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RETROECONOMIC BARRIERS IN THE DEVELOPMENT OF AN INNOVATIVE ECONOMY

Abstract. This paper explores the challenges of fostering an innovative economy in the context of technological underdevelopment. Enterprises relying on outdated technologies constitute the structural core of what may be termed a *retroeconomy*. In many developing countries, the persistence of obsolete production technologies remains widespread, often giving the misleading impression of enterprise viability and economic success. However, such retroeconomic firms lack competitiveness in the global marketplace. Addressing the adverse implications of retroeconomy requires a proactive and strategic role from the government, particularly through targeted innovation policies and support for technological modernization.

JEL Classification: D21, D24, D42, G33, L26, L51, L53, O32, O34, O38

Introduction

The process of globalization brings both positive and negative impacts to the economy. One of the most serious threats to modern economic development, especially in the context of technological underdevelopment, is the spread of necroeconomies through globalization (Papava, 2002).

A necroeconomy, or "dead economy," refers to the production of goods using outdated technologies – goods that are generally unwanted due to their low quality (or absence thereof) and/or high production costs, but for which artificial demand is created by government intervention (Papava, 2002). This unappealing economic phenomenon emerged most prominently in post-Communist economies, where the elimination of competition within the command economy led to a lack of incentive to modernize technological infrastructure across many sectors of the economy (Lipowski, 1998), generally, with the exception of the military-industrial complex.

The paper presents the concept of retroeconomics as a theoretical framework to understand the technological backwardness of an economy, and elaborates recommendations for how to avoid the decline and eventual collapse of economies facing these challenges worldwide (Papava, 2017, 2024, pp. 95–115).

The Phenomenon of the Retroeconomy

It should be emphasized that the technological backwardness of production itself does not constitute a sufficient condition for the emergence of a necroeconomy (it is merely a necessary condition); in a necroeconomy, along with technological backwardness, the government must also deliberately strive to operate "dead enterprises" by means of generating artificial demand for their products.

As the restriction of competition is a precondition for the creation of a necroeconomy, it can be concluded that the phenomenon of the necroeconomy is present wherever enterprises with technologically obsolete equipment operate solely due to government support. One example of this can be found in India of the 1980s (OECD, 2007), and in this we can see that a necroeconomy is not only a problem symptomatic of post-Communist countries (as initially indicated in the publications referenced above), but that it can be encountered in other countries where enterprises with outdated technology and no real demand for their products operate with government support and, in select cases, entirely at the government's expense.

An economy that enables the functioning of firms which operate with relatively outdated technology compared to current global standards (referred to as retro-firms), yet which still see a demand for their products, is referred to as a **retroeconomy** ("retro" being Latin for "back"). We propose the term **retroeconomics** to describe the theoretical framework that examines the technological backwardness of an economy (Papava, 2017, 2024, pp. 95–115).

What are the similarities and differences between a necroeconomy and a retroeconomy? One similarity is that both economies make use of outdated technology; the difference is that in necroeconomic conditions, enterprises use equipment so out of date that the demand for the products they manufacture is virtually nonexistent and, therefore, these enterprises are able to operate solely thanks to government backing. In a retroeconomy, the demand for the products being manufactured does exist, with the manufacturers making only moderate use of government support. Both types of economies require government intervention, but while the former exists exclusively at the expense of the government, the latter requires government-sanctioned protection of the domestic market from international competitions.

What constitutes the building blocks of a retroeconomy? Even though these factors vary in nature, they ultimately result in a single outcome – the establishment of a retroeconomy. In particular, these factors include the following:

I. *The protection of intellectual property,* which restricts the free dissemination of and access to new technological know-how, thus increasing the threat of unauthorized duplication and re-engineering of these technologies (Golichenko, 2012, p. 120). Under these circumstances, the authorized use of new technology becomes expensive, especially for firms that operate in poor countries with a relatively low level of economic

development. As a result, priority is given to relatively outdated technologies in these particular countries;

II. *Monopolization of the economy,* wherein monopolies purchase patents on new technologies not for the purpose of applying them in any efficient manner, but to prevent third parties from employing them. Even if the monopolies in question put the patents to use at a later time (or as they deem necessary), by then, it is quite possible that more advanced technologies will have been developed, rendering the purchased but idle technology useless due to moral depreciation. This factor is particularly significant in the modern era, where monopolies have evolved and taken on new forms of dominance (Stiglitz, 2016);

III. *The behavior of leading international competitors* which, as a rule, do not sell the highest-quality, latest-generation technology (Porter, 1990, p. 548). On the contrary, in order to maintain a competitive advantage, they sell used, second-hand technology (Dementyev, 2006), effectively carrying out second-hand investments (Papava, 2002, p. 800). Due to such policies, economically backward countries accumulate not innovative but imitation (or quasi-innovative) technologies (for example, Polterovich and Tonis, 2010; Segerstrom, 1991), while international competition leaders sidestep morally deteriorating, resource-demanding, labor-intensive and/or environmentally hazardous enterprises, largely promoting the use of the newest technology in the vacated economic space;

IV. *A low level of education* and an absence of an appropriately educated workforce make it virtually impossible to utilize information, even via open channels, not to mention commercial knowledge transfer channels. This issue is evident in the insufficient levels of not only higher and vocational, but also secondary education (Golichenko, 2012, p. 118);

V. *A zombie economy*, signifying a consolidation of firms (and associated banks), rendered insolvent as a result of a financial crisis, which continue to operate via bank loans taken on the basis of government guarantees (e.g., Ahearne and Shinada 2005; Hoshi, 2006). Zombie-firms, by their nature, have no interest in technological upgrades or managerial reforms, as government support allows them to continue operating without making such improvements. This dynamic has been clearly illustrated by the Japanese experience (e.g., Ahearne and Shinada, 2005; Hoshi 2006). Unsurprisingly, the proliferation of zombie-firms directly contributes to the persistence and expansion of a retroeconomy. At the same time, it is important to consider that in the aftermath of the global financial crisis of 2007-2009, the phenomenon of zombie economies became increasingly globalized (Harman, 2010; Krugman, 2020; Onaran, 2012; Quiggin 2010). This globalization has intensified the risk of zombification even in existing necroeconomies (Papava, 2010), the most conspicuous example being Russia's economy (Lindsey, 2002, pp. 210-212; Papava 2015).

All these factors create the main barriers to the development of an innovative economy.

It is noteworthy that, of the five factors listed above, the first four contribute to the formation of a retroeconomy in poor and economically less-developed countries, while the fifth factor impacts not only the latter, but also economically developed states.

To achieve the best results in economic development, the transformation of technology into a "public good" is of particular importance (Sachs, 2017, p. 91). This requires a fundamental change in legislation as regards the protection of intellectual property rights (Baker, 2023b; Stiglitz, 2023), yet it is hindered by the first three factors in the formation of a retroeconomy.

On the Problem of the "Technology Trap"

There is a concept, according to which economically backward countries enjoy a certain advantage as compared to developed countries. In particular, at first glance, the viewpoint that the establishment of new technological structures (i.e., a large-scale complex of technologically-linked enterprises) in economically backward countries is relatively easier is not entirely devoid of common sense, since said enterprises are not burdened by an excess accumulation of capital corresponding to outdated technological structures (Glazyev, 2009, p. 27). However, this concept should be regarded as one-sided, as the first, third and fourth factors for the establishment of a retroeconomy listed above preclude economically backward countries from enjoying this advantage (or pseudo-advantage, in reality): firstly, a country with few (or, perhaps no) wealthy firms will be unable to afford costly patents on the latest technology; secondly – leading international competitors will attempt to obstruct the dissemination of advanced technology; and, thirdly – a population with inadequate levels of education will be virtually incapable of making use of innovative technology.

In highlighting the "advantages of backwardness," as a rule, accent is placed on the possibility for these countries to focus on imitation (quasi-innovation) rather than innovation *per se*, reproducing already well-established technology (certainly, the costs of duplicating technology are clearly less than those of innovation) (Barro and Sala-i-Martin, 2004), as a result of which backward countries can minimize the lag (Bresis, Krugman and Tsiddon, 1993). It should once again be emphasized that in order for imitation technology to succeed, a properly educated national workforce is an absolute necessity.

Although the retroeconomy established in economically backward countries at the expense of an imitation policy ensures economic growth, imitator countries are under the threat of long-term low levels of productivity as compared to developed countries (Howitt, 2000). The principal reason for the differentiation in productivity levels by country lies in the variance between the type of knowledge applied in each country and the way it is applied (Parente and Prescott, 2000).

Focusing on the duplication of relatively outdated foreign technology, provided that other circumstances remain equal, constitutes a mandatory step for economically backward countries. Doing so contributes to the preservation of their backwardness, as well as to prolonging the

retroeconomy, thereby driving said countries into the trap of technological dependency (Dementyev, 2006).

A "technology trap" is a condition when a firm favors outdated, less-efficient technology, even when the possibility exists to transition to the use of modern technology (Balatskiy, 2003). It is believed that technology traps are triggered when firms give preference to tackling short-term, as opposed to long-term, objectives; the dominance of short-term interests over long-term goals often comes first and foremost due to political, legal and macroeconomic instability (Balatskiy, 2012, pp. 56-57).

We believe that besides the triggers mentioned above, technology traps may be set by a number of other no less significant factors. In particular, in order for a retroeconomy to exist, government support, even if only moderate, is key. Namely, if a government does not apply protectionist policies in foreign trade, firms equipped with outdated technology will be incapable of competing with leading international rivals furnished with the latest technology. According to the evolutionary theory of economic change (Nelson and Winter, 1982), the established "routines" within retro-firms, defined as the regular and predictable behavioral patterns that shape how firms reproduce their operational characteristics (Murrell, 1992), serve as a basis to presuppose that retro-firms should, first and foremost, endeavor not so much to prepare for engagement in international competition as to expand government protectionist measures in foreign trade. This reliance on protectionist measures discourages proactive efforts to adopt modern technologies, ultimately reinforcing technological stagnation and deepening the firms' entrapment in technology traps.

Due to the fact that the routines established at retro-firms contribute to a virtually indefinite prolongation of protectionist measures in foreign trade, it is very likely that these firms will gradually transform into zombie-firms (operating via loans taken at the expense of government guarantees). Further, if circumstances remain unchanged, these firms will eventually become necro-firms, examples of which are already evident in the modern Chinese economy (Lipton, 2016).

Hence, there is a close link between technology traps and retroeconomies: on the one hand, it is evident that *a firm placed in a technology trap is essentially a retro-firm*; on the other, *retro-firms in turn contribute to the prolongation of the technology trap*.

In order to facilitate an exit from a retroeconomy and escape the technology trap, a series of complex measures must be put into play.

First and foremost, the government should encourage a sense of economic optimism within society. In an environment where a reconciliatory approach to high risk prevails, an optimist will seek to maximize benefits, whereas pessimists tend to focus on minimizing risk within narrowly defined and guaranteed outcomes (Balatskiy, 2010). Building a sense of economic optimism is particularly crucial in countries where, due to political, legal and macroeconomic instability, firms prefer to strategize for short-, rather than long-term goals (Balatskiy, 2012, pp. 56–57).

To foster economic optimism, emphasis is often placed on the rapid growth of the overall economy, which shapes a mindset where all market stakeholders aim for high individual growth rates. In such circumstances, it is crutial to make a "technological leap" to avoid falling into technology traps, and to enable firms to adopt more advanced technologies. Achieving this requires greater access to credit, which is closely tied to lower bank interest rates (Balatskiy, 2012, p. 57). Here, we can only add that, in our opinion, escaping from a retroeconomy, i.e., undertaking a technological leap, suggests that the state needs to shift the spotlight from reducing bank interest rates in general to reducing them only in the case where loans are to be used to adopt modern technology.

We also believe that, along with cutting bank loan rates, particular attention should be afforded to the application of tax concessions for firms aiming to utilize modern technology. Further, in preparing for and executing the technological leap, particular significance should be awarded to other measures taken by the government.

As mentioned above, the protection of intellectual property is among the contributing factors to the prolongation of a retroeconomy, especially in economically backward countries. Due to the protection of intellectual property, advanced technologies remain virtually inaccessible in these countries. As such, it is our view that, on the basis of a country's economic development priorities and an official request filed by firms interested in new technologies, the government should acquire patents on said technologies in accordance with relevant economic sectors. By doing so, the government can support stakeholder firms by supplying them with technologies at reduced prices, thereby fostering the development of a commercial knowledge transfer channel. However, this channel may lack effectiveness if it is not complemented by a highly-skilled workforce equipped with the necessary knowledge to apply and adapt these technologies.

The desired result cannot be achieved through commercial knowledge transfer channels alone if the general level of education is insufficient to ensure the effective use of openly available information. Thus, one of the key challenges faced by the government is the institution of a general education system which can supply the country's economy with a relevantly qualified staff. This entails not only university and vocational, but also basic education. The fact that China has gained an advantage over India in terms of economic development can be attributed to the latter placing its main emphasis on university and vocational education, and refraining from the creation of a strong base of general secondary education, whereas China has made every effort to advance all areas of its education sector (Golichenko, 2012, p. 118).

A government's undivided focus on the education system serves as the basis for the successful diffusion of technological knowledge (Golichenko, 2012).

In order to escape the technology trap, together with the development of the education system, government support for scientific activity is also of great significance, since the assimilation and application of new technology is considerably facilitated when a country has its own knowledge production system (Dementyev, 2006).

The most serious threat to overcoming a retroeconomy and escaping technological entrapment lies in the zombification of the economy. Zombie-firms, those that survive solely through government support, have little to no incentive to invest in technological upgrades, whether in production or management. Over time, if zombification persists and government-backed loans prove insufficient, these firms risk crossing a critical threshold. When their technological base becomes so outdated that their products lose all market relevance, these firms may transition from being part of a zombie economy to forming the core of a necroeconomy. In such cases, their continued existence depends entirely on artificial demand created by the state, rather than genuine market needs.

Zombified Retroeconomy and the Role of Bankruptcy Legislation

This situation fundamentally contradicts the very essence of capitalism, which, as Joseph Schumpeter argued, is a system defined by continuous economic transformation (Schumpeter, [1942] 2008, p. 82). Schumpeter's theory of economic dynamics states that the essence of capitalism lies in the process of "creative destruction," or the process of economic mutation, which continuously demolishes obsolete structures from the inside and replaces them with new ones (Schumpeter [1942] 2008, p. 83). Creative destruction occurs when the outdated is displaced by the qualitatively new, resulting in the creation of new types of goods, the application of new production methods, and the assimilation of new sources of raw materials and new markets. Individuals engaged in these innovative activities, Schumpeter says, are entrepreneurs whose economic function is to implement innovation (e.g., Catner, 2016).

A zombified retroeconomy constitutes an obstacle in the process of creative destruction, which, if not surmounted, leads to technological degradation within the economy. According to one view, if the process of creative destruction is stalled for any length of time, it may trigger an institutional collapse. This is, by its very nature, equivalent to a political and military revolution, exemplified by the Soviet Union and Serbia (Foster and Kaplan, 2001, p. 294).

It is an unfortunate reality that the preservation of non-viable firms often enjoys strong backing from politically and socially influential groups. In contrast, there are no organized interest groups advocating for emerging or yet-to-be-established industries and firms, precisely because these sectors have not yet come into existence (Anderson, 2004, p. 199). In other words, while non-viable firms have lobbying groups, new industries or firms that have not yet been instituted cannot have similar lobbyists. Under these circumstances, we believe the only actor potentially able to lobby for new industries or firms to be created is the government.

Much significance is given to the enforcement of bankruptcy procedures against zombified retro-firms. There is admittedly no universal bankruptcy legislation, and the key principle typical of bankruptcy regimes is the preservation of the balance between the protection of creditors' interests on the one hand, and the avoidance of premature liquidation of viable firms on the other (Stiglitz, 2001, p. 3). In our view, this principle does not fully reflect the challenges facing a modern economy, especially in economically backward poor countries, as we will describe below.

An objective assessment of a firm's viability is inherently complex, as it calls for a comparison between the going concern value and the liquidation value: a firm is considered viable if the going concern value exceeds the liquidation value. However, determining the going concern value is particularly challenging, as it involves forecasting future revenues and expenses, an exercise that requires careful development of both a business plan and a reorganization plan. These plans are often shaped by differing perspectives: firm owners tend to present optimistic projections, while creditors typically approach them with greater skepticism. The estimation of liquidation value is relatively easier, although this process also involves the resolution of several complex tasks (estimation of revenues to be derived from the sale of assets) (Anderson 2004, pp. 175-176). Consequently, decision-makers in bankruptcy cases generally favor reorganization over liquidation, leaning toward preserving the enterprise as a going concern (White 2001, p. 32). If we recall the circumstances mentioned above, in which non-viable firms are actively protected by various politically and socially influential groups, it becomes clear how zombified retro-firms and, in extreme cases, zombified necro-firms, retain their place on the market.

It is our view that, in order to evade the zombification of a retroeconomy or to contribute to creative destruction, the core principle of bankruptcy legislation should change and, in lieu of the above (i.e., the preservation of the balance between the protection of creditors' interests on the one hand, and avoiding the liquidation of viable firms on the other), a balance must be maintained between the requirement to protect creditors' interests and the need for a timely liquidation of non-viable firms. This approach will improve the competitive environment, as competition is the sole basis for firms to generate demand for innovation, without which the process of creative destruction, as such, becomes unfeasible.

Only when the market becomes free from non-viable firms will competition force firms to orient themselves towards innovation. With this, relevant entrepreneurs (e.g., Chedi, 2015), politicians and government officials will be obliged to support entrepreneurs' interests through decision-making.

Drawing on international experience, it is believed that, particularly in poor countries, the question of an insolvent firm's viability should be primarily resolved via a direct agreement between the creditors and the firm's proprietors, with government intervention as per bankruptcy law occuring only when creditors and proprietors are unable to reach an agreement (Anderson, 2004, p. 176-178).

Relying exclusively on bankruptcy law to support and develop viable firms is unjustified. While bankruptcy legislation plays an important role, it is just one element within a country's broader legislative framework which should strive toward creating a stable and legal market space (White, 2001, p. 43). For instance, if a country, in addition to its bankruptcy laws, also has legislation that governs the restructuring of tax debts, then the latter in essence blocks the initiation of bankruptcy procedures.

Conclusions and Recommendations

In many countries, particularly underdeveloped economies, economies use obsolete technologies, resulting in their having retroeconomies. The factors establishing a retroeconomy are: protection of intellectual property, monopolization of the economy, the behavior of leading international competitors (which, as a rule, do not sell the highest-quality, latest-generation technology), the low level of education, and the presence of a zombie economy. The technological backwardness, in comparison to contemporary global standards, becomes a critical factor in sustaining the retroeconomy, ultimately trapping these countries in a cycle of technological dependency.

A zombified retroeconomy poses significant obstacles to the process of creative destruction. The key goal of any bankruptcy regime is to preserve the balance between protecting creditor interests while avoiding the premature liquidation of viable firms. Therefore, the underlying principles of bankruptcy law should be revised to reflect the challenges posed by the existence and persistence of retroeconomies.

It can be concluded that overcoming a retroeconomy requires a strong focus on comprehensive government economic policy, which must not be one-dimensional. Expressly:

1. The government must make the development of the education system a top priority. This implies improving the quality of general secondary education and the harmonization of vocational and university education with international standards;

2. The government should see that strengthening university education requires positioning scientific activity at its core. Given the country's economic development potential, the government should identify strategic priority areas and allocate funding to relevant research groups to carry out targeted scientific projects;

3. The government should establish channels of commercial knowledge transfer for the purposes of which, in accordance with the country's key economic development priorities, and in response to an official request lodged by firms, the government should acquire patents on technology in keeping with relevant economic sectors to then supply these firms at reduced prices;

4. To encourage the adoption of modern technology, the government should support relevant firms by subsidizing a portion of their bank interest payments and offering targeted tax concessions;

5. In order to promote the process of creative destruction, the government should ensure to the maximum extent possible that no non-viable firms remain on the market- doing so, first and foremost, through the establishment of an adequate legislative framework. National bankruptcy laws should rely on a basic principle which states that a balance should be maintained between the interests of the creditors on the one hand, and the timely liquidation of non-viable firms on the other;

6. It is recommended that the issue of the viability of insolvent firms be addressed through a direct agreement between the creditors and the proprietors of a firm, with the government intervening in the process, citing bankruptcy law, only when the two sides are unable to reach an agreement;

7. The government should establish a sound legal space on the market which excludes other laws and regulations impeding the efficient application of bankruptcy law.

When assigning such responsibilities to the government, especially when there is a real threat of failure due to weak state institutions or when the level of corruption is high (Dompe, 2014), it becomes critically important to ensure transparency in decision-making. Publicizing government decisions is key to fostering broad public and expert engagement in shaping effective policy outcomes.

The phenomenon of a retroeconomy is already well entenched globally, making it crucial for economists and policymakers to focus their attention on this growing threat. Doing so is essential to prevent the zombification of retroeconomic systems, and, ultimately, their potential descent into full-fledged necroeconomies.

References

Ahearne, A. G. and N. Shinada. (2005). "Zombie Firms and Economic Stagnation in Japan." *International Economics and Economic Policy*, 2 (4): 363–381.

Anderson, R. E. (2004). *Get Out of the Way: How Government Can Help Business in Poor Countries*. Washington, D.C.: CATO Institute.

Baker D. (2023b). "Professor Stiglitz's Contributions to Debates on Intellectual Property." *Real-World Economics Review*, (105): 12–24, <https://www.paecon.net/PAEReview/issue105/whole105.pdf>.

Balatskiy, E. V. (2003). "Ekonomicheskij rost i tekhnologicheskie lovushki [Economic Growth and Technological Traps]." *Obshchestvo i ekonomika* [*Society and Economy*], 11: 53–76. (In Russian.)

Balatskiy, E. V. (2010). "Rol' optimizma v innovatsionnom razvitii ekonomiki [The Role of Optimism in the Innovative Development of the Economy]." *Obshchestvo i ekonomika* [*Society and Economy*], 1: 3–20. (In Russian.)

Balatskiy, E. V. (2012). "Institutsional'nye i tekhnologicheskie lovushki [Institutional and Technological Traps]." *Zhurnal ekonomicheskoij teorii* [*Journal of Economic Theory*], 2: 48–63. (In Russian.)

Barro, R. J. and X. Sala-i-Martin. (2004). *Economic Growth*. Cambridge: MIT Press.

Bresis, E., Krugman, P. and R. Tsiddon. (1993). "Leapfrogging in International Competition: A Theory of Cycles in National Technological Leadership." *American Economic Review*, 83 (5): 1211–1219.

Catner, U. (2016). "Foundations of economic Change – an Extended Schumpeterian Approach." *Journal of Evolutionary Economics*, 26 (4): 701–736.

Chedi, M. K. E. (2015). "Entrepreneurial Features of the Creators of Innovative Enterprises." *International Journal of Economic Practices and Theories*, 5 (3): 213–221.

Dementyev, V. E. (2006). "Lovushka tekhnologicheskikh zaimstvovanij i usloviya ee preodoleniya v dvukhsektornoij modeli ekonomiki [A Trap of Technological Adoption and the Terms to Overcome it in the Two-Sectors Economic Model]." *Ekonomika i matematicheskie metody* [*Economics and Mathematical Methods*], 42 (4): 17-32. (In Russian.)

Dompe, S. (2014). "Industrial Policy Is Still a Loser." *Mises Daily Articles*, July 16, <https://mises.org/mises-daily/industrial-policy-still-loser>.

Foster, R. and S. Kaplan. (2001). *Creative Destruction: Why Companies That Are Built to Last Underperform the Market and How to Successfully Transform Them*. New York: Currency.

Glazyev, S. (2009). "Mirovoij ekonomicheskij krizis kak protsess smeny tekhnologicheskikh ukladov [World Economic Crisis as a Process of Substitution Technological Models]." *Voprosy ekonomiki* [*Issues of the Economy*], 3: 26-38. (In Russian.)

Golichenko, O. (2012). "Modeli razvitiya, osnovannogo na diffuzii tekhnologij [Models of Development Based on Technology Diffusion]." *Voprosy ekonomiki* [*Issues of the Economy*], 4: 117–131. (In Russian.)

Harman, C. (2010). *Zombie Capitalism. Global Crisis and the Relevance of Marx*. Chicago: Haymarket Books.

Hoshi, T. (2006). "Economics of the Living Dead." *The Japanese Economic Review*, 57 (1): 30–49.

Howitt, P. (2000). Endogenous Growth and Cross-Country Income Differences. *The American Economic Review*, 90 (4): 829–846.

Krugman, P. (2020). *Arguing with Zombies: Economics, Politics, and the Fight for a Better Future*. New York, W. W. Norton & Company.

Lindsey, B. (2002). *Against the Dead Hand: The Uncertain Struggle for Global Capitalism*. New York: John Wiley & Sons.

Lipowski, A. (1998). *Towards Normality. Overcoming the Heritage of Central Planning Economy in Poland in 1990-1994*. Warsaw: Adam Smith Research Center, Center for Social and Economic Research.

Lipton, D. (2016). "China's Corporate-Debt Challenge." *Project Syndicate*, August 18, <https://www.project-syndicate.org/commentary/china-corporate-debt-problem-by-david-lipton-2016-08>.

Murrell, P. (1992). "Evolution in Economics and in the Economic Reform of the Centrally Planned Economies." In *The Emergence of Market Economies in Eastern Europe*, ed. by C. Clauge, and G. C. Rausser. Cambidge, M.A. & Oxford, UK: Blackwell Publishers, pp. 35–53.

Nelson, R. R. and S. G. Winter. (1982). An Evolutionary Theory of Economic Change. Cambridge: Belknap Press of Harvard University Press.

OECD. (2007). *OECD Economic Surveys: India*. OECD, Volume 2007/14, October, <https://www.oecd.org/en/publications/oecd-economic-surveys-india-2007_eco_surveys-ind-2007-en.html>.

Onaran, Y. (2012). *Zombie Banks. How Broken Banks and Debtor Nations are Crippling the Global Economy*. Hoboken: John Wiley & Sons.

Papava, V. (2002). "Necroeconomics – The Theory of Post-Communist Transformation of an Economy." *International Journal of Social Economics*, 29 (9-10): 796-805.

Papava, V. (2010). "The Problem of Zombification of the Post-communist Necroeconomy." *Problems of Economic Transition*, 53 (4): 35-51.

Papava, V. (2015). "Necroeconomics of Post-Soviet Post-Industrialism and the Model of Economic Development of Georgia and Russia." *Journal of Business and Economics*, 6 (5): 976-983.

Papava, V. (2017). "Retroeconomics – Moving from Dying to Brisk Economy." *Journal of Reviews on Global Economics*, 6: 455-462, <https://www.lifescienceglobal.com/independent-journals/journal-of-reviews-on-global-economics/volume-6/85-abstract/jrge/2929-abstract-retroeconomics-moving-from-dying-to-brisk-economy>.

Papava, V. (2024). *From Retroeconomics to Sanctionomics: Essays on Unconventional Economics*. Bloomington: iUniverse.

Parente, S. L. and E.C. Prescott. (2000). *Barriers to Riches*. Cambridge: MIT Press.

Polterovich, V. and A. Tonis. (2010). "Innovation and Imitation at Various Stages of Development: A Model with Capital." *MPRA Paper* No. 20244, January 26, <https://mpra.ub.uni-muenchen.de/20244/2/MPRA_paper_20244.pdf>.

Porter, M. E. (1990). *The Competitive Advantage of Nations*. New York: The Free Press.

Quiggin, J. (2010). *Zombie Economics. How Dead Ideas Still Walk Among Us*. Princeton: Princeton University Press.

Sachs J. F. (2017). *Building the New American Economy. Smart, Fair, and Sustainable*. New York: Columbia University Press.

Schumpeter, J. A. [1942] (2008). Capitalism, Socialism, and Democracy. New York: Harper Perennial Modern Thought.

Segerstrom, P. S. (1991). "Innovation, Imitation, and Economic Growth." *Journal of Political Economy*, 99 (4): 807–827.

Stiglitz, J. E. (2001). "Bankruptcy Laws: Basic Economic Principles." In *Resolution of Financial Distress: An International Perspective on the Design of Bankruptcy Laws*, ed. by S. Claessens, S. Djankov and A. Mody. Washington, D.C.: The World Bank, pp. 1–23.

Stiglitz, J. E. (2016). "Monopoly's New Era." *Project Syndicate*, May 13, <https://www.project-syndicate.org/commentary/high-monopoly-profits-persist-in-markets-by-joseph-e--stiglitz-2016-05?barrier=true>.

Stiglitz J. E. (2023). "Fixing Global Economic Governance." *Project Syndicate*, October 23, <https://www.project-syndicate.org/commentary/global-financial-economic-architecture-needs-an-overhaul-by-joseph-e-stiglitz-2023-10?utm_source=Project+Syndicate+Newsletter&utm_campaign=b69308463f-covid_newsletter_10_25_2023&utm_medium=email&utm_term=0_73bad5b7d8-b69308463f-93567601&mc_cid=b69308463f&mc_eid=e9fb6cbcc0>.

White, M. J. (2001). "Bankruptcy Procedures in Countries Undergoing Financial Crises." *In Resolution of Financial Distress: An International Perspective on the Design of Bankruptcy Laws*, ed. by S. Claessens, S. Djankov and A. Mody. Washington, D.C.: The World Bank, pp. 25–45.