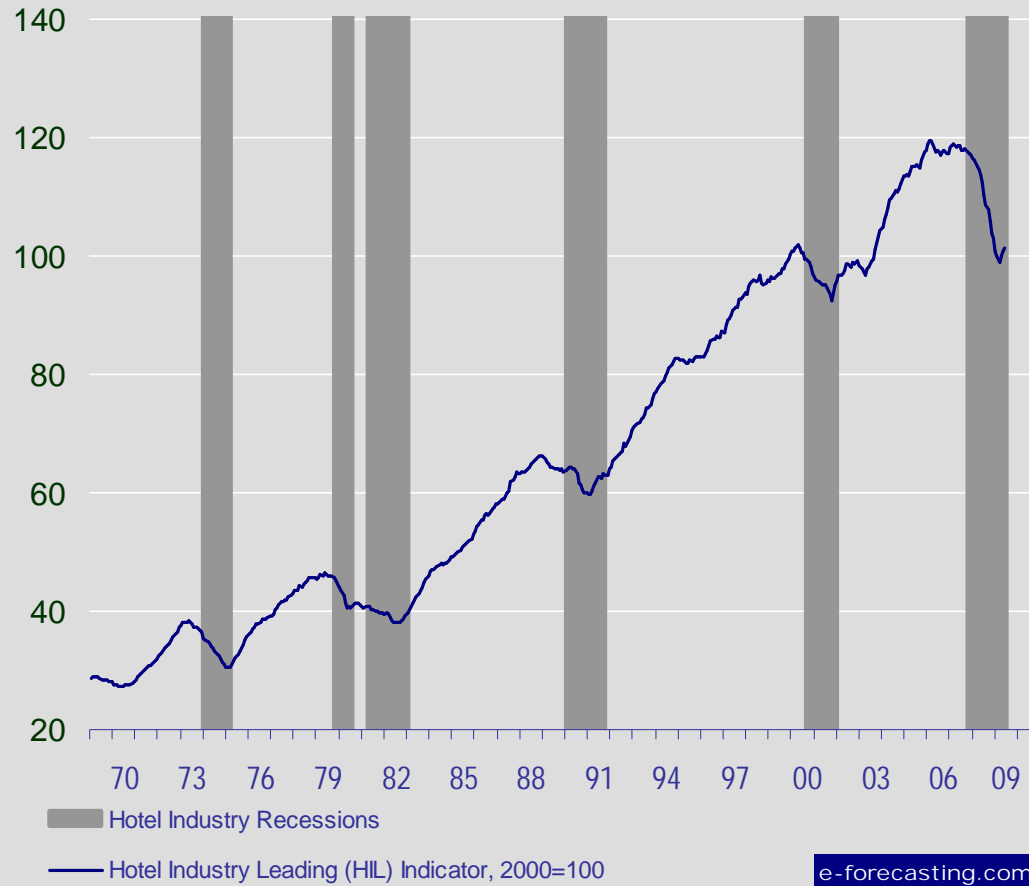
- Construction of the composite leading indicator



- Adjustment of each leading component
- Standardize each component by the historic variance so that signals carry equal information
- Equally weighted aggregation to a composite
- Trend adjustment to that of target series (HIP)
- Rebasing to 2000=100

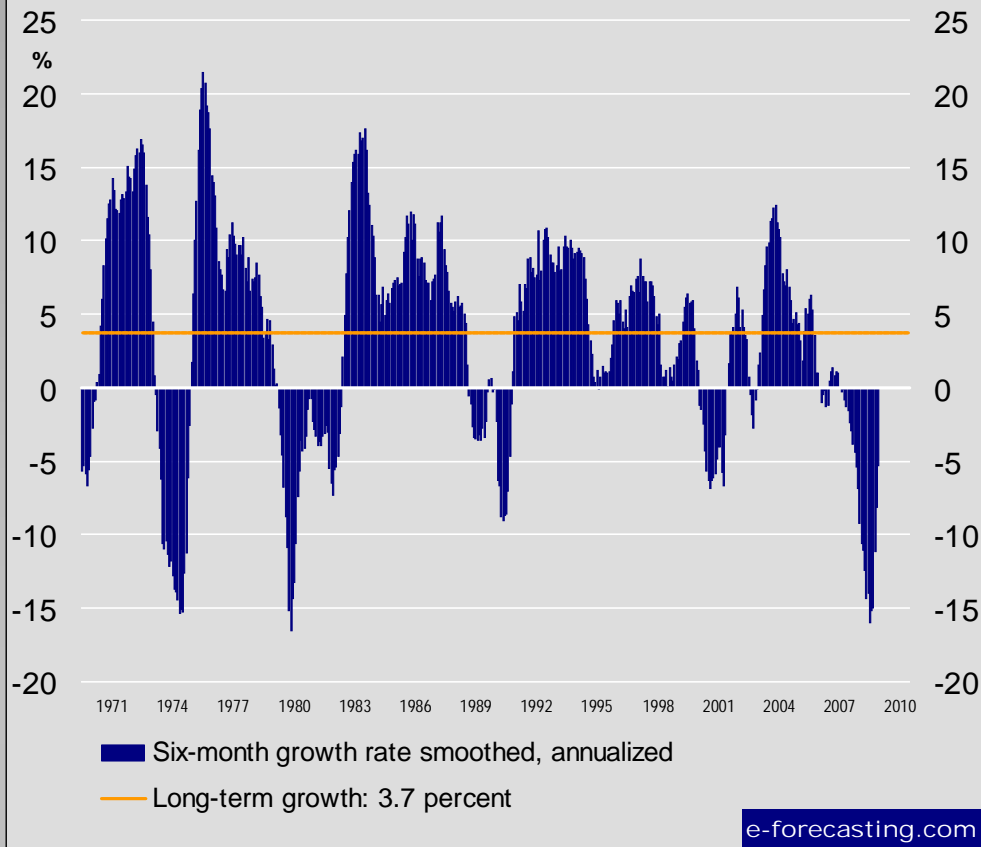
Step 3/3 in making HIL: construction

### Hotel Industry Leading (HIL) Indicator



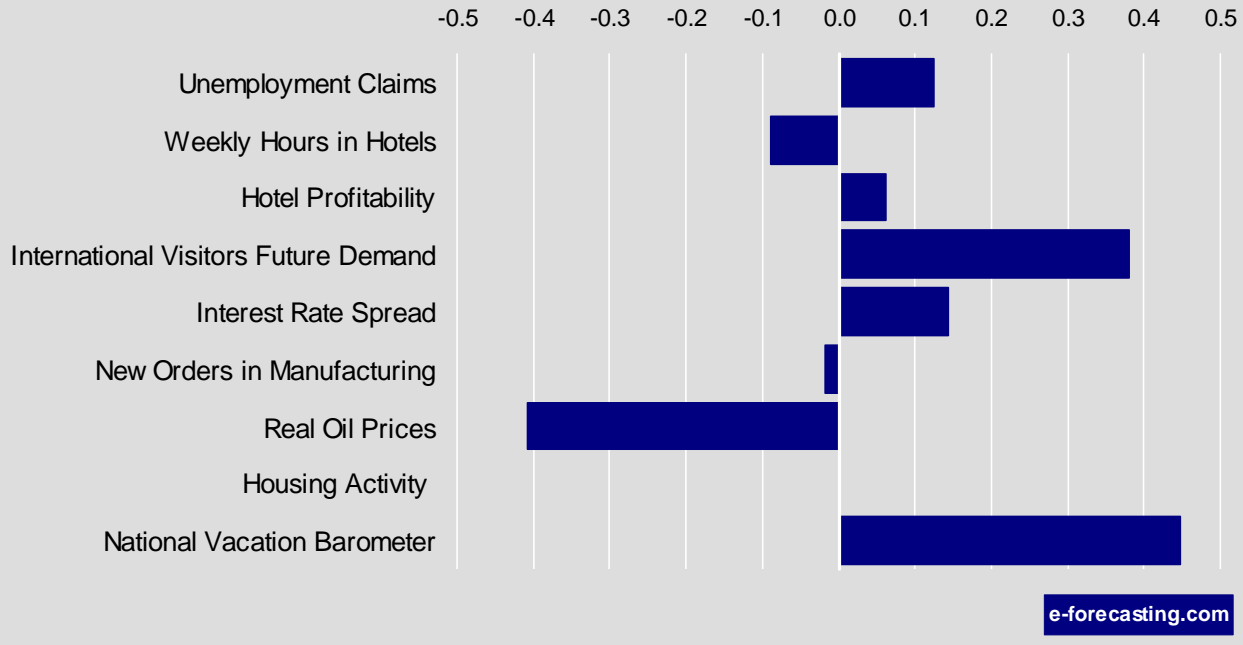
# Meet HIL

Growth in Hotel Industry Leading Indicator



Growth rate continues to improve, 5 months in a row

## Contribution of Components to the Monthly Growth Rate of Hotel Industry's Leading Indicator in June 2009



# Vacations and visitors up

- Remember, hotel biz cycle not always in sync with US cycle
- Useful to look at composite indicators which take into account several components in a meaningful way
- The use of high-frequency indicators, like HIP and HIL, will help ID current and future levels of demand
  - HIP – released 1<sup>st</sup> wk of mo
  - HIL – released mid-month

## Takeaways

- Any questions on presentation, please contact Maria [mesimos@e-forecasting.com](mailto:mesimos@e-forecasting.com)
- Questions regarding obtaining full reports of HIP or HIL, contact Chad from STR [chad@wwstar.com](mailto:chad@wwstar.com)

Questions, Comments