Dynamic Efficiency in an OLG Model With the Spirit of Capitalism

Yanzhao Liu, Liutang Gong, Jianjian Liu, and Chan Wang[*]

In this paper, we aim to answer the question why the natural rate of interest displays a downward trend by introducing the spirit of capitalism in the spirit of Zou (1994,1995) in Diamond (1965). We find that the capital stock is higher and the interest rate is lower in our model than their respective counterparts in Diamond (1965). We also find that the stronger the spirit of capitalism, the higher the capital stock and the lower the interest rate. We conclude from the above findings that the decentralized equilibrium in an OLG model with the spirit of capitalism is more likely to be inefficient than that in Diamond (1965).

Key Words: The spirit of capitalism; OLG model; Dynamic inefficiency.
JEL Classification Numbers: E22, B10.

1. INTRODUCTION

Wicksell first introduced the idea of the natural rate of interest in 1898. Since then, it has been playing an important role in macroeconomics and monetary theory (Wicksell, 1936). Recently, many researchers have found that the natural rate of interest shows a downward trend across developed countries over the past four decades (Summers, 2015; Holston et al. 2017; Rachel and Summers, 2019; Del Negro et al. 2019; Eggertsson et al., 2021). Due to the fact that the natural rate of interest is affected by many macroeconomic factors, it is difficult to know the exact reason why the natural rate of interest has been falling for such a long period.

[*] Liu: Jinhe Center for Economic Research, Xi'an Jiaotong University,Xi'an Shaanxi Province, 710049,China. Email: chelseamliu@163.com; Gong: Guanghua School of Management and LMEQF, Peking University, Beijing, 100871,China; School of International Economics and Management, Beijing Technology and Business University, Beijing, 100871,China. Email: ltgong@gsm.pku.edu.cn; Liu: Corresponding author. School of Finance,Shandong University of Finance and Ecoonomics, Jinan, 250014,China. Email: iversonljj@126.com; Wang: Corresponding author. School of Finance, Central University of Finance and Ecoonomics, Beijing, 100081, China. Email: wangchanist@126.com.

In this paper, we aim to answer the question why the natural rate of interest displays the downward trend by introducing the spirit of capitalism in the spirit of Zou (1994,1995) in Diamond (1965). Our analysis shows that the capital stock is higher and the interest rate is lower in our model than their respective counterparts in Diamond (1965). In addition, we find that the stronger the spirit of capitalism, the higher the capital stock and the lower the interest rate. Based on these findings, we conclude that the decentralized equilibrium in an OLG model with the spirit of capitalism is more likely to be inefficient than that in Diamond (1965).

Inspired by Weber (1958), Zou (1994) first expresses the spirit of capitalism by assuming that the households derive the felicity not only from consumption but also from wealth, thus the utility function should be revised to include not only consumption but also wealth. In our model, each individual lives for only two periods, and supplies one unit of labor to the representative firm when he or she is young. The young individual uses a proportion of his or her labor income to buy consumption goods from the firm and the rest of the labor income to save for the future. In the second period, the old individual consumes a part of the total revenue from savings and interest, and bequeaths the rest to his or her offspring.

The individuals in our model accumulate wealth continuously for its own sake, rather than for the material rewards that it can serve to bring. Consequently, the capital stock in our model is higher than that in Diamond (1965). Since the production function is neoclassical, an increase in the capital stock means that the interest rate is lower in our model than that in Diamond (1965). Intuitively, with the increase in the degree of the spirit of capitalism, the interest rate tends to decline. Thus, our model provides a possible answer to the question why the natural rate of interest has been falling across developed countries over the past four decades.

When the interest rate is lower than the growth rate of population, the social planner in Diamond (1965) can improve on the decentralized equilibrium by transferring one unit of labor income from each young individual to the old individuals living in the same period, and to avoid the young individuals being harmed by the transfer, the social planner can ask the young individuals in the next period to repeat what their predecessors have done, and then continue this kind of transfer every period. By contrast, the interest rate is lower in our model than that in Diamond (1965), implying that the decentralized equilibrium in an OLG model with the spirit of capitalism is more likely to be inefficient than that in Diamond.

Our paper is closely related to the literature on the importance of the spirit of capitalism to the macroeconomic theory. Though Kurz (1968) discusses wealth effects in an optimal growth model by introducing the capital stock in the utility function as well as consumption, it is Zou (1994) that initially associates the utility function adopted by Kurz (1968) with the

spirit of capitalism. Zou (1994) shows that the differences in consumption per capita, capital stock per capita and the growth rate among countries can be explained by the difference in the degree of the capitalist spirit. Zou (1995) introduces the spirit of capitalism in an OLG model to explain the savings puzzle, that is, why old people continue to accumulate wealth, and wealth holdings increase with age. Many researchers also explore how the capitalist spirit affects asset prices (Bakshi and Chen,1996; Smith, 2001; Gong and Zou, 2002; DeMarzo et al., 2008). By incorporating the capitalist spirit into a general model of precautionary savings, Luo et al. (2009) find that the capitalist spirit helps resolve the excess sensitivity puzzle and the excess smoothness puzzle about consumption behaviors. In addition, Luo et al. (2021) discuss the implications of the spirit of capitalism for consumption inequality, the interest rate, and equity premium in a consumption-portfolio choice model. Karnizova (2010) finds that a model with the spirit of capitalism can generate a boom in consumption, investment, employment, output and asset prices in response to good news about future productivity. In the presence of the spirit of capitalism, many researchers find that inflation can promote economic growth (Zou, 1998; Gong and Zou, 2001; He et al., 2022).

The rest of the paper is organized as follows. Section 2 lays out the model. Section 3 analyzes dynamic efficiency of the decentralized equilibrium. Section 4 extends the benchmark model. Section 5 concludes.

2. THE MODEL

We analyze the implications of the spirit of capitalism and bequest for dynamic efficiency in a standard OLG model. Following Zou (1994,1995), we introduce the spirit of capitalism by letting the young and old individuals derive the felicity not only from consumption but also from wealth. Each individual lives for only two periods, and supplies one unit of labor to the representative firm when he or she is young. After receiving the labor income, the young individuals divide it between consumption and savings. In the second period, the old individuals consume a part of the total revenue from savings and the interest, and bequeaths the rest to his or her offspring.

2.1. Households

The representative individual maximizes the following utility function

$$U\left(c_{1t}\right) + \gamma_1 U\left(s_{1t}\right) + \beta U\left(c_{2t+1}\right) + \beta\gamma_2 U\left(s_{2t+1}\right) \tag{1}$$

subject to the budget constraints

$$c_{1t} + s_{1t} = w_t + \frac{(1 + r_t)\, s_{2t-1}}{(1+n)^2}, \tag{2}$$

$$c_{2t+1} + s_{2t+1} = (1 + r_{t+1})\, s_{1t}, \tag{3}$$

where $\beta \in (0,1)$ is the time discount factor, n is the population growth rate, c_{1t} and c_{2t} are the consumption in period t of the young and old individuals respectively, s_{1t} and s_{2t} are the savings in period t of the young and old individuals respectively, w_t and r_t are the wage and the interest rate respectively. In the spirit of Zou (1994, 1995), we assume that the representative individual can derive utility from wealth accumulation itself and $\gamma_1 > 0$ and $\gamma_2 > 0$ measure the degrees of the spirit of capitalism of the young and old individuals respectively. Equation (2) implies that the young individual born in period t receives bequest from the old individual of the last period. Thus, the spirit of capitalism of the old individual can also be seen as bequest motive (Hurd, 1987, 1989; Wilheml, 1996; Dynan et al., 2002; Kopczuk and Lupton, 2007; Ameriks et al., 2020).

The first-order conditions are given by

$$U^{'}(c_{1t}) = \gamma_1 U^{'}(s_{1t}) + \beta (1 + r_{t+1})\, U^{'}(c_{2t+1}), \tag{4}$$

$$\gamma_2 U^{'}(s_{2t+1}) = U^{'}(c_{2t+1}). \tag{5}$$

Equation (4) implies that the marginal utility of consumption in period t equals the marginal benefit of savings in the same period. If the young individual decreases the consumption by one unit, and saves the income by lending it to the firm, he or she will earn an interest of r_{t+1} when he or she is old. As a result, the discounted marginal benefit from consumption in period $t + 1$ is $\beta (1 + r_{t+1})\, U^{'}(c_{2t+1})$. In addition, the young individual can directly obtain the marginal benefit from savings in the presence of the spirit of capitalism, which is given by $\gamma_1 U^{'}(s_{1t})$. Equation (5) implies that the marginal utility of consumption in period $t + 1$ equals the marginal benefit from bequest.

We assume that the utility function takes the following form

$$U(x) = \frac{x^{1-\sigma}}{1 - \sigma}, \sigma > 0, \tag{6}$$

in which σ is the coefficient of relative risk aversion, and x stands for consumption or savings.

Thus, equations (4) and (5) can be written as, respectively

$$c_{1t}^{-\sigma} = \gamma_1 s_{1t}^{-\sigma} + \beta (1 + r_{t+1})\, c_{2t+1}^{-\sigma}, \tag{7}$$

$$\gamma_2 s_{2t+1}^{-\sigma} = c_{2t+1}^{-\sigma}. \tag{8}$$

From equations (3) and (8), we have

$$\left(1 + \gamma_2^{\frac{1}{\sigma}}\right) c_{2t+1} = (1 + r_{t+1}) s_{1t}. \tag{9}$$

From equations (7) and (9), we can obtain

$$c_{2t+1} = \left[\gamma_1 \left(\frac{1 + \gamma_2^{\frac{1}{\sigma}}}{1 + r_{t+1}}\right)^{-\sigma} + \beta \left(1 + r_{t+1}\right)\right]^{\frac{1}{\sigma}} c_{1t}. \tag{10}$$

Equation (10) tells us that whether an individual's consumption increases or decreases over time depends on whether the real interest rate is greater or less than the discount rate in the absence of the spirit of capitalism. However, when the individual has the spirit of capitalism, the change in his or her consumption over time also depends on the degrees of the spirit of capitalism.

2.2. Firms

The representative firm has the following neoclassical production function

$$y_t = f(k_t), \tag{11}$$

where $y_t = \frac{Y_t}{L_t}$ and $k_t = \frac{K_t}{L_t}$ are output and capital per worker.[1]Since each young individual provides one unit of labor, the variable L_t denotes the total number of young people in period t. Solving the profit maximization problem facing the representative firm, we have

$$r_t = f'(k_t), \tag{12}$$

$$w_t = f(k_t) - k_t f'(k_t). \tag{13}$$

Equations (12) and (13) imply that factor prices are equal to their marginal products.[2]

Assuming that the production function is Cobb-Douglas with the elasticity of output with respect to capital being α, we can rewrite equations (12) and (13) as

$$r_t = \alpha k_t^{\alpha-1}, \tag{14}$$

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[1]For simplicity, we neglect technological progress, and incorporation of it does not affect the main conclusions of our analysis.

[2]We assume that the depreciation rate is zero.

$$w_t = (1 - \alpha) \, k_t^{\alpha}. \tag{15}$$

From equations (14) and (15), we have

$$r_t = \alpha \left(\frac{w_t}{1 - \alpha} \right)^{\frac{\alpha - 1}{\alpha}}. \tag{16}$$

2.3.   Equilibrium

In a closed economy, aggregate net investment equals total income minus total consumption

$$K_{t+1} - K_t = w_t L_t + r_t K_t - c_{1t} L_t - c_{2t} L_{t-1}. \tag{17}$$

Substituting out for c_{1t} and c_{2t} in equation (17) from equations (2) and (3), we have

$$K_{t+1} = s_{1t} L_t + s_{2t} L_{t-1}, \tag{18}$$

which means that the savings of the young individual and the bequest of the old individual of the last period equal the capital stock of the next period. [3]

From equations (14) and (18), we can obtain

$$r_{t+1} = \alpha \left(\frac{s_{1t}}{(1+n)} + \frac{s_{2t}}{(1+n)^2} \right)^{\alpha - 1}. \tag{19}$$

Equations (2), (8), (9), (10), (16), (19) constitute a dynamic equilibrium describing how endogenous variables $\{c_{1t}, c_{2t}, s_{1t}, s_{2t}, r_t, w_t\}$ evolve.

3. DYNAMIC EFFICIENCY

The economy is on its balanced growth path when the endogenous variables of period t equal their counterparts of period $t + 1$ for any given $t \geq 0$. When the economy is on its balanced growth pathand the coefficient of relative risk aversion is unity, we have after some algebra

$$r^* = \frac{\alpha}{2} (\Omega - \Lambda), \tag{20}$$

in which $\Lambda = \frac{(1+\alpha)}{\alpha} + \frac{(1-\alpha)}{\alpha} (1+n) \left(1 + \frac{1}{\gamma_2} \right)$, and

$$\Omega = \sqrt{\Lambda^2 + \frac{4}{\alpha} \left[\frac{(1+n)^2 \left(1 + \frac{1}{\gamma_2} \right)}{\gamma_1 + \beta(1+\gamma_2)} + (1+n)^2 \left(1 + \frac{1}{\gamma_2} \right) - 1 \right]}.$$

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[3]please refer to Barro and Sala-i-Martin (2004) for a detailed derivation of equation (18).

Intuitively, due to the presence of the spirit of capitalism, the households tend to accumulate more capital than otherwise, which implies that the marginal return of capital is lower because the production function is neoclassical.

PROPOSITION 1. *The capital stock in an OLG model with the spirit of capitalism is higher than that in Diamond (1965). By contrast, the interest rate in an OLG model with the spirit of capitalism is lower than that in Diamond (1965).*

Proof. We first prove the latter part of Proposition 1, that is, the interest rate in an OLG model with the spirit of capitalism is lower than that in Diamond (1965).

The interest rate in Diamond (1965) is $\frac{\alpha(1+\beta)(1+n)}{(1-\alpha)\beta}$, thus it is enough to show that

$$\frac{\alpha}{2}(\Omega - \Lambda) < \frac{\alpha(1+\beta)(1+n)}{(1-\alpha)\beta}. \tag{21}$$

After simplification, inequality (21) can be written as

$$
\begin{aligned}
\frac{(1+n)^2(1+\gamma_2)}{\gamma_1 + \beta(1+\gamma_2)} \ &< \ \left[1 + \frac{\alpha(1+\beta)^2(1+n)^2}{(1-\alpha)^2\beta^2} + \frac{(1+\alpha)(1+\beta)(1+n)}{(1-\alpha)\beta}\right]\gamma_2 \\
&+ \ \frac{(1+n)^2(1+\gamma_2)}{\beta}
\end{aligned} \tag{22}
$$

Since $\frac{1}{\gamma_1 + \beta(1+\gamma_2)} < \frac{1}{\beta}$, and $\left[1 + \frac{\alpha(1+\beta)^2(1+n)^2}{(1-\alpha)^2\beta^2} + \frac{(1+\alpha)(1+\beta)(1+n)}{(1-\alpha)\beta}\right]\gamma_2 > 0$, we know that inequality (21) holds. Therefore, we complete the proof of the latter part of the Proposition 1.

Because the production function is neoclassical, we can conclude that the capital stock in an OLG model with the spirit of capitalism is higher than that in Diamond (1965) from the latter part of the Proposition 1. ∎

According to Weber (1958), the essence of the spirit of capitalism is the continual accumulation of wealth for its own sake, rather than for the material rewards that it can serve to bring. If each individual has a stronger desire to accumulate wealth, there is more capital in the economy. As a result, the interest rate is lower. We can prove this result formally.

PROPOSITION 2. *The stronger the spirit of capitalism, the higher the capital stock, and the lower the interest rate.*

Proof. We first show that the Proposition 2 holds for the young individual. Specifically, we want to show that $\frac{\partial k^*}{\partial \gamma_1} > 0$ and $\frac{\partial r^*}{\partial \gamma_1} < 0$.

Casual observation of equation (20) confirms that $\frac{\partial r^*}{\partial \gamma_1} < 0$. In addition, from equation (12), we know that $\frac{\partial r^*}{\partial \gamma_1} = f''(k^*) \frac{\partial k^*}{\partial \gamma_1}$. Since the production function is neoclassical, from $\frac{\partial r^*}{\partial \gamma_1} < 0$, we know that $\frac{\partial k^*}{\partial \gamma_1} > 0$.

Then we show that the Proposition 2 holds for the old individual. Specifically, we want to show that $\frac{\partial k^*}{\partial \gamma_2} > 0$ and $\frac{\partial r^*}{\partial \gamma_2} < 0$. Differentiating both sides of equation (20) with respect to γ_2, after simplification, we have

$$\frac{\partial r^*}{\partial \gamma_2} = \frac{(1+n)}{2} \frac{(1-\alpha)\,\Omega - (1-\alpha)\,\Lambda - 2\,(1+n) \left[\frac{\gamma_1 + \beta(1+\gamma_2) + \beta\gamma_2(1+\gamma_2)}{(\gamma_1 + \beta(1+\gamma_2))^2} + 1 \right]}{\gamma_2^2 \Omega}. \tag{23}$$

If we want to show that equation (23) is strictly less than 0, it is enough to prove that

$$(1-\alpha)\,\Omega < (1-\alpha)\,\Lambda - 2\,(1+n) \left[\frac{\gamma_1 + \beta\,(1+\gamma_2) + \beta\gamma_2\,(1+\gamma_2)}{(\gamma_1 + \beta\,(1+\gamma_2))^2} + 1 \right]. \tag{24}$$

After simplification, inequality (24) is equivalent to

$$\begin{aligned} 0 \;<\; & \frac{(1-\alpha)^2}{\alpha} + \Omega + \frac{(1-\alpha)\,(1+\alpha)\,(1+n)}{\alpha} \left[\frac{\gamma_1 + \beta\,(1+\gamma_2) + \beta\gamma_2\,(1+\gamma_2)}{(\gamma_1 + \beta\,(1+\gamma_2))^2} + 1 \right] \\ & + \frac{\beta\,(1-\alpha)^2\,(1+n)^2\,(1+\gamma_2)^2}{\alpha\,(\gamma_1 + \beta\,(1+\gamma_2))^2}. \end{aligned} \tag{25}$$

Clearly, inequality (25) holds. Thus, the interest rate strictly decreases with the degree of the spirit of capitalism of the old individual, i.e. $\frac{\partial r^*}{\partial \gamma_2} < 0$. In addition, from equation (12), we know that $\frac{\partial r^*}{\partial \gamma_2} = f''(k^*) \frac{\partial k^*}{\partial \gamma_2}$. Since the production function is neoclassical, from $\frac{\partial r^*}{\partial \gamma_2} < 0$, we know that $\frac{\partial k^*}{\partial \gamma_2} > 0$.

Thus, we complete the proof of the Proposition 2. ∎

In Diamond (1965), it is possible for the social planner to transfer resources between the young and old generations each period to make everyone better off. It implies that the decentralized equilibrium can be Pareto-inefficient. The reason for the inefficiency is that the social planner can use the infinity of generations to provide the consumption for the old individuals. By contrast, in the market economy, the only way for the old individuals to consume is to save when they are young, even if the interest rate is low. The social planner, however, can transfer one unit of labor income from each young individual to the old individuals living in the same period. Since the growth rate of population is n, the transfer implies that each old individual can have $1 + n$ more units of income to consume.

To avoid the young individuals being harmed by the transfer, the social planner can ask the young individuals in the next period to repeat what their predecessors have done, and then continue this kind of transfer every period. When the interest rate is lower than the growth rate of population, the transfer of income between the young and old individuals living in the same period is more efficient than saving, thus the social planner can improve on the decentralized equilibrium.

There are three possibilities in Diamond (1965): dynamic efficiency; dynamic inefficiency; efficiency threshold. When the decentralized equilibrium in Diamond (1965) is efficient, that is, the interest rate is strictly higher than the growth rate of population, it is possible that the decentralized equilibrium in our model is inefficient since, according to Proposition 1, the interest rate in an OLG model with the spirit of capitalism is strictly lower than that in Diamond (1965). By contrast, when the decentralized equilibrium in Diamond (1965) is inefficient or on the efficiency threshold, that is, the interest rate is strictly lower than or equal to the growth rate of population, it is certain that the decentralized equilibrium in our model is inefficient, due to the fact that the interest rate in an OLG model with the spirit of capitalism is strictly lower than that in Diamond (1965). Thus, we have

PROPOSITION 3. *The decentralized equilibrium in an OLG model with the spirit of capitalism is more likely to be inefficient than that in Diamond (1965).*

To facilitate the understanding of Proposition 3, we analyze the model numerically. In the benchmark case, we set one period to 25 years, implying that, if the young individuals enter the economy at the age of 25, they will retire at the age of 50 and then consume what they have saved, but will also consider to bequeath some of the savings to their offspring. Following the literature, we set the annual growth rate of population to 2%, which means that $n = 1.02^{25} - 1 = 0.6406$. The time discount factor is set to 0.99 annually, implying that $\beta = 0.99^{25} = 0.7778$. In addition, we set the elasticity of output with respect to capital α to 0.3.

Figure 1 depicts efficiency and inefficiency regions of the elasticity of output with respect to capital α and the time discount factor β when the degree of the spirit of capitalism of the young individuals increases from 0 to 1. In Figure 1, we assume that the old individuals have no capitalist spirit and the growth rate of population remains at the benchmark value. In addition, in the left panel of Figure 1, the time discount factor remains at the benchmark value. Similarly, in the right panel of Figure 1, the elasticity of output with respect to capital remains at the benchmark value. Figure 1 shows that the inefficiency regions of the elasticity of output with respect

FIG. 1. How efficiency and inefficiency regions change when the spirit of capitalism of the young individuals varies. ($\sigma = 1$)
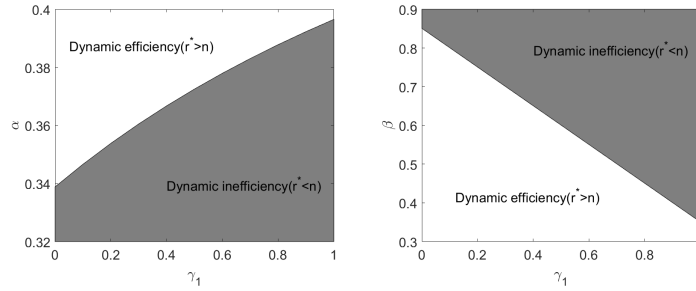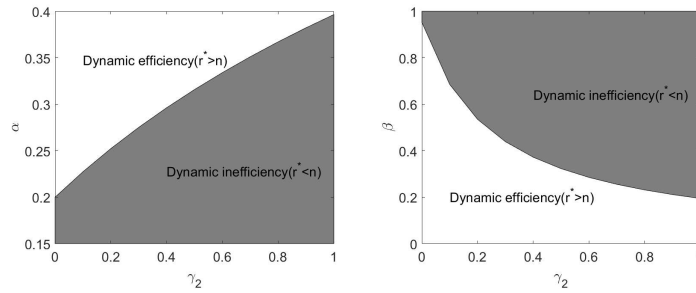

FIG. 2. How efficiency and inefficiency regions change when the spirit of capitalism of the old individuals varies. ($\sigma = 1$)

to capital α and the time discount factor β become larger as the degree of the spirit of capitalism of the young individuals increases from 0 to 1. Therefore, Figure 1 provides corroborative evidence for Proposition 3, i.e. the decentralized equilibrium in an OLG model with the spirit of capitalism is more likely to be inefficient than that in Diamond (1965).

Figure 2 depicts efficiency and inefficiency regions of the elasticity of output with respect to capital α and the time discount factor β when the degree of the spirit of capitalism of the old individuals increases from 0 to 1. In Figure 2, we assume that the young individuals have no capitalist spirit and the growth rate of population remains at the benchmark value. As in Figure 1, we assume that the time discount factor remains at the benchmark value in the left panel of Figure 2, and the elasticity of output with respect to capital remains at the benchmark value in the right panel of Figure 2. Figure 2 also shows that the inefficiency regions of the elasticity of output with respect to capital α and the time discount factor β become larger as the degree of the spirit of capitalism of the old individuals increases from 0 to 1. Once again, we corroborate the conclusion that the decentralized

equilibrium in an OLG model with the spirit of capitalism is more likely to be inefficient than that in Diamond (1965).

4. MODEL EXTENTION

The above analysis assumes a logarithmic utility function of consumption. In this section, we extend the benchmark model to consider a general utility function of consumption. The extension makes it impossible to solve the model analytically, thus we have to solve it numerically. We set the coefficient of relative risk aversion σ to 2, and keep other parameters at their benchmark values.

FIG. 3. How the interest rate and the capital stock change when the degree of the spirit of capitalism increases from 0 to 1.
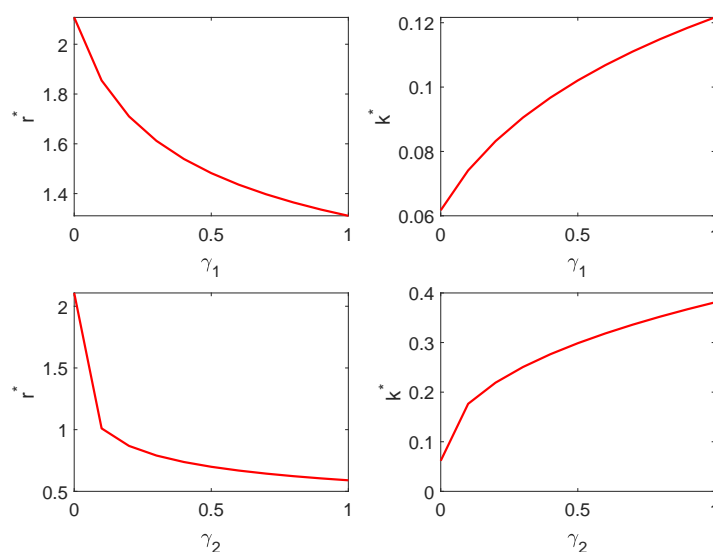

Figure 3 depicts how the interest rate and the capital stock change when the degree of the spirit of capitalism increases from 0 to 1. It is clear that the capital stock rises and the interest rate falls when the degree of the spirit of capitalism increases from 0 to 1, which is true for both the young and old individuals. Thus, we show in Figure 2 that the stronger the spirit of capitalism, the higher the capital stock, and the lower the interest rate. Proposition 2 still holds in the extended model.

We can also provide corroborative evidence to show that the decentralized equilibrium in an OLG model with the spirit of capitalism is more likely to be inefficient than that in Diamond (1965). Figure 4 depicts ef-

ficiency and inefficiency regions of the elasticity of output with respect to capital α and the time discount factor β when the degree of the spirit of capitalism of the young individuals increases from 0 to 1. As in Figure 1, we assume that the old individuals have no capitalist spirit and the growth rate of population remains at the benchmark value. In the left panel of Figure 4, the time discount factor remains at the benchmark value. Similarly, in the right panel of Figure 4, the elasticity of output with respect to capital remains at the benchmark value. Figure 4 shows that the inefficiency regions of the elasticity of output with respect to capital α and the time discount factor β become larger as the degree of the spirit of capitalism of the young individuals increases from 0 to 1, which implies that the decentralized equilibrium in an OLG model with the spirit of capitalism is more likely to be inefficient than that in Diamond (1965).

FIG. 4. How efficiency and inefficiency regions change when the spirit of capitalism of the young individuals varies. ($\sigma = 2$)
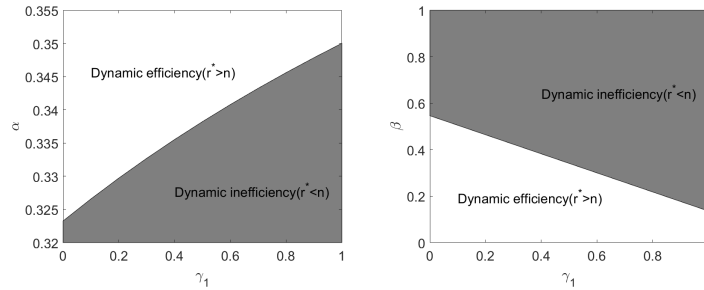

Figure 5 depicts efficiency and inefficiency regions of the elasticity of output with respect to capital α and the time discount factor β when the degree of the spirit of capitalism of the old individuals increases from 0 to 1. In Figure 5, we assume that the young individuals have no capitalist spirit and the growth rate of population remains at the benchmark value. In addition, we assume that the time discount factor remains at the benchmark value in the left panel of Figure 5, and the elasticity of output with respect to capital remains at the benchmark value in the right panel of Figure 5. Figure 5 shows that the inefficiency regions of the elasticity of output with respect to capital α and the time discount factor β become larger as the degree of the spirit of capitalism of the old individuals increases from 0 to 1. It means that the decentralized equilibrium in an OLG model with the spirit of capitalism is more likely to be inefficient than that in Diamond (1965).

FIG. 5. How efficiency and inefficiency regions change when the spirit of capitalism of the old individuals varies.($\sigma = 2$)
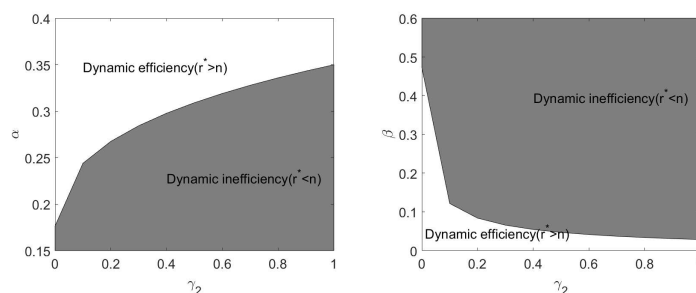
5. CONCLUSION

In this paper, we introduce the spirit of capitalism in the spirit of Zou (1994,1995) in Diamond (1965) to analyze its efficiency implications for the decentralized equilibrium. We find that the capital stock is higher and the interest rate is lower in our model than their respective counterparts in Diamond (1965). We also find that the stronger the spirit of capitalism, the higher the capital stock and the lower the interest rate. The above findings imply that the decentralized equilibrium in an OLG model with the spirit of capitalism is more likely to be inefficient than that in Diamond (1965).

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