Forecasting and Policy Analysis System in the Czech National Bank

Macroeconomic Forecasting Division Monetary and Statistics Department

Tibor Hlédik

Masaryk University Brno 27 September, 2011



INVESTICE DO ROZVOJE VZDĚLÁVÁNÍ

Outline

- The motivation for FPAS and main objectives
- The elements of the system
- The forecasting process and its organization
- Conclusion

The motivation for FPAS and main objectives (i)

- FPAS is most importantly a system!
- Its main goals:
 - 1. All know-how at department level should be channeled into the analysis and forecast
 - 2. Clear division of responsibilities
 - 3. Effective execution of specialized tasks but...emphasis on high quality synthesis
 - 4. Good coordination of mutually linked activities
 - 5. Transforming the technical results into a digestible story
 - 6. Meeting tight deadlines

The motivation for FPAS and main objectives (ii)

- The difference between forecasting in a CB compared, for instance, with the academia:
 - 1. Individual vs. Team work
 - 2. Own views vs. Communication within the forecasting team and with policy makers
 - 3. Snap-shot vs. Regular task
 - 4. Medium-term research vs. Real-time pressures
 - 5. "No memory" vs. Last forecast relative to the actual one
 - 6. Broad picture vs. Details
 - 7. Technical language vs. Macroeconomic story
 - 8. Target groups for "external" communication are different

The motivation for FPAS and main objectives (iii)

- Medium-term approach
- Reactive MP and unconditional inflation forecast
- Insight into decision making of economic agents and monetary authority
- The process organized around a relatively simple (QMP) resp. less simple (g3) core structural model:
 - How important it is to have a state-of-the art core model?
 - Communication aspects
- Departmental forecasting team: responsible for the successful conduct of the process and co-operation of all divisions

The motivation for FPAS and main objectives (iv)

- To have consistent and clear methodology to derive a consistent macroeconomic forecast
- To shape inflation expectations and behave systematically in line with the inflation forecast
- To communicate the basic massage of the forecast:
 - where the economy is and what the current trends are
 - what is the likely evolution in the future
 - what are the implicit risks
 - what are the underlying pressures in terms of MP

	The Elements of the System (i)						
Short-term forecasting methods							
	phase-in	QPM		phase-out			
			phase-in	g3			
Jan. 1998	Jan. 2001	July 2002	Jan. 2007	July 2008			

- CNB relied on near-term methods when the IT introduced
- QPM introduced into forecasting in mid-2002
- Switch from constant IRs assumption to endogenous IRs
- Successful switch to 'g3' in mid-2008
- Integration with near-term forecast
 - nowcasting + robustness check + expert judgments

The Elements of the System (ii)

- <u>Core model (g3)</u>
- Multisectoral SOE model
- No ad-hoc detrending, explicit treatment of sectoral trends
- BGP with constant nominal expenditure shares and trends in relative prices
- Cascade of price and wage rigidities
- Real frictions (habit formation, new vs. old capital, ...)
- Imperfect exchange rate pass-through
- Import intensity of exports, increase in trade openness
- Regulated prices included

The Elements of the System (iii)

• Core model (g3) (cont.)

- Definition of the key features of the economy
- The structure of the model
- Stock-flow equilibrium
- Calibration
- Kalman filtering, identification of structural shocks
- The model generates an interest rates trajectory consistent with the overall projection
- Some other use: alternative scenarios, MP experiments, stochastic simulations of shocks etc.

The Elements of the System (iv)

<u>Near-term forecast (NTF)</u>

- Model (g3) mechanisms are valid for medium-term horizon
- The nowcast and 1Q ahead forecast are based on a wide range of high frequency information
- Identification of short-run idiosyncratic shocks
- High degree of detail and structural insight
- Economic intuition based on accumulated expert knowledge
- An important role of empirical evidence, statistical data and econometric methods
- Irreplaceable task: NTF benchmark for the model forecast
- Example (Kalman filter based forecast decomposition)

The Elements of the System (v)

<u>Departmental forecasting team:</u>

- Why a separate forecasting team?
- Forecast is made by the staff not by the model
- Inclusivity and collective view are essential
- Responsible for a conduct of the forecasting process
- Specifies deadlines and responsibilities
- Disposes with technical background with a seamless database and prediction system

The Elements of the System (vi)

- <u>Composition of the forecasting team (FT)</u>:
 - Head of the forecasting team, representative of the Macroeconomic Forecasting Division (MAFD)
 - Representative of the near-term forecasting team (MAFD)
 - 2 representatives of Monetary Policy and Strategy Division (Editor + Fiscal expert)
 - Representative of External Economic Relations Divisions
 - 1 model operator (MAFD)
 - Potentially some other members of the department (training)

Forecasting Process and Its Organisation (i)

- The process
- Departmental forecasting team builds up a macroeconomic forecast as a main support for MP decision
- Provides an unconditional medium term forecast using the model, NTF and own judgment
- Incorporating out-of-model information (fiscal policy, indirect taxes, structural insight etc.)
- <u>The main goal</u>: a macroeconomic story consistent with economic theory, empirical evidence and judgment

Forecasting Process and Its Organisation (ii)

•	Issues meeting	W1
•	Meeting on forecasting techniques	W2
•	Meeting with the BB on initial cond. and IT fulfillment	W3
•	Meeting with the BB: first version of the forecast + alter.	
	Meeting on the final approval of the forecast	W4
•	Drafting of the Inflation Report	W5
•	Official MP BB meeting ⇒ MP decision	W6
•	Post mortem meeting	W7

Forecasting Process and Its Organisation (iii)

Issues Meeting:

- Collective and intuitive view among the staff where the economy is and what the current economic issues are
- Designed to address a wide range of questions
- Broad participation of the staff encouraged
- Examples

Forecasting Process and Its Organisation (iv)

Meeting on Forecasting Techniques:

- Properties of main forecasting tools are reintroduced and reexamined
- Opportunity to introduce changes and assess their significance
- Refreshes the staff's and forecasting team's familiarity with the techniques
- Examples (change in the model calibration, extension of the model, etc.)

Forecasting Process and Its Organisation (v)

Meeting on Initial Conditions and Inflation Forecast Fulfillment

- Identification of structural shocks
- Out-of-model information (examples)
- Is there any significant change in underlying sectoral productivity trends?
- External assumptions (CF) and their expected impact on the forecast
- Initial exchange rate scenario for NTF mix of model consistent UIP and order flow forecast (BoP)
- Inflation forecast fulfillment
- Meeting on "Initial Conditions" with the Bank Board
- Examples

Forecasting Process and Its Organisation (vi)

• <u>1. Forecast Round:</u>

- NTF is already incorporated into the model forecast (residuals)
- The first draft of the forecast introduced
- Response of management and experts
- Room for modification or tuning the message of the baseline scenario
- Discussing the motivation for alternatives
- Meeting with the Bank Board on alternative scenarios: which risks are to be quantified

Forecasting Process and Its Organisation (vii)

- Final Forecast Round:
 - Approval of the baseline scenario of the forecast
 - Final consistency check and fine-tuning
 - Preparing alternatives and MP experiments

Forecasting Process and Its Organisation (viii)

Post Mortem Meeting:

- Opportunity to systematically asses what went wrong and what should be improved (technically vs. in terms of organization of the process)
- Broad participation of the department is encouraged
- Efficient tool to transform fresh emotions into immediate measures for the next time
- Examples

Forecasting Process and Its Organisation (ix)

2x1 Tm Sp 123 13:00 Substance Report <			2nd SR 2011 and 3rd SR 2011 schedule			Documents	
24-III Thu SP 123 13.00 Issue meeting 3rd Situation Report Image: Second Status Sta				9:00	2nd Situation Report - Bank Board meeting		
B G G G G Control Control <thcontrol< th=""> Control Cont</thcontrol<>	24-III.	Thu	5P 123	13:00	Issue meeting 3rd Situation Report		
25-III. Fri Image: prime of the inflation target 100 Fext distribution: Fulfiment of the inflation target 29-III. Tu 100 4P 321 13:00 Meeting - techniques of forecast and fulfiment of the inflation target 100 Fext distribution: Fulfiment of the inflation target 31-00 Fri 12:00 Fri 12:00 Fri 12:00 Fri 4-V Mo 4P 321 13:00 Resentation - Near Term Forecast (412 dep.) 12:00 Fri 12:00 Fri 6-V Mo 4P 321 13:00 Intial conditions meeting 12:00 Intial conditions, Fulfiment of the inflation target 6-V Mo 4P 321 13:00 Intial conditions, Fulfiment of the inflation target. 12:00 Intial conditions, Fulfiment of the inflation target. 7-V Th 4P 321 13:00 Intial conditions, Fulfiment of the inflation target. 12:00 Intial conditions, Fulfiment of the inflation target. 11-V Mo 7 11:00 Intial conditions, Fulfiment of the inflation target. 12:00 Intial conditions, Fulfiment of the inflation target. 11-V Mo 7 10:00 Instal meeting with Bank Board. Intial conditions, Fulfiment of the inflation target. 11-V Mo 7 7 10:00 Instal Monetar			5P 123	14:00	Meeting: exchange rate near-term forecast, fulfilment of the inflation target		
28-III, Mo Ho	25-III.	Fri					
29-III To49-32113.00Meeting - techniques of forecast and fulfiment of the inflation target101031-III Tru49-32113.00Meeting - techniques of forecast and fulfiment of the inflation target101041-V49-32113.00Presentation - Near Term Forecast (412 dep.)10101064-V49-32113.00Presentation - Near Term Forecast (412 dep.)10101064-V49-32113.00Presentation - Near Term Forecast (412 dep.)10101064-V49-32113.00Initial conditions meeting1010107-V49-32113.00Boxes and nanexes for 3rd SP/ILInflation Report1010108-VFri10.00Consensus Forecasts1010101011-VNo9-00Inflation (march 2011)111010101011-VNo9-00Foreign tarks precision threads thread and be precision10101012-VIn49-32113.00Is version of forecast precision with TF team and BOP experts10101013-VVersion of forecast period with Bank Board -choice of atternantives and sensitivity scenarios1010101013-VVersion of forecast approval10Forecast approval100Final text. II to editors13-VVersion of the abstrain tark with Bank Board -choice of atternantives and sensitivity scenarios10Final text. II to editors13-V<	28-III.	Мо				16:00	Text distribution: Fulfilment of the inflation target
30-III, We4P 32113:00Meeting - techniques of forecast and fulfiment of the inflation targetImage: Constraint of the inflation targetImage: Constraint of the inflation target14-V, Mo4P 32113:00Instant of the inflation - Near Tem Forecast (412 dep.)Image: Constraint of the inflation targetImage: Constraint of the inflation constraint of the inflation target5-V, Tu4P 32113:00Instant of the inflation reatingImage: Constraint of the inflation target, external scenarios5-V, We4P 32113:00Instant of the inflation reatingImage: Constraint of the inflation target, external scenarios7-V, Tu4P 32113:00Instant of the inflation control of the inflation target, external scenariosImage: Constraint of the inflation target, external scenarios8-V, We4P 32114:00Consensus Forecast, scenario forecast, breeing with NTF team and BoP expertsImage: Consensus Forecast, scenario scenarios11-V, We4P 32114:00ScenarosImage: Consensus Forecast, the inflation target, external scenarios13-V, We4P 32114:00ScenarosImage: Consensus Forecast, the inflation control of the inflation target, external scenarios13-V, We4P 32113:00Forecast, the inflation control of the inflation target, external scenariosImage: Consensus Forecast, the inflation target, external scenarios13-V, We4P 32113:00Forecast, the inflation control of the inflation target, external scenariosImage: Consensus Forecast, the inflation target, external scenarios13-V, We4P 32113:00Forecast, the inf	29-III.	Tu					
31-III. True Image: Second Secon	30-III.	We	4P 321	13:00	Meeting - techniques of forecast and fulfilment of the inflation target		
1-V. Fri 4-V.VVVVV4-V.Mo $4p 221$ 1300Presentation - Near Term Forecast (412 dep.)II6-V. Vu 6-V. Vu4-P 2211300Initial conditions meetingII6-V. Vu 6-V. Vu4-P 2211300Initial conditions meetingII6-V. Vu 6-V. Vu4-P 2211300Initial conditions meetingII6-V. Vu 6-V. Fri4-P 2211300Initial conditions, Fulfilment of the inflation target, external scenariosI8-V. Vu 11-V. VuIII11-V. Va 12-V TuII12-V. Tu 13-V. VeI13-V. Ve 14-VI13-V. Ve 14-V14-V. Tu 14-V15-V. Fri 14-V16-V. Vi 14-V18-V. Ve 14-V4P 32113:00Reeing with NTF team and BoP experts1000Final text. II 1 to editors18-V. Vi 14-V18-V. Ve 14-V4P 32113:00Reeing with NTF team and BoP experts1000Final text. II 1 to editors18-V. Ve 14-V4P 32113:00Reeing with NTF team and BoP experts1100Final text. II 1 to editors18-V. Ve 14-V4P 32113:00Reeing with NTF team and BoP experts <td>31-III.</td> <td>Thu</td> <td></td> <td></td> <td></td> <td></td> <td></td>	31-III.	Thu					
4-1V.Mo4P 32113.00Presentation - Near Term Forecast (412 dep.)Image: Constraint of the constra	1-IV.	Fri					
41-10, m0 4P 321 13:00 Presentation - Near Term Forecast (412 dep.)	4 11/	Mo					
5-W, Tu 4P 321 13:00 Initial conditions meeting Image: constraint of the initial conditions meeting 7-W, Thu 4P 321 13:00 Initial conditions meeting Documents for Bank Board: Initial conditions, Fulfilment of the initial conditins, Fulfilment, Fulfilment, Fulfilment, Fulfilment, Fulfilment, Ful	4-1V.	IVIO	4P 321	13:00	Presentation - Near Term Forecast (412 dep.)		
6-1/2 We 4P 321 13:00 Initial conditions meeting Initial conditions meeting 8-1/2 Fri 15:30 Meeting: Boxes and annexes for 3rd SR /I Lindian Report Documents for Bank Board: Initial conditions, Fulfilment of the inflation target, external scenarios 11-1/2 Mo 9:00 Inflation (march 2011) Initial conditions, Fulfilment of the inflation target, external scenarios Documents for Bank Board: Initial conditions, Fulfilment of the inflation target, external scenarios 12-1/2 Via 4P 321 14:00 Scenarios Initial meeting with Bank Board: Initial conditions, Fulfilment of the inflation target, external scenarios 12-1/2 Via 4P 321 14:00 Ist version of forecast, breefing with NTF team and BoP experts Ist version of forecast, breefing with NTF team and BoP experts 14-1/7 Hu 9:00 Foreign trade prices (February 2011) Ist version of forecast, breefing with NTF team and BoP experts Ist version of the expert prices (February 2011) 15-1/2 Fri 9:00 Foreign trade prices (February 2011) Ist version of the expert prices (February 2011) Ist version of the ex	5-IV.	Tu					
7-1/L The 4P 321 15:30 Meeting: Boxes and annexes for 3rd SR / II.Inflation Report Image: Constraint of the second	6-IV.	We	4P 321	13:00	Initial conditions meeting		
8-IV Fri 10.00 Consensus Forecasts Documents for Bank Board: Initial conditions, Fulfilment of the Initial conditions, Fulfilment of the Initial conditions, Fulfilment of the inflation target, external 22 P318 Documents for Bank Board: Initial conditions, Fulfilment of the inflation target, external 22 P318 Documents for Bank Board: Initial conditions, Fulfilment of the inflation target, external 22 P318 11-VV Me 4P 321 14:00 indition (march 2011) Initial conditions, Fulfilment of the inflation target, external 22 P318 Initial conditions, Fulfilment of the inflation target, external 22 P318 13-VV We 4P 321 14:00 Istersion of forecast, breefing with NTF team and BoP experts Documents for Bank Board: choice of atternantives and sensitivity 22 OV 13-VV Fri 9:00 Foreign trade prices (February 2011) Documents for Bank Board: choice of atternantives and sensitivity 20:00 13-VV Fri 9:00 Reating with Bank Board - choice of atternantives and sensitivity scenarios 16:00 Final boxes and annexes to editors 13-VV Fri 14:00 Meeting with Bank Board - choice of atternantives and sensitivity scenarios 16:00 Final boxes and annexes to editors 13-VV Fri 14:00 Second exchange real-team forecast meeting 16:00 Final boxes and annexes to editors 13-VV Fri 14:00 13:00 Forecast approval 16:00 Final boxes	7-IV.	Thu	4P 321	15:30	Meeting: Boxes and annexes for 3rd SR / II.Inflation Report		
11 10:00 [Consensus Forecasts 12:00 [Inflation target, external scenarios 11 2P 318 9:00 [Inflation (march 2011) Initial meeting with Bank Board: Initial conditions, Fulfilment of the inflation target, external Image: Consensus Forecasts 12:1/V Tu 9:00 [Inflation (march 2011) Initial meeting with Bank Board: Initial conditions, Fulfilment of the inflation target, external Image: Consensus Forecasts 12:1/V Tu 9:00 [Foreign trade prices (February 2011) 13:00 Second exchange rate near-term forecast meeting Image: Consensus Forecasts 18:1/V Tu 9:00 [Foreign trade prices (February 2011) 13:00 Second exchange rate near-term forecast meeting 16:00 [Final text. II.1 to editors 19:1/V Tu 10:00 [Final text. II.1 to editors 16:00 [Final text. II.1 to editors 19:1/V Tu 11:00 [Forecast approval 16:00 [Final text. II.1 to editors 19:1/V Tu 11:00 [Final text. II.1 to editors 16:00 [Final text. II.1 to editors 19:1/V Tu 11:00 [Final text. II.1 to editors 16:00 [Final text. II.1 to editors 19:1/V Tu 11:00 [Final text. II.1 to editors 16:00 [Final text. II.1 to editors 10:1/V Tu 11:00 [Final text. II.1 to editors 16:00 [Final text. II.1 to editors 10:00 [Final	8 11/	Eri					Documents for Bank Board: Initial conditions, Fulfilment of the
11-12/- 12-12/- 13-12/-	0-10.			10:00	Consensus Forecasts	12:00	inflation target, external scenarios
11-1.V. Mo 2P 318 14:00 Initial meeting with Bank Board: Initial conditions, Fulfilment of the inflation target, external Image: Constraint of the inflation target, external 12-V. Tu 4P 321 14:00 Ist version of forecast, breefing with NTF team and BoP experts Image: Constraint of the inflation target, external Image: Constraint of the inflation target, external 13-V. We 4P 321 14:00 Ist version of forecast, breefing with NTF team and BoP experts Image: Constraint of the inflation target, external 14-W. Thu Second exchange rate near-term forecast meeting Image: Constraint of the inflation target, external Image: Constraint of the inflation target, external 18-W. Mo 2P 318 14:00 Second exchange rate near-term forecast meeting Image: Constraint of the inflation target, external Image: Constraint of the inflation target, external 19-W. Tu 4P 321 13:00 Forecast approval 16:00 Final text. II.1 to editors 19-W. Tu 4P 321 13:00 Forecast approval 16:00 Final text. II.2 or ditors 21-W. Mo 4P 321 8:30 Discussion in M&S dept. Chapter III. 16:00 Final text. II.1 to editors 22-W. Fri 4P 321 8:30 Discusion in M&S dept. Chapter III. 15:00 <td></td> <td></td> <td></td> <td>9:00</td> <td>Inflation (march 2011)</td> <td></td> <td></td>				9:00	Inflation (march 2011)		
L 2P 318 11:00 scenarios Image: constraint of the constraint of t	11-IV.	Мо			Initial meeting with Bank Board: Initial conditions, Fulfilment of the inflation target, external		
12-1V. Tu 4P 321 14:00 Is version of forecast, breefing with NTF team and BoP experts Image: constraint of the constrai			2P 318	14:00	scenarios		
13-14, Wei 44 221 14:00 Ist Version or forecast, breeing with NTP team and BoP experts 14-W, Thu	12-IV.	Tu	40.004	14:00			
14-10. 1100	13-IV.	vve	4P 321	14:00	Ist version of forecast, preeting with NTF team and BOP experts		
15-IV. Fri Stor Foreign hade phoses (rephdary 2011) Documents for Bank Board: choice of attlemantives and sensitivity scenarios 18-IV. Mo 2P 318 14:00 Meeting with Bank Board - choice of attlemantives and sensitivity scenarios 16:00 Final text. II.1 to editors 19-IV. Tu - - - 20-IV. We 4P 321 13:00 Forecast approval 16:00 Final text. III.1 to editors 21-IV. Thu - - - - 22-IV. Fri - - - - 22-IV. Fri - - - - 22-IV. Fri - - - - - 22-IV. Fri - - - - - - 22-IV. Fri - - - - - - - - - -	14-IV.	Inu		0.00	Foreign trade prices (February 2011)		
ISH: Fill 13:00 Second exchange rate near-term forecast meeting Decontrains 18:1V: Mo 2P 318 14:00 Meeting with Bank Board - choice of attlemantives and sensitivity scenarios 16:00 Final text. II.1 to editors 19:1V: Tu - - - - 20:1V: We 4P 321 13:00 Forecast approval 16:00 Final boxs and annexes to editors 21:1V: Thu - - - - - 21:1V: Thu - - - - - 22:1V: Fri - - - - - - 21:1V: Thu - <t< td=""><td>15 11/</td><td>Eri</td><td></td><td>9.00</td><td>Foreign trade prices (February 2011)</td><td></td><td>Documents for Bank Board: choice of atternantives and sensitivity</td></t<>	15 11/	Eri		9.00	Foreign trade prices (February 2011)		Documents for Bank Board: choice of atternantives and sensitivity
18-IV. Mo 2P 318 14:00 Meeting with Bank Board - choice of attlemantives and sensitivity scenarios 16:00 Final text. II.1 to editors 19-IV. Tu 4P 321 13:00 Forecast approval 16:00 Final text. II.1 to editors 20-IV. We 4P 321 13:00 Forecast approval 16:00 Final text. III.1 to editors 21-IV. Thu C 16:00 Final text. III.2 to editors 12-IV. Fri C 16:00 Final text. III.2 to editors 12-IV. Fri C 16:00 Final text. II.2 to editors 12-IV. Fri C 16:00 Final text. II.2 to editors 12-IV. Fri C 16:00 Final text. II.3 and II.4 to editors 22-IV. Fri C 15:00 Distribution chapter II.1. M&S dept. 25-IV. Mo E E E E 26-IV. Tu 4P 321 8:30 Discussion in M&S dept.: Chapter III3 a II.5 15:00 Distribution chapter II.1-3 a II.5 in M&S dept. 28-IV. Thu 4P 321 8:30 Discussion in M&S dept.: Chapter I.1	13-17.			13:00	Second exchange rate near-term forecast meeting	12.00	scenarios
18-IV. Mo 2P 318 14:00 Meeting with Bank Board - choice of atternantives and sensitivity scenarios 10:00 Final lext. II. 1 to Building 19-IV. Tu 20-IV. We 4P 321 13:00 Forecast approval 16:00 Final boxes and annexes to editors. 20-IV. We 4P 321 13:00 Forecast approval 16:00 Final text. II. 2 to editors 21-IV. Thu Intervention 16:00 Final text. II. 2 to editors 22-IV. Fri Fri Intervention 16:00 Final text. II. 2 to editors 22-IV. Fri Fri Intervention 15:00 Final text. II. 2 to editors 22-IV. Fri Fri Intervention 16:00 Final text. II. 2 to editors 22-IV. Fri Fri Intervention 15:00 Final text. II. 3 and II. 4 to editors 22-IV. Tu 4P 321 8:30 Discussion in M&S dept: Chapter III3 a II.5 15:00 Distribution chapter I II3 a II.5 in M&S dept. 28-IV. Tu 4P 321 8:30 Discussion in M&S dept: Chapter I. and II.4 17:00 3rd Situation Report delivery to M&S dept. director 28-IV. Thu 4P 321 8:30 Discussion in M&S dept. Directors meeting - Monetary Polic						12.00	Final text. II 1 to editors
19-IV. Tu 14:00 Meeting with Bark Board - Choice of alternatives and sensitivity scenarios 19-IV. Tu 4P 321 13:00 Forecast approval 16:00 Final boxes and annexes to editors 20-IV. We 4P 321 13:00 Forecast approval 16:00 Final text. II.2 to editors 21-IV. Thu Initial ext. III.2 Initial ext. III.2 Initial ext. III.2 Initial ext. II.2 22-IV. Fri Initial ext. II.2 Initial ext. II.2 Initial ext. II.2 Initial ext. II.2 25-IV. Mo Initial ext. II.2 Initial ext. II.2 Initial ext. II.2 Initial ext. II.2 26-IV. Tu 4P 321 8:30 Discussion in M&S dept.: Chapter III. 15:00 Distribution chapter III.1-3 a II.5 in M&S dept. 27-IV. We 4P 321 8:30 Discussion in M&S dept.: Chapter II.1-3 a II.5 15:00 Distribution chapter I. al.4 in M&S dept. 28-IV. Tu 4P 321 8:30 Discussion in M&S dept.: Chapter I. and II.4 17:00 3rd Situation Report delivery to M&S dept. director 29-IV. We 4P 321 8:30 Discussion in M&S dept. Uncetors meeting - Monetary Policy Recomendation 13:00 3rd Situation Report delivery to Bank Board (9:00 in M&S dept.) 2-V. Mo </td <td>18-IV.</td> <td>Mo</td> <td>20 210</td> <td>14.00</td> <td>Masting with Bank Board, shoins of atternantives and consitivity conneries</td> <td>10.00</td> <td></td>	18-IV.	Mo	20 210	14.00	Masting with Bank Board, shoins of atternantives and consitivity conneries	10.00	
13:10 4P 321 13:00 Forecast approval 16:00 Final boxes and annexes to editors Final text. III to editors 21-IV. We 4P 321 13:00 Forecast approval 16:00 Final text. III to editors 21-IV. Thu Image: Constraint of the enditors 16:00 Final text. II.2 to editors 22-IV. Fri Image: Constraint of the enditors 15:00 Final text. II.3 and II.4 to editors 25-IV. Mo Image: Constraint of the enditors 15:00 Final text. II.3 and II.4 to editors 26-IV. Tu 4P 321 8:30 Discussion in M&S dept.: Chapter III. 15:00 Distribution chapter I II.1-3 a II.5 in M&S dept. 26-IV. Tu 4P 321 8:30 Discussion in M&S dept.: Chapter II.1-3 a II.5 15:00 Distribution chapter I I.1-3 a II.5 in M&S dept. 28-IV. Thu 4P 321 8:30 Discussion in M&S dept.: Chapter II.1-3 a II.5 17:00 3rd Situation Report delivery to M&S dept. director 29-IV. Fri 4P 321 8:30 Discussion in M&S dept. Chapter I.1 and II.4 17:00 3rd Situation Report delivery to M&S dept. director 29-IV. Fri 4P 320 10:30	10 11/	т.	2F 310	14.00			
20-IV. We IF 021 10:00 Final text. III to editors 21-IV. Thu Image: State of Product approval 16:00 Final text. III to editors 22-IV. Fri Fri Image: State of Product approval 16:00 Final text. III to editors 22-IV. Fri Fri Image: State of Product approval 16:00 Final text. III to editors 22-IV. Fri Fri Image: State of Product approval 15:00 Distribution chapter III. in M&S dept. 25-IV. Mo Image: State of Product approval 15:00 Distribution chapter III3 a II.5 in M&S dept. 26-IV. Tu 4P 321 8:30 Discussion in M&S dept.: Chapter III3 a II.5 15:00 Distribution chapter I II.1-3 a II.5 in M&S dept. 27-IV. We 4P 321 8:30 Discussion in M&S dept.: Chapter II.1-3 a II.5 15:00 Distribution chapter I I.1-3 a II.5 in M&S dept. 28-IV. Thu 4P 321 8:30 Discussion in M&S dept.: Chapter I. and II.4 17:00 3rd Situation Report delivery to M&S dept. director 29-IV. Fri Fri 9:00 Mes dept. Directors meeting - Monetary Policy Recomendation Image: State of Policy Recomendation Image: State of Policy Recomendation 4-V. We 2P 318 14:00	13-17.	Tu	4P 321	13.00	Forecast approval	16.00	Final boxes and annexes to editors
21-IV. Thu Thu <t< td=""><td>20-IV.</td><td>We</td><td>41 521</td><td>10.00</td><td></td><td>16:00</td><td>Final text. III to editors</td></t<>	20-IV.	We	41 521	10.00		16:00	Final text. III to editors
21-IV. Thu Image: Constraint of the const						.0.00	
22-IV. Fri Image: Strain	21-IV.	Thu				16.00	Final text II 2 to editors
22-1V. Fri Image: Stript of the stript o						15:00	Final text, II.3 and II.4 to editors
25-IV. Mo Mo Me	22-IV.	⊢ri				15:00	Distribution chapter III, in M&S dept.
26-IV. Tu 4P 321 8:30 Discussion in M&S dept.: Chapter III. 15:00 Distribution chapter I II.1–3 a II.5 in M&S dept. 27-IV. We 4P 321 8:30 Discussion in M&S dept.: Chapter II.1–3 a II.5 15:00 Distribution chapter I I.1–3 a II.5 in M&S dept. 28-IV. Thu 4P 321 8:30 Discussion in M&S dept.: Chapter II.1–3 a II.5 17:00 3rd Situation Report delivery to M&S dept. director 29-IV. Fri Fri 4P 320 10:30 M&S dept. Directors meeting - Monetary Policy Recomendation 13:00 3rd Situation Report delivery to Bank Board (9:00 in M&S dept.) 2-V. Mo 4P 320 10:30 M&S dept. Directors meeting - Monetary Policy Recomendation 1 1 3-V. Tu 4P 320 10:30 M&S dept. Directors meeting - Monetary Policy Recomendation 1 1 4-V. We 2P 318 14:00 Macrofinancial panel 1 1 5-V. Thu 3. Situation Report - Bank Board meeting 1 1 1 1 6-V. Fri 9:00 ILO emloyment (1.0 2011) 1 1 1 1	25-IV.	Mo					
27-IV. We 4P 321 8:30 Discussion in M&S dept.: Chapter II.1–3 a II.5 15:00 Distribution chapter I. a II.4 in M&S dept. 28-IV. Thu 4P 321 8:30 Discussion in M&S dept.: Chapter I. and II.4 17:00 3rd Situation Report delivery to M&S dept. director 29-IV. Fri Image: Chapter I. and II.4 11.4 17:00 3rd Situation Report delivery to Bank Board (9:00 in M&S dept.) 2-V. Mo Image: Chapter I. and II.4 Image: Chapter I. and II.4 Image: Chapter I. and II.4 13:00 3-V. Tu 4P 320 10:30 M&S dept. Directors meeting - Monetary Policy Recomendation Image: Chapter I. and II.4 Image: Chapter I. and II.4 4-V. We 2P 318 14:00 Macrofinancial panel Image: Chapter I. and II.4 Image: Chapter I.a 5-V. Thu Image: Situation Report - Bank Board meeting Image: Chapter I.a Image: Chapter I.a Image: Chapter I.a 6-V. Fri 9:00 ILO emloyment (1.0 2011) Image: Chapter I.a Image: Chapter I.a	26-IV.	Tu	4P 321	8:30	Discussion in M&S dept.: Chapter III.	15:00	Distribution chapter I II.1–3 a II.5 in M&S dept.
28-IV. Thu 4P 321 8:30 Discussion in M&S dept.: Chapter I. and II.4 17:00 3rd Situation Report delivery to M&S dept. director 29-IV. Fri Image: Constraint of the state of	27-IV.	We	4P 321	8:30	Discussion in M&S dept.: Chapter II.1–3 a II.5	15:00	Distribution chapter I. a II.4 in M&S dept.
29-IV. Fri 13:00 3rd Situation Report delivery to Bank Board (9:00 in M&S dept.) 2-V. Mo 13:00 3rd Situation Report delivery to Bank Board (9:00 in M&S dept.) 3-V. Tu 4P 320 10:30 M&S dept. Directors meeting - Monetary Policy Recomendation 4-V. We 2P 318 14:00 Macrofinancial panel 10:00 5-V. Thu 3. Situation Report - Bank Board meeting 10:00 10:00 6-V. Fri 9:00 ILO emloyment and unemployment (1.Q 2011) 10:00	28-IV.	Thu	4P 321	8:30	Discussion in M&S dept.: Chapter I. and II.4	17:00	3rd Situation Report delivery to M&S dept. director
29-17. Fri 13:00 3rd Situation Report delivery to Bank Board (9:00 in M&S dept.) 2-V. Mo	00.11.1	F				40.00	2 ad Oiteration Depart dell'erret & Deale Depart (0:00 in M00, 4, 4)
2-V. Mo V 3-V. Tu 4P 320 10:30 M&S dept. Directors meeting - Monetary Policy Recomendation 4-V. We 2P 318 14:00 Macrofinancial panel 5-V. Thu 3. Situation Report - Bank Board meeting	29-IV.	⊢ri				13:00	and Situation Report delivery to Bank Board (9:00 in M&S dept.)
3-V. Tu 4P 320 10:30 M&S dept. Directors meeting - Monetary Policy Recommendation 4-V. We 2P 318 14:00 Macrofinancial panel 5-V. Thu 3. Situation Report - Bank Board meeting 6-V. Fri 9:00 ILO emloyment and unemployment (1.Q 2011)	2-V.	Мо					
4-V. We 2P 318 14:00 Macrofinancial panel 5-V. Thu 3. Situation Report - Bank Board meeting	3-V.	Tu	4P 320	10:30	M&S dept. Directors meeting - Monetary Policy Recomendation		
5-V. Thu 3. Situation Report - Bank Board meeting 6-V. Fri 9:00 ILO emloyment and unemployment (1.Q 2011)	4-V.	We	2P 318	14:00	Macrofinancial panel		
6-V. Fri 9:00 ILO emloyment and unemployment (1.Q 2011)	5-V.	Thu			3. Situation Report - Bank Board meeting		
	6-V.	Fri		9:00	ILO emloyment and unemployment (1.Q 2011)		

Conclusion

- Structured debate about risks and policy issues enabled due to common language
- Forecast with active MP (includes rates trajectory consistent with forecast)
- Involvement of MSD resources but manageable discussion: FT
- Consistently incorporated judgment
- Real time pressures well tackled due to automatisation
- Story-centered discussion
- High level of transparency



Thank you for your attention !

Tibor.Hledik@cnb.cz



Backup slides

Production structure – g3



Price structure – g3

Consumption prices - cost structure



Identification of structural shocks



27



The forecasting process (ii)



) 29

Sensitivity to foreign demand assumption

PRIBOR 3M (%, p.a.)



Nominal exchange rate (CZK/EUR)



Real GDP growth (y-o-y, %)



Nominal wages growth (y-o-y, %)



30

Endogenous interest- and exchange rates

3M PRIBOR forecast





■ 90% ■ 70% ■ 50% ■ 30% confidence interval



90% = 70% = 50% = 30% confidence interval



Identification of structural shocks – initial conditions

Nominal Marginal Cost in Consumption Sector (q/q, in %, ann.)





Decomposition tools



The structure of nominal disposable income

Gross disposable income

(annual percentage changes; contributions in percentage points)



The analysis of nominal wage growth (i)

Nominal wages growth (%, y-o-y)



The analysis of nominal wage growth (ii)

26

24 ^L_____ I/06

I/07

I/08

I/09

I/10



3M PRIBOR (%, p.a.)





I/11



