Table 1. Union density and coverage rates

	Density			Coverage		
	1980	*1990*	*1994*	*1980*	*1990*	*1994*
Italy	49%	39%	39%	85%	83%	82%
US	22%	16%	16%	26%	18%	18%

Source: OECD (1997)

Table 2. Standard business cycle statistics for Italy

	Std%	Vol.	Auto.	Cor. Y	Cor. P
Y	*0.91*	-	0.71	-	-
C	*0.85*	0.94	0.88	0.71	-
I	*3.10*	3.42	0.89	0.77	-
K	*0.41*	0.48	0.94	0.36	-
N	*0.78*	0.86	0.86	0.53	-0.36
P	*0.82*	0.91	0.69	0.59	-
A	*0.79*	0.90	0.70	0.76	-

Notes: Based on seasonally adjusted quarterly ISTAT series from 1982:1 to 1998:4, expressed in constant 1995 prices. Y: GDP over working age population; C: households' final consumption expenditure over working age population; I: gross fixed investment over working age population; N: Standard Units of Labor over working age population; P: average labor productivity (Y/N); A: total factor productivity. All variables are transformed in logarithms and H-P filtered.

Table 3. Standard business cycle statistics for the Monopoly Union model

	Std%	*Std*	Vol.	*Std*	Auto.	*Std*	Cor. Y	*Std*	Cor. P	*Std*
Y	**1.14**	*0.17*	-	-	**0.62**	*0.10*	-	-	-	-
C	0.49	*0.08*	**0.43**	*0.01*	**0.65**	*0.10*	**0.98**	*0.01*	-	-
I	3.90	*0.57*	**3.42**	*0.03*	**0.61**	*0.10*	**0.99**	*0.00*	-	-
K	0.17	*0.04*	**0.15**	*0.03*	**0.91**	*0.04*	**-0.01**	*0.09*	-	-
N	0.77	*0.12*	**0.67**	*0.00*	**0.63**	*0.10*	**1.00**	*0.00*	**0.98**	*0.01*
P	0.38	*0.06*	**0.33**	*0.00*	**0.61**	*0.10*	**0.99**	*0.00*	-	-
A	0.68	*0.10*	**0.59**	*0.01*	**0.61**	*0.10*	**0.99**	*0.00*	-	-

Notes: The Table is based on 1000 simulations over a 68-quarter horizon, performed under the benchmark parameterization. The simulated series were H-P filtered for comparison purposes. The reported statistics are respectively the standard deviation times one hundred, the relative standard deviation with respect to output, the autocorrelation coefficient, the correlation coefficient with output, and the correlation coefficient with average labor productivity. All figures are averages across simulations. Note that the elasticity of adjustment costs was calibrated to reproduce the relative volatility of investment.

Table 4. Sensitivity analysis on ξ

	ξ	**0.40**	**0.60**	**0.70**	**0.80**	**1.00**
Y	*Std%*	*0.69*	*0.98*	*1.14*	*1.30*	*1.75*
I	Vol.	3.39	3.43	3.42	3.40	3.38
N	Vol.	0.15	0.51	0.67	0.81	1.00
	Auto.	0.91	0.65	0.63	0.61	0.63
	Cor. Y	0.26	0.99	1.00	1.00	1.00
	Cor. P	0.11	0.96	0.98	0.98	0.99
P	Vol.	0.97	0.50	0.33	0.19	0.00
	Auto.	0.62	0.63	0.61	0.60	0.62
	Cor. Y	0.99	0.99	0.99	0.99	0.99

Notes: The Table is based on a set of experiments performed running 100 simulations over a 68-quarter horizon each time with a different value of the elasticity of substitution between capital and labor. The remaining parameters follow the benchmark parameterization. The simulated are H-P filtered. The reported statistics are respectively the relative standard deviation with respect to output, the autocorrelation coefficient, the correlation coefficient with output, and the correlation coefficient with average labor productivity. All figures are averages across simulations.

Table 5. Standard business cycle statistics: Monopoly Union vs. Rogerson-Wright

	Std%		Vol.		Auto.		Cor. Y		Cor. P	
	MU	RW	MU	RW	MU	RW	MU	RW	MU	RW
Y	*1.14*	*1.12*	-	-	0.62	*0.62*	-	-	-	-
C	*0.49*	*0.55*	0.43	*0.49*	0.65	*0.63*	0.98	*1.00*	-	-
I	*3.90*	*3.47*	3.42	*3.11*	0.61	*0.61*	0.99	*1.00*	-	-
K	*0.17*	*0.15*	0.15	*0.13*	0.91	*0.91*	-0.01	*-0.05*	-	-
N	*0.77*	*0.72*	0.67	*0.65*	0.63	*0.61*	1.00	*1.00*	0.98	*0.99*
P	*0.38*	*0.39*	0.33	*0.35*	0.61	*0.63*	0.99	*1.00*	-	-
A	*0.68*	*0.67*	0.59	*0.60*	0.61	*0.61*	0.99	*1.00*	-	-

Notes: The RW model is a CES stochastic version of the well-known Rogerson-Wright indivisible labor model. Both models share the same benchmark parameterization. The Table is based on 1000 simulations over a 68-quarter horizon. The simulated series are H-P filtered. The reported statistics are respectively the relative standard deviation with respect to output, the autocorrelation coefficient, the correlation coefficient with output, and the correlation coefficient with average labor productivity. All figures are averages across simulations.

Table 6. Correlation between observed and simulated series for Italy

	Y		C		I		N	
	MU	*RW*	MU	*RW*	MU	*RW*	MU	*RW*
t+3	0.42	*0.28*	0.55	*0.33*	0.08	*0.03*	0.20	*-0.09*
t+2	0.55	*0.43*	0.60	*0.46*	0.21	*0.16*	0.29	*0.01*
t+1	0.68	*0.58*	0.64	*0.53*	0.35	*0.30*	0.38	*0.11*
0	**0.81**	***0.73***	**0.66**	***0.58***	**0.48**	***0.44***	**0.46**	***0.21***
t-1	0.77	*0.71*	0.64	*0.60*	0.55	*0.52*	0.54	*0.31*
t-2	0.73	*0.70*	0.62	*0.62*	0.61	*0.59*	0.60	*0.41*
t-3	0.70	*0.69*	0.59	*0.62*	0.64	*0.63*	0.67	*0.51*

Notes: The simulated series for output, consumption, investment, and employment (expressed in percentage deviation from the their mean) are generated by feeding the MU and RW models with the observed innovations to TFP. The Table reports the correlation coefficient between the observed normalized series (expressed in percentage deviation from their mean too) and different leads and lags of the simulated ones.

Table 7. Statistical forecast comparison for Italy

		Y		C		I		N	
		MU	*RW*	MU	*RW*	MU	*RW*	MU	*RW*
b		0.82	*0.77*	1.93	*1.70*	0.47	*0.48*	0.58	*0.30*
	Std.	0.07	*0.09*	0.27	*0.29*	0.10	*0.12*	0.14	*0.17*
	p-value	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.00	*0.09*
R^2		**0.65**	***0.53***	**0.43**	***0.34***	**0.23**	***0.20***	**0.21**	***0.04***
MDM		-3.99		-1.58		-2.05		-2.62	
	p-value	0.00		0.12		0.04		0.01	

Notes: We regress the observed series over each simulated series in turn, estimating the equation $x_t = b\tilde{x}_{it} + \epsilon_t$, where x_t is a generic observed series, $\tilde{x}_{it}$ the corresponding simulated one, and *i* an index identifying the model. In the first part of the Table, we report the coefficients' absolute values, the corresponding standard deviations, and the *p*-values for the standard *t*-tests, together with the equations' R^2. In the second part, we report the Modified Diebold-Mariano (MDM) statistics and the corresponding *p*-values. The statistic is based on one-step ahead forecast errors obtained by recursive least squares on the previous equations. The null hypothesis assumes equal prediction mean squared errors. A significantly negative (positive) MDM statistic implies that the null can be rejected in favor of the alternative hypothesis assuming a higher (lower) prediction accuracy of the MU model.

Table 8. Correlation between observed and simulated series for the US

	Y		C		I		N	
	MU	*RW*	MU	*RW*	MU	*RW*	MU	*RW*
t+3	0.71	*0.61*	0.81	*0.72*	0.61	*0.61*	0.49	*0.32*
t+2	0.80	*0.75*	0.85	*0.82*	0.65	*0.67*	0.59	*0.45*
t+1	0.88	*0.85*	0.86	*0.88*	0.68	*0.71*	0.66	*0.56*
0	**0.93**	***0.93***	**0.84**	***0.90***	**0.68**	***0.72***	**0.70**	***0.64***
t-1	0.87	*0.91*	0.77	*0.88*	0.63	*0.69*	0.71	*0.67*
t-2	0.78	*0.86*	0.67	*0.84*	0.54	*0.61*	0.69	*0.68*
t-3	0.66	*0.76*	0.58	*0.78*	0.41	*0.49*	0.65	*0.66*

Notes: The simulated series for output, consumption, investment, and employment (expressed in percentage deviation from the their mean) are generated by feeding the MU and RW models with the observed innovations to TFP. The Table reports the correlation coefficient between the observed normalized series (expressed in percentage deviation from their mean too) and different leads and lags of the simulated ones.

Table 9. Statistical forecast comparison for the US

		Y		C		I		N	
		MU	*RW*	MU	*RW*	MU	*RW*	MU	*RW*
b		0.78	*0.97*	1.22	*1.72*	0.66	*0.80*	1.06	*1.39*
	Std.	0.04	*0.05*	0.10	*0.10*	0.09	*0.10*	0.13	*0.21*
	p-value	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*
R^2		**0.86**	***0.87***	**0.71**	***0.81***	**0.46**	***0.50***	**0.49**	***0.41***
MDM		1.30		3.78		2.63		-1.84	
	p-value	0.20		0.00		0.01		0.07	

Notes: We regress the observed series over each simulated series in turn, estimating the equation $x_t = b\tilde{x}_{it} + \epsilon_t$, where x_t is a generic observed series, $\tilde{x}_{it}$ the corresponding simulated one, and i an index identifying the model. In the first part of the Table, we report the coefficients' absolute values, the corresponding standard deviations, and the *p*-values for the standard *t*-tests, together with the equations' R^2. In the second part, we report the Modified Diebold-Mariano (MDM) statistics and the corresponding *p*-values. The statistic is based on one-step ahead forecast errors obtained by recursive least squares on the previous equations. The null hypothesis assumes equal prediction mean squared errors. A significantly negative (positive) MDM statistic implies that the null can be rejected in favor of the alternative hypothesis assuming a higher (lower) prediction accuracy of the MU model.