Technical Appendix to:
The great inflation of the 1970s

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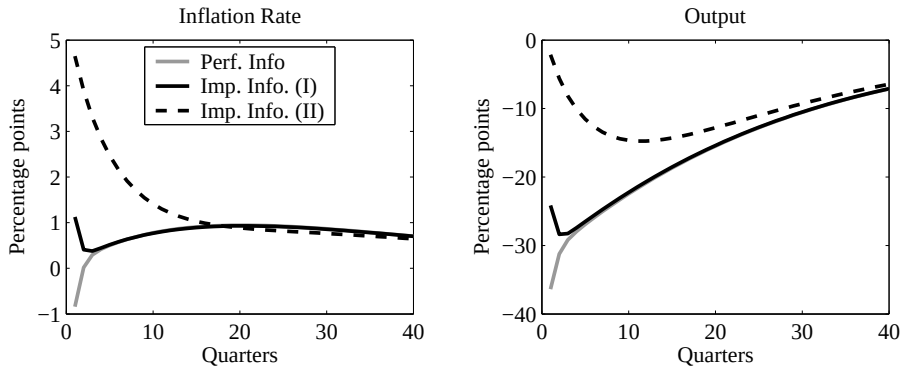
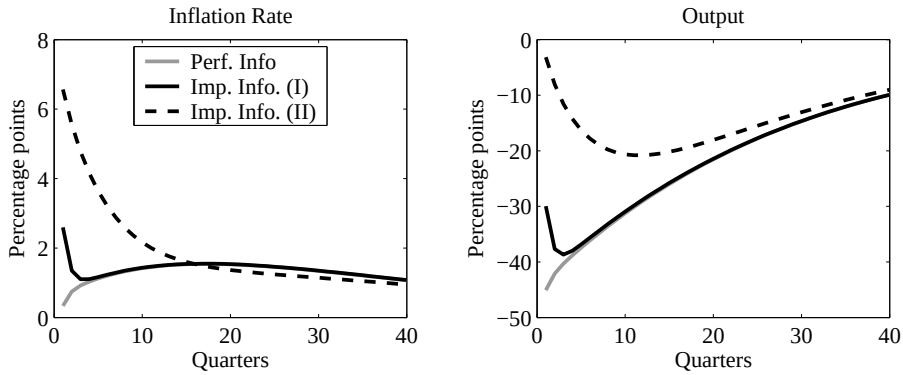
Determinacy: Other reactions to inflation and output

Figure 1: IRF to a negative -33% technology shock

Panel A: $\Theta = \{0.75, 1.50, 0.20\}$



Panel B: $\Theta = \{0.75, 1.50, 0.70\}$



Panel C: $\Theta = \{0.75, 1.2, 0.5\}$

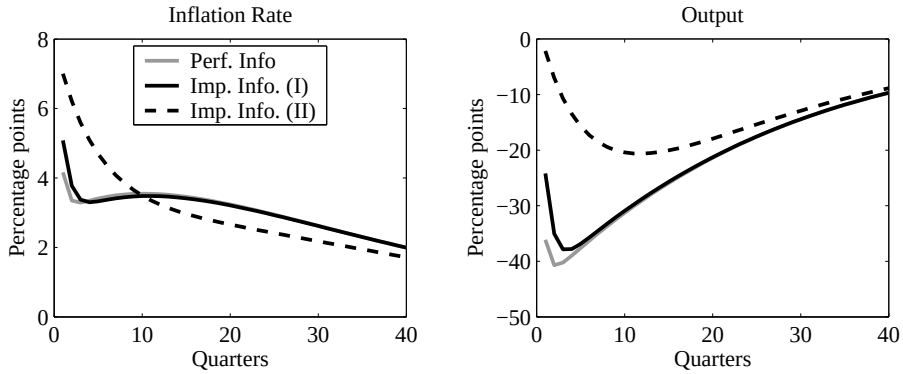


Table 1: Standard Deviations

	σ_y	σ_i	σ_π
Data	1.639	7.271	0.778
	$(\rho, \kappa_\pi, \kappa_y)$=(0.75,1.50,0.20)		
Perf. Info.	3.509	12.774	0.108
Imp. Info. (I)	3.146	11.549	0.154
Imp. Info. (II)	1.598	5.865	0.483
	$(\rho, \kappa_\pi, \kappa_y)$=(0.75,1.50,0.70)		
Perf. Info.	3.255	11.612	0.093
Imp. Info. (I)	2.957	10.821	0.188
Imp. Info. (II)	1.509	5.521	0.478
	$(\rho, \kappa_\pi, \kappa_y)$=(0.75,1.20,0.50)		
Perf. Info.	3.103	10.810	0.278
Imp. Info. (I)	2.856	10.251	0.313
Imp. Info. (II)	1.468	5.269	0.492

Note: The standard deviations are computed for HP–filtered series. y, i and π are output, investment and inflation respectively.

Determinacy: Other Parameterizations

1. A Hybrid Phillips Curve

In this case, we assume that the prices of the non-optimizing firms are indexed to past inflation. We keep the same parameterization of the monetary rule ($\Theta = (0.75, 1.50, 0.50)$) and the size of the shock.

Figure 2: IRF to a -33% technology shock

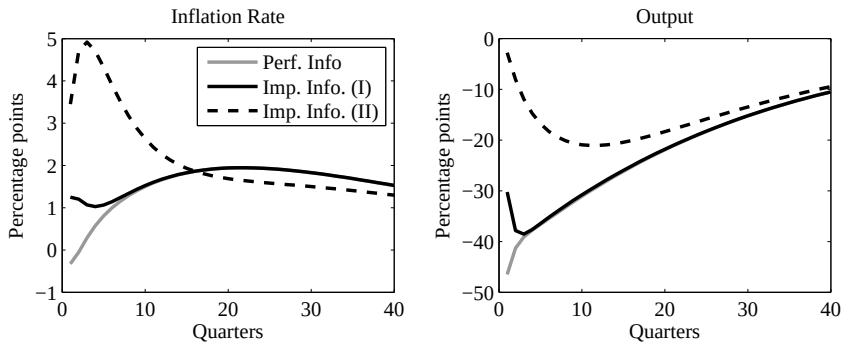


Table 2: Effects of a -33% technology shock

	Perf. Info		Imp. Info (I)		Imp. Info (II)	
	Impact	Max	Impact	Max	Impact	Max
Output	-46.478	-46.478	-30.226	-38.532	-2.760	-21.056
Inflation	-0.326	1.946	1.249	1.947	3.452	4.922

Table 3: Standard Deviations (-33% Technology Shock)

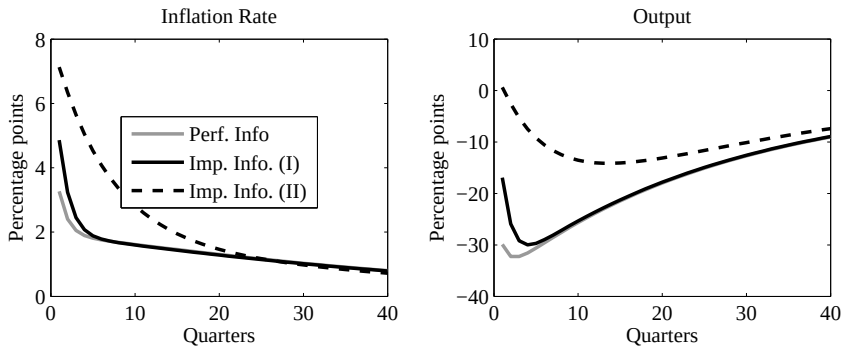
	σ_y	σ_i	σ_π
Data	1.639	7.271	0.778
Perf. Info.	4.313	15.566	0.110
Imp. Info. (I)	3.869	14.285	0.132
Imp. Info. (II)	1.865	6.877	0.510

2. The Role of Capital Adjustment Costs

In this part, we investigate the role of capital adjustment costs by using alternative, higher values of φ, namely, $\varphi = \{10,\ 20\}$. The parameters of the monetary rule are as before ($\Theta = (0.75, 1.50, 0.50)$) and also the size of the shock.

Figure 3: IRF to a negative technology shocks (Varying adjustment costs)

(a) $\varphi = 10$



(b) $\varphi = 20$

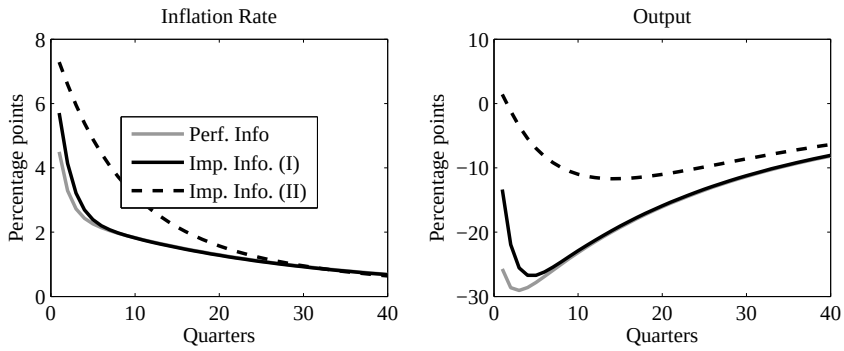


Table 4: Effects of a -33% technology shock

	Perf. Info		Imp. Info (I)		Imp. Info (II)	
	Impact	Max	Impact	Max	Impact	Max
			$\varphi = 10$			
Output	-29.890	-32.244	-16.915	-29.970	0.625	-14.130
Inflation	3.269	3.269	4.858	4.858	7.132	7.132
			$\varphi = 20$			
Output	-25.723	-29.055	-13.376	-26.716	1.427	-11.692
Inflation	4.499	4.499	5.704	5.704	7.287	7.287

Table 5: Standard Deviations (-33% Technology Shock)

	σ_y	σ_i	σ_π
Data	1.639	7.271	0.778
		$\varphi = 10$	
Perf. Info.	3.289	7.738	0.264
Imp. Info. (I)	2.932	6.927	0.385
Imp. Info. (II)	1.314	2.994	0.684
		$\varphi = 20$	
Perf. Info.	2.945	5.139	0.365
Imp. Info. (I)	2.611	4.546	0.466
Imp. Info. (II)	1.157	1.852	0.705

3. Policy Reaction to Actual Output

In this section, we consider a rule in which output gap is defined as the gap between actual and steady state rather than actual and potential output:

$$\widehat{R}_t = \rho \widehat{R}_{t-1} + (1-\rho)[\kappa_\pi E_t(\widehat{\pi}_{t+1} - \pi) + \kappa_y \widehat{y}_t]$$

The parameters of the policy rule are as before ($\Theta = (0.75, 1.50, 0.50)$) and so is the size of the shock.

Figure 4: IRF to a -33% technology shock

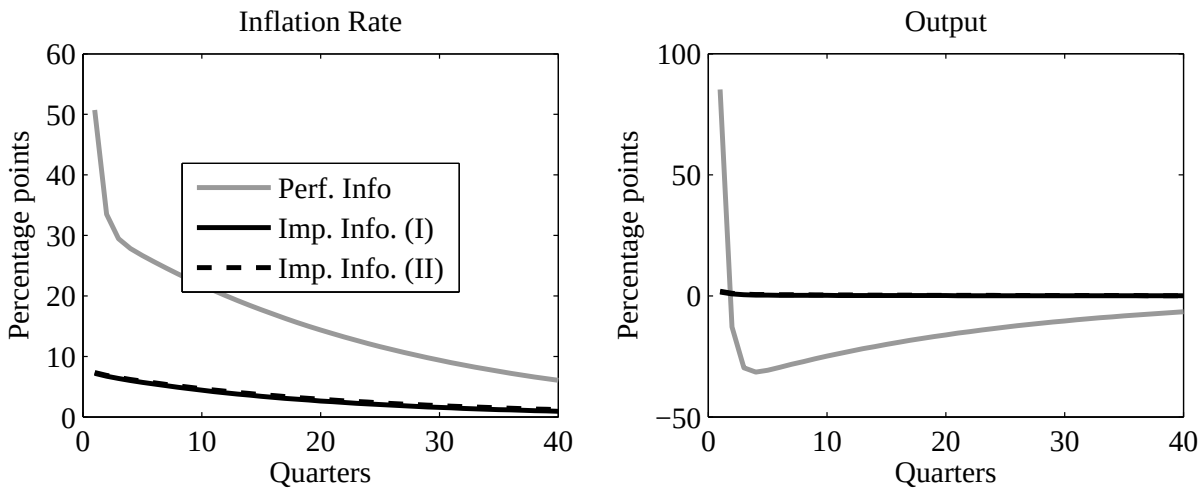


Table 6: Effects of a -33% technology shock

	Perf. Info		Imp. Info (I)		Imp. Info (II)	
	Impact	Max	Impact	Max	Impact	Max
Output	85.326	-31.502	1.620	0.072	1.949	0.097
Inflation	50.717	50.717	7.209	7.209	7.327	7.327

Table 7: Standard Deviations (-33% Technology Shock)

	σ_y	σ_i	σ_π
Data	1.639	7.271	0.778
Perf. Info.	7.796	31.826	3.996
Imp. Info. (I)	0.255	2.148	0.701
Imp. Info. (II)	0.266	2.377	0.711

4. The Required Size of the Shock Under Alternative Parameterizations

All these experiments above have been conducted assuming a -33% technology shock. In order to assess whether any of these mechanisms can help in reducing the size of the supply shock we have also computed the size of the shock that is required to produce results similar to those in Table 2. More precisely, we compute the size of the technology shock under which the model can replicate the maximal effect of a technology shock on the inflation rate in the "high" imperfect information case ($\varsigma = 8$) — i.e. an increase in inflation of 6.569 percentage point. These results are reported in the next table.

Table 8: Size of the technology shock

$\varphi = 10$	$\varphi = 20$	Alternative Taylor Rule	Hybrid Phillips Curve
-30.95%	-30.29%	-30.12%	-38.02%

1 Indeterminacy: Other cases

Figure 5: IRF to a -8% technology shock, $\Theta = \{0.75, 1.20, 0.80\}$

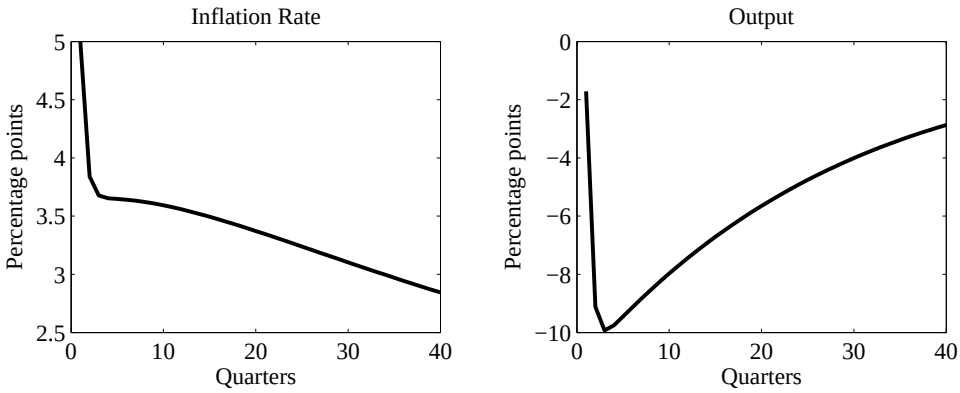


Table 9: Effects of a -8% technology shock, $\Theta = \{0.75, 1.20, 0.80\}$.

	Impact	Max.
Output	-1.718	-9.972
Inflation	5.020	5.020

Table 10: Standard Deviations, $\Theta = \{0.75, 1.20, 0.80\}$

σ_s	σ_y	σ_i	σ_π
Data	1.639	7.271	0.778
0	1.625	5.274	0.689
σ_a	1.650	5.394	0.714
$0.006^{(a)}$	1.639	5.340	0.704
$0.035^{(b)}$	2.072	7.271	1.042
$0.016^{(c)}$	1.724	5.736	0.778
$0.058^{(d)}$	2.681	9.827	1.461

Note: The standard deviations are computed for HP–filtered series. y, i and π are output, investment and inflation respectively. (a), (b), (c) and (d) match σ_y, σ_i, σ_π and σ_R. $\Theta = \{\rho, \kappa_\pi, \kappa_y\}$

The next table reports the size of the technology shock that is needed in order to replicate the maximal effect of a technology shock on the inflation rate reported in Table 4 ubder alternative parametrizations of the model. As in the case of imperfect information and determinacy we experiment with higher capital adjustment costs, an alternative policy rule and a hybrid Phillips curve. The results reported below have been obtained under the policy rule parametrization $\Theta = \{0.75, 0.80, 0.40\}$.

Table 11: Size of the technology shock

$\varphi = 10$	$\varphi = 20$	No Potential Output in HMT Rule	Hybrid Phillips Curve
-6.71%	-6.20%	-28.54%	-19.16%