Vnějšího prostředí

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Blok zahraničního obchodu

- *Objem import a exportu*
- *Ceny importu a exportu*

Objemy

- *Firmy*

$$C_t^S = \left[\varpi^{1-\psi} (Y_t)^{\psi} + (1-\varpi)^{1-\psi} (M_t)^{\psi} \right]^{\frac{1}{\psi}} \left[\varpi (P_t^Y)^{\frac{\psi}{\psi-1}} + (1-\varpi)(P_t^M)^{\frac{\psi}{\psi-1}} \right]^{\frac{\psi-1}{\psi}}$$

$$Y_t = \beta \left[\theta^{1-\varphi} (L_t)^{\varphi} + (1-\theta)^{1-\varphi} (K_t)^{\varphi} \right]^{\frac{1}{\varphi}}$$

$$P_t^Y = \frac{1}{\beta} \left[\theta (P_t^{EL})^{\frac{\varphi}{\varphi-1}} + (1-\theta)(P_t^{EK})^{\frac{\varphi}{\varphi-1}} \right]^{\frac{\varphi-1}{\varphi}}$$

$$P_t^M = ER_t PY_t^*$$

Objemy

- *Poptávka po importu a exportu*

$$M_t = (1-\varpi) Y_t^S \left(\frac{P_t^M}{P_t^S} \right)^{-\sigma_\psi}$$

$$E_t \approx M_t^* = (1-\upsilon) Y_t^{S*} \left(\frac{P_t^{M*}}{P_t^{S*}} \right)^{-\sigma_\rho}$$

Odhady

Rovnice dlouhodobé dynamiky :

$$\overline{e}_t = 0.22\left[4.54 y_{t-1}^{EU} - 1.71(pe_{t-1} - p_{t-1}^{PPI,EU} - eur_{t-1})\right] + (1-0.22)e_{t-1}$$

Rovnice krátkodobé dynamiky :

$$\Delta e_t = 0.21[4.67\Delta y_{t-1}^{EU} - 1.97(\Delta pe_{t-1} - \Delta p_{t-1}^{PPI,EU} - \Delta eur_{t-1})] + (1-0.21)\Delta e_{t-1} - 0.57(e_{t-1} - \overline{e}_{t-1})$$

Rovnice dlouhodobé dynamiky :

$$\overline{m}_t = \left[0.70 dd_t + 0.84 e_t - 0.05(pm_{t-2} - p_{t-2}^{PPI})\right]$$

Rovnice krátkodobé dynamiky :

$$\Delta m_t = 0.61\left[1.0\Delta dd_t + 0.68\Delta e_t - 0.05(\Delta pm_{t-2} - \Delta p_{t-2}^{PPI})\right] + (1-0.61)\Delta m_{t-1} - 0.12(m_{t-1} - \overline{m}_{t-1})$$

Ceny v zahraničním obchodě

- *Rothembergův model*

$$L_t^P = E_t \sum_{j=0}^{\infty} \delta^j \left[\alpha \left(P_{t+j} - \bar{P}_{t+j} \right)^2 + (1-\alpha) \left(\Delta P_{t+j} \right)^2 \right]$$

$$P_t = \left(\frac{\alpha}{2-\alpha} \right) \bar{P}_t + \left(\frac{2-2\alpha}{2-\alpha} \right) \left[0.5 P_{t-1} + 0.5 E_t P_{t+1} \right]$$

Odhady

Rovnice dlouhodobé dynamiky :

$$\overline{p}_t^E = 0.26\left[p_t^{PPI,EU} + eur_t \right] + (1-0.26)\, p_{t-1}^E$$

Rovnice krátkodobé dynamiky :

$$\Delta p_t^E = 0.52\left\{0.95\left[0.9\left(\Delta p_t^{PPI,EU} + \Delta eur\right) + 0.1\Delta p_t^{PPI} \right]\right\} + (1-0.52)\Delta p_{t-1}^E - 0.63(p_{t-4}^E - \overline{p}_{t-4}^E)$$

Rovnice dlouhodobé dynamiky :

$$\overline{p}_t^M = 0.4\left[0.9\left(p_t^{PPI,EU} + eur_t \right) + 0.1\left(oil_t + usd_t \right)\right] + (1-0.4)\, p_{t-1}^M$$

Rovnice krátkodobé dynamiky :

$$\Delta p_t^M = 0.82\left\{0.71\left[0.92\left(\Delta p_t^{PPI,EU} + \Delta eur\right) + 0.08\left(\Delta oil_t + \Delta usd_t\right)\right]\right\} +$$
$$+(1-0.82)\Delta p_{t-1}^M - 0.11(p_{t-1}^M - \overline{p}_{t-1}^M)$$

Klíčové faktory

- *HDP v EU…* [**4.7/4.5**]
- *Relativní ceny…*[**-2.0/-1.7**]
- *Importní náročnost exportu…*[**0.68/0.84**]
- *Ceny komodit…*[**0.06/0.1**]

Dopady...přímé vs.nepřímé

- *Ceny komodit*
- *Směnné kursy*
- *Ekonomická aktivita*
- *Ceny v zahraniční*

Satelitní model EU

- *Ceny*
- *Reakční funkce ECB*
- *HDP a gap*

Ceny

$$P_t^{EU} = \left(\frac{\alpha}{2-\alpha}\right)\left[\upsilon(P_t^{Y,EU}) + (1-\upsilon)(P_t^{M,EU})\right] + \left(\frac{2-2\alpha}{2-\alpha}\right)\left[0.5P_{t-1}^{EU} + 0.5E_tP_{t+1}^{EU}\right]$$

$$P_t^{Y,EU} = \frac{1}{\beta}\left[\varepsilon(P_t^{L,EU}) + (1-\varepsilon)(P_t^{K,EU})\right]$$

$$P_t^{L,EU} = W_t^{EU}(1+r_{SSE}) \approx W_t^{EU} = P_t^{CPI}(Y_t^{EU} / L_t^{EU})$$

$$P_t^{K,EU} = \frac{P_t^{I,EU}}{(1-r_{CIT})}\left[\delta + r - \pi_{t+1}^{I}\right] \approx P_t^{I,EU} = \phi P_t^{PPI,EU}(1-\phi)P_t^{M,EU}$$

Vliv dovozních cen

	Přímý dopad		Celkový dopad		Rok
	CPI	PPI	CPI	PPI	
Francie	0.10	0.20	0.11	0.21	1990
Německo	0.11	0.17	0.11	0.17	1990
Itálie	0.06	0.11	0.15	0.19	1985
Velká Británie	0.15	0.24	0.14	0.23	1990
Holandsko	0.14	0.29	0.17	0.32	1986
Dánsko	0.10	0.20	0.12	0.23	1990
Kanada	0.12	0.24	0.13	0.24	1990
USA	0.05	0.10	0.05	0.10	1990
Japonsko	0.04	0.05	0.07	0.08	1990
Australie	0.07	0.14	0.08	0.16	1989
Minimum	**0.04**	**0.05**	**0.05**	**0.08**	
Maximum	**0.15**	**0.29**	**0.17**	**0.32**	
Průměr	**0.09**	**0.17**	**0.11**	**0.19**	

Ceny

$$\Delta p_t^{M,EU} = 0.3\Delta p_t^{PPI,US} + 0.1\Delta oil + 0.4\Delta eurusd$$

$$\Delta p_t^{PPI,EU} = 0.1 gap_t^{EU} + 0.75\left(0.5\Delta y_t^{EU} + 0.5\Delta p_t^{CPI,EU} - 1.0\right) + 0.25\Delta p_t^{M,EU}$$

$$\Delta p_t^{CPI,EU} = 0.05 gap_t^{EU} + 0.6\left[0.8\left(0.5\Delta y_t^{EU} + 0.5\Delta p_t^{CPI,EU} - 1.0\right) + 0.2\Delta p_t^{M,EU}\right] + 0.4\Delta p_{t-1}^{CPI,EU}$$

Reakční funkce

$$L_t^{ECB} = \sum_{i=0}^{\infty} \lambda^i \left\{ \alpha \left(\Delta p_{t+i+1}^{EU} - \Delta p_{t+i+1}^{*} \right)^2 + \beta (gap_{t+i}^{EU})^2 + \gamma (irs_{t+i}^{EU} - \Delta p_{t+i+1}^{EU})^2 + \delta (\Delta irs_{t+i}^{EU})^2 + \varepsilon (\Delta er_{t+i}^{EU})^2 \right\}$$

$$irs_t^{EU*} = \alpha_1 \left[\Delta p_t^{TARGET} + \alpha_2 (E_t \Delta p_t - \Delta p_t^{TARGET}) + \alpha_3 E_t gap_t^{EU} \right] + (1 - \alpha_1) irs_{t-1}^{EU*}$$

$$irs_t^{EU} = \max \left\{ 0,\ irs_t^{EU*} \right\}$$

$$irs_t^{EU*} = 0.25 \left[2.0 + 1.5 \left(\Delta p_t^{CPI,EU} - 2.0 \right) + 2.5 gap_t^{EU} \right] + 0.75 irs_{t-1}^{EU*}$$

HDP a output gap

$$\Delta y_t^{EU} = 0.4\left[\left(0.8\Delta\tilde{y}_t^{EU} + 0.2\Delta y_t^{US}\right) - 0.01\left(\Delta oil_t - \Delta p_t^{PPI,EU}\right) - 0.5\left(irs_t^{EU} - \Delta p_t^{CPI,EU}\right) + \right.$$
$$\left. +0.1\left(\Delta eurusd_t + \Delta p_t^{PPI,US} - \Delta p_t^{PPI,EU}\right)\right] + \left(1 - 0.4\right)\Delta y_{t-1}^{EU}$$

$$gap_t^{EU} = \Delta y_t^{EU} - \Delta\tilde{y}_t^{EU} + gap_{t-1}^{EU}$$

Elasticita na IR

	Spotřeba		Investice	
	EUROMON	NIGEM	EUROMON	NIGEM
Francie	-0.40	-	-2.50**	-1.80***
Německo	-0.40	-	-2.90**	-4.20***
Itálie	-0.20*	-0.20*	-2.50**	-
Velká Británie	-0.30*	-0.70*	-3.20	-4.30***

* krátkodobá elasticita

** nominální sazba

*** krátkodobá a nominální sazba

Elasticity relativních cen

	Export			Import		
	EUROMON	NIGEM	QEUST*	EUROMON	NIGEM	QEUST*
Francie	-0.58	-0.63	-0.27	-0.85	-0.59	-0.21
Německo	-0.80	-0.55	-0.23	-	-0.28	-0.22
Itálie	-1.62	-0.49	-0.25	-0.05	-0.73	-0.12
Velká Británie	-0.69	-0.47	-0.34	-0.17	-0.43	-0.23
USA	-	-	-0.30	-	-	-0.18
Japonsko	-	-	-0.40	-	-	-0.19

* krátkodobá elasticita

Simulace

Proměnné:

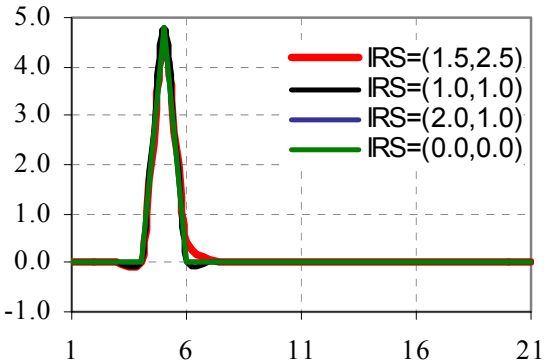
- *Růst ceny ropy…[**50%**]*
- *Depreciace EUR/USD… [**5%**]*
- *Akcelerace HDP v USA… [**5%**]*
- *Akcelerace PPI v USA… [**5%**]*

Reakce funkce ECB:

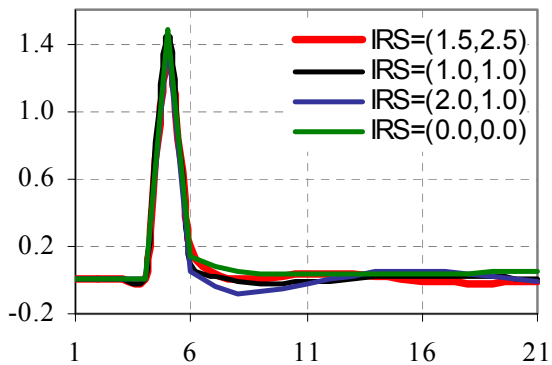
- *(CPI,GAP)=(1.5, 2.5)*
- *(CPI,GAP)=(1.0, 1.0)*
- *(CPI,GAP)=(2.0, 1.0)*
- *(CPI,GAP)=(0.0, 0.0)*

Ropa

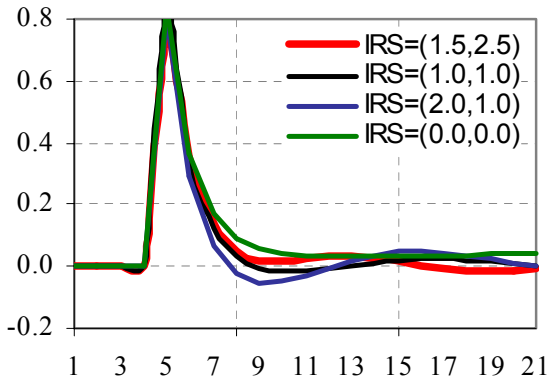
Dovozní ceny



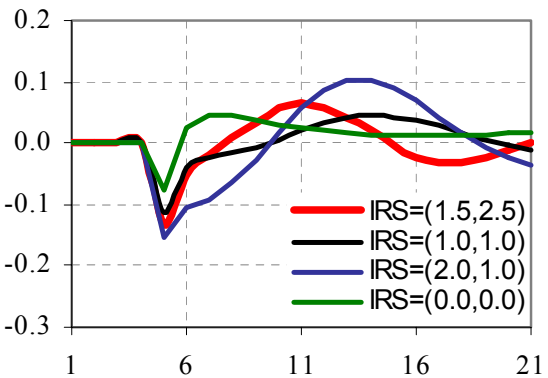
Průmyslové ceny



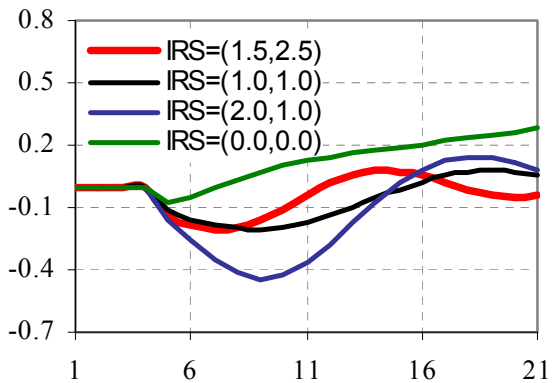
Spotřebitelské ceny



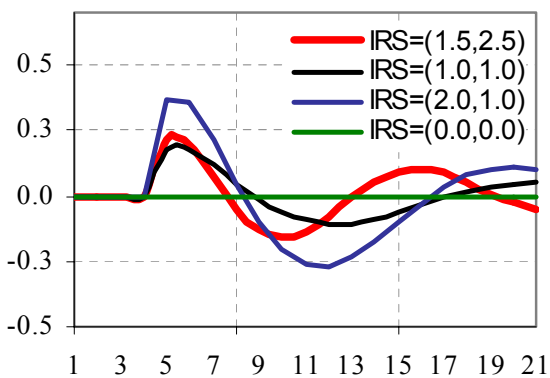
HDP



Output gap

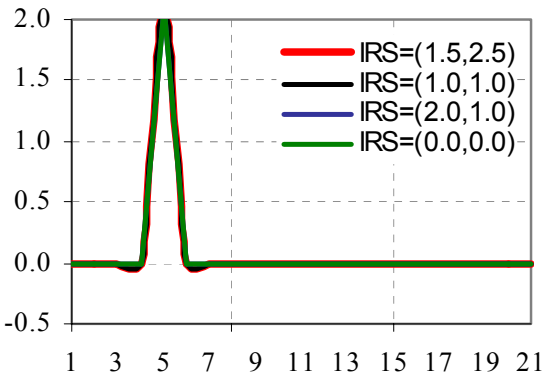


Úrokové sazby

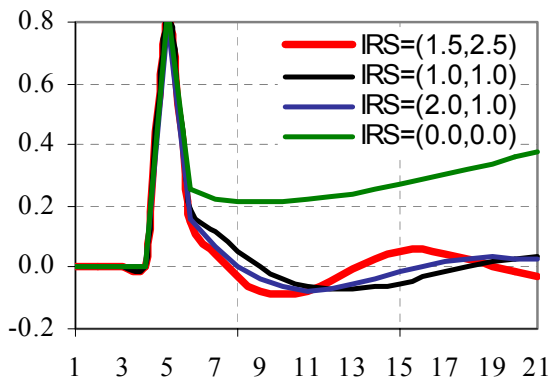


EUR/USD

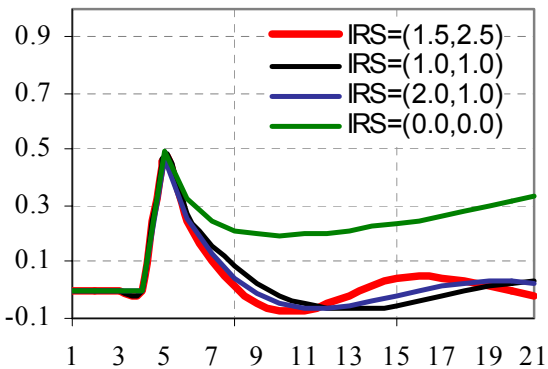
Dovozní ceny



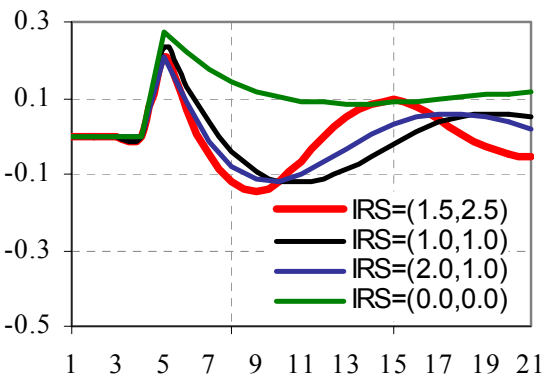
Průmyslové ceny



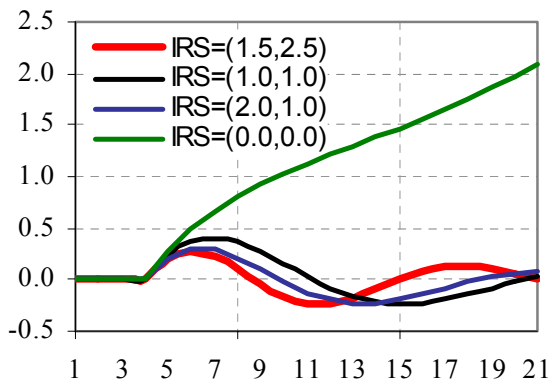
Spotřebitelské ceny



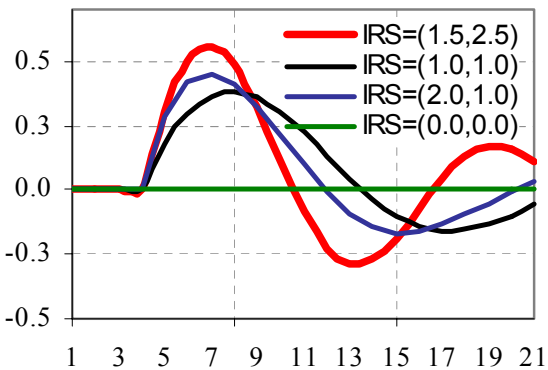
HDP



Output gap

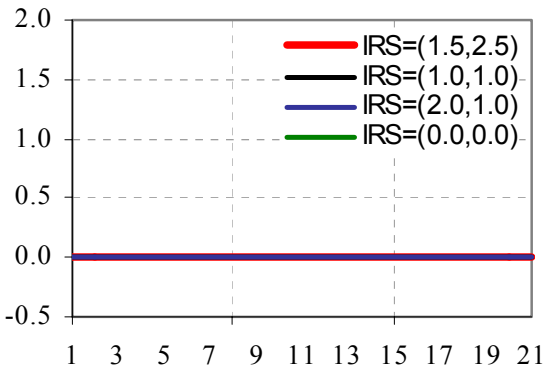


Úrokové sazby

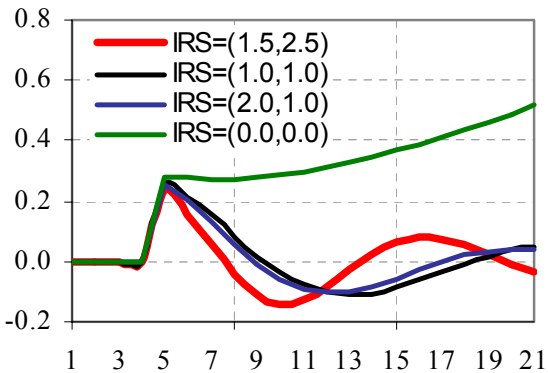


HDP v USA

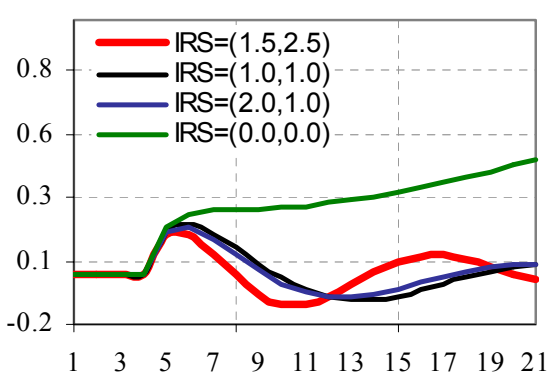
Dovozní ceny



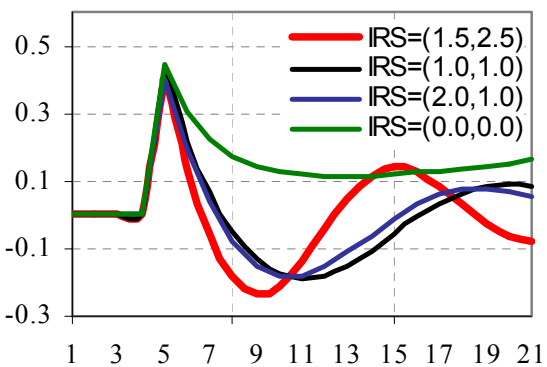
Průmyslové ceny



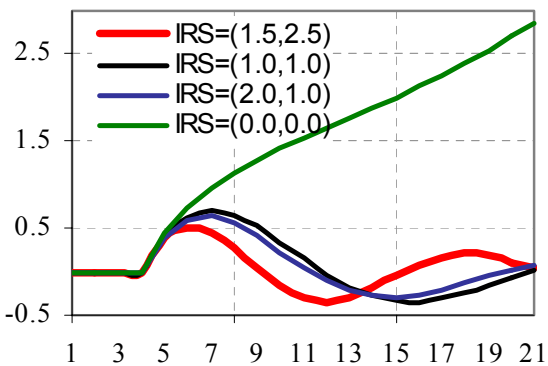
Spotřebitelské ceny



HDP



Output gap



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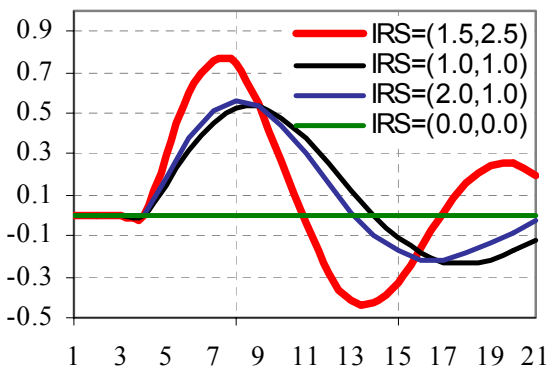
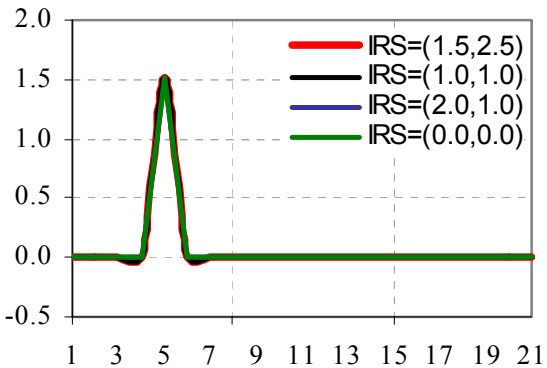
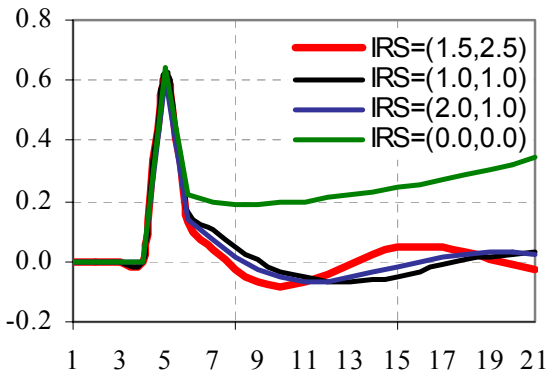


PPI v USA

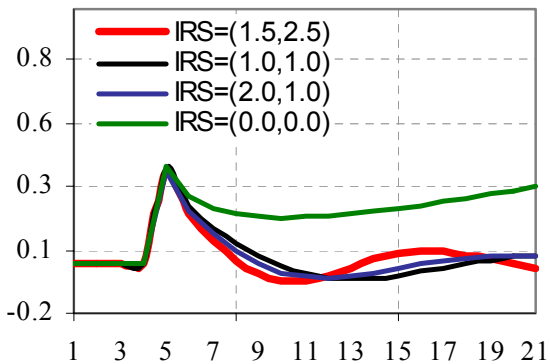
Dovozní ceny



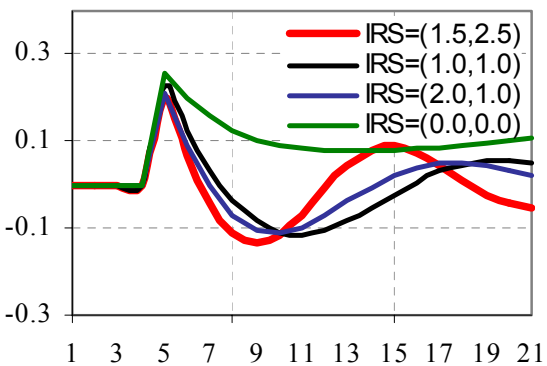
Průmyslové ceny



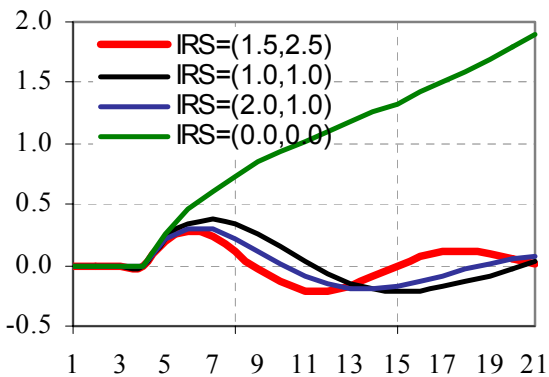
Spotřebitelské ceny



HDP



Output gap



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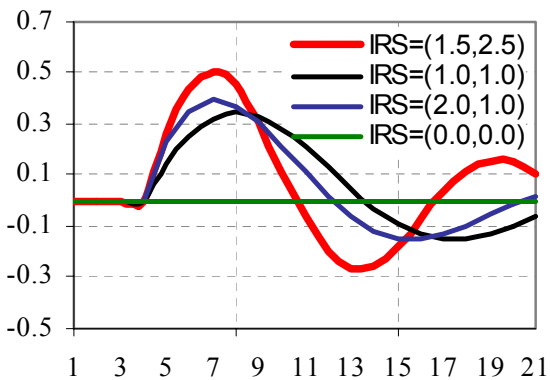

Děkuji za pozornost