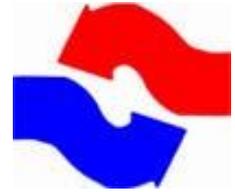




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Those Unpredictable Recessions...

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of Business and Consumer Tendency Surveys

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What is it all about?

Three main questions

- ▶ Did the leading indicators really give signs of the beginning and the end of the 2008-2009 recession in advance?
- ▶ Did the experts make the correct and timely conclusions concerning the approach of turning points?
- ▶ Why the experts could hardly recognize the cyclical peak in real time?

Data and Methods

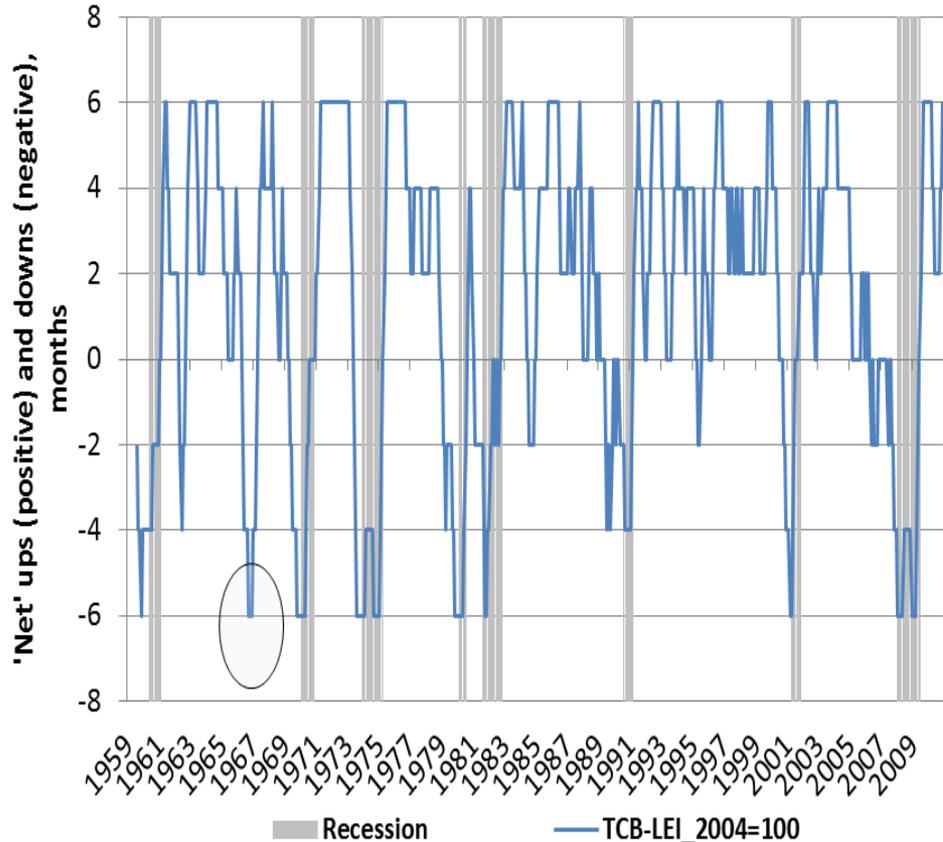
Three popular cyclical indicators for the USA

- ▶ The Leading Economic Indicator (LEI) by the Conference Board
- ▶ The Composite Leading Index (CLI) by the OECD
- ▶ The Purchasing Managers' Index (PMI) by the ISM

Special features

- ▶ Not only revised time-series but also real-time vintages
- ▶ Separate analyses for the peak of December 2007 and for the trough of June 2009
- ▶ “Five out of six” rule of thumb
- ▶ Remembering about real-time “diagnoses” in official press-releases

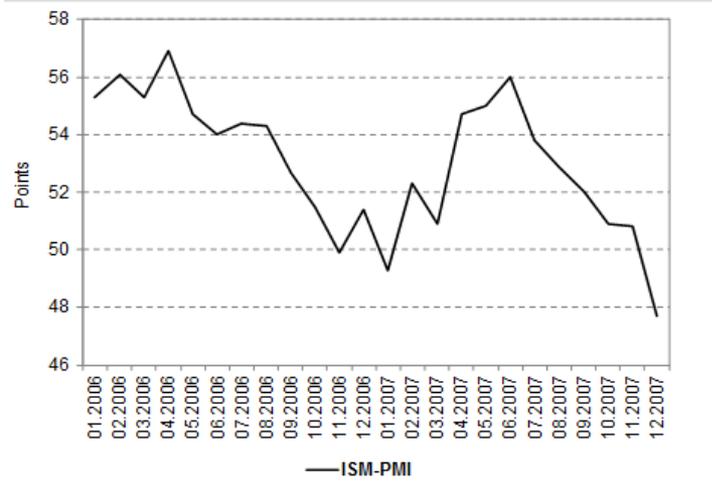
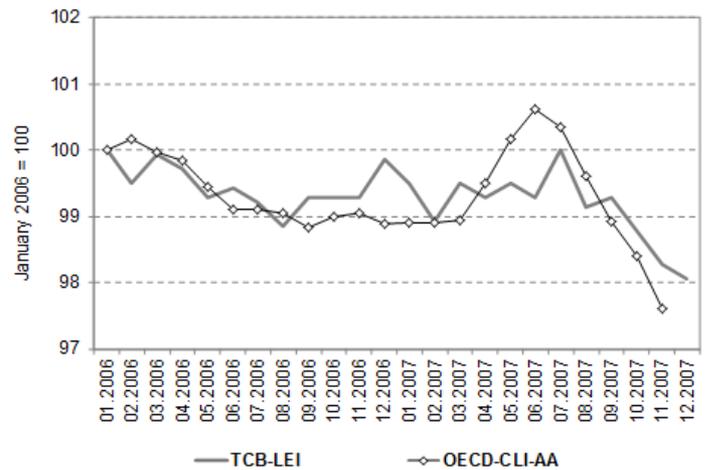
“Five (minimum) out of six” rule of thumb



Properties

- ▶ The net score is equal to -6 if an indicator is declining for all six last months; to -4 if it is declining for any 5 out of 6 last months, etc.;
- ▶ Changes in the range from -6 to +6
- ▶ For the “-4 threshold” only one false signal (June 1966-February 1967) for 52 years
- ▶ Very similar to the 6-months Diffusion Index by TCB but gives less false signals, especially during 1991-2001

Peak of December 2007



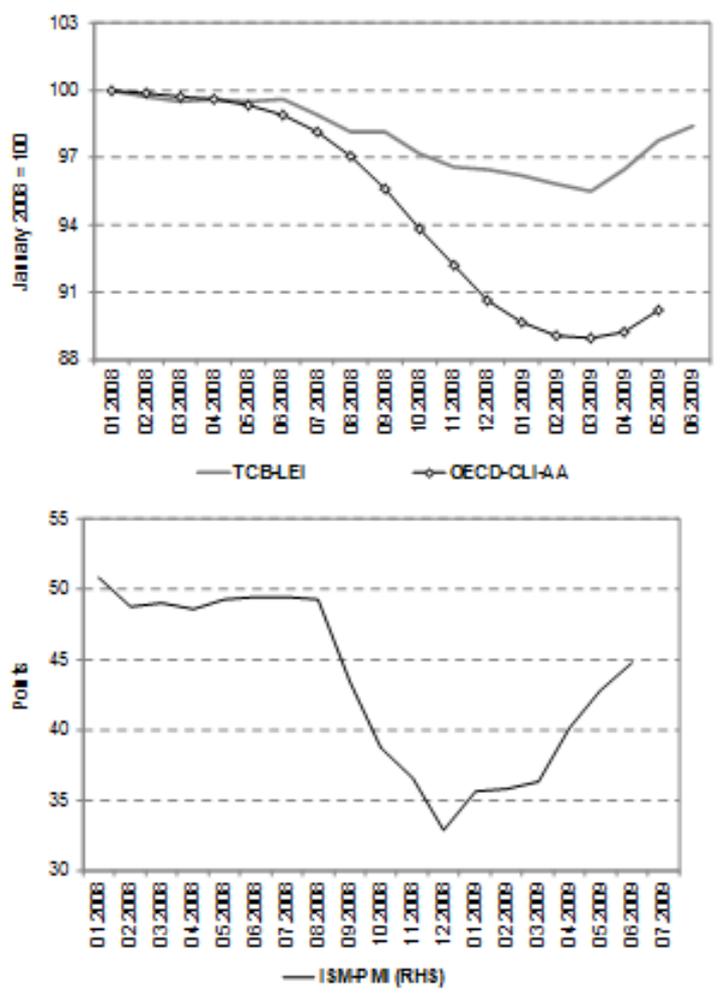
Net Scores

Indicator	Date of release	R-T/R*	
		Initial Index	Y-o-Y change
LEI by TCB	18.01.08	-2/-4	-4/-4
CLI by OECD	11.01.08	-4/-4	-4/-2
PMI by ISM	02.01.08	-6/-2	0/0

Conclusions

- ▶ There *were* signals for approaching recession;
- ▶ The PMI was the best but LEI and CLI were also good;
- ▶ The signals were not indisputable; experts “diagnosis” was obviously needed

Trough of June 2009



Net Scores

Indicator	Date of release	R-T/R*	
		Initial Index	Y-o-Y change
LEI by TCB	20.07.09	0/0	+2/+2
CLI by OECD	10.07.09	-2/0	0/0
PMI by ISM	01.07.09	+6/+6	+6/+6

Conclusions

- ▶ The PMI was the best once again;
- ▶ Results for the LEI and CLI were less expressive (in comparison with the peak of December 2007) because of a too short period of growth;
- ▶ Again the signals were not indisputable

Remembering of official diagnoses: an example of the LEI by TCB

The peak of December 2007

Indicators	Date of release	Diagnosis in real time	Notes
LEI by TCB	18.01.2008	"Increasing risks for further economic weakness; economic activity is likely to be sluggish"	For several months in 2008 TCB wrote "weak activity" or "weakening activity"; they wrote about <i>contraction</i> of the economy in November 2008 (!) for the first time ("Economy is unlikely to improve soon, and economic activity may contract further"); and mentioned the word <i>recession</i> only in December 2008 just after the NBER had announced the peak of December 2007 ("The recession that began in December 2007 will continue into the new year; and the contraction in economic activity could deepen further").

The trough of June 2009

Indicators	Date of release	Diagnosis in real time	Notes
LEI by TCB	20.07.09	"The recession will continue to ease; and the economy may begin to recover."	The three months before (in April) The Conference Board predicted: "the contraction in activity could become less severe"; in July they mentioned the possibility of a recovery for the first time; in August they stated that the recession was bottoming out. Thereby, the predictions of the trough by TCB were more or less timely but they were hardly "leading", and were rather "coincidental".

Conclusions

- ▶ The diagnosis for the peak was very cautious; the word "recession" was mentioned for the first time only in December 2008 (just after the NBER);
- ▶ The diagnosis for the trough was more definite in spite of shorter period of changes in the "proper" direction

More General Results

Leads and Lags at Peaks and Troughs

Turning points (dated by NBER)		Leads (-) and Lags (+) of Cyclical Indicators, months							
		NBER's decision		LEI turning points		CLI turning points		PMI turning points	
Peaks	Troughs	Peaks	Troughs	Peaks	Troughs	Peaks	Troughs	Peaks	Troughs
Jan. 80	Jul. 80	5	12	-15	-2	-18	-3	-18	-2
Jul. 81	Nov. 82	6	8	-8	-10	-8	-6	-8	-6
Jul. 90	Mar. 91	9	21	-18	-2	-36	-3	-31	-2
Mar. 01	Nov. 01	8	20	-11	-2	-14	-2	-16	-1
Dec. 07	Jun. 09	12	15	-5	-3	-6	-4	-43	-6
Average		8.0	15.2	-11.4	-3.8	-16.4	-3.6	-23.2	-3.4

“Three-compound” paradox

- ▶ leading indicators lead peaks more than troughs;
- ▶ peaks are announced by NBER with less lags than troughs;
- ▶ in spite of this, peaks are recognized by private experts worse than troughs

Why do experts recognize cyclical peaks in real time so rarely?

Economic reasons

- ▶ While peaks are always lead by slowdowns, slowdowns do not always lead to a peak;
- ▶ Timely preventive measures may preserve the economy from sliding into a recession;
- ▶ In part, recessions are a result of shocks that are themselves unpredictable

Psychological reasons

- ▶ “Dependency” from the dating committee of the NBER
- ▶ “Dependency” from real-time GDP dynamics

The USA: Advanced GDP Estimates by Vintages (% changes, SAAR)

Vintages	07Q1	07Q2	07Q3	07Q4	08Q1	08Q2	08Q3	08Q4
30.01.2008	0.6	3.8	4.9	0.6				
30.04.2008	0.6	3.8	4.9	0.6	0.6			
31.07.2008	0.1	4.8	4.8	-0.2	0.9	1.9		
30.10.2008	0.1	4.8	4.8	-0.2	0.9	2.8	-0.3	
30.01.2009	0.1	4.8	4.8	-0.2	0.9	2.8	-0.5	-3.8
29.07.2011	0.5	3.6	3.0	1.7	-1.8	1.3	-3.7	-8.9

Forecasting of turning points is a decision-making process

Some propositions

- ▶ Utility (loss) functions are not the same for all experts; there would be different predictions from the same value of an index;
- ▶ Utilities for being right depend upon “common view” (terms Y_c or N_c); to be right while the others are wrong is better than to be right while the others are also right:

$$YR_i(Y_i|N_c) \gg YR_i(Y_i|Y_c) \text{ and } NR_i(N_i|Y_c) \gg NR_i(N_i|N_c)$$
- ▶ Utilities of being right and being wrong – if in accord with all others – are around zero:

$$YR_i(Y_i|Y_c) \approx 0; YR_i(N_i|N_c) \approx 0; NR_i(N_i|N_c) \approx 0; \text{ and } NR_i(Y_i|Y_c) \approx 0$$
- ▶ One may make the name only by forecasting recessions, not expansions

$$YR_i(Y_i|N_c) \gg YE_i(Y_i|N_c)$$
- ▶ Et cetera..

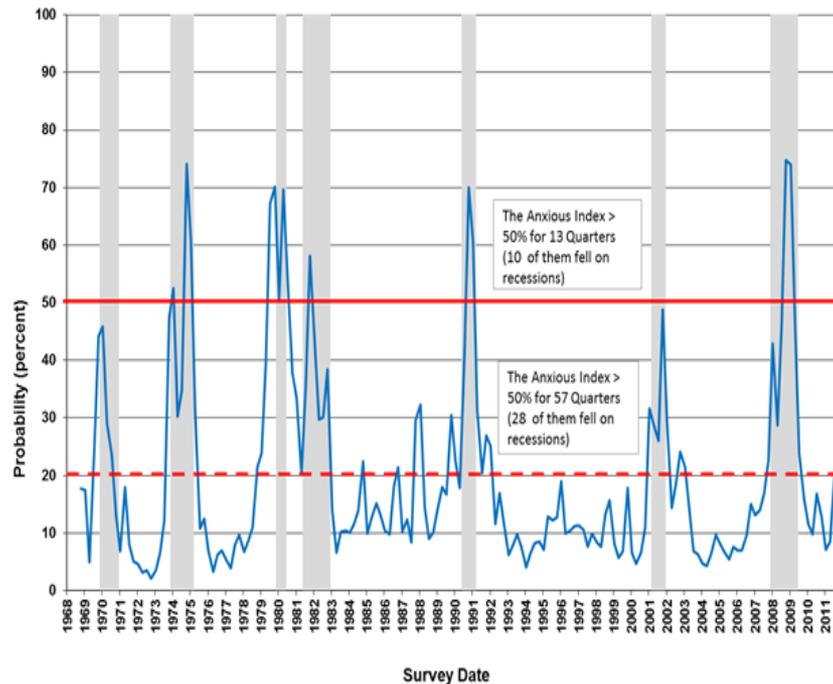
Utilities Under Each Decision and State of Economy

Forecasting of Recession Decision*	Actual State of Economy	
	Recession	No recession
Common view: Yes		
i -expert's forecast: Yes	$YR_i(Y_i Y_c)$	$NR_i(Y_i Y_c)$
i -expert's forecast: No	$YR_i(N_i Y_c)$	$NR_i(N_i Y_c)$
Common view: No		
i -expert's forecast: Yes	$YR_i(Y_i N_c)$	$NR_i(Y_i N_c)$
i -expert's forecast: No	$YR_i(N_i N_c)$	$NR_i(N_i N_c)$

Note: * - “Yes” means that according to the forecast there will be a recession; “no” means that there will be no recession.

To predict a recession or not to predict? That is the question...

"Anxious Index" According to the Survey of Professional Forecasters by FRB of Philadelphia



Note: "Anxious Index" is a probability of decline in real GDP in the following quarter (1968:Q4-2011:Q3)

Source: FRB of Philadelphia.

A "wishful bias" exists

- ▶ For a "good" alarm system, a false signal is better than a missed one:

$$NR_i(Y_i|N_d) > YR_i(N_i|Y_d)$$

- ▶ For a "wishful thinker" the opposite is true:

$$YR_i(N_i|Y_d) > NR_i(Y_i|N_d)$$

- ▶ In reality an "average" probability of a recession is highly underestimated:
 - if "anxious index" is greater than 50%, the real probability is about 75% and even more;
 - if it is greater than 20%, the real probability is about 50%

Conclusions: Remembering the three main questions...

Did the leading indicators really lead during 2008-2009?

- ▶ ‘Historical’ and ‘real-time’ time-series are two different things...
- ▶ ... but during the 2008-2009 recession, LEI, CLI, and PMI could all be really useful in real time (although they were rather coincident, not leading)

Did the experts make correct and timely predictions?

- ▶ The experts forecasted the recovery successfully...
- ▶ ... but they were too cautious or too “optimistic” about predicting the recession

Why they could hardly recognize the peak in real time?

- ▶ Economic reasons (unpredictable shocks; timely preventive measures, etc.)
- ▶ Psychological reasons (“dependency” from real-time GDP and from NBER’s decisions)
- ▶ Reasons connected with decision-making (the majority prefer to hide in the herd; the minority prefer to produce false signals but not to miss a peak)
- ▶ The “wishful bias” exists. The average probability of a recession (according to SPF by FRB of Philadelphia) is underestimated from 1.5 to 2.5 times

Thank you for your attention