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EVOLUTIONARY DYNAMICS OF GLOBALIZATION

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Evolutionary Dynamics of Globalization*

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Abstract

The expansion of markets –globalization– was reversed during early 20th century and unfettered markets gave in to the welfare state and central planning. But the markets have been striking back since the early 1980s. Governments are withdrawn from economic activities, and many structural market reforms are implemented. Now the question is: Can the forces that market expansion create again reverse this expansion? This paper seeks an answer to this question by constructing an evolutionary game theoretical framework in which market and "egalitarian" societies appear as evolutionarily stable states and shows that catastrophic events such as the Great Depression can indeed cause switch over between evolutionarily stable states.

Keywords: *globalization, evolutionary game theory, evolutionarily stable states, behavioural strategies*

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Introduction

The first wave of the globalization had started in the second half of the 19th century.[1] The formation of the gold standard as the world monetary system and elimination of the controls over the international movements of capital, labour and goods–which were already low compared to the interwar period–helped the emergence of the global economy. Throughout the 19th century, world merchandise trade increased rapidly by the help of the decline in transportation and communication costs. International mobility of labour and capital had all increased dramatically and the capital markets became steadily more integrated during this period.

The expansion of markets came to a halt with the First World War. After the war, attempts to rebuild global economy based on a renewed gold standard failed because of the political pressures of working class parties and rising social spendings.[2] Unemployment in developed countries soared and output declined. The Great Depression of the 1930s increased doubts about the efficiency of markets as an efficient allocation mechanism of the resources. Governments began to intervene to markets boldly and sometimes desperately. One of the first areas of intervention was the international trade: during the 1930s trade barriers proliferated. As a result, the growth rate of international trade among the industrialized nations fell drastically. Countries adopted capital controls to avoid currency crisis and outflow of gold. Monetary policies became an instrument of beggar-thy-neighbour devaluations. Capital markets which already began to recede in 1920s collapsed in 1930s. Labour migration also fell down.

Between 1917 and 1950 many countries broke away from markets and switched over to central planning. In 1950 almost a third of the world population was living in centrally planned economies under a

[1] For competing views about to the question “when did globalization begin?”, see: O’Rourke and Williamson 2000.

[2] Eichengreen (1996: 4) summarizes the situation quite well: “Universal male suffrage and the rise of trade unionism and parliamentary labor parties politicized monetary and fiscal policy making.”

socialist party rule (The World Bank 1996). Many of the developing countries used planning as a basis for their development strategy and adopted industrialization policies based on import substitution and trade restrictions. Even industrialized countries such as the U.K. or Norway used planning at various levels. In industrialized countries, the welfare state began to rise.

The second wave of the globalization had a slow start in 1960s but gained momentum in the 1980s. After the collapse of the Bretton Woods system in the early 1970s international capital flows began to rise and reached very high levels. International trade also increased very rapidly.

In 1990s, after the collapse of the communism, centrally planned economies of the Eurasia switched back to market economy. In many developing countries so-called market friendly reforms are implemented: state-owned enterprises are privatized, markets are deregulated and governments' interventions to markets are restricted. In order to limit the responsiveness of the monetary and fiscal policies to the short term economic objectives, central banks are given independence and governments tied their hands by "fiscal discipline". In terms of economic policies the line separating right and left political parties faded away.

Even if it is difficult to assess the overall record of market expansion on growth, inequality and poverty[3], one can still argue that, generally speaking, the experiment with planning created more egalitarian outcomes at the cost of economic efficiency (World Bank 1996: 2). However, economic efficiency does not solve all of the economic problems. It is becoming clear that to reduce poverty and decrease income inequality within the market economies redistribution schemes are necessary (Harrison, 2006). Whether these schemes can be

[3] As to the differing positions, see Krueger (1997), Rodriguez and Rodrik (2000) for growth Maddison (2001), O'Rourke (2001), Boltho and Toniolo (1999), Lindert and Williamson (2001), Bourguignon (2005), and Sala-i-Martin (2002) for inequality; Bhalla (2002), Sala-i-Martin (2002), Chen and Ravallion (2008), Bourguignon (2005), Lindert and Williamson (2001) for poverty.

realized or not within the parameters of markets will determine the evolution of the globalization. In respect of a decline in growth rates or further deterioration of income inequality within countries, the relevant question is: can anti-globalization forces gain enough power to reverse the expansion of markets as it happened in the first half of the 20th century?

The present paper seeks to find an answer to this question of reversal through building an asymmetric evolutionary game theoretic model which aims at examining the dynamics of globalization. Section 1 gives a brief account on markets and their limitations. Section 2 presents an asymmetric evolutionary game theoretical model in which market and "egalitarian" societies are represented by the evolutionary stable states, and conditions for a reversal of the market expansion is also considered. And a brief conclusion will follow.

1. Markets: A Brief Assessments

The worldwide expansion of markets –globalization– at the expense of other economic and social institutions alters and modifies the rules governing investment, production and distribution decisions, and affects well-being of every individual on earth and raises uncertainty in their daily lives.

Economic polices, one way or another, affect the expansion of markets. In fact, they can be broadly categorized according to their stance to markets. On the one hand we have the neo-liberal policies that support the expansion of markets to increase overall efficiency and foster economic growth. The policy guidelines referred as the Washington Consensus or "market friendly" economic reforms fall in this category. International organizations such as the IMF, World Bank and WTO steer member countries to follow policies that support the expansion of markets. On the other hand we have Keynesian, social-democrat or socialist economic policies that intervene into markets in order to obtain socially more acceptable or equitable outcomes. From the welfare state to central planning, these economic policies aim to limit the markets or alter their outcomes.

Markets, if they function adequately, provide individuals opportunity to use their endowments productively to enhance their well-being. Expansion of markets increases those opportunities available to individuals. But even in the most developed markets, information asymmetries, incomplete contracts, transaction costs, and imperfect competition can all hinder the efficiency of the outcome of market transactions. Furthermore, unequal bargaining power in market transactions generates outcomes that depend on strategic behaviour of interacting individuals (Bowles 1998, Bowles and Gintis 1988). Markets provide opportunities but individuals have different abilities to exploit these opportunities. Since participation in market interactions is voluntary, everybody is supposed to be better off. But gains from market exchanges need not be distributed to everybody's satisfaction.

Moreover, uncertainty is a fact of life. Each decision involves some degree of risk. No economic system can eliminate all risks that individuals face. But expansion of markets raises uncertainty that individuals tackle in their daily lives and feeds anxiety. Financial liberalization increases the risk of loosing all savings in a crisis, and financial crises are very costly for the poor (Harrison 2006). Trade liberalization affects the distribution of employment across countries. Some people loose their jobs because their firms cannot compete with their foreign counterparts. Market shares decline and profits evaporate because of a new product, developed by a rival firm, enters the market. Market mechanism may increase overall economic efficiency by eliminating losers and picking up winners. But this is hardly comforting for those who are on the loosing side. Risk-averse people demand security from their governments but governments' ability to meet these demands are becoming increasingly restricted because of fiscal discipline imposed upon them. Those unmet demands may be a source of political tensions that can stop or reverse the expansion of markets

(Rodrik 1997, Scheve and Slaughter 2002, Mayda, O'Rourke and Sinnott 2007).

Expansion of markets may generate a Pareto improvement if winners can adequately compensate losers. Accomplishment of such a compensatory redistribution scheme may help to calm down people who are on the loosing side of the market expansion. Such a redistribution scheme –welfare state– is nevertheless proven to be difficult to sustain especially without distorting incentive mechanism that markets largely rely on to function properly (Bowles 1992, Alesina and Perotti 1994).

Actually, it is not just a matter of loosing or winning. Economic growth raises everbody's life standards in the long run. But people also care about fairness, especially when it comes to the distribution of income and wealth. If market outcomes contradict what is considered as "fair" or "just" this alone can be a cause for discomfort and suboptimal behaviour (Akerlof 1980, Dobbs and Molho 1999, Fehr and Schmidt 1999, Gaechter and Fehr 1999).

2. A Two-Player Model of Social Interactions

In this section, we present an asymmetric evolutionary game theoretic model in which evolutionarily stable states corresponds to different institutional structures of the society.

Consider a population of n individuals, where n is large. Individuals have the same preferences but differ in their physical and mental abilities which are not perfectly observable by others. We will refer to those abilities as productive capacity or initial endowment which will be denoted for an individual i by Z_i. Initial endowments are distributed randomly among the individuals. The differences in initial endowments represent nature's inequalities. These inequalities are the source of hierarchical relations and unequal bargaining power among the members of the population. They also determine the roles played by the individuals in social interactions and affect choice of actions as well as the outcome of the interaction.

The objective of each individual is to use her endowment to enhance her well-being (fitness). We assume that the well-being of an individual depends on goods she consumes and endowment she conserves. Consumption good can be obtained by working, and endowment can be conserved by not working.

At the beginning of each period, members of the population paired randomly to negotiate on the terms of cooperation. If they agree, they work together to produce a composite consumption good, otherwise they work alone. The agreement between paired individuals involves the distribution rule, and the contribution rate.

Let ε_i denotes the contribution rate, in other words the fraction of initial endowment allocated for work by individual i $(0 \le \varepsilon_i \le 1)$. Then, endowment used for work by individual i can be expressed as $\varepsilon_i Z_i$. Since initial endowments are not perfectly observable it is reasonable to assume that the actual contribution rate may be lower than the terms of agreement indicates.

Let the amount of consumption good that can be produced by working be a function of endowment. If individual i works alone we have

$$Q_i = Q(\varepsilon_i Z_i), \qquad Q_\varepsilon > 0,\ Q_{\varepsilon\varepsilon} < 0,\ Q_Z > 0,\ Q_{ZZ} < 0$$

where Q is the amount of consumption good measured in fitness unit. If we assume that contribution of consumption good and not working to well-being is additively seperable, then well-being of individual i who works alone can be expressed as

$$w_i = (1-\varepsilon_i)Z_i + Q_i,$$

where $(1-\varepsilon_i)Z_i$ is also measured in fitness unit.

If the individuals agree to work together well-being of individual *i* who works with individual *j* can be written as

$$\mathrm{E}\left[w_i\right] = (1-\varepsilon_i)Z_i + \alpha_i Q_{ij}, \qquad .$$

where $\mathrm{E}\left[\cdot\right]$ is the expectation operator, and $Q_{ij} = Q(\varepsilon_i Z_i, \varepsilon_j Z_j)$. The outcome of cooperation is a random variable because endowments are not perfectly observable, and assumed contribution rate cannot be completely enforced. We will omit the expectation operator in order to limit the notational burden.

Cooperation increases the total amount of consumption good that can be consumed but it also brings conflict of interest between members of the population. Since the initial endowments are given, total output can be increased only by raising the amount of endowment allocated for work. Given the total output, an individual can enhance her well-being only by demanding a higher share. Given the share, well-being can be improved by lowering the level of contribution to work but this will also lower the total output. This conflict of interest allows us to refer individuals as the players of "the game of life"[4].

Given that endowments are distributed randomly, in each random matching, every player finds herself in one of two positions: high endowment (role I) with probability θ and low endowment (role II) with probability $1-\theta$. Having high or low endowment is identified according to relative endowments of the paired individuals. We assume that although the endowment levels are not perfectly observable, players can perceive their differences in endowments. This perceived asymmetry influences players' choice of strategy and their payoffs.

We will assume that both players have two strategies: They may choose the distribution rule or choose the contribution rate. Although many distributional schemes can be envisioned we will consider two

[4] Binmore (1994: 6).

distribution rules: Market rule and the egalitarian rule to represent a redistribution scheme. Under the market rule players get shares according to their contributions to output. Under the egalitarian rule: players get equal shares.[5] We will denote the output share of each player under the egalitarian distribution rule by α_W, and the high-endowment player's output share under the market rule by α_M.

We distinguish contribution rates of players by a superscript: for example ε_H the high-endowment player's contribution rate. We assume that when a player's preferred distribution rule is played, this player contributes all of her endowment to work, for example when α_M is played $\varepsilon_H = 1$. Note that market rule is the preferred by the high-endowment player, because $\alpha_M > \alpha_W$. Since $(1-\alpha_M) < \alpha_W$, the low-endowment player prefers the egalitarian rule.

In each matching there are four possible outcomes for each player:

i. If both players play distribution rules (i.e., high-endowment player plays α_M and low-endowment player plays α_W), no deal will be made and they end up with working alone. Then the well-being of the players in role I and role II are

$$w_{11}^{\mathrm{I}} = (1-\varepsilon_H)Z_H + Q(\varepsilon_H Z_H) \text{ and } w_{11}^{\mathrm{II}} = (1-\varepsilon_L)Z_L + Q(\varepsilon_L Z_L),$$

where Z_H and Z_L denotes high- and low-endowment players' endowment levels.

ii. If player in role I plays α_M, and player in role II plays ε_L, the well-being of the players in role I and role II are

$$w_{12}^{\mathrm{I}} = \alpha_M Q(Z_H, \varepsilon_L Z_L) \text{ and } w_{12}^{\mathrm{II}} = \alpha_W Q(\varepsilon_H Z_H, Z_L)$$

[5] The market rule raises efficiency in social interactions by rewarding higher contributions but preserves nature's inequalities which are reflected in differences in initial endowments. The egalitarian rule eliminates nature's inequalities by rewarding equal shares to the participants. The market rule can be qualified as *fair* because shares reflect relative contributions. Egalitarian rule can be qualified as *unfair* because it ignores differences in contributions.

iii. If player in role I plays ε_H, and player in role II plays α_W, the well-being of the players in role I and role II are

$$w_{21}^{\mathrm{I}} = (1-\varepsilon_H)Z_H + \alpha_W Q(\varepsilon_H Z_H, Z_L)$$

and

$$w_{21}^{\mathrm{II}} = (1-\varepsilon_L)Z_L + (1-\alpha_M)Q(Z_H, \varepsilon_L Z_L).$$

iv. Finally if both players play effort level, we assume that output will be shared by after work negotiation. In this case, the well-being of the players in role I and role II are

$$w_{22}^{\mathrm{I}} = (1-\varepsilon_H)Z_H + \alpha_N Q(\varepsilon_H Z_H, \varepsilon_L Z_L)$$

and

$$w_{22}^{\mathrm{II}} = (1-\varepsilon_L)Z_L + (1-\alpha_N)Q(\varepsilon_H Z_H, \varepsilon_L Z_L)$$

where α_N is the high-endowment player's output share settled by after-work negotiation, and we assume that $\alpha_N > \alpha_W$.

Payoff matrices for players in role I and role II are denoted by W^{I} and W^{II} can be written as

$$W^{\mathrm{I}} = \theta\begin{bmatrix} w_{11}^{\mathrm{I}} & w_{12}^{\mathrm{I}} \\ w_{21}^{\mathrm{I}} & w_{22}^{\mathrm{I}} \end{bmatrix} \quad \text{and} \quad W^{\mathrm{II}} = (1-\theta)\begin{bmatrix} w_{11}^{\mathrm{II}} & w_{12}^{\mathrm{II}} \\ w_{21}^{\mathrm{II}} & w_{22}^{\mathrm{II}} \end{bmatrix}.$$

Since each individual can find herself in different position in each matching, the population will consists of four types (or behavioural strategies):

$T_1 = (\alpha_M, \alpha_W)$: play distribution rule in both roles,

$T_2 = (\alpha_M, \varepsilon_L)$: play distribution rule in role I, play contribution rate in

role II,

$T_3 = (\varepsilon_H, \varepsilon_L)$: play contribution rate in both roles,

$T_4 = (\varepsilon_H, \alpha_W)$: play contribution rate in role I, play distribution rule in

role II.

Contributing high and demanding less may be called altruistic behaviour. Similarly, contributing less and demanding more may be called selfish behaviour. But none of the types listed above fit these definitions given the assumptions about the players' strategies. For example, consider T_1 individuals. When they play the distribution rule they contribute all of their endowments. Contributing everything can be considered as an altruistic act in role I because it implies no self use of initial endowment. Meanwhile playing the distribution rule in role II can be considered as selfish because it demands a higher share of output relative to the contribution. Furthermore, two types use the same strategy in one role and different one in the other. For example, T_1 and T_2 play the distribution rule in role I, T_3 and T_4 play effort level in role I. In short, there is no type (behavioural strategy) that can be described as purely selfish or altruistic.

The well-being matrix of the game is given as

$$W = \begin{bmatrix} w_{11}^{\mathrm{I}} + w_{11}^{\mathrm{II}} & w_{11}^{\mathrm{I}} + w_{21}^{\mathrm{II}} & w_{12}^{\mathrm{I}} + w_{11}^{\mathrm{II}} & w_{12}^{\mathrm{I}} + w_{21}^{\mathrm{II}} \\ w_{21}^{\mathrm{I}} + w_{11}^{\mathrm{II}} & w_{21}^{\mathrm{I}} + w_{21}^{\mathrm{II}} & w_{22}^{\mathrm{I}} + w_{11}^{\mathrm{II}} & w_{22}^{\mathrm{I}} + w_{21}^{\mathrm{II}} \\ w_{11}^{\mathrm{I}} + w_{12}^{\mathrm{II}} & w_{11}^{\mathrm{I}} + w_{22}^{\mathrm{II}} & w_{12}^{\mathrm{I}} + w_{12}^{\mathrm{II}} & w_{12}^{\mathrm{I}} + w_{22}^{\mathrm{II}} \\ w_{21}^{\mathrm{I}} + w_{12}^{\mathrm{II}} & w_{21}^{\mathrm{I}} + w_{22}^{\mathrm{II}} & w_{22}^{\mathrm{I}} + w_{12}^{\mathrm{II}} & w_{22}^{\mathrm{I}} + w_{22}^{\mathrm{II}} \end{bmatrix}$$

Let $\mathbf{f}(t)$ denote the state of the population at time *t*, then type frequencies f_i belong to the simplex S_4, where

$$S_4 = \{\mathbf{f}(t) = (f_1(t),..., f_4(t)) \in \Re^4 : \sum f_i = 1,\ f_i \geq 0,\ i = 1,...,4\}$$

Suppose the success of a behavioural strategy is a function of the difference between the fitness of type T_i and the average fitness of the population. Let the fitness of the type T_i in terms of frequencies be given as $(W\mathbf{f})_i = \sum_j w_{ij} f_j$, and the average fitness of the population as $\mathbf{f}W\mathbf{f}$. Then, the evolution of the frequencies of the behavioural strategies can be modelled by a differential equation on the simplex S_4 which is given by the replicator equation

$$\dot{f}_i = f_i\left[(W\mathbf{f})_i - \mathbf{f}W\mathbf{f}\right]$$

where $\dot{f}_i$ denotes the change in the frequency of type T_i. The rate of change $\dot{f}_i / f_i$ measures the evolutionary success of the type T_i. If it is positive, it indicates that the fitness of T_i is above the average and the frequency of the behavioural strategy T_i within the population rises.

An interior rest point is obtained from the solutions of

$$(W\mathbf{f})_1 = (W\mathbf{f})_2 = (W\mathbf{f})_3 = (W\mathbf{f})_4$$

$$f_1 + f_2 + f_3 + f_4 = 1$$

satisfying $f_i > 0$ for $i = 1,...4$. There may be none, one or infinite solution. Instead of trying to solve these equations we are going to analyze qualitative behaviour of the dynamic system. Following

Hofbauer and Sigmund (1998: 124) we rewrite the well-being (fitness) matrix as

$$\Pi = \begin{bmatrix} 0 & -R & -r & S+s \\ R & 0 & -S-r & s \\ r & -R-s & 0 & S \\ R+r & -s & -S & 0 \end{bmatrix}$$

where
$R = \theta\left(w_{21}^{\mathrm{I}} - w_{11}^{\mathrm{I}}\right)$, $S = \theta\left(w_{12}^{\mathrm{I}} - w_{22}^{\mathrm{I}}\right)$, $r = (1-\theta)\left(w_{12}^{\mathrm{II}} - w_{11}^{\mathrm{II}}\right)$, and $s = (1-\theta)\left(w_{21}^{\mathrm{II}} - w_{22}^{\mathrm{II}}\right)$. We assume that

i. $R > 0$ and $r > 0$. That is payoff to the both players are higher under the egalitarian distribution rule than the working alone,

ii. $S > 0$ and $s > 0$ if the payoff to the both players are higher under the market distribution rule than the share won after-work negotiation.

Under these assumptions player in role I prefers the egalitarian distribution rule to working alone, and the market distribution rule to fighting. The player in role II prefers the egalitarian distribution rule to working alone and market distribution rule to fighting. Hence, these assumptions allow us to rule out T_1 and T_3 as evolutionary stable strategies. The remaining behavioural strategies T_2 and T_4 are the candidates for evolutionary stable strategies.[6] Let us denote the average well-being in terms of consumption goods by $W(T_i)$ in each evolutionary stable state. Then we have

$$W(T_2) = \theta w_{12}^{\mathrm{I}} + (1-\theta) w_{21}^{\mathrm{II}} \quad \text{and} \quad W(T_4) = \theta w_{21}^{\mathrm{I}} + (1-\theta) w_{12}^{\mathrm{II}}.$$

[6] Technically this is the *bistability* case in which there is a line of rest points in the interior. In this case all initial conditions lead to one of the two candidates for evolutionary stable states.

When T_2 beats T_4 we have $W(T_2) > W(T_4)$. We call this evolutionary stable state as the market society. If the inequality changes direction T_4 beats T_2, and we have $W(T_2) < W(T_4)$. We call this evolutionary stable state as the egalitarian society. Note that since $W(T_2)$ and $W(T_4)$ are continuous functions of ε_L and ε_H for given θ, α_M, Z_H , and Z_L we have $W(T_2) = W(T_4)$ at some ε^*. Figure 1 depicts the outcome of the cooperation under different distributional rules.

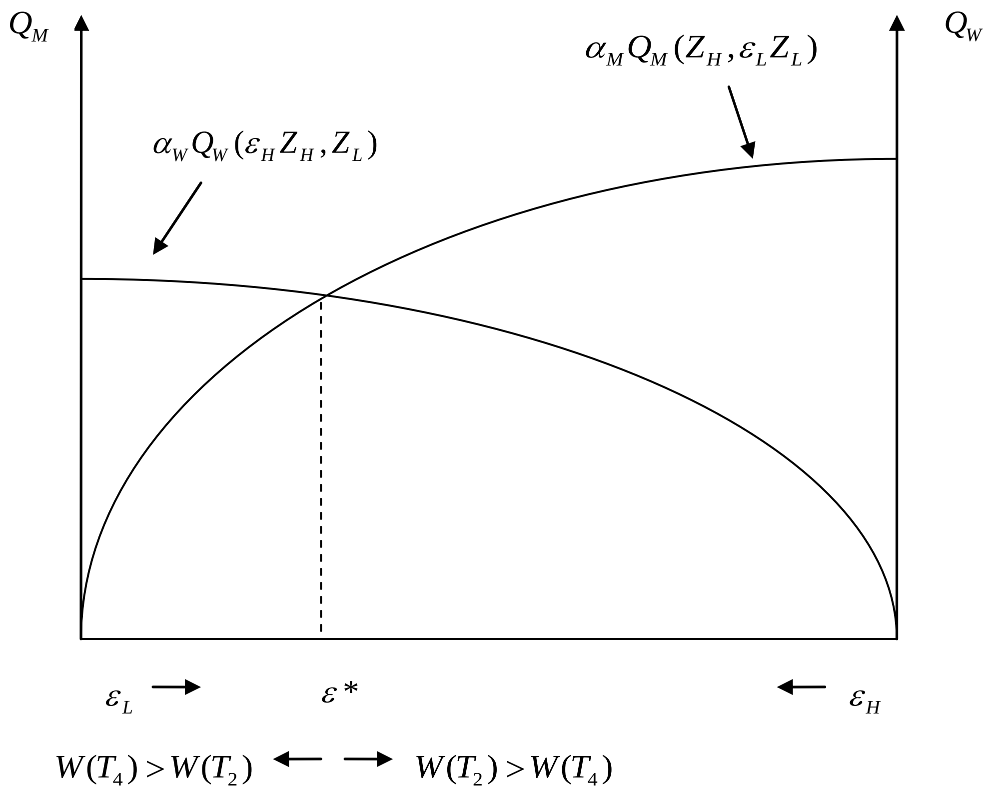

Figure 1

In the figure left vertical axes measures the share of the high-endowment player's under the market distribution rule, and right vertical axes measures the outcome of the cooperation under the egalitarian distribution rule. We measure ε_L from left to the right and ε_H from right to the left. The length of the horizontal axes equals to 1 because $0 \leq \varepsilon_H, \varepsilon_L \leq 1$. The distance from left to $\varepsilon *$ gives us the range where the amount of socially produced goods is higher under the egalitarian rule than the market rule. Any cause that increases this range also increases the probability of emerging the egalitarian society as the evolutionary stable state. Note also that while the well-being under the market rule depends upon the contribution rate of the low-endowment player the opposite is valid under the egalitarian rule. When the contribution rate of low-endowment player rises above $\varepsilon *$ the well-being of the behavioural strategy T_2 exceeds that of T_4 and market society emerges as an evolutionarily stable state. Similarly, when the contribution rate of high-endowment player rises above $\varepsilon *$ (note that we measure ε_H from left to the right) the well-being of the behavioural strategy T_4 exceeds that of T_2 and the egalitarian society emerges as an evolutionarily stable state.

An increase in the market share of the low-endowment player (a decline in inequality in terms of consumption goods) causes the curve given by $\alpha_M Q_M(Z_H, \varepsilon_L Z_L)$ to turn clockwise. In this case the critical value $\varepsilon *$ shifts to
the right, and the support given by the low-endowment player to the market society rises. The reverse is also true.

Until now we assumed that each player’s contribution rate is 1 under their preferred distribution rule. When we relax this assumption, for instance when the contribution rate of the high-endowment player to the market society gets lower, then the curve given by $\alpha_M Q_M(Z_H, \varepsilon_L Z_L)$ turns clockwise (The same is also true for a decline in θ). In this case $\varepsilon *$ shifts to the right, and this also increases the probability of the emergence of the egalitarian society as the evolutionary stable state.

Conclusion

Karl Polanyi (1944) once argued that the market expansion is reversed by the forces it created and the state will play the dominant role in the economy in the future. Events proved him right for a while but later the markets begin to strike back. Now the question is that "can the forces that market expansion created again reverse this expansion and replace market institutions with other social institutions to create more equitable outcomes?"

In an evolutionary game theoretical framework we presented a role game in order to seek an answer to this question. In the model players find themselves in different position in social interactions and this asymmetry brings them the opportunity to use different strategies in each position. Under these assumptions the society consists of four behavioural strategies (types) and none of those behavioural strategies can be characterized as purely egoist (self-regarding) or altruistic. Due to the inherent asymmetries in social interactions we believe that focusing on behavioural strategies rather than players provide more appropriate foundation for economic, social or political considerations. Furthermore, to the best of our knowledge, this feature of the model is novel in explicitly mixing *homo economicus* with *homo egalis* (or *homo reciprocan*).[7]

In the model we restricted the strategy space to contribution rates and distribution rules in social interactions. While this restriction drastically simplifies the model it also helps to focus on efficiency and inequality issues which are crucial of the survival of any economic and social system.

In the model we showed that market and egalitarian societies are the evolutionarily stable states and we also showed that catastrophic shocks such as the Great Depression (a decline in ε_L) or an increase in inequality (an increase in α_M) can indeed cause switches between evolutionarily stable states. In other words, the results of the model

[7] Binmore (1994: 25), Gintis (2000: ch. 11).

presented indicate that the market society is not the globally evolutionary stable state of the game of life.

Of course one should not make strong statements about the evolution of human societies based on a simple model. But from an evolutionary perspective, in the long run what matters are the numbers. If losers of the market expansion outweighs the winners in numbers this will eventually be reflected in economic policies and institutions, and have a negative effect on the expansion of markets. In other words, if the costs of the expansion of markets exceed its benefits for the majority or for the politically powerful then we may witness a reversal in the market expansion in favour of other economic and social institutions. First half of the 20th century provides an example of such a reversal and there is no guarantee that it may not happen again.

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