KOF

KOF Business Tendency Survey in Manufacturing Industry - Micro Data and Applications

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Outline

1. The data
2. Present research

KOF Business Tendency Survey in Manufacturing Industry

- available since 1985Q1
- quarterly survey
- observations: 113.531

Present research

- Shock adjustment
- Surprise index
- Firm's price setting
- Capacity constraints and prices: Phillips curve
- NAICU and the Phillips curve

Shock adjustment

Contingency tables

		realisation		
		-	=	+
judgment	-	mm	me	mp
	=	em	ee	ep
	+	pm	pe	pp

- different states of firms
  - pm: negative shock
  - ee: equilibrium
  - mp: positive shock

Shock adjustment

Idea

- identification of a state of the economy
- measurement of time and speed for adjustment to shocks by the economy
- approximation by a discrete Markov-chain of order one

Shock adjustment

Results

- reaction to shocks is consistently asymmetric
- adjustment to a positive shock is faster than adjustment to a negative shock
- adjustment of firms to both shocks is faster nowadays than in the sample from ’89 to ’98

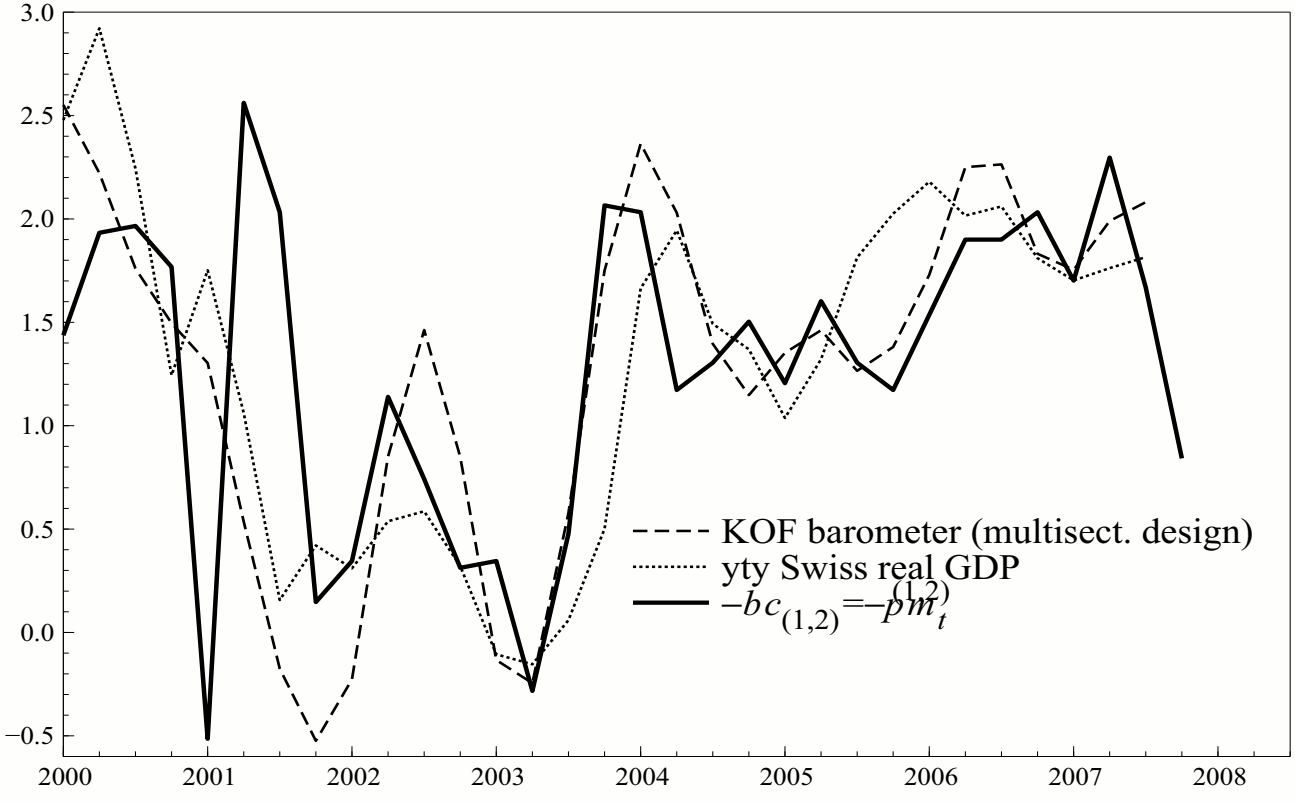
Surprise index

Idea

- the negative shock has a longer lasting effect on the economy
- our business cycle measure bc_t is therefore simply given by $bc_t = pm_t$
- pm_t represents the quarterly share of firms being in the negative shock state

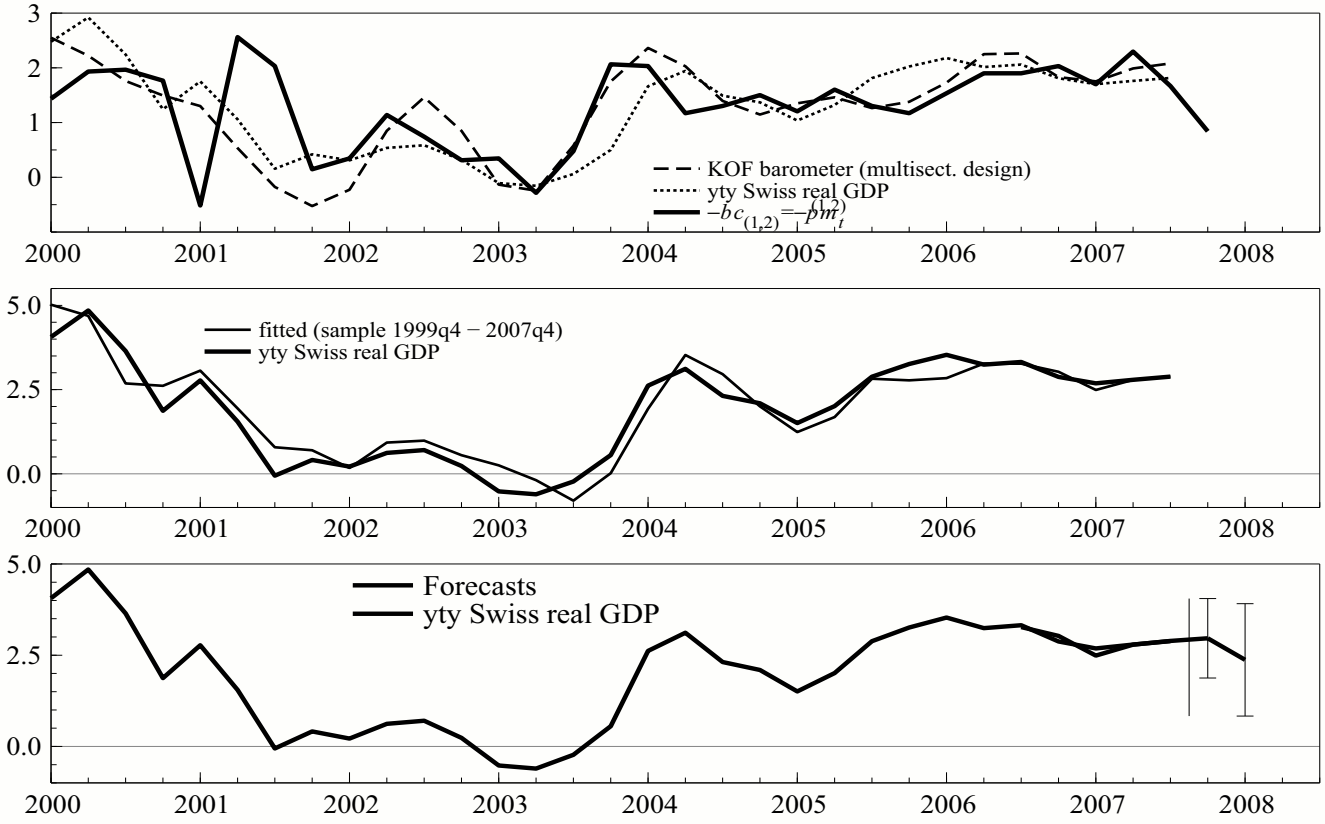
Surprise index

Graphical analysis



Surprise index

Forecasting Performance



Surprise index

Results

- business cycle indicator is not subject to revisions
- publication lead of at least one quarter
- can be used for up to two quarters ahead forecasting real GDP growth
- easy to compute

Firm's price setting

Idea
Check for determinants of price adjustment:

1. time or state dependent features of price setting?
2. do macroeconomic developments additionally matter?
3. do the results differ when considering price plans?

Firm's price setting

Findings

1. both time and state dependent features in the data
2. macroeconomic variables only have marginal additional information
3. even more support for state dependent pricing when predetermined price changes are excluded from analysis

Capacity constraints and prices: Phillips curve

Idea

- analysis of the interplay of capacity utilisation, capacity contraints, demand constraints and price setting
- we use a model (Álvarez Lois (2004)) that shows that a convex Phillips curve can exist if firms are faced with capacity constraints
- we employ this theoretical general equilibrium model to derive a testable price setting equation for our empirical model

Capacity constraints and prices: Phillips curve

Findings

- firms with high capacity utilisation are more pressed to increase and less likely to decrease prices
- we therewith confirm the bottleneck assumption of the theoretical model: capacity constraints lead to higher probability of raising prices
- price reductions are very responsive to reductions in capacity utilisation rates and demand constraints

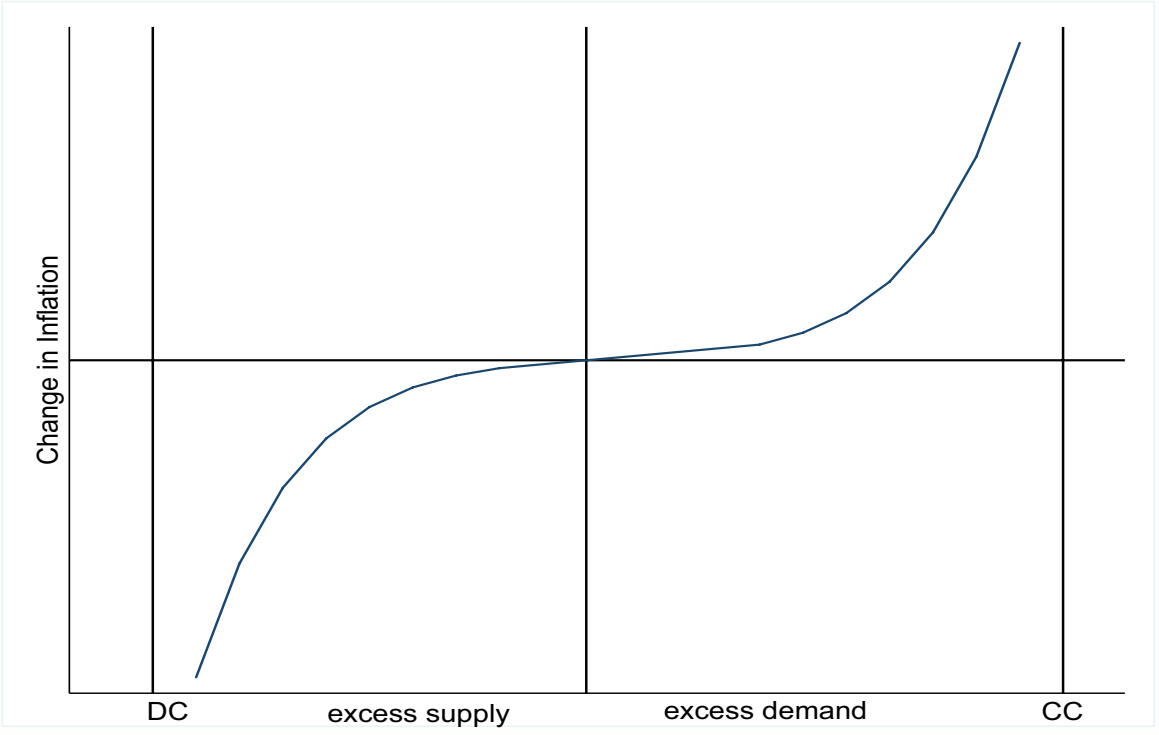
Capacity constraints and prices: Phillips curve

Macro level insights

- inflation accelerates faster during periods of large excess demand
- however, it declines at faster rate during periods of large excess supply
- hence, the Phillips curve is rather convex-concave than purely convex

Capacity constraints and prices: Phillips curve

Convex-concave Phillips curve



NAICU and the Phillips curve

Idea

- we link the utilisation rate to the currently and expected price adjustments at the firm level

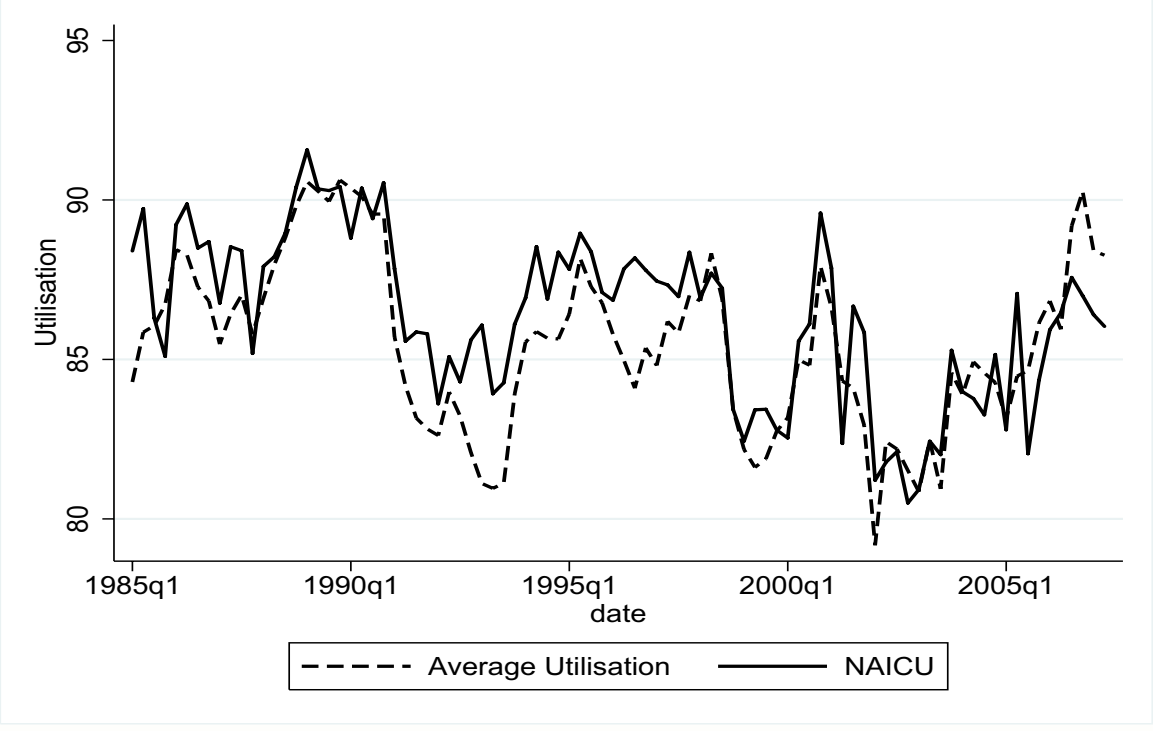
- hence, we get the firm-specific NAICU (non-accelerating inflation capacity utilisation rate)

NAICU and the Phillips curve

Advantages over previous estimates

- availability in real time and not subject to revisions
- derived from micro data and takes into account the theoretical idea of the NAICU
- very simple method, no end-point adjustments or priors on smoothness of trend or cycle
- it considers heterogeneity at firm level
- it allows for time variation

NAICU and the Phillips curve



NAICU and the Phillips curve

Capacity utilisation gap and performance

- New Keynesian Phillips Curve estimates with a constructed capacity utilisation gap
- remarkably well performance
- it beats unit labor cost and output gap measures for Switzerland by far

Outlook

- easier access to database to be able to update surprise index and NAICU
- test inflation pressure forecast performance of our NAICU
- further research on interplay between capacity and price adjustment (choice model)
- set up a complete new keynesian model with micro data based variables of inflation expectations (NAICU), output gap and capacity utilisation gap
- Analysis of the effects of demand and supply shocks when the shock is exogneously defined on basis of survey data
- find evidence for phases of classical and keynesian unemployment over time on basis of survey data (labor vs. quantity constraint)