The Unrevealed Causes of Prosperity

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Abstract

With the unique Algorithmic Thinking Theory, this essay unconventionally, theoretically, multifacetedly, and concisely explains why and how the market-government mixedness intensifies prosperity, which can lead to abundant policy implications.

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Introduction

There is no overarching ideal state of the economy because the economy is pluralistic (Reardon, 2009), developmental, expansive (Smith, 1904), and innovative (Schumpeter, 1934), infinitely. Therefore, mainstream neoclassical economics has been aiming at a gratuitous target. The market economy, if prosperous satisfactorily, should be dissected and explained only in relative or comparative contexts, which can be carried out from multiple angles under the Algorithmic Thinking Theory (ATT, or Algorithm Framework Theory, AFT; Li, 2009-2023).

The Market

Capitalism stemmed from, or competes with, collectivist systems such as feudalism, autocracy, authoritarianism, or communism in which the society was/is controlled strictly by rulers, or the social order was/is prioritized over personal freedom. However, the capitalistic market has been generally deemed the winner of the competition. Apart from mainstream explanations, apparently, actors in the market do more, better, quicker, and more diversified jobs than in collectivist systems where actors, under strict control, always appear inactive, doing monotonous or futile work. Restricted

by their computational power, rulers as very few persons are not able to timely give enormous actors the detailed and precise commands that can satisfy everyone's demands, but only simplified, coarse, and indiscriminate ones. Conversely, free actors in the market need not wait for the commands; in most cases or in most aspects of a case, they think and decide on their own; they can fully make use of their time and resources to better pursue their own purposes; and, with the introduction of money, monetary income can be their major and "final" pursuit, which can be obtained anywhere, anytime without approval from the authority. Comparatively, beyond the mainstream simple explanation, this mechanism increases the quantity of autonomous work, greatly enriches the categories and contents of jobs, and accelerates behavioral paces. In collectivist systems, it seems quick in certain noticed national performances; however, the quickness is at the expense of neglecting or decelerating other enormous common tasks.

Especially, the free economy allows and accommodates pluralistic and even conflictive behaviors that coexist peacefully. As interpreted in other Algorithmic[2] writings, ATT can be used to explain the fact that tremendous different ideas arise and coexist in society. These ideas may appear kind of inconsistent or conflictive. However, as they reside in different brains or in different spatiotemporal circumstances, space and time, as barriers, prevent them from "interacting directly or completely"; that is, finitary human computational power is not quick enough to unify them into a wholeness. Nonetheless, these different and dispersive ideas can support actors in making decisions respectively in their own different circumstances, usually unnecessary or uneconomical to integrate with each other. Even if the Algorithms[3] used by somebody are somehow lower than those used by others, they could be economically viable, saving computational workloads. In other cases, literally, some behaviors and ideas need to be further coordinated; though by private or public communications or negotiations, or by organizational or institutional measures, these cases actually weigh only secondary to those individual and separate ones. Moreover, any further coordinative operations, Algorithmically, cannot be expected to eliminate their differences thoroughly (Li, 2022x). Viewing from this perspective, it is wide of the mark for theorists to indiscriminately assume a single, optimal, and general Algorithm (e.g., the neoclassical marginal mathematical method for decision-making) for all economic issues that actors are facing; instead, theorists should have to comprehensively study all real Algorithms and be Algorithm-neutral: to observe and describe the real and practical Algorithms first, then to analyze them and comprehend their circumstantial optimality, and finally to comment, predict, and/or advise.

This pluralistic scenario is prominently advantageous in explaining the competitiveness of the market system in development. Additionally, the comparison should also be dynamic; thus, another approach to the explanation of development is to illustrate how "undeveloped" the past was. As it accurately depicts how feeble a thinking or computational operation is, ATT is uniquely at home in unfolding an expansive and innovative socioeconomic picture. Free thinking can concurrently generate diverse new thoughts, and free communication can make the thoughts interacted and improved relatively sufficiently. And the free society is highly asynchronous in personal actions, which can be used further to test, select, revamp, and apply the new thoughts, with huge attempts. Abundant pieces of information on these operations in different phases can come out sensitively, leading to a quite quick and reliable assessment of new ideas. Many losers gradually quit while many winners rise, thereby the society evolves fairly stably and persistently at the macro level.

Let's return to collectivist systems. Due to informational, computational, and knowledge restrictions, the rulers incline to simplify computations and to uniformize the society. They must dislike diversity or plurality because "social order," prioritized by the rulers, means the adoption and application of extant knowledge that is deemed relatively reliable; they must be hostile and resistant to changes or innovations. Therefore, the collectivist society should in principle be conservative, hence not as prosperous as the free society. Since anybody is Algorithmically inevitable to make mistakes that can be hedged among many free people but cannot or hardly among the few rulers, the collectivist society does not evolve as stably or sustainably as the free society.

The Government

However, will more freedom bring more prosperity? The bad reputation of anarchism implies the answer is "no". Why? It can be Algorithmically explained: the feeble capacity of a computational operation requires many ready-made knowledge stocks to assign most of the variables relevant to a problem-solving task so that only a few variables are left to be effectively assigned in time by the current on-the-spot computations; in case the society must, concurrently and anarchically, assign an enormous number of variables or all variables at the same time, it would usually not be viable. Otherwise, if the society could have done so quickly, it would imply that it could have remade all the relevant knowledge stocks quickly, thus the knowledge stocks as historic accumulative computing results would be unnecessary or insignificant. Especially in social computations and interactions, considering interpersonal uncertainty (Slater, 2000; Yang, 2005), if people were "completely free", with no or few variables fixed, the operations would be complicated to such an extent that the results might become messy or futile, and gangdom, fights, and war, as the "Social Algorithms", would probably be adopted by some actors to make a living, which causes social destruction, retrogression, and diachronic inequality. Hence, institutions and organizations, embedded with the stocked social knowledge assumed to be relatively reliable, are established to fix some variables, and then to simplify or facilitate individual decision-making within the knowledge infrastructure, and to pursue social stability.

Therefore, the social order, or institutions and organizations, should be neither more nor less. In traditional economic terms, this reflects just the nonlinear marginal effect: the marginal return of freedom rises up to a tipping point where it would go down; then freedom is superseded by institutions and organizations, and hence prosperity is saved.

The marginal effect can be re-explained as follows: interpersonal conflicts or pluralities can impede the execution of decisions. The executive operations, as a kind of computation, require concerted actions of different people who, temporarily setting aside their own ideas, obey the commands from a person or a few persons at the head – since a person's or a few persons' commands can be more internally consistent than those of many free persons. These free persons, if executing one decision freely and separately, would probably fall into chaos. However, executive operations might crowd out the time and resources that would otherwise be used to innovate; therefore, when an organization is expanding, the marginal benefits from its hierarchical system would diminish, the losses from its lack of innovations would rise, and the managerial complexity (as communicational and computational complexity) would challenge its leadership. Hence, in these heterogeneous contexts, organizations are only limitedly sized and exist locally.

The free market also suffers from its huge repetitive and wasteful computations of individuals. In order to mitigate this diseconomy, society selects the most reliable or useful knowledge and teaches it to kids or young people. Such measures, besides institutions and organizations, guide, restrict, and simplify current free computations, making them fundamentally effective. The effectiveness is exhibited strikingly in the rise of the Chinese economy: the government has been leading, to some extent, the whole country to orderly imitate the western developed economy; and, for this imitation, it would be roughly enough, at least temporarily, for only some elites who know the western economics well to have a grip on political power (Gerschenkron, 1962), despite the underdevelopment of its regime.

Nevertheless, this is a dangerous adventure, since the Chinese spectacular developmental story by far has not been finalized. When the income per capita is approaching that of western countries, according to the above logic, the “Chinese development model” (Lin, 2012) needs to be superseded by the western market-led “growth model”. In the final analysis of the market economy, both physical and mindful heterogeneities cause various concurrent but asynchronous marginal effects, and hence the mixedness of the government and the market; therefore, the economy grows persistently, providently, and infinitely.

Conclusion

With the formula "thinking = computation = (Instruction + information) × speed × time", ATT provides almost all elements of the above analysis, thus enabling the comprehensive theoretical explanation of prosperity. Especially, with the "combinatorial explosions" occurring between Instructions and data, ATT brings the justification of infinite knowledge development, which can affect every aspect of economic analysis. Then, we could realize further that the major objects of economics are just the thoughts that should be neutrally, objectively, and economically depicted. On the contrary, when economists try to justify a standard Algorithm for all actors, communism, not the market economy (Stiglitz, 1994), and boredom, not prosperity, are being demonstrated. Happiness comes from endless improvement rather than any ideal statics.

Footnotes

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[2] “Algorithmic(al)” means “of ATT”, “under ATT”, etc.

[3] “Algorithm” refers to the sequence and method of computations, i.e., using Instructions to process data serially.

References

- Gerschenkron, Alexander. (1962) *Economic Backwardness in Historical Perspective: A Book of Essays* Belknap Press of Harvard University Press.
- Li, Bin (2009). *A Theory for Unification of Social Sciences: Algorithm Framework Theory* (in Chinese). Beijing: China Renmin University Press. English draft translation downloadable at https://binli.academia.edu/
- Li, Bin (2012). *A Preliminary Exploration of Principles of General Social Science: The Algorithmic Approach* (in Chinese). Beijing: China Renmin University Press. English draft translation downloadable at https://binli.academia.edu/
- Li, Bin (2019). *Foundations of Algorithmic Economics: The Cognitive Revolution and the Grand Synthesis of Economics* (in Chinese). Beijing: Economic Daily Press.
- Li, Bin (2019). *How Could the Cognitive Revolution Happen to Economics? An Introduction to the Algorithm Framework Theory*. World Economics Association (WEA) online conference "Going Digital". https://goingdigital2019.weaconferences.net/papers/how-could-the-cognitive-revolution-happen-to-economics-an-introduction-to-the-algorithm-framework-theory/
- Li, Bin (2020). *The Birth of a Unified Economics*, MPRA paper, downloadable at https://mpra.ub.uni-muenchen.de/110155/
- Li, Bin (2020). *Why is Algorithmic Theory a Necessary Basis of Economics?* MPRA paper, downloadable at https://mpra.ub.uni-muenchen.de/110581/
- Li, Bin (2022). *How Various "Irrationalities" Proven to be Rational*. Academia Letters, Article 4579. https://doi.org/10.20935/AL4579
- Li, Bin (2022). *Algorithmic Economics as an Economics of Thought* The International Journal of Pluralism and Economics Education, Vol. 13, No.2, pp 176-191.
- Li, Bin (2022). *The Algorithmic Logic" as a Synthetic or General Logic*. Academia Letters, Article 4936. https://doi.org/10.20935/AL4936
- Li, Bin (2022). *The Scientific Meanings of Spirituality and humanity: How can a Human be Modeled "Alive"?* In "Human Rights, Religious Freedom and Spirituality", Pune, India: Bhishma Prakashan, 2023. Downloadable at https://binli.academia.edu/
- Li, Bin (2022). *A Unified Psychology as Part of a General Social Science*. A draft paper downloadable at https://binli.academia.edu/
- Li, Bin (2022x). *From General Equilibrium to Algorithmic Equilibrium*. A draft paper downloadable at https://binli.academia.edu/
- Li, Bin (2022). *Algorithmic Economics*. MPRA paper, downloadable at https://mpra.ub.uni-muenchen.de/113563/
- Bin Li. (2023). *A Unified Psychology as Part of a General Social Science*. Qeios. doi:10.32388/GGSOLK.2.
- Lin, Justin Yifu. (2012) *Demystifying the Chinese Economy*. Cambridge University Press.
- Reardon, Jack Ed. (2009) *The Handbook of Pluralist Economics Education*, Routledge.
- Schumpeter, Joseph A. (1934) *The Theory of Economic Development*. Translated by Redvers Opie. New Brunswick.
- Slater, Gary and Spencer, David. (2000) *The Uncertainty Foundations of Transaction Costs*
- *Economics*. Journal of Economic Issues, Vol. 34, No.1, 61-87.
- Smith, Adam (1904) *An Inquiry into the Nature and Causes of the Wealth of Nations* London: Methuen & Co., Ltd.

- Stiglitz, Joseph E. (1994) *Whither Socialism*. The MIT Press.
- Yang, Xiaokai and Yao, Shuntian (2005) *Walrasian Sequential Equilibrium, Bounded Rationality, and Social Experiments*, Division of Labor & Transaction Costs, Vol. 1, Issue 1, 73-98.