

BEHAVIOURAL TYPES DETERMINING ECONOMIC SYSTEMS

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Abstract. The paper formulates an analytical framework that considers the roles of a changing distribution of agents on behavioural settings with distinct behavioural traits, and of their interactive behaviour across many settings, in pushing the economic system towards a distinct behavioural type. The framework is elaborated to distinguish between basically different economic systems along distinct behavioural types, and applied to major regions in the world. The focus is on three behavioural settings: household firm and state settings; and on the behavioural types that associate with these settings. Attention is also given to persuasive settings which are especially relevant in China and India.

The paper addresses also questions as to why and how different paths emerged for alternative systems, their comparative economic performances, and their future global outlooks in the context of displacements of leading countries that relate to particular economic systems.

Keywords: economic systems, economic development, state, firms, behavioural economics

Classification: 23, 25, and 28.

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1. Introduction

In the past century, the traditional framework used for the analysis of economic systems reflected the ideological divide and the cold war between two opponent regimes of capitalism and communism. There was in general more interest in the descriptive analysis of capitalism and communism, as by Grossman, Kornai, Neuberger, Pryor, and others, their comparative evaluation as by Hayek, compromise regimes as by Lange, and convergence and the optimal economic order as by Tinbergen. In contrast, little attention went to theorizing on the formation, evolution and differentiation of economic systems, with the exception of several basic contributions by Bornstein, Hurwicz, Koopmans, Montias brought together in an edited volume by Eckstein (1971). It is not surprising, therefore, that once the choice between capitalism and communism was no more relevant by the mid-1980s, the sub-discipline of economic systems came to face an identification crisis.

There is recently a renewed interest in economic systems stimulated by the recognition that (a) next to convergence tendencies in some areas there are significant institutional diversifications among in the OECD countries, Jackson and Deeg (2006); (b) behavioural traits of the communist regime are re-emerging in ex-Soviet countries, Beck and Laeven (2006); and (c) the quest for a healthy relationship between economic and political participation and progress in the developing world, Barro (1996). There are now also various calls and attempts to theorize on these matters, as found in Acemoglu and Robinson (2005), and North et al. (2006).

The purpose of this paper is to contribute to theories and empirics on the formation, evolution and differentiation of economic systems. It shares with the last two references the purpose of developing a conceptual framework for understanding long-range changes in the economy and polity, though our unit of analysis, methods, findings and implications differ from theirs. The paper emphasizes the location and interaction of agents in *distinct behavioural settings* as the clue for understanding how agents, and the economic system they form, become aligned with a particular behavioural setting, take over the typical behavioural type that associates with that behavioural setting, and spread it to other settings via various channels.

The main components of the approach pursued will be displayed, and then combined to distinguish between basically different economic systems that rotate on different behavioural types. Country examples are added in support of the arguments. We focus on three distinct behavioural settings and behavioural types, namely those typical of the household, firm and state settings. We treat economic transformations within these settings, as well as inter-transactions, inter-communications, and inter-mobility of agents between these settings. We derive three distinct social regimes that associate with

these settings, display the mechanisms involved, and classify countries along these regimes and their intersections. In separate sections we answer why and how different regimes evolve from different external environments and from different combinations of personal and collective needs; illustrate main arguments using a conceptual model; and recapitulate on the comparative performance of settings and regimes.

2. Behavioural types and behavioural settings

Following Fox (1984), a behavioural setting g is a physical site populated by interacting persons who became members of the setting by accident and/or choice. Behavioural settings relevant for economic analysis are those that generate for their participants added value from the transformation of some activities. Agents inhabiting such a behavioural setting engage in a value added transformation of goods and services, subject to institutional rules, information flows and physical and technological boundaries. The most common examples of behavioural settings of interest for economic analysis are the *household*, *firm*, and *state* settings, to be denoted by $g = \{h, f, s\}$. There are more behavioural settings that are not engaged in economic transformations, and there are other behavioural settings that have significant bearings for economic transformations, as will become clear later.

A distinct behavioural type characterizes each of the three behavioural settings. Transformation processes in the household, firm, and state settings are driven by *intrinsically* distinct behavioural motives that are typical of the given environment that circumscribes the setting. In terms of motivation, social sharing and reciprocal exchanges are the underlying motives in household settings. Profit maximization is the intrinsic motive in firm and market settings. Political returns and rent seeking are the intrinsic motives in state and related settings. Settings can relate to each other horizontally and vertically as organizations do. The three distinct behavioural motives can be modelled as is done in equations 1, 2 and 3, below.¹

In the household setting the agents lump together their benefits and costs in an effort to make total benefits exceed total costs. In eq. 1, V_h stands for the value added in the household setting, while benefits B and costs Q of agents i and i' are lumped together and somehow shared among all i .

¹ The following are basic notations used in the paper in order of occurrence.

g = setting, with specifications of types h , f and s for household, firm and state settings, resp.; ps for pre-state setting

i = agent, with specification of k for agents with state authority . m = economic system

B = benefits of agents. Q = costs to agents. V = value added from transformation in a setting type

E = engagement lines of transactions and communications of agents. N = intensity of engagement lines of agents

A = share of agents participating in a setting type. C = share of demanded commodities transformed in a setting type.

L = labour. D = demanded commodities, specified by setting type in which their transformation is most suited.

$$V_h \equiv B_i + B_{i'} - Q_i - Q_{i'} \geq 0. \quad (1)$$

The agents would thrive to distribute these benefits and costs between i and i' in ways that contribute to a maximum value added or at least a positive result for the whole setting. The resulting distribution can be affected by personal and relational circumstances.

In the firm setting each agent would like to realize the highest positive returns to oneself. In eq. 2, V_f stands for the value added in the firm when agents i and j maximize their relative returns, defined as benefits less costs per unit of capital invested; the latter can be approximated by taking multiples of the total costs, or to simplify things we set the total costs as the denominator.

$$V_f \equiv (B_i - Q_i) / Q_i \geq (B_{i'} - Q_{i'}) / Q_{i'} \geq 0 \quad (2)$$

The resulting income distribution is likely to show returns of one agent higher than the other.

To model the state setting we employ for variables B , Q , V subscript s , and for the pre-state setting subscript ps . We also employ $k = 1, \dots, K$ to represent agents with state authority.

Eq.3.1 shows a higher value added in the state setting compared to the pre-state setting. This is due to a reorganized transformation with intervention of state agents k that results in $\sum B_i > \sum B_{psi}$ and /or $\sum Q_i + \sum Q_{ik} < \sum Q_{psi}$. Part of $\sum Q_i$ is a privately incurred cost and the other part is the collectively invested expenditure that allows for the higher value added transformation.

$$V_s \equiv \sum B_i - \sum Q_i - \sum Q_{ik} \geq 0, \quad V_{ps} \equiv \sum B_{psi} - \sum Q_{psi} \leq 0 \quad (3.1)$$

Agents in the state setting, $k = 1, \dots, K$, acquire an authority to extract a remuneration from all other agents denoted by Q_{ik} , such that the average remuneration for k is higher than the average level of net benefits left over for agents i, \dots, I , as shown in eq. 3.2.

$$\text{Distribution of } V_s \equiv (\sum_i Q_{ik}) / Q > \sum_i (B_i - Q_i - Q_{ik}) / I > 0 \quad (3.2)$$

The distribution of incomes will manifest on the average a higher level for the authority agent k than for subordinate agents i .

Given the above distinct behavioural patterns per distinct setting, the coordination mechanisms in the three settings are distinctly different. The coordination mechanism in households is typically sociologic in character, in firms coordination is economic, and in state settings coordination is political.

In any country one finds households, firms and state settings co-existing in large numbers side to side. The same agents can be members of more than one setting simultaneously. Agents communicate with agents within their own settings and other settings. The interactions are given shape in Figure 1. The squares, triangles and circles refer to the three behavioural settings, each with its own members; the *engagement lines* linking them indicate transformation and mutual exchanges taking place among agents in or between the organizations, as well as communicated behaviours. Each engagement line can be interpreted as consisting of a large number of *bits* of exchanged transformations and

communicated traits. Such an engagement line can be denoted by $E_{igi'g'}$. As these bits are not uniform in intensity in terms of time, effort or effects, they can be normalized making use of some scale of the intensity of the engagement, N , in terms of time, effort or effect. The engagements weighted by intensities can be expressed by $\Sigma_{ig} (E_{igi'g'} \cdot N_{igi'g'})$. This term can be eventually divided by the sum of all engagements weighted by intensity in the whole economy to give a relative measure of the strength and dominance of the engagement lines. They can be drawn lightly or heavily so as to reflect relative strength, as shown in the figure.

A setting generates outcomes that are distributed as rewards to its members. The distributed rewards in competing settings are crucial for an evaluation that participating agents regularly do, and which guides them in their decision to continue in the setting, voice or exit and enter another setting.² The propensity to move and participate in alternative settings satiates when the marginal utility of the agent of shifting a unit of effort between settings is equal to the marginal cost of the shift. The engagement lines in the figures can accordingly be given an additional meaning: they contain agent mobility and express directions of the reallocation of agents between alternative settings.

Processes of exchanged transformations, communicated traits and agent reallocations over lengthy periods lead to greater concentrations of agents in related behavioural settings g than others g' , opening the way for the spread and dominance of the behavioural type G that coincides with behavioural setting g . Once a threshold is reached with regard to accepting a specific behavioural type G , this G can be expected to gain momentum in view of network externalities, and will spread further and subordinate other G' . The adoption and spread of a particular behavioural type among more agents has been studied in many contexts, and there are well-known relating mechanisms in the literature.³

A conglomeration of interacting behavioural settings having a common dominant core is very likely to evolve into, and be identifiable as, a social system. The structure, conduct and outcomes of the social system will tend to be relatively homogeneous and reasonably predictable. Each social system has its own integral economic aspects that describe together its economic system. Similarly,

² The notions of loyalty, voice, exit and entry, emphasized by Hirschman (1970), help explain the dynamics of social systems. Entry and loyalty lead to growth of settings and organizations. Voice and exit lead to their decline. If in communicating economic systems $m1$ and $m2$, performance $m1$ is higher than performance $m2$, then this would lead to tension in $m2$ (voice and exit) and pressure on $m1$ (hostility and entry).

³ There is a significant amount of literature relating to logarithms of convergence that lay emphasis on the mechanisms of integration causing the spread and dominance of particular behavioural types and that give support and background to our hypothesis. Mention can be made of the following mechanisms: imitation, convention, focal points, information cascades, reciprocal behaviour, group learning, and Markov chain inversions.

each social system has its own integral polity. It is logical to expect high degrees of consistency and correlation between the economy and polity of a specific social system.⁴

3. Relating economic systems to dominant behaviours

Agents adopt the behaviour of the setting that they inhabit most and in which they interact most, and spread it to other settings they communicate with, or partially inhabit⁵. Sharing common external environments among related behavioural settings, communication in and between settings, mobility among settings, and network externalities, tend to end up in a social system, with an integral economic system allied to it that would manifest one dominant behavioural type G over others G' .

Given the three prominent behavioural settings examined, the large numbers of agents inhabiting each of them, the vast volumes of transactions and communications in each and between them, and the tendencies for one setting to overshadow other settings over long periods of time; it is not surprising that these three broad types of economic systems have become dominant in different parts of the world.

The first type, and the oldest, is the economic system that circles around households and in which all settings have adapted to household behavioural traits. This can be called the household intensive system, HIM, as in figure 1a. In the real world, many rural regions within developing countries would qualify as HIM. At the country level there are limited examples that fully operate along the lines of HIM.

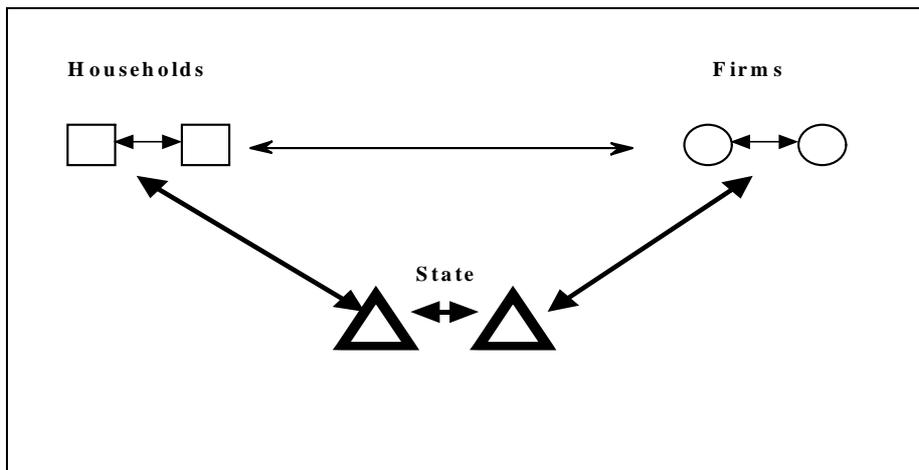
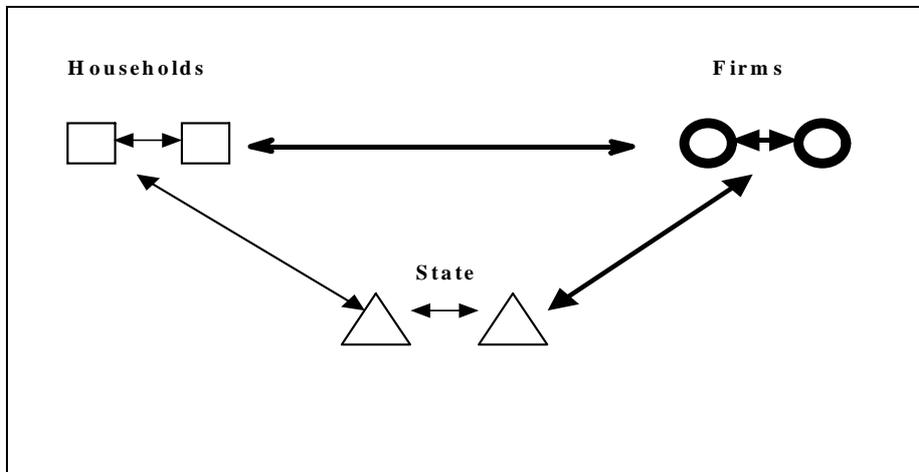
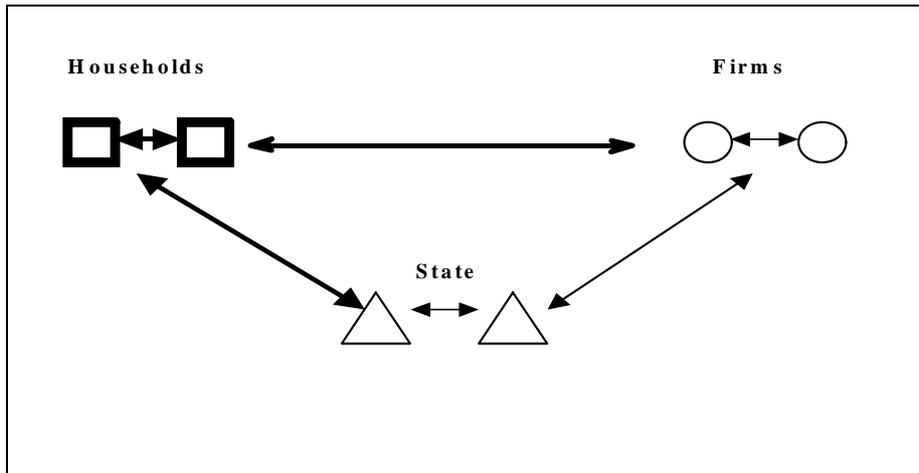
The second type, as in figure 1b, is the economic system where agents adopt a firm-like behavioural type, i.e. maximization of material returns at least material cost. The firm intensive system, FIM, has many copies in the real world; the best example is US.

The third type, as in figure 1c, is the economic system where agents have adapted to a state-like behavioural type that is guided by rent appropriation and political returns. In the real world Russia is a close example of countries that operate along the state intensive system, SIM, though this was more so during the communist regime.

⁴ This means, for instance, that the economy and polity in the social system of the US are consistent with and reinforce each other so as to speak of an integrated whole of economy and polity. Likewise, Russia has a different social system, with its own consistently integrated economy and polity. A fruitful comparison of the US and Russian economies would require giving due consideration to their corresponding polities.

⁵ As agents in US are intensively engaged in firm settings where the profit motive dominates, the agents adopt this inclination when they participate in household and state settings, and over time these settings converge towards the same profit motive. In Russia the significant preoccupation of agents with state settings that pursue political motives tends to reorient agents' behaviour in most settings towards a rent-appropriating political behaviour.

Figure 1 (a,b,c). Configurations of three socio-economic systems: HIM, FIM, SIM.



There are arguments for drawing up a fourth configuration. Specific conditions exist that may hinder convergence towards one dominant behavioural type. Where the absorption of agents from households in firms or state is limited because of the sheer large numbers involved, as in China or India and several others, the result is a loosely linked multi-poles system, MPM. These countries have vast rural populations that are bound to household settings, and significant urban populations manifesting subcultures relating to firms and state. The distribution of agents on these settings has been historically stable, and given the involved magnitudes the distribution may not change much in the future.⁶ In this environment, there are other behavioural settings that keep this vast heterogeneity intact: these include political congresses, judiciary courts, religious, intellectual and media circles, that can be called *persuasive settings*. They play a crucial role in the streamlining of developments among these segments. Persuasive settings are exclusive settings. Participating agents are highly talented leaders who are able to place themselves as leaders in various contexts: household, firm, state, religious, intellectual and judiciary settings. They are the so-called ‘wise men’, and they are able to obtain the support of leaders that lead different settings. They have the natural authority to affirm the status quo and anticipated changes. To the extent that agent distribution among these segments in these countries will continue to keep a stable balance in the future it can be expected that persuasive settings will increase their leverage significantly in this environment.⁷

What makes a network of interactions comprehensible as a distinct system is the *prevalence* of common revealed preferences and *typical* coordination tracts, structures and performances as can be observed in countries considered to have adapted to that system, as compared to other groups of countries with a different behavioural focus. Four factors are behind how the *common* is formed, and how the *prevalence* is caused.: (a) sharing of common external environment and past history fosters convergence towards a common behavioural type; (b) intensive and extensive interactions and communications of agents participating in more settings extend the prevalence of the advantaged behavioural type; (c) agents observe the transformation outcomes in alternative settings, and *move* to the advantaged setting or *copy* its behaviour thus resulting in the prospect that the typical behaviour of the advantaged setting becoming prevalent; (d) network externalities enforce convergence towards the advantaged behavioural type.

Furthermore, there is the strong association between specific given environments, behavioural settings and behavioural types. When a behavioural setting g happens to stand higher than g' in the

⁶ See Maddison (1971). Historical records for India and China show that distribution of agents between the three distinguished settings has been intact for many centuries in spite of significant regime changes in the polity and economy of both countries.

⁷ Persuasion settings are not restricted to developing countries; their active role in advanced economies is discussed in Murphy and Shleifer (2004).

hierarchy of settings, then g is also able to set rules that other settings g' would follow. And in this way, the behavioural type G' is subjugated to that of G , allowing a further dominance of G' . If persuasive settings, being the highest, affirm the socio-economic order, then prevalence of stipulated behavioural type in the economic system is complete.⁸

The ability to predict the conduct and performance of the economic system of a specific country depends on how uniform and integrated is the economic system in that country. For example, the modelling and analysis of the conduct and performance in FIM relating countries along lines of profit maximization, and in SIM relating countries along lines of rent appropriation, can be seen as workable approximations made possible by over majorities of the agents behaving along these two distinguishable lines in the two systems, respectively.

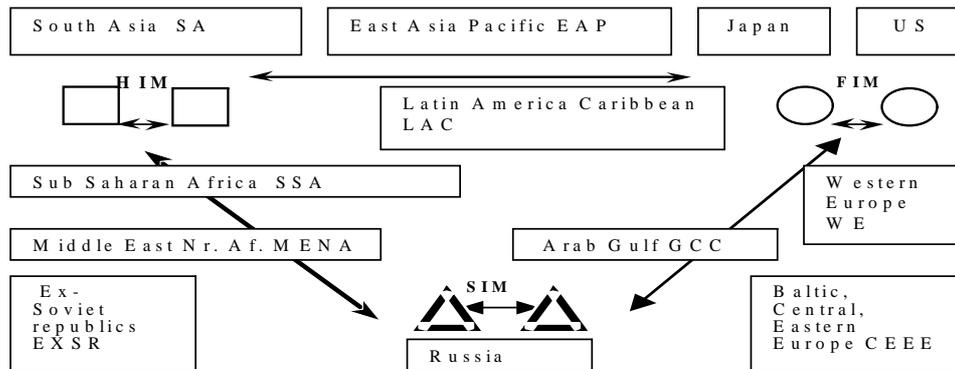
The ranking of a large number of empirical indicators on firm and state settings shows US to be most close to FIM, while Japan and West European countries, also identifiable as FIM, yet showing differing inclinations to the other two poles. The indicators show Russia to fit most to SIM, with the Ex-Soviet Republics and East European countries also manifesting SIM but showing differing inclinations to the other two poles. As can be expected, developing countries are in relative terms closer to HIM, but significant differentiations among them have taken place. Figure 2 displays the positioning of various country regions along the three axes. The annex contains empirical material supporting the positioning.

To drive the point at the cost of some exaggeration, it can be maintained that in the 'US' the high concentration of agent interactions in firms pushes intrinsic motivations in the household and state settings aside and get replaced over time by profit maximization typical of the firm settings. In contrast, the same processes oblige agents in household and firm settings in 'Russia' to follow a politicized motive typical of state settings. As a result, all three settings in 'US' behave in ways typical of firm settings, while in 'Russia' they manifest behaviour typical of state settings. In the extreme, a comparison between the economic systems of 'US' and 'Russia' is a comparison of two contrasting behavioural types that involves the political, and the whole social, system. In 'US' the economic motive dominates, and the polity can be described to have adapted itself to the economic motive. Next to constitutional checks and balances, and an independent judiciary system, that keep state discourse in control, profit maximizing firms and agents have installed more institutions for

⁸ Compare checks and balances restricting power of the state that were built by the Founding Fathers in the US Constitution and passed by the Congress in 1789-91, with the unlimited powers legitimized to the state by the Russian Revolutionary Council in 1917-21, about 130 years later.

controlling state conduct, and in some cases bending the polity to realize economic interests. In contrast, in 'Russia' the polity can be seen as exogenous to the economy.⁹

Figure 2. Positioning of economies along axis of dominant systemic interactions.



4. The start and the long- range development of economic systems

If at the end of the road three or four broad economic systems show up, then how did each start at all at the very beginning and developed further?

The external environment is a basic determinant of behavioural settings and the behavioural type that characterizes the setting. Different external environments generate typical coordination structures that coincide and fit with typical behavioural settings. A closed world, homogeneous population, strong kinship, severe scarcity of resources, and low levels of material welfare characterize the external environments of household settings described here. This external environment promotes sharing behaviour and solidarity structures. Agents in these settings get conditioned towards adopting institutions of familial altruism, brotherhood attitudes, income sharing among households linked by kinship and location. By the same token, households unrelated by kinship or locations tend to be excluded from the sharing tradition. Group altruism is double edged, with inclusive and exclusive dimensions.

The external environment typical of value maximizing settings is materially better off, and is characterized by an open world with frequent changes, product discoveries, and choice opportunities; and a high mobility of agents.

⁹ North et al (2006) take the position that interactions between economy and polity are inseparable, which stops the analysis short of reaching fruitful conclusions. We argue here that there are proofs for the supremacy of the economy on the polity, and likewise the opposite. While in the US the focal points are the economy, firms, profits, and exchange, with a subordinated polity to the economy; in the Russian context the focal points are the polity, state, rent, and authority; and hence, a subordination of economy to polity.

The external environment typical of state settings is also materially better off, but is characterized by highly skewed human endowments and rank among differentiated population groups, often generating conflicting interests and requiring authoritarian rules to resolve them. The external environment contains also barriers that obstruct openness, choice and mobility.

The starting point is conveniently the situation where household settings are already there. Which settings followed: firm settings or state settings? Hicks (1969) is among the many economists who contend that tribal, feudal, army and state settings historically preceded firm and market settings. Most anthropologists, like Firth (1967), maintain that economic organization and the transformation and exchange of products within and between neighbouring primitive societies came first and preceded political organization. There is documented history that can be used to support both scenarios in different regions in the very past.

Our model of long-range systemic development makes allows for both scenarios. The model is basically microeconomic, and is based on several premises. (1) Agents inhabiting household settings, and interacting with each other in a communal environment, experience specific needs, or can be attended to uncovered needs, and they are ready to embrace these needs. Agents are also innovative and capable of finding solutions and creating new transformation settings that satisfy these needs. (2) The needs of an agent can be *personal* or *collective*.¹⁰ Personal needs of one agent can be directly satisfied by the innovative and responsive transformation offered by another agent; opening ways for exchange and firm settings. Collective needs are indivisible and their satisfaction would require a joint effort of agents and a third party intervention to coordinate the task at a higher level; which opens ways for authority and state settings. (3) In communities where personal needs happen to have an overweight, the firm setting will emerge and prosper. In communities with an overweight of collective needs, the state setting will emerge and prosper. (4) The above premises assume other things remaining the same; in particular, the external environment is kept constant.¹¹

The case of communities where personal needs had overweight, thus pushing the economic system towards adopting a firm-like behaviour, can be displayed along the following scenario. Personal needs and searches for new products to satisfy them occur more frequently in open communities. In any open community there are talented and skilled agents who are capable of

¹⁰ Satisfaction of these two types of needs corresponds with the distinction between private and public goods.

¹¹ North et al (2006) see a substantive degree of physical violence in primitive society as the pre-condition for the creation of state institutions, which they call a limited access order. This view is narrow and restrictive. They describe also a transition from the limited to an open access order in which the western industrial democracies are classified, but they do not enter into the micro behavioural mechanisms that characterize the transition, and how features of the new order become typical and prevalent. Although the limited and the open access regimes have some correspondences with the state intensive and firm intensive economic systems that we have modelled in this paper, our approach and the implications thereof are basically very different.

innovating and achieving a value added transformation in the form of a good or service that satisfy some felt personal need. The newly introduced transformation is by itself a new setting in formation. The larger the community and the more open it is, the greater is the probability that more personal needs, talented transforming agents, and new transformation settings emerge in the form of firms and markets.

As demand for personal goods diversifies and increases, more agents reallocate from households to transforming firms and markets, and the decline of the income sharing behavioural type in favour of the profit maximization behavioural type. There will also be a jump in the value added transformation via the production and exchanges of more and newer products, supporting the fact that a HIM in its pure form has limited economic growth ambitions given its limited demand for and supply capabilities for personal goods. In contrast, profit maximization, greater value added transformations, higher economic growth and FIM correlate with each other.

Finally, persuasive settings play an important role in affirming the principles of a newly installed socio-economic order, i.e. one where firm settings dominate.

The case of communities where collective needs have overweight allows for the emergence and prevalence of state settings, and can be displayed along the following scenario. Collective needs consist of urges to curb uncertainties and externalities that the agents experience. Unable to resolve their uncertainties and externalized divisions agents i and i' call on a ruling agent k to organize security and to execute public actions to satisfy collective needs. In all societies there are talented agents who are well equipped to take the role of ruler k , lead politically, find compromising solutions to collective needs, and govern effectively towards realizing these solutions. Having a governing monopoly, agents k pursue an economy of *measured* exploitation in fixing their compensation for the services they provide to agents i, i' . If all the counteracting i, i' agents calling for collective action count I and each produces y , and the production is liable to fall down to x if no collective action is taken, but may increase to z if the state intervenes, whereby $x < y < z$, then $I(z-x)$ represents the maximum amount that agent k can collect from agents i, i' for the collective actions rendered, including the bureaucratic apparatus required to implement these actions. If the number of agents k involved in the collective actions is K , then their average reward is $I(z-x)/K$. Under crude but realistic assumptions agent k can be shown to end with about double the income of agent i, i' or more.¹²

¹² Take y equal 100 and x and z fixed at 10% below and above y , and take I/K to be 100 implying 100 citizens per one state official, the transaction can then create in the extreme case an income for agent k of 200 as compared to 90 for agent i or i' . To secure a sustainable income, the state agents would pursue a measured exploitation. Too much extraction would cut into the earning base of agents i, i' , and threaten a reduction in the income of k .

Under leadership of politicians and bureaucrats, governments have evolved overtime into natural monopolies.¹³ Anywhere, there is only one government to run state affairs. This monopoly position seduces state officials to appropriate rent in the process of organizing and executing collective actions in the future. State officials are also politically motivated to create and expand community needs for collective goods. In this way, the received rent is extended to more activity areas, and the monopoly is sustained and broadened. To create community needs for collective actions, political man would take measures to discourage private solutions to emerging needs. The above does not mean that all state agents behave along rent appropriating motives. Many (most) state agents will pursue benevolent motives as when the state is embedded in a household intensive system, HIM. Or many (most) will seek no more than their opportunity cost if they are embedded in a firm intensive system, FIM. But if they function within a system that is intensively dominated by the state, SIM, then state agents will excel in rent seeking and political behaviour, and cause this behavioural type to spread to other settings and converge towards SIM.¹⁴ Finally, repeated affirmation from persuasive settings strengthens SIM.

To summarize, alternative scenarios are feasible regarding sequence of regimes. It follows therefore that it is perfectly plausible that the state (firm) settings emerge first and firm (state) settings follow later if collective (personal) needs were felt to be more urgent than personal (collective) needs. So, both routes are possible, and these can vary over time and place. The breakthrough towards a predominance of the firm or state settings would then depend on the *cumulative* relative weights of personal versus collective needs.

We have assumed other things remain the same. In the real world, the external environment undergoes basic changes that particularly promote FIM or SIM. A few examples suffice: (a) the age of discovery has allowed a major diversification in demanded products at the personal level, a huge jump in personal needs of the newly settling migrating populations and a push for firm settings, and (b) technological advances enhance demand for new personal products and their divisible production

¹³ For brevity sake, we formulated state agents k as a unified party. Of course, an elaborate treatment would distinguish between governing agents and those aspiring to govern, bureaucrats, and various intermediary groups and clients who are aligned to and are materially supported by the state. In spite of the tension between these categories of state and quasi-state agents, the presumption of self-enforcing arrangements among them to preserve their monopoly status and role in state matters is generally valid.

¹⁴ Rent seeking can occur also in firm settings, but in a FIM the counteracting forces towards profit maximization would mobilize more firms to act for greater competition and free entry, which would make the realization of rent seeking only temporary and neutrally distributed over rent takers. Rent seeking in SIM is permanently institutionalized, and is tied to the office of the authorized rent taker, whoever holds this office. Finally, the demarcation line between rent seeking and profit maximization is not arbitrary since profit maximization abides by the institutional rules that hold for all firm agents, while rent seeking in a state setting strives strategically to adjust and reinterpret the institutional rules towards the benefit of the state authority in the current and future periods.

encourages firm settings. Both examples explain the early inclination of US and Europe towards FIM. On the other hand, (c) frustrations with an unfair and insecure social order encourage calls for authoritarian rules, and (d) military conflicts with neighbouring countries and defeat promote growth of state settings. Both examples explain the inclination of Russia to SIM after WWI, and a stronger state in Germany between WWI and WWII.

In principle, there are conceivable conditions under which the two orders can temporarily (or permanently) reverse. If in specific circumstances, collective needs overshadow personal needs there will be a strong demand for state settings. Similarly, disappointment with achievements of state settings and rising demand expectations based on better attainments in firm settings can shift the overweight from collective to personal needs, giving some push towards firm settings.¹⁵

5. A demonstrative model

With the above as background, emergence and prevalence of specific behavioural types in response to satisfaction of personal and collective needs, is conceptually modeled below. The probability that a behavioural type identifiable with setting V_g prevails over all other V_g' can be expressed as in eq.4.

$$V_g \text{ prevails if } (\omega_1 A_g + \omega_2 C_g) \geq \nu \quad (4)$$

In this equation, there are two share parameters that affect prevalence. A_g is the share of agents in setting g , with respect to all agents in all settings. C_g is the share of goods and services, say commodities, demanded that are most suitably transformed in setting g , with respect to all demanded commodities. The *personal* commodities are most suitably transformed in firm settings. The *collective* needs are most suitably transformed in state settings.

The greater the shares of those agents and commodities associated with a particular setting the greater is the probability that the behavioural type underlying this setting prevails over other behavioural types. ω_1 and ω_2 are weights applying to these two shares, whereby $\omega_1 + \omega_2 = 1$.¹⁶ In this equation, ν is a proportion, which represents a critical mass. Once the practice of a particular behavioural type reaches this critical mass, this behavioural type can be expected to benefit from network externalities and to extend its maintenance to practically the whole population. There are

¹⁵ As an example, Russia has experienced both reversals in the 20th century.

¹⁶ The two shares are not independent of each other. For instance, C_f affects A_f positively in the long run, while when relatively more agents go in f , thus increasing A_f , the potential for demanding and producing the f type of commodities is enhanced, and thus C_f is influenced positively. In spite of the interdependence the two shares stand for different aspects that feature the identification of the economic system. It can be expected that the two shares correlate, which is an argument for following a simple aggregation equation and giving them equal weights in eq. 3. With weights at $\omega_1 = \omega_2 = 0.5$, eq. 3 gives an Index of Interactive Influence that can be fruitfully applied in various contexts to assess the extent of dominance; see section 7 below for an application.

different views concerning the likely value of the critical mass. Values of 2/3rd and 3/4th are among the most quoted in the literature relating to a critical mass.¹⁷ There is thus justification for fixing the value of v at around 0.7.

The network externalities can be interpreted by adding to the term of the direct effects of the agent shares in eq. (4), a term for the indirect externality effects. This latter can be conceptualized by introducing a squared term that is meant to emphasize a scale effect in this process of induced interactions and spin offs. In the expression below, giving thus the direct and indirect effects of relative agent participation on behavioural prevalence, the squared term should have a lesser weight, than the non-squared term, $0 < \omega o < 1$.

$$(\omega_1 A_g + \omega_2 C_g) + \omega o (\omega_1 A_g + \omega_2 C_g)^2$$

If $(\omega_1 A_g + \omega_2 C_g)$ reaches the value of v , say, 0.7, and if ωo is set at say ? , then the direct and indirect effects would result in a full-fledged prevalence tending towards 1.0.

Attention can now be directed to examining the likely paths of the share of demand for commodities, C_g , and the shares of agents A_g for each setting g .

To start with the concentration of commodities, define C_f as the proportion of demanded commodities D most suited to be transformed in setting g , in the total demand for commodities, $C_g = D_g / D$. Applied to the three settings we have therefore the share of demanded personal commodities that happen to be most suitably transformed in firm settings $C_f = D_f / D$, and the share of demanded collective commodities that happen to be most suitably transformed in state settings $C_s = D_s / D$, so that the share of demanded domiciled commodities that happen to be most suitably transformed in household settings becomes $C_h = 1 - C_f - C_s$.

For the evolution of the shares of commodity types transformed in alternative settings, C_g , introduce D_{ho} , D_{fo} , D_{so} for the initial demand for goods whose transformation is related to the domicile, personal and collective types h, f and s, respectively. In eqs. 5.1 and 5.2, the evolution of the commodity shares of C_{ft} and C_{st} over time t is described in terms of the initial D_{ho} , D_{fo} , and D_{so} , and the growth rates of *per capita* demand for the f and s commodities: γ_f and γ_s ; which are assumed for convenience of presentation to grow at constant rates but this is not a necessary assumption. As we stated earlier the shares can shift abruptly due to exogenous changes in the external environment. In eq. 5.3, commodity share C_{ht} becomes a residual in terms of the initial values of goods by the three types and the growth rates γ_f and γ_s .

$$C_{ft} = D_{fo} (1 + \gamma_f)^t / \{ D_{ho} + D_{fo} (1 + \gamma_f)^t + D_{so} (1 + \gamma_s)^t \} \quad (5.1)$$

$$C_{st} = D_{so} (1 + \gamma_s)^t / \{ D_{ho} + D_{fo} (1 + \gamma_f)^t + D_{so} (1 + \gamma_s)^t \} \quad (5.2)$$

¹⁷ see for example Simon (1993).

$$C_{ht} = D_{ho} / \{ D_{ho} + D_{fo} (1 + \gamma_f)^t + D_{so} (1 + \gamma_s)^t \} \quad (5.3)$$

The following can be noted on the evolution of the commodity shares C_g . (a) C_h tends to fall over time in favor of C_f and C_s . (b) Furthermore, these effects are tempered if the *per capita* growth rates of demand for commodities γ_f and γ_s are low, due to a high population growth.

Next, considering the concentration of agents, define A_g as the proportion of the population L in setting g , in the total population, $A_g = L_g / L$. Applied to the three settings we have therefore the share of agents in firm settings $A_f = L_f / L$, and the share of agents in state settings $A_s = L_s / L$, so that the share of agents in household settings becomes $A_h = 1 - A_f - A_s$. For the evolution of the agent shares in alternative settings, take first the case of firm settings f . In eq. 6.1*, future agents in firms L_{ft} are determined by the initial labor input/demand output ratio L_{fo} / D_{fo} , and the evolution of this ratio as depicted by the future growth of labor productivity λ_f ; and the future level of the demand for commodity f . This is the initial demand D_{fo} multiplied by the future growth rate of per capita demand for this commodity $(1 + \gamma_f)^t$, and the future growth rate of the population $(1 + \pi)^t$. The result of the above gives L_{ft} . This is divided by the future total number of agents L_t to give the share A_{ft} . By substitution and elimination, eq. 6.1* is simplified to its final form in eq. 6.1. Similar final results are shown for the case of state settings s , in eq. 6.2. Therefore, in eqs. 6.1 and 6.2, the evolution of shares of agents in firm and state settings A_{ft} and A_{st} over time t is described in terms of their initial values of A_{fo} and A_{so} ; the growth rates of labor productivity in firm and state settings λ_f , λ_s ; and the growth rates of per capita demand for commodities that relate to personal and collective needs and that are most suited to be transformed by firm settings and state settings, γ_f , γ_s , respectively. In eq. 6.3, the share of agents in household settings A_{ht} becomes a residual.

$$A_{ft} = L_{ft} / L_t = [(L_{fo} / D_{fo}) (D_{fo} (1 + \gamma_f)^t (1 + \pi)^t)] / L_o (1 + \pi)^t \quad (6.1)^*$$

$$A_{ft} = A_{fo} (1 - \lambda_f)^t (1 + \gamma_f)^t \quad (6.1)$$

$$A_{st} = A_{so} (1 - \lambda_s)^t (1 + \gamma_s)^t \quad (6.2)$$

$$A_{ht} = 1 - A_f - A_s \quad (6.3)$$

The following can be noted on the evolution of the agent shares A_g . (a) The effective share of agents in household settings A_h tends to decline, and those of A_f and A_s tend to increase. (b) However, if the *per capita* growth rates of demand for commodities γ_f and γ_s are low, due to a high population growth, then the effects just mentioned are tempered. Thus, high population growth sustains the prevalence of A_g , while low population growth enhances the shares of A_f and A_s .¹⁸ (c) There is

¹⁸ This point can be highlighted when per capita demand growth γ_f in eq.6.1 is broken down into aggregate demand growth $\hat{\gamma}_f$ and population growth π , to give the following $A_{ft} = A_{fo} (1 - \lambda_f)^t (1 + \hat{\gamma}_f)^t / (1 + \pi)^t$. A higher population growth π increases A_{ht} and reduces A_{ft} . A higher intrinsic aggregate demand growth

disputed evidence that $\gamma_f > \gamma_s$; to the extent that this is true then firm settings have a greater probability to spread than state settings. However, these growth paths are frequently interrupted and there are periods when collective needs dominate personal needs, and other periods manifest the contrary. (d) It is established that the growth rate of labor productivity is higher in the transformation of personal goods as compared to collective goods $\lambda_f > \lambda_s$; this tendency favors a relative rise in the agent share of state settings as compared to firm settings.

6. On the economic performance of alternative economic systems

It was stated earlier that a household intensive economic system is less capable than firm centered or state centered economic systems in producing larger valued transformations. The main reason for that is that the traditional range of household products is much smaller than modern personal and modern collective needs and products (that satisfy these needs). The question whether a firm intensive or a state intensive economic system, in their optimal forms, performs economically better in the above sense has been controversial for more than a century. There is the valid argument that in its economically optimal form, competing firms in the firm centred economy would maximize their profits to the point where inefficient profits would be eliminated by more entry and exit of firms. There is also a no less valid argument that the state in a state centred economy, if it would calculate its exploitation margin well, it will not impose a too high inefficient margin that, so as to say, may reduce the size of the cake and the ultimate margin as well. The two valid standpoints emphasize the complexity of the question. Of course, to the extent that inefficient profits in a competitive market economy are less likely to occur than inefficient margins in a non-competitive political system, then FIM would perform economically better than SIM.

Nevertheless, empirical observation may not be able to establish superiority of system related country examples on others due to a host external interventions and disruptions that cannot be easily isolated. The role of external interventions and distortions is significant and important in other respects that are not often examined and which would require more attention: the external interventions are distortive in effect as they prevent agents from making a rational choice between

γ_f^{\wedge} drives the economic system away from household settings towards firm state settings. The same applies for eq. 6.2 for the case of state settings.

genuine alternatives, discourage agent mobility across settings, systems and countries, and tend to reduce convergence between countries featuring different systemic behaviour. Where persuasive settings are active and have nationalist sentiments, which has been quite natural and is often the case, these persuasive settings tend to ridicule the gaps in performance if the gaps appear unfavorable to own nation. This instinctive attitude, just like the external disruptions, distorts transparency of performance.

In principle, non-disrupted and fully interacting systems would permit convergence. But as noted above, various complexities intervene, disrupt genuine evaluations and choice, and prevent convergence. There are indications, collected by Jackson and Deeg (2006), that interacting systems contain some general dimensions that tend to and can be predicted to converge, while beholding other specific dimensions that accentuate identity and divergence.

7. On the future outlook for alternative economic systems

Putting the historical development of economic systems in a broader perspective, the HIM, FIM and SIM can be interpreted in terms of an original, a thesis, and an antithesis, respectively; and one can ask what next? How would a synthesis look like? There is general agreement that while HIM is seen as the original state of community life, FIM can be viewed to constitute the thesis in which the individual agent strives towards his/her individual maximum economic welfare through the free mobility of goods and factors of production in space and time. SIM can be viewed as the reaction to a privatised economy, as the antithesis where the individual's self-interest is substituted by a collective satisfaction of needs that is defined and ruled by state authorities. In this context, regulations on the free movement of goods and factors of production, and aspirations of nationhood and protectionism are likely to prosper.

Are there grounds for expecting an evolvment towards a synthesis of the three systems? What will eventually be the new elements entering in a synthesis? The answer to this question is not independent from the future outlook for contemporary leading countries that align with particular economic systems. In particular, the future outlook for economic systems will be significantly influenced by the expected larger sizes of the economies of China and India compared to US or Russia. Both countries have configurations of behavioural settings that lean more towards household settings. Besides and importantly, persuasion settings in China and India are much more active in coordinating and streamlining the social system than in US or Russia which is logical, given the demographic dynamics and the multi polar differentiation of the social system in these two giant countries.

What will be the relative influence of the rising new economies? We have postulated that the relative distribution of agents and the relative distribution of transformed value added in competing settings determine the dominant setting. The two relative distributions are the shares denoted by Ag and Cg, respectively. We suggested taking an average of the two shares, thus using equal weights, in developing an Index of Interactive Influence. The approach is applied here in table 1 to predict the relative influence of the alternate contenders in 2000 and in a projected future year for 2050; table 1.

Table 1. Future outlook of major countries as reflected by the Index of Interactive Influence based on country shares in the world totals with respect to population and GDP

| | 2000 | | | 2050 | | |
|-------------------------|--------------------|------------|--------------------------------|--------------------|------------|--------------------------------|
| | Population million | GDP USD bn | Index of Interactive Influence | Population million | GDP USD bn | Index of Interactive Influence |
| World total | 6124 | 31,800 | | 9191 | 170721 | |
| Percentage distribution | | | | | | |
| US | 4.7 | 30.7 | 17.7 | 4.4 | 20.6 | 12.5 |
| EU | 6.9 | 25.3 | 16.1 | 4.8 | 10.4 | 7.6 |
| Japan | 2.1 | 14.6 | 8.4 | 1.1 | 3.9 | 2.5 |
| Russia | 2.4 | 1.2 | 1.8 | 4.2 | 3.4 | 3.8 |
| China | 20.7 | 3.4 | 12.1 | 15.3 | 26.0 | 20.7 |
| India | 17.1 | 1.5 | 9.3 | 18.0 | 16.3 | 17.2 |
| Rest of world | 46.1 | 23.3 | 34.7 | 52.1 | 19.4 | 35.8 |
| World | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| FIM: US, EU, Japan | 13.7 | 70.6 | 42.2 | 10.3 | 34.9 | 22.6 |

Sources: Population figures are from UN Population Division at <http://esa.un.org/unpp/> GDP figures for 2000 are from World Bank at <http://devdata.worldbank.org/query>. GDP projections for 2040 and 2050 for the individual countries, expressed in constant price of 2003, are from Wilson and Puroshothaman (2003). We used their projected aggregated growth path for France, Germany, Italy and UK to obtain the projections for the EU, which consists of the 15 Western European countries. The projections for the Rest of World Group are from Fogel (2007). The projected world total for the GDP is thus obtained by summing the regions, and the percentage distribution by region is calculated. The index of interactive influence in column 3 = (col.1 + col. 2) /2. Col. 6 = (col4 + col.5) /2.

Table 1 suggests two striking implications. First, there would be a reduction in the interactive influence of US, EU and Japan, who represent the firm intensive system, some increase in the interactive influence of Russia that is closest to the state intensive system. But the significant gainers in interactive influence are China and India. Their interactive influences are almost doubled, with India's increment greater than China's in half a decade. These changes in relative influences will not pass unmarked on the other interacting economic systems. Some typical features of the social systems in China and India will influence, be passed to, or be adopted in other social systems.

Second, the table shows that the index of interactive dominance varies at around twenty percentage points for any country and its related system, confirming that a dominance of one any one system is excluded. The FIM configuration consisting of US, EU, Japan and a few smaller countries is reduced to some 23 points. The China system is stuck at 21 points., and India at 17 points. The table suggests the evolvement of a stable balance of power between the countries and related systems.

In speculation on the implications of the above picture for future economic systems, the following can be stated. The bigger and highly dualistic countries of China and India were described as less fitted to the classification into HIM, FIM and SIM. We emphasized the significant and lasting extent of rural household settings in these countries as well as significant roles for firm and state settings; a highly segmented system with a low degree of communication between the segments. The term multi polar system, MPM, was used to distinguish these countries from others, and an important role is laid there for persuasion settings in the coordination and streamlining of responses between the segments. Persuasion settings are economically beneficial and can accomplish greater cooperation between political, business and other leading circles; giving China and India an economic edge. Differences between the MPM type and other types of economic system show up in a lesser degree of separation of decision making and agent rewards when joint familial, commercial and state interests are involved, and in frequent consultations between leaders in business, government, scientific and intellectual leaders in evaluating, formulating and executing policies and defending them.

In view of the future perspectives, it is very likely that the multi partnership system, MPM, would gain more strength at the cost of the FIM and SIM, causing system disruptions and instabilities in the latter. However, the probabilities of dominance or convergence towards one global system are very remote given the values of the index of interactive influence that do not exceed the 20 percent for any particular country-system in any year. The future situation would most likely lead to a new systems competition that is already taking shape. The question is then whether the new system competition will be non-cooperative or cooperative. There are mixed signals on this issue. It will be relevant to give attention to documenting and digesting recent national reactions in both directions.

On the one hand, in reaction to the increasing influence and acquisition moves of foreign state-led corporatism such as of China, Russia, and India in the EU, business and state circles in several EU countries, as well as the European Commission, have called for concerted action and protective measures to obstruct foreign takeovers, and for joint corporate-state efforts in strategic sectors to combat foreign-led corporate-state collaborations of MPM type countries.¹⁹ The tendencies in the

¹⁹ The call by Germany to veto takeovers of EU companies by Chinese and Russian state controlled companies is a case in point. The French opposition to India's Mittal takeover of Arcelor is another, as well as the French policy of close collaboration between companies and the state to strengthen and consolidate French global industrial players.

Anglo-Saxon countries of US and UK in this respect are rather mixed as yet.²⁰ It is very hard to predict national response especially when the national loss cannot be identified as the result of fair play or strategic trespassing. And if protectionism is justified, counter protection usually follows.

On the other hand, truly persuasive scenarios at the global level appear to take place regarding issues of global pollution, climatic changes, natural disasters, threatening epidemics, free trade and poverty reduction, to name a few. There is no available way of assessing whether this scenario would be maintained and flourish, and how effective it will be in tackling inter-system externality problems.

The following can be stated in support of an optimistic note. It can be generally maintained that when the contending parties have influential powers that are more or less equal, i.e. thus an equal balance of powers, and perceive the situation as such, the parties are more inclined to use reason and knowledge and adopt cooperative attitudes in resolving frictions between them. Under a skew distribution of influential powers it is more likely that a non-collaborative attitude emerges. Table 1 predicts a future world in 2050 with a much more equal balance of powers than in 2000; and thus feeds the expectation that the new systems competition ahead will be more of the collaborative than the non-collaborative type with a greater role of reason and knowledge

What is certain, if the future outlook is realised, is that some of the new elements in a synthesis system may have to be contributed by China and India. Both countries have configurations of behavioural settings that lean more towards household settings, i.e. the traditional and sharing behavioural type, than firm settings. And more important, persuasion settings in China and India are highly active in coordinating and streamlining the social system, which is logical, given the demographic dynamics and the multi polar differentiation of the social system in these two giant countries. It is thus likely that a synthesis system would make more frequent use of sharing and persuasive mechanisms. It is interesting to note that other thinkers, working from other starting points are arriving at similar conclusions.²¹

8. Concluding remarks

The distribution of agents in contrasting behavioural settings, such as household, firms and state settings, and their interactive participation, produce over long periods highly contrasting economic and political systems that coincide with distinct behavioural types, observable in many countries. The

²⁰ There are in the US indications of concerted interventions to prohibit Chinese takeovers in the energy sector as in the case of the unsuccessful bid by the Chinese oil company CNOOC for the California-based oil producer Uncoal. On the other hand, in less strategic sectors, no obstacles were laid down when parts of American IBM were sold to China's LP, without raising controversy.

²¹ See Rosser and Rosser (1999).

paper laid down a micro-macro conceptual framework that is useful for tracing the evolution and the internal consistency of the economic system and the polity towards focal behavioural settings and focal behavioural types that go with these settings.

Making use of differing compositions of personal and collective needs, the paper explored the paths of different economic systems since early development that associate with satisfaction of personal and collective needs. The economy-polity configurations of countries like US and Russia are outcomes of firm-intensive and state-intensive economic and political transformations, with overweight of personal and collective needs, respectively.

The remarkably big sizes of the segments relating to rural households, urban households, firms and state settings in countries like China and India assures that these segments keep a stable balance to each other. Persuasive settings and persuasive institutions play a *greater* crucial role in coordinating the economic and political systems in these countries, than elsewhere. The paper predicts a greater role of persuasive settings in economic systems globally, given the future outlook of an increasing influence of both countries.

Persuasive settings, that encompass economic transformations, play prominent roles in the national coordination of economic systems, and should form a crucial area in the study of economic systems. There is little known on persuasive settings concerning the nature of the leader-followers relationship, as well as aspects that concerning inter-group leaders: their compositions, functioning, reach and effects. These are very promising areas in investigation of intra-group and inter-group economic transformations and national coordination.

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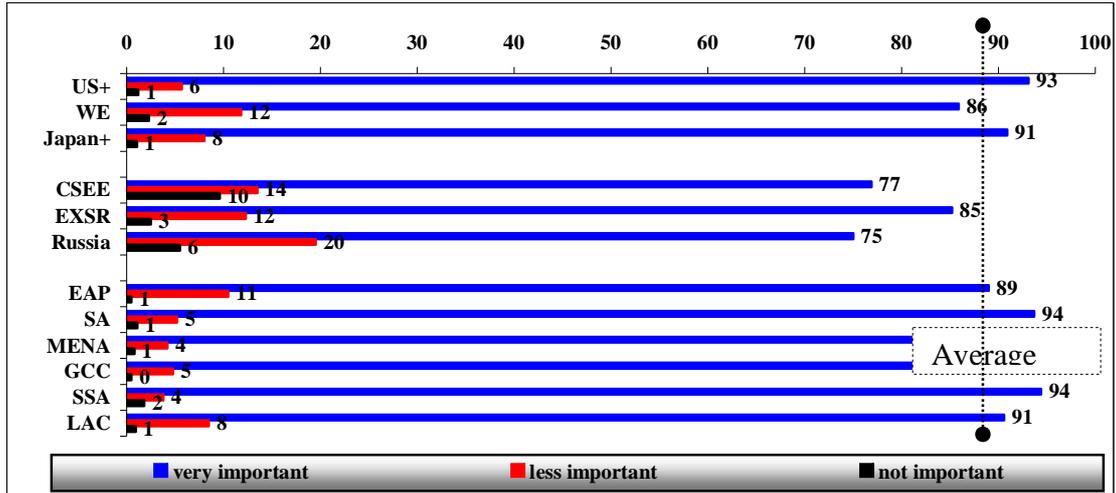
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Annex

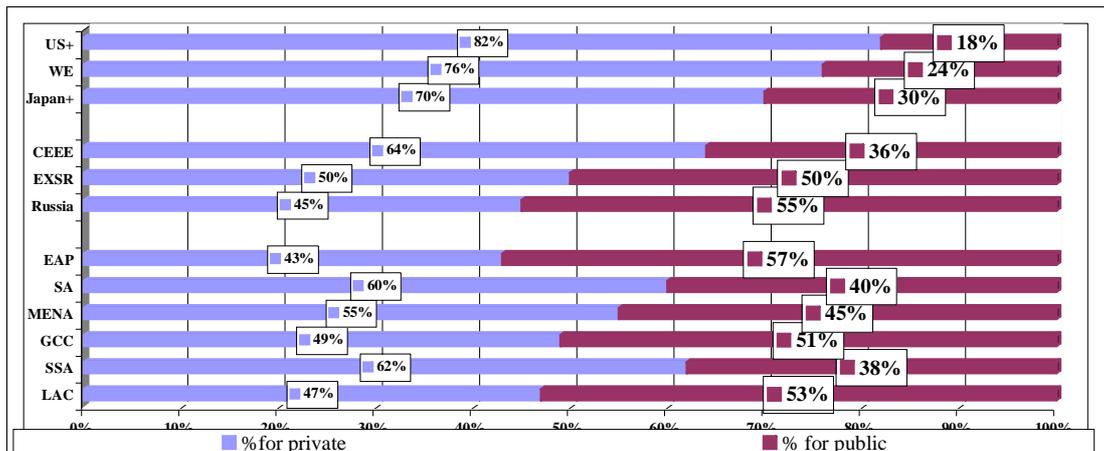
The World Value Survey shows differences in attitudes of agents towards household, firm and state settings by various regions of the world. The survey results give support to the classification we proposed in figure 2. Selected survey results are summarised in figures A.1 and A.2.

Figure A.1. Importance of household settings: Country groups ranking of importance of family



Source: Compiled from World Value Survey 1999-2000, at. <http://www.worldvaluessurvey.org>. Results are for national sample surveys, around 2000. The figure gives percentage of the responses 'very important' and 'rather important'. The reply 'not important' accounts for the residual of a 100 percent. The average for 'very important' of all country groups is 88.7.

Figure A.2. Pro-firm and pro-state attitudes



Source: Compiled from World Value Survey 1999-2000, at. <http://www.worldvaluessurvey.org>. Results are for national sample surveys, around 2000. Definitions are (% for private) = Accumulated percentage of respondents in the interviewed sample that believes private ownership of business should be increased. Results of responses ranked in terms of five degrees of conviction are summed. (% for public) = Accumulated percentage of respondents in the interviewed sample that believes government ownership of business should be increased. Results of responses ranked in terms of five degrees of conviction are summed.

The positioning of US, on the dimension of the firm intensive economic system, and Japan and Western Europe to the left and right of US, reflecting a sharing-inclined economy in Japan, and a control-inclined economy in Europe, is supported by various indicators in the tables A.1 and A.2.

Among the SIM related countries, Russia is taken as closest to the state intensive economics, with former East European satellites slightly leaning to firms, and the other ex-Soviet republics, especially some Asian, more linked to household settings. This orientation is supported by Beck and Laeven (2006), and is reflected in tables A.3 and A.4.

Finally, figure A.3. reflects on future outlook of displacement tendencies among leading economies.

Table A.1. Competitiveness indicators reflecting degree of firm intensity in FIM related countries.

The index for 2006 is based on ten indicators of competitiveness in the Business Freedom a) business, (b) trade, (c) fiscal, (d) government control, (e) monetary, (f) investment, (g) financial, (h) property rights (i) corruption, and (j) labour mobility. The table below shows a greater ability of agents to compete in the US than in Europe, which can be seen as evidence of a more firm intensive economic system in US than in Europe. The indicators also show Japan to be closer to US than Europe.

| | | | | | | | |
|--------|------|---------|------|-------------|------|-------|------|
| US | 82.4 | France | 65.2 | Netherlands | 77.0 | Japan | 74.5 |
| Canada | 78.7 | Germany | 74.0 | Sweden | 74.0 | Korea | 68.1 |
| | | Italy | 52.7 | UK | 82.2 | | |

Source: The Heritage Foundation (2000): *Index of Economic Freedom*, published by The Wall Street Journal and The Heritage Foundation, New York.

Table A.2. Corporate governance patterns in FIM related countries.

The situation is around 2000. Control is assumed if any shareholder type controls 20% of votes in a company's annual shareholder meeting. OG= no one controlling shareholder, case of outside governance. BF=Business families (wealthy) in control. BG=Business groups (industrial) in control. BI= Business institutions (financial) in control. ST= State controls

| | | | | | | | | | | |
|-------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| US | OG | | BF | | | | | | | |
| Canada | OG | | BF | | | | | | | |
| France | OG | | BF | | | | | | | |
| Germany | BF | BG | ST | | | | | | | |
| Italy | OG | BF | BI | ST | | | | | | |
| Netherlands | OG | BF | BI | | | | | | | |
| Sweden | OG | BF | BI | | | | | | | |
| UK | OG | | | | | | | | | |
| Japan | BG | | ST | | | | | | | |
| Scale | 10% | 20% | 30% | 40% | 50% | 60% | 70% | 80% | 90% | 100% |

Source: Adapted from Morck, R. K. and Steier, L. (2005): *The Global History of Corporate Governance*, NBER WP 11062.

Table A.3. Poll of polls corruption perception index, CPI, in transition countries

The Corruption Perceptions Index, CPI, is an average of perceptions about corruption from various sources. The table includes the minimum and maximum scores for each country to show the diversity of opinion. The 1999 CPI score relates to perceptions of the degree of corruption as seen by business people, risk analysts, and the general public, and ranges between 10 (highly clean) and 0 (highly corrupt). CPI registers the evaluations of "cleanness" given to specific countries by the officers of multinational corporations. All countries in the world are subsequently ranked in descending order of cleanness. The results show the BCEE group to be cleaner than EXSR or Russia. Opinions on corruption have wider margins in Russia than EXSR.

| Country | CPI Score | Max. Score | Min. Score | Country | CPI Score | Max. Score(a) | Min. Score(b) |
|------------------|-----------|------------|------------|--------------|-----------|---------------|---------------|
| Average BCEE | 4.2 | 5.9 | 2.3 | Average EXSR | 2.4 | 3.6 | 1.5 |
| Average BCEE (a) | 3.8 | 5.4 | 2.1 | Russia | 2.4 | 4.2 | 0.6 |

Source: CPI by Transparency International at <http://www.ncpa.org/pi/internet/sept98s.html>.

(a) excluding Croatia, Albania and Serbia

Table A.4. Consensus on subjective perceptions and objective indicators on the imposition of the rule of law in transition countries

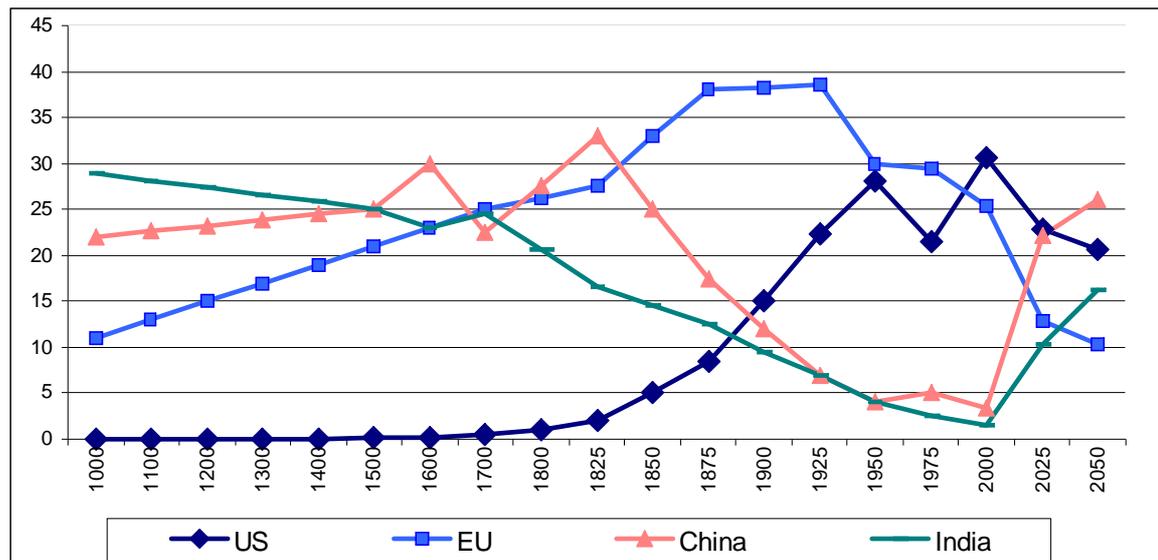
The box reflects on the institutionalisation of the rule of law. It shows the Baltic, Central and Eastern European countries (BCEE) to be more advanced in this respect than either a sample of the Ex-Soviet Republics (EXSR), or Russia.. The table supports also our positioning of the transition countries to the left and right of Russia, with Russia being closest to having a state intensive economic system, see chapter 1.

| Country group | (1)Percentage believe legal system will “uphold any contract and property rights in business disputes” | (2) Rule of law index. (10= best, 0=worst) |
|---------------|--|--|
| BCEE group | 41 | 7.2 |
| EXSR group | 60 | 4.4 |
| Russia | 73 | 3.7 |

Source: Column (1) is from EBRD/WB survey. Column 2 is from Wall Street Journal. The figures are also quoted in Hoff and Stiglitz (2002). BCEE group includes 11 countries. EXSR group consists of Kyrgyzstan and Kazakhstan.

Figure A.3. Displacement tendencies with significant effects on the future dominance of economic systems

China and India are recorded to have been leading economies in the world until about the 18th Century. After two centuries of downfall their economies have risen again and are forecasted to regain their leading positions by 2040 and 2050. The forecasts assume the absence of economic calamities at the foreign front that are caused by world recessions, credit crunch, trade protectionism, inelastic supply of energy resources; and at the domestic front caused by financial mismanagement, severe epidemics, ethnic conflicts, inequality divides, poverty extent, civil disorder, and polity shake-up.



Source: Years 1000 to 1975 are reported in OECD, see Maddison (2003). Year 2000 and forecasts for 2040 and 2050 are from table 1.