清华大学国家金融研究院
TSINGHUA UNIVERSITY NATIONAL INSTITUTE OF FINANCIAL RESEARCH

研究报告

2018 11 42

49.33%

67.6%

清华大学国家金融研究院
TSINGHUA UNIVERSITY NATIONAL INSTITUTE OF FINANCIAL RESEARCH

Research report

2018-3- 19 edition

TSINGHUA UNIVERSITY NATIONAL INSTITUTE OF FINANCIAL RESEARCH Mar. 19th, 2018

Resource Misallocation and the Structural Contradiction between Supply and Demand in the New Era
An Interpretation of the Social Main Contradiction in the New Era

Yiyao HE, Shiyuan Pan, Kang Shi, Juanyi Xu[2]

Abstract

With the rapid development of Chinese economy, household consumption style has already changed from "how to survive" to "how to live a high-quality life". However, there are still substantial resource misallocation problem emotween state-owned and private enterprises, which results in that the supply structure cannot adapt to consumption upgrades and lead to the structural contradiction emotween supply and demand. This paper first summarizes detailed empirical facts of the structural contradiction emotween supply and demand in the new era, and then constructs a three-stage dynamic model to reveal the mechanism of the structural reform of the supply side on alleviating and solving the main social contradictions. Furthermore, this paper calculates the expected effect of the structural reform on the supply side through paramoter calibration. Quantitative results show that:

[2] He, post-doctor, School of Economics, Zhejiang University; Pan: Professor, School of Economics, Zhejiang University; Shi: Associate Professor, Department of Economics, Chinese University of Hong Kong; Xu: Department of Economics, Hong Kong University of Science and Technology.

social welfare increases by about 12.46% and 3.41% if the credit constraints of private firms and the subsidies of state-owned enterprise are removed, respectively; However, if we accelerate the reform of state-owned enterprises and increase the productivity of SOE to the same level of private firms, then the social welfare can increase by about 49.33%. We also find, on average, more than 60% of welfare gain from supply-side reforms is due to improving the mismatch between supply and demand. This paper provides both theoretical and quantitative support for further deepening the supply-side structural reform.

GDP

12.46%

3.41%

49.33%

67.6%

Restuccia et al Hsieh and Klenow

TFP 40% 60%[3]

[3] Restuccia, Diego, and Richard Rogerson Policy Distortions and Aggregate Productivity with Heterogeneous Establishments *Review of Economic Dynamics*, vol.11, no.4, 2008, pp.707 720; Hsieh, Chang-Tai, and Peter J. Klenow Misallocation and Manufacturing TFP in China and India , *Quarterly Journal of Economics*, vol.124, no.4, 2009, pp.1403 1448.

Song et al Chen et al

4

5 GDP

6

7

Bilbiie et al

Epifania and Gancia

8

4 *American Economic Review*, vol.101, no.1, 2011, pp.196-
IMF Economic Review, vol.62, no.3, 2014, pp.327-370; Chen Kaiji and Yi
American Economic Journal: Macroeconomics, vol.9, no.2, 2017, pp.73-114.

5 Discussion Paper 4764, 2010 Ju Jiandong, Justin Yi
Journal of Monetary Economics, vol.76: 2015, pp.244-263.

6 2012 3
GDP 115.61%

TFP

9

TFP 10

9

2012, Working Paper.

10

The Scandinavian Journal of Economics, vol.116, no.1, 2014, pp.87 127.

1.

1993-2016

8

1

11

1

1

11 *American Economic Review* vol. 50, no.4. 1960, pp.624-654; *Journal of International Economics*, vol.90, - no.2, 2013, pp.255-265.

1

2. GB/T 4754-2017

2013 262

2

3. 3 5

12

CPI GDP

3

2010-2016

12

4 5

2010

4 5 2004-2009 2010-2016

2010

2010

2004-

2009 2010 20%

2004-2009 2010

13

2006-2015

13

4.2 52.37 32.55%[14]

2010

1

	0.61	4.64%	7.87%	
	0.50	4.32%		
	0.80	5.61%		
	1.40	11.86%		

[14] 2012

2004-2009

GDP -0.05% -0.03%

10.38% 2010-2016 GDP

2.58% 1.33% 11.97%

	1.44	13.57%		
	1.07	8.24%		
	1.48	15.17%		
	0.52	5.38%		

2

		&
		&

57.28% 3.94% 28.36% 10.42%

3 %

		04-09	10-16		04-09	10-16	04-09	10-16
		3.93 (4.93)	0.64 (4.01)		18.88 (29.31)	14.83 (21.47)	14.95 (24.38)	14.19 (17.46)
(		14.81 (24.54)	2.97 (8.48)		13.55 (14.98)	7.59 (12.37)	-1.26 (-9.56)	4.62 (3.89)
)		12.76 (22.84)	7.43 (17.16)		19.13 (29.85)	11.39 (16.81)	6.37 (7.01)	3.96 (-0.35)
		16.21 (31.49)	10.28 (14.94)		19.80 (34.10)	9.83 (13.29)	3.59 (2.61)	-0.45 (-1.65)
)		22.69 (36.17)	13.05 (19.82)		14.78 (23.61)	12.52 (20.18)	-12.86 (-12.56)	-0.53 (0.36)
		13.00	10.39					

		(13.02)	(13.28)		(22.72)	(16.45)	(9.70)	(3.17)
		7.44						

		10.96	0.70 (-0.19)		0.33	-0.05 (-0.86)	-0.75 (-0.67)
		7.79	-1.63 (-0.55)		11.97	1.84 (2.76)	3.47 (3.31)

5 10-16 %

		2010 _____			2010 _____ GDP		
		25.14	-3.58 (-4.29)		11.21	6.24 (5.62)	9.82 (9.91)
( )		7.56	-4.87 (-5.65)		11.58	-0.50 (-1.34)	4.37 (4.31)
		4.75	-1.05 (-1.66)		1.04	3.03 (2.19)	4.08 (3.85)

( )

		8.52	1.42 (0.58)		0.63	2.58 (1.77)	1.16 (1.19)
		6.97	18.42 (17.60)		32.49	1.27 (0.27)	-17.15 (-17.33)

2015

2015 A 2818

50% 1673

61.64% 20 18

12 [15]

[16]

[16] 2017

2016 6

F E

Song et al[17]

R^l [18]

C-D

$$Y_{FL,t} = K_{FL,t}^{\alpha}(A_t N_{FL,t})^{1-\alpha}, \quad (1)$$

$$Y_{EL,t} = K_{EL,t}^{\alpha}\left(\chi A_t N_{EL,t}\right)^{1-\alpha},$$

[17] *American Economic Review*, vol.101, no.1, 2011, pp.196-233.

[18] 0 0.1

$Y_{iL,t}$, $K_{iL,t}$ $N_{iL,t}$ $i \in \{E,F\}$

19

$\chi > 1$

$A_{t+1} = A_t(1+z)$ $z > 0$

τ

$$\max_{K_{FL,t},N_{FL,t}} (1+\tau)Y_{FL,t} - w_t N_{FL,t} - R^l K_{FL,t},$$

w_t

$$w_t = (1-\alpha)\left[(1+\tau)\right]^{\frac{1}{1-\alpha}} A_t \left(\frac{\alpha}{R^l}\right)^{\frac{\alpha}{1-\alpha}},$$

m_t $m_t = \psi Y_{EL,t}$ ψ

<1

$$V\left(K_{EL,t}\right) = \max_{N_{EL,t}} (1-\psi)Y_{EL,t} - w_t N_{EL,t},$$

$N_{EL,t}$ 3

$$N_{EL,t} = \left[(1-\psi)\chi\right]^{\frac{1}{\alpha}} \left(\frac{\alpha}{R^l}\right)^{\frac{-1}{1-\alpha}} (1+\tau)^{\frac{-1}{\alpha(1-\alpha)}} \frac{K_{EL,t}}{A_t \chi},$$

19

$$V\left(K_{EL,t}\right)$$

$$V\left(K_{EL,t}\right)=\left(\frac{1-\psi}{1+\tau}\right)^{\frac{1}{\alpha}}\chi^{\frac{1-\alpha}{\alpha}}R^{l}K_{EL,t}=\rho_{E}K_{EL,t},$$

$$\chi \qquad\qquad \chi>\underline{\chi}\equiv\left(\frac{1+\tau}{1-\psi}\right)^{\frac{1}{1-\alpha}}$$

$K_{Et}=S_{t-1}^{E}+L_{t-1}$ S_{t-1}^{E} L_{t-1}

ξ

$R^{l}L_{t}\le\xi\rho_{E}K_{Et}$

$$Y_{FH,t}=A_{t}^{1-\alpha}K_{FH,t},$$

$$Y_{EH,t}=(A_{t}\chi)^{1-\alpha}K_{EH,t},$$

$K_{FH,t}$ $K_{EH,t}$ 20

$$p_{Ht}A_t^{1-\alpha} = R^l,$$

N_t μN_t

v

$$N_{t+1} = (1+v)N_t$$

(non-homothetic preference)

$$\frac{[(C_{1,H})^{\gamma}(C_{1,L}-\underline{C})^{1-\gamma}]^{1-\frac{1}{\theta}}-1}{1-\frac{1}{\theta}} + \beta\frac{[(C_{2,H})^{\gamma}(C_{2,L}-\underline{C})^{1-\gamma}]^{1-\frac{1}{\theta}}-1}{1-\frac{1}{\theta}},$$

C_H C_L β θ

$\underline{C}$

20 Chang et at,2016

Song et al 2011

10 - 11

9 :

$$p_{1,H}C_{1,H}^{E}+C_{1,L}^{E}+S^{E}=m,$$

$$p_{2,H}C_{2,H}^{E}+C_{2,L}^{E}+R^{l}L^{E}=\rho^{E}(S^{E}+L^{E}),$$

12 - 13 9

:

$$p_{1,H}C_{1,H}^{W}+C_{1,L}^{W}+S^{W}=w-T_{t},$$

$$p_{2,H}C_{2,H}^{W}+C_{2,L}^{W}=R^{l}S^{W},$$

$$T_{t}=\tau Y_{1,FL}$$

21 S^{E} S^{W}

R^{l}

$$\frac{\xi\rho_{E}}{R^{l}}(K_{EL,t}+K_{EH,t})+K_{FL,t}+K_{FH,t}=S_{t-1}^{W},$$

21 Song et al 2014

:

T_t

$$T_t = \tau Y_{FL,t}$$

T_t

22

$$\varepsilon_{1,H}^{E} = \frac{m}{m - S^{E} - \underline{C}}$$

$$\varepsilon_{1,L}^{E} = \frac{m}{\frac{\underline{C}}{1-\gamma} + m - S^{E} - \underline{C}}$$

t $K_{FL,t}>0$ $K_{FH,t}>0$ $\rho_L^E>\rho_H^E$

$K_{EL,t}=K_{Et}$ $K_{EH,t}$=0

ρ_L^E

ρ_H^E

$\rho_L^E=\rho_H^E$

23

$(1-\psi)\chi^{1-\alpha}R^l$

$$\alpha(1-\psi)\left(\frac{K_{EL,t}}{\chi A_t N_{EL,t}}\right)^{\alpha-1}$$

23 $\underline{C}$ θ

$S^E=\frac{\beta}{1+\beta}m$ $K_E=S^E+L$ $m=\psi Y_{EL}$ χ

$$(1+\nu)(1+z)<\frac{\beta R^l}{1+\beta}\frac{\psi}{\alpha(1-\psi)}\frac{1}{R^l/\rho^E-\xi}$$

χ $\partial\rho_E/\partial\chi>0$ χ $\chi>$ χ

$$\frac{K_{EL,t}}{\chi A_t N_{EL,t}} \qquad \frac{1}{\chi}\left(\frac{\alpha}{R^l}\right)^{\frac{1}{1-\alpha}}$$

$$\left[(1-\psi)\chi\right]^{-\frac{1}{\alpha}}\left(\frac{\alpha}{R^l}\right)^{\frac{1}{1-\alpha}}(1+\tau)^{\frac{1}{\alpha(1-\alpha)}} \le \frac{K_{EL,t}}{\chi A_t N_{EL,t}} < \frac{1}{\chi}\left(\frac{\alpha}{R^l}\right)^{\frac{1}{1-\alpha}}.$$

3.

$$\frac{K_{EL,t}}{\chi A_t N_{EL,t}} \ge \frac{1}{\chi}\left(\frac{\alpha}{R^l}\right)^{\frac{1}{1-\alpha}}.$$

τ 15

16

T

$$U_t = \sum_{t=1}^{T} \beta^{t-1} \frac{[(C_{Ht})^{\gamma}(C_{Lt} - \underline{C})^{1-\gamma}]^{1-\frac{1}{\theta}} - 1}{1 - \frac{1}{\theta}},$$

19 - 20

18 :

$$p_{Ht}C^E_{j,Ht} + p_{Lt}C^E_{j,_{Lt}} + S^E_{j,t} = m_t + R^l S^E_{j,t-1} \quad j < J_E$$

$$p_{Ht}C^E_{j,Ht} + p_{Lt}C^E_{j,_{Lt}} + S^E_{j,t} = \frac{(1-\xi)R^l\rho_E}{R^l - \xi\rho_E} S^E_{j,t-1} \quad j \geq J_E$$

J_E $S^E_{T,t} = S^E_{0,t-1} = 0$

21 - 22

18 :

$$p_{Ht}C^W_{j,Ht} + p_{Lt}C^W_{j,_{Lt}} + S^W_{j,t} = w_t + R^l S^W_{j,t-1} - T_t, \quad j < J_W$$

$$p_{Ht}C^W_{j,Ht} + p_{Lt}C^W_{j,_{Lt}} + S^W_{j,t} = R^l S^W_{j,t-1}, \quad j \geq J_W$$

J_W $S^W_{T,t} = S^W_{0,t-1} = 0$ $T_t = \tau Y_{FL,t}$

1993-2016

α 0.5, δ 0.1, R^l

1.0175 θ 2

25

78

28 30 58

6

α	0.5000
δ	0.1000
R^l	1.0175
θ	2
v	0.0300
β	0.9960
z	0.0380

TFP

25

2013 2

χ	4.7900
ψ	0.4500
ξ	0.8600
γ	2/3
$\underline{C}$	0.5120
τ	0.0140

1 1

a

b c

20 4μ

35

2

15 a c

1 63.63% b

d

25 f

2 τ =0

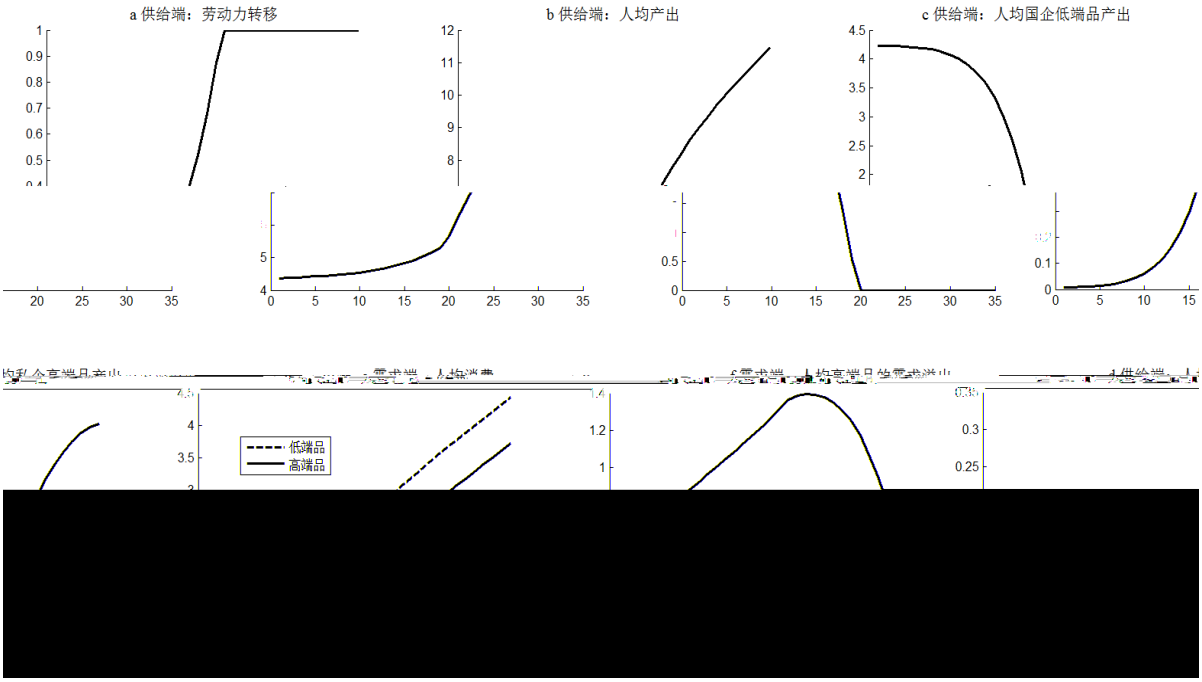
3

14 a c

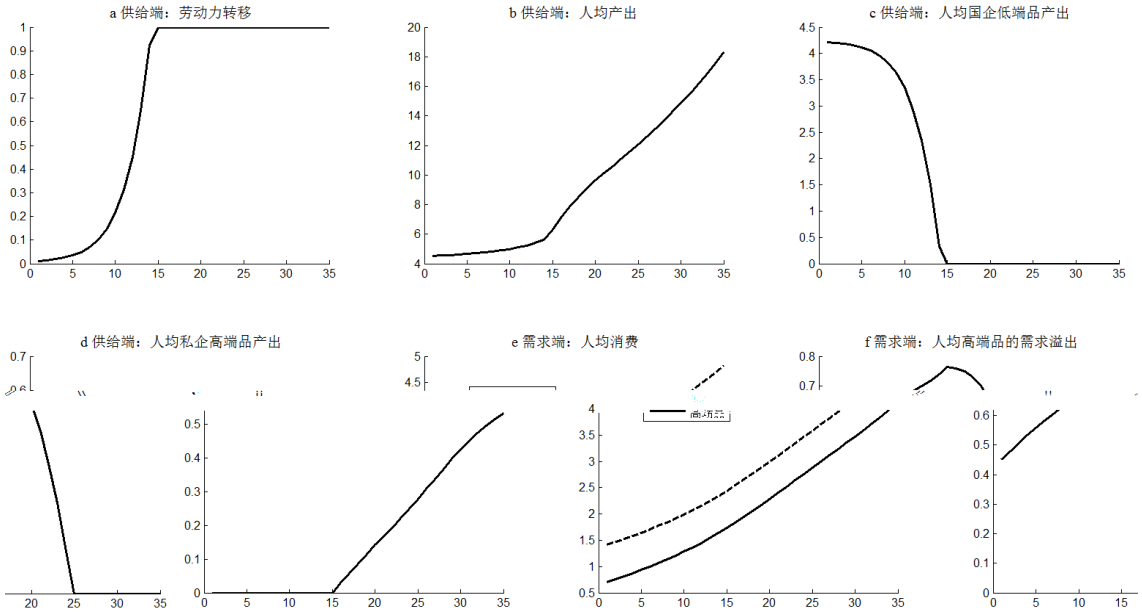
d

24 f [26]

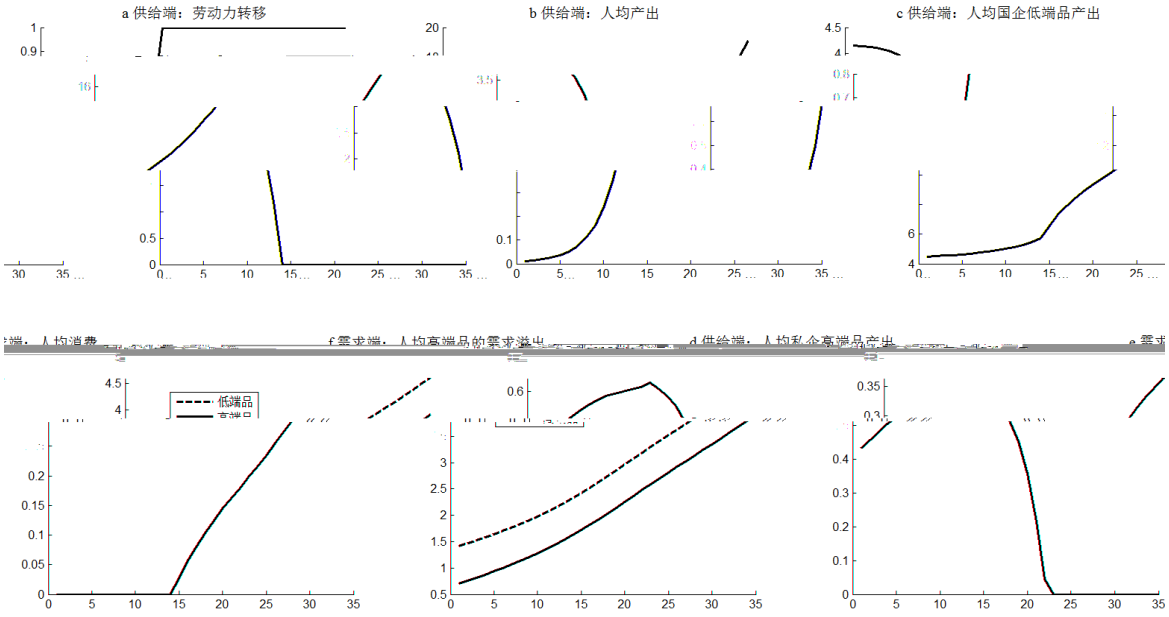
[26]



1


a 供给端：劳动力转移
b 供给端：人均产出
c 供给端：人均国企低端品产出
d 供给端：人均私企高端品产出
e 需求端：人均消费
f 需求端：人均高端品的需求溢出

2 I


a 供给端：劳动力转移
b 供给端：人均产出
c 供给端：人均国企低端品产出
低端品

3 II +

12.46%

3.41%

49.33%

27

28

7

67.6%

[27] Manova Kalina, Shang-
The Review of Economics and Statistics, vol.97, 2015, pp.574-588; Feenstra Robert C., Zhiyuan
and Credit Constraints under Incomplete Information: Theory and Evidence from
The Review of Economics and Statistics, vol.96, 2014, pp.729-744; Poncet Sandra, Walter Steingress,
-level Eviden *China Economic Review*, vol.21,
2010, pp.411-
Journal of Comparative Economics, vol.36, 2008, pp.633-
657.

[28] Eliza *The American Economic Review*,
vol.88, 1998, pp.1094-
Journal of Development Economics, vol.94, 2011, pp.86-
- *The American Economic Review*,
vol.86, 1996, pp.147- on and
The American Economic Review, vol.87, 1997, pp.565-

Journal of Comparative Economics, vol.18, 1994, pp.470-490.

7

		+	+
			+
	4.75%	1.13%	12.89%
	7.71%	2.28%	36.44%
	+ 12.46%	+ 3.41%	+49.33 %

2018

2018 3 19

62797519