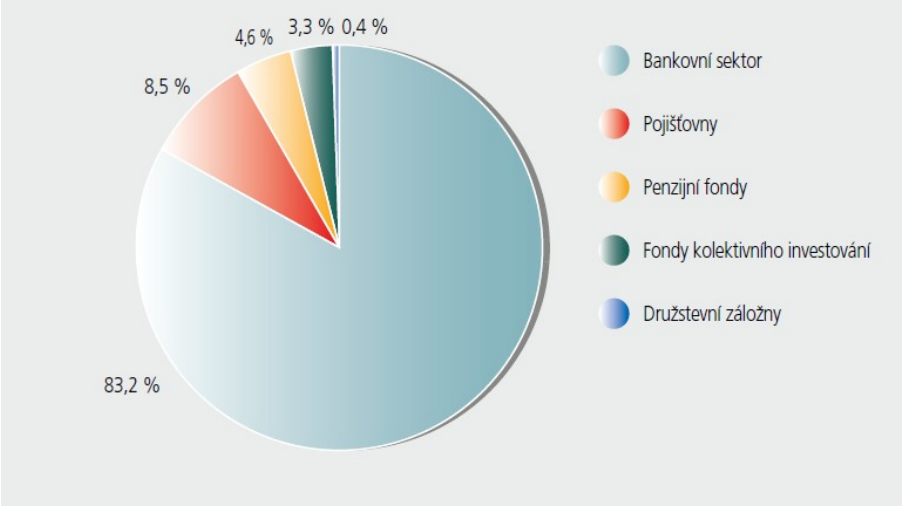
List of appendices

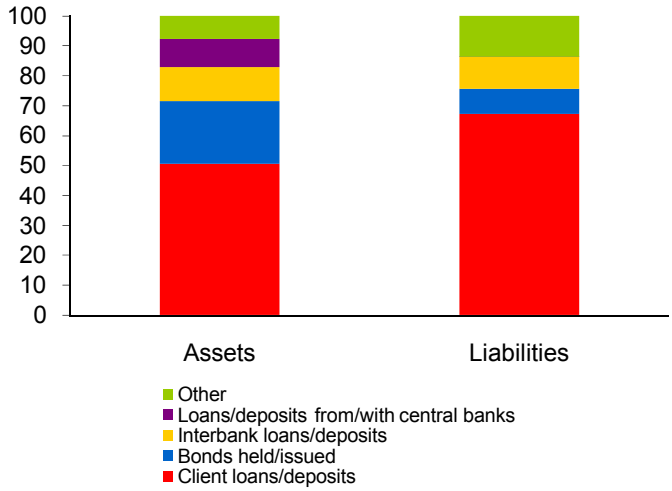
Appendix

Appendix 1: *The proportion of assets of the supervised financial market entities in the Czech Republic (to date 31.12.2011)*



Source: CNB, Annual report 2010

Appendix 2: *Balance sheet structure of the banking sector in the Czech Republic*



Source: CNB, Financial Stability Report 2010/2011

Appendix 3: *Input data for VAR model*

Observations	NR	IP	IR	ER	INF	UN
2002M01	12,50	81,3821	4,55	88,68	3,7	7,6
2002M02	11,84	82,9183	4,30	89,42	3,9	7,4
2002M03	11,55	83,7640	4,30	90,60	3,7	7,3
2002M04	10,91	82,8648	4,21	93,76	3,2	7,3
2002M05	10,71	83,1776	3,81	93,77	2,5	7,2
2002M06	10,27	83,8836	3,78	95,29	1,2	7,2
2002M07	9,53	86,3811	3,37	97,80	0,6	7,2
2002M08	9,39	81,5348	3,06	94,29	0,6	7,2
2002M09	9,33	85,2463	2,99	96,03	0,8	7,3
2002M10	9,68	89,6231	2,82	94,73	0,6	7,3
2002M11	9,51	91,9570	2,77	94,48	0,5	7,4
2002M12	8,79	91,6649	2,63	93,40	0,6	7,4
2003M01	9,11	85,9820	2,66	93,20	-0,4	7,3
2003M02	9,17	85,2782	2,45	93,15	-0,4	7,3
2003M03	9,10	84,8264	2,39	93,12	-0,4	7,4
2003M04	9,04	86,6036	2,45	93,54	-0,1	7,6
2003M05	8,30	85,7469	2,45	95,12	0,0	7,8
2003M06	7,28	86,2341	2,33	95,34	0,3	7,9
2003M07	7,14	86,0317	2,25	93,68	-0,1	8,0
2003M08	7,06	87,2002	2,06	92,12	-0,1	8,0
2003M09	6,25	87,5925	2,06	92,03	0,0	8,1
2003M10	6,27	88,7357	2,06	93,57	0,4	8,1
2003M11	6,25	90,6703	2,07	93,60	1,0	8,2
2003M12	6,19	92,3429	2,08	93,24	1,0	8,2
2004M01	6,25	92,3074	2,07	92,32	2,3	8,3
2004M02	6,18	92,9138	2,06	92,00	2,3	8,4
2004M03	5,61	94,4044	2,05	91,12	2,5	8,5
2004M04	5,42	96,0260	2,06	92,10	2,3	8,5
2004M05	5,30	95,9044	2,16	93,78	2,7	8,4
2004M06	5,11	95,6253	2,33	94,72	2,9	8,4
2004M07	5,20	96,9016	2,47	94,96	3,2	8,3
2004M08	5,11	96,5897	2,57	94,56	3,4	8,2
2004M09	4,96	97,3255	2,72	94,66	3,0	8,2
2004M10	4,85	97,6043	2,67	95,19	3,5	8,2
2004M11	4,65	97,9571	2,61	96,02	2,9	8,3
2004M12	4,65	96,6441	2,57	98,11	2,8	8,2
2005M01	4,60	96,6403	2,53	98,92	1,7	8,2
2005M02	4,60	96,8734	2,25	99,80	1,7	8,0
2005M03	4,53	97,0455	2,08	100,59	1,5	8,0
2005M04	4,50	97,9833	2,03	99,46	1,6	8,1
2005M05	4,40	98,0464	1,78	99,03	1,3	8,0
2005M06	4,31	99,9446	1,75	98,97	1,8	8,0

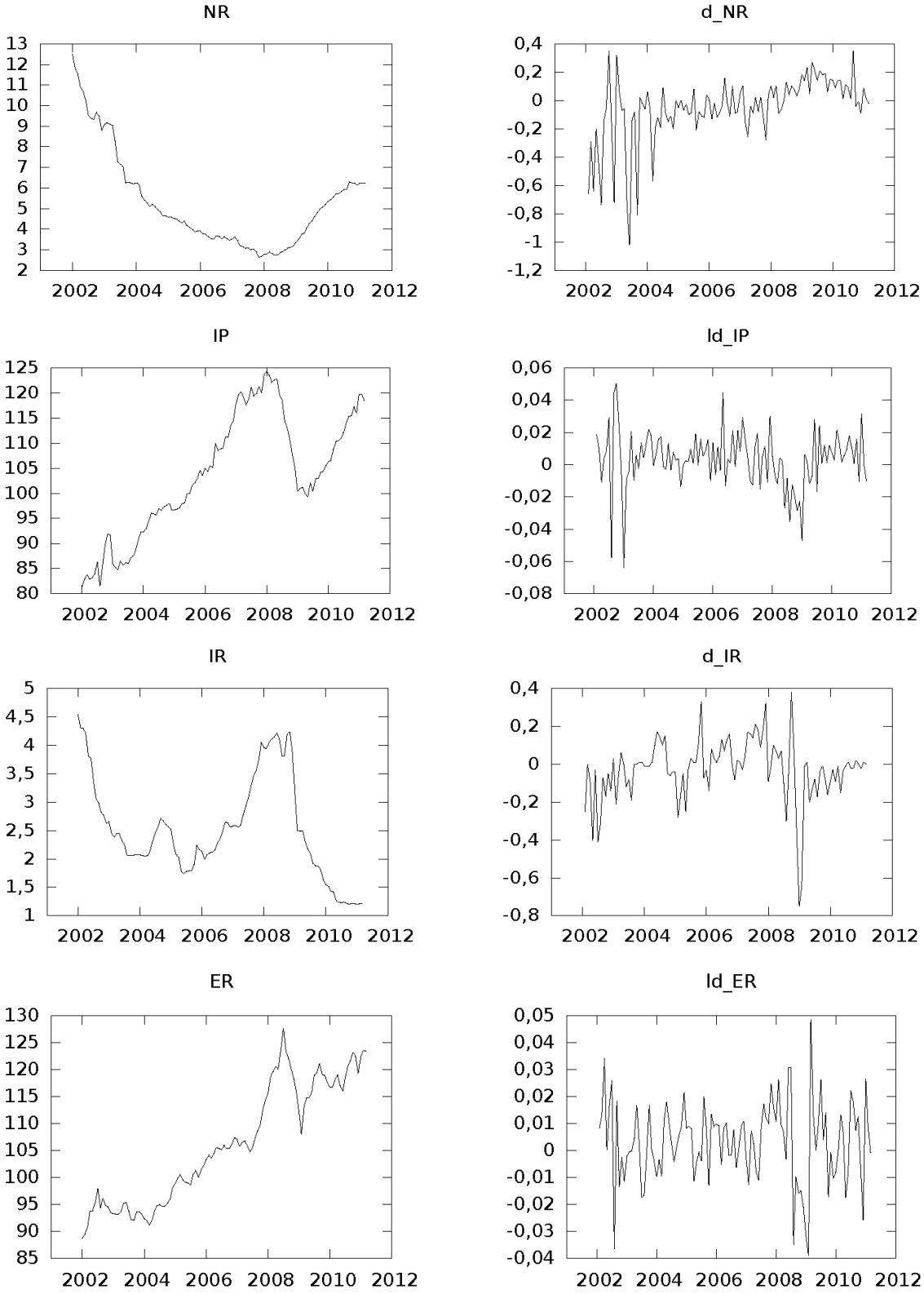
2005M07	4,39	99,9230	1,78	98,60	1,7	7,8
2005M08	4,18	101,5123	1,79	100,58	1,7	7,8
2005M09	4,10	102,0797	1,80	101,29	2,2	7,8
2005M10	3,99	102,9064	1,91	99,98	2,6	7,8
2005M11	3,87	104,5320	2,24	101,34	2,4	7,9
2005M12	3,91	103,5091	2,17	102,23	2,2	7,8
2006M01	3,91	104,9203	2,14	103,22	2,9	7,8
2006M02	3,78	104,2846	2,00	104,16	2,8	7,7
2006M03	3,76	105,4369	2,08	103,60	2,8	7,6
2006M04	3,64	105,0789	2,11	104,44	2,8	7,4
2006M05	3,55	109,9052	2,12	105,50	3,1	7,3
2006M06	3,51	108,4725	2,16	105,31	2,8	7,1
2006M07	3,67	108,8706	2,29	105,12	2,9	7,1
2006M08	3,65	108,9749	2,36	105,94	3,1	7,1
2006M09	3,54	111,2822	2,49	105,27	2,7	7,0
2006M10	3,64	111,1416	2,65	105,33	1,3	6,8
2006M11	3,55	113,5085	2,64	106,26	1,5	6,6
2006M12	3,47	114,4351	2,56	107,39	1,7	6,4
2007M01	3,52	117,8072	2,58	107,09	1,3	6,0
2007M02	3,62	119,6076	2,59	105,72	1,5	5,7
2007M03	3,46	120,1604	2,56	106,48	1,9	5,6
2007M04	3,20	118,9728	2,60	106,74	2,5	5,5
2007M05	3,16	117,5079	2,77	105,91	2,4	5,5
2007M06	3,07	118,7737	2,93	104,74	2,5	5,4
2007M07	3,09	121,1194	3,07	105,57	2,3	5,2
2007M08	3,01	119,2797	3,28	107,40	2,4	5,1
2007M09	3,03	119,8541	3,46	108,66	2,8	5,1
2007M10	2,92	121,2196	3,55	109,73	4,0	5,0
2007M11	2,64	119,9019	3,73	112,47	5,0	5,0
2007M12	2,68	123,5677	4,05	114,23	5,4	4,8
2008M01	2,78	124,2106	3,96	115,46	7,5	4,6
2008M02	2,80	123,4659	3,94	118,51	7,5	4,4
2008M03	2,90	122,0205	4,04	119,64	7,1	4,3
2008M04	2,81	122,5083	4,11	120,42	6,8	4,4
2008M05	2,74	122,7698	4,14	120,01	6,8	4,4
2008M06	2,74	119,4884	4,21	123,74	6,7	4,4
2008M07	2,87	118,4739	4,11	127,60	6,9	4,3
2008M08	2,91	114,3294	3,81	123,21	6,5	4,3
2008M09	3,01	112,9276	3,81	121,99	6,6	4,3
2008M10	3,09	110,7289	4,19	120,08	6,0	4,4
2008M11	3,12	107,6465	4,24	118,29	4,4	4,5
2008M12	3,20	105,2496	3,89	115,82	3,6	4,7
2009M01	3,38	100,4007	3,14	112,22	2,2	5,1
2009M02	3,52	101,0170	2,50	107,93	2,0	5,5
2009M03	3,75	101,2180	2,49	113,29	2,3	5,9
2009M04	3,80	100,0246	2,50	114,76	1,8	6,2

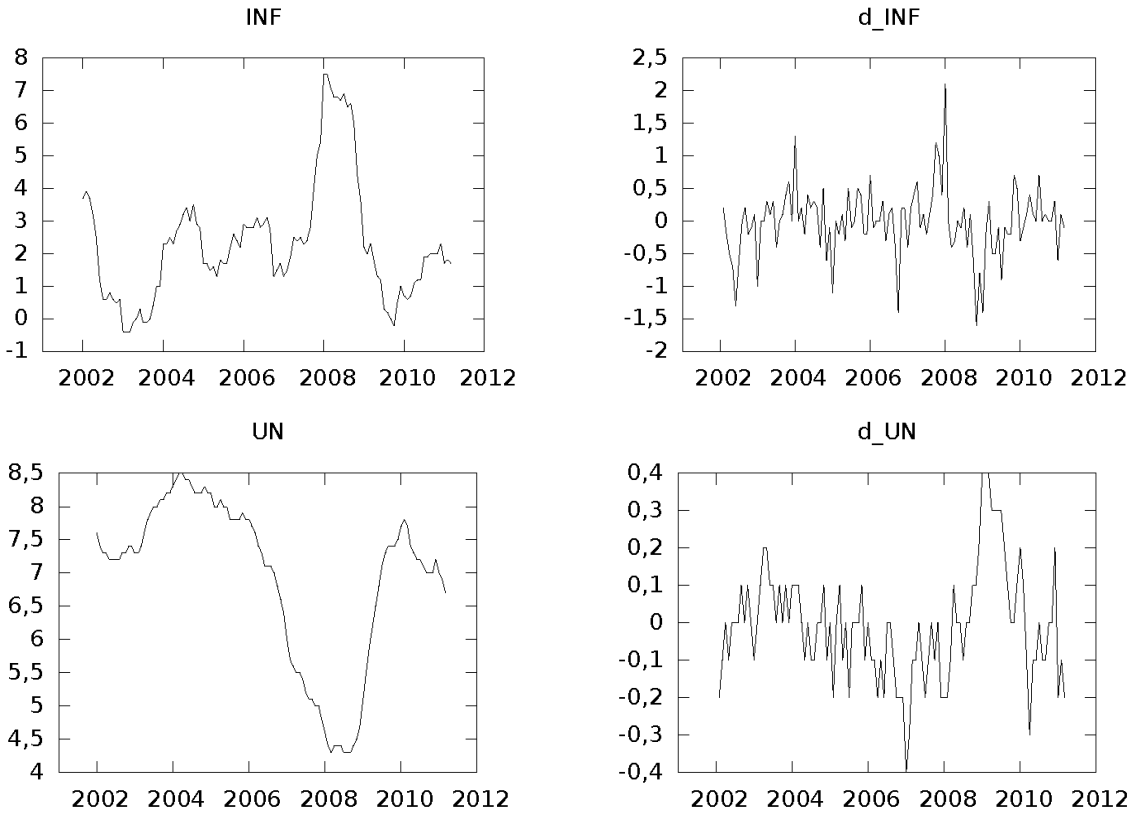
2009M05	4,07	99,3279	2,30	114,76	1,3	6,5
2009M06	4,28	102,1447	2,17	115,87	1,2	6,8
2009M07	4,42	100,4326	2,09	118,95	0,3	7,1
2009M08	4,63	102,8835	1,92	119,41	0,2	7,3
2009M09	4,81	102,9458	1,88	121,08	0,0	7,4
2009M10	5,00	104,1834	1,87	119,01	-0,2	7,4
2009M11	5,06	104,2966	1,80	118,91	0,5	7,4
2009M12	5,21	105,5165	1,64	117,68	1,0	7,5
2010M01	5,35	106,3019	1,55	116,75	0,7	7,7
2010M02	5,44	106,5884	1,52	116,72	0,6	7,8
2010M03	5,58	108,8696	1,43	118,28	0,7	7,7
2010M04	5,72	110,3447	1,42	118,99	1,1	7,4
2010M05	5,73	110,5076	1,27	116,92	1,2	7,3
2010M06	5,84	111,1146	1,24	115,99	1,2	7,2
2010M07	5,93	112,1373	1,23	118,58	1,9	7,2
2010M08	5,94	114,1623	1,24	120,72	1,9	7,1
2010M09	6,29	115,3307	1,22	121,62	2,0	7,0
2010M10	6,25	115,4098	1,20	123,15	2,0	7,0
2010M11	6,24	117,2619	1,22	122,37	2,0	7,0
2010M12	6,15	116,0101	1,22	119,25	2,3	7,2
2011M01	6,24	119,7393	1,20	122,46	1,7	7,0
2011M02	6,25	119,6785	1,21	123,50	1,8	6,9
2011M03	6,23	118,4446	1,21	123,39	1,7	6,7
	%		%		%	%

Appendix 4: *More detailed description of input data*

Variable	Notation	Specification	Additions
NPLs/TLs ratio	NR	Client loans (residents)	$NR = \frac{NPL_{res}}{TL_{res}}$
Industrial production	IP	Basic industrial production index	Average month (2005=100)
Nominal interest rate	IR	PRIBOR 3M	Monthly averages
Nominal effective exchange rate	ER	Index of NE exchange rate CZK	Weights: foreign trade turnover 2005
Inflation	INF	An increase in CPI	Year-on-year
Unemployment rate	UN	Total unemployment rate	Adjusted data

Appendix 5: *Graphical plots of original and transformed time series*





Appendix 6: *Unit-root tests for the original time series*

ADF test results

Variable	Test statistics	P-value	Autocor.coef.	H_0	STATIONARITY
NR	-1,8494	0,6805	0,0200	not rejected	x
IP	-1,2849	0,6389	-0,0130	not rejected	x
IR	-1,8642	0,3497	0,0560	not rejected	x
ER	-0,8801	0,7951	0,0080	not rejected	x
INF	-2,0993	0,2451	-0,0700	not rejected	x
UN	-1,7435	0,4093	0,0210	not rejected	x

Note: The null hypothesis is the non-stationarity of time series.

KPSS test results

Variable	Test statistics	Critical values			H_0	STATIONARITY
		1%	5%	10%		
NR	1,2846	0,2160	0,1480	0,1200	rejected	x
IP	3,8037	0,7350	0,4650	0,3490	rejected	x
IR	0,7420	0,7350	0,4650	0,3490	rejected	x
ER	5,2572	0,7350	0,4650	0,3490	rejected	x
INF	0,6889	0,7350	0,4650	0,3490	rejected	x
UN	1,3623	0,7350	0,4650	0,3490	rejected	x

Note: The null hypothesis is the stationarity of time series.

Cipra (2008) recommends employing ADF test together with KPSS test, since ADF test may suffer from a low resolving power. Only two combinations should be taken into account.

1) ADF: H_0 rejected Λ KPSS: H_0 not rejected => H_0 is stationary

2) ADF: H_0 not rejected Λ KPSS: H_0 rejected => H_0 is non-stationary

Appendix 7: *Unit-root tests for the transformed time series*

ADF test

Variable	Test statistics	P-value	Autocor.coef.	H_0	STATIONARITY
d_NR	-7,6734	2,24E-11	0,0210	rejected	√
ld_IP	-6,2241	3,40E-08	0,0090	rejected	√
d_IR	-5,6735	7,02E-07	0,0210	rejected	√
ld_ER	-7,1109	1,65E-10	-0,0090	rejected	√
d_INF	-5,0858	1,36E-05	-0,0150	rejected	√
d_UN	-3,3812	1,17E-02	0,0290	rejected	√

Note: The null hypothesis is the non-stationarity of time series.

KPSS test

Variable	Test statistics	Critical values			H_0	STATIONARITY
		1%	5%	10%		
d_NR	0,0828	0,2160	0,1480	0,1200	not rejected	√
ld_IP	0,2120	0,7350	0,4650	0,3490	not rejected	√
d_IR	0,3109	0,7350	0,4650	0,3490	not rejected	√
ld_ER	0,0416	0,7350	0,4650	0,3490	not rejected	√
d_INF	0,1123	0,7350	0,4650	0,3490	not rejected	√
d_UN	0,2468	0,7350	0,4650	0,3490	not rejected	√

Note: The null hypothesis is the stationarity of time series.

Appendix 8: *Correlation matrix of residuals*

	uhat_NR	uhat_IP	uhat_IR	uhat_ER	uhat_INF	uhat_UN
uhat_NR	1,0000	0,0353	0,0128	-0,0112	-0,0833	-0,2457
uhat_IP	0,0353	1,0000	0,0908	0,2277	0,2445	-0,1782
uhat_IR	0,0128	0,0908	1,0000	0,2800	-0,0016	-0,0312
uhat_ER	-0,0112	0,2277	0,2800	1,0000	0,1348	-0,2053
uhat_INF	-0,0833	0,2445	-0,0016	0,1348	1,0000	0,0632
uhat_UN	-0,2457	-0,1782	-0,0312	-0,2053	0,0632	1,0000

It is possible to notice that there is not a strong correlation among individual residuals.

Appendix 9: *Graphical plot of residuals*