Marzenna Anna Weresa*

Poland's Development Model: How to Move from Catch-Up Growth to a Knowledge-Based and Resilient Economy

Poland's development model is facing a changing set of opportunities and constraints. The transformation initiated in 1989, reinforced by accession to the European Union, laid the foundations for a successful convergence trajectory. Over more than three decades, macroeconomic stability, integration into European and global markets, foreign direct investment, export growth, EU funding, and a relatively well-educated labor force have supported rapid productivity growth, rising living standards, and a narrowing of the income gap with Western Europe (Próchniak, 2025). Poland's experience demonstrates that catch-up growth depends not only on capital accumulation but also on institutional change, technological diffusion, and the capacity to absorb knowledge generated at the global technological frontier (Gomułka, 2023; Piątkowski, 2025).

> The earlier model relied heavily on comparatively low labor costs, export-oriented manufacturing, foreign direct investment, and participation in value chains coordinated largely by foreign firms. These sources of growth remain important, but their contribution is diminishing. Wages are rising, the working-age population is shrinking, energy costs have become less predictable, and the global economy is increasingly fragmented.

Poland must therefore move from a model based primarily on the absorption of capital, technology, and organizational solutions developed elsewhere toward one increasingly based on the domestic creation of knowledge, innovation, and higher-value-added activities.

This challenge is well captured by the Schumpeterian approach to growth, originating in the work of Schumpeter (1934) and subsequently developed by Philippe Aghion and Peter Howitt (1992). Their framework interprets long-term growth as a process of creative destruction, in which new technologies, firms, and organizational forms replace less productive ones. For a catch-up economy, the task is not simply to imitate advanced economies but to establish the institutional, educational, and competitive conditions that enable domestic firms to innovate and adapt continuously (Aghion, Antonin and Bunel, 2021). This perspective is particularly relevant to Poland and other Central and Eastern European countries because it links the transition from imitation to innovation with competition, entrepreneurship, higher education, and effective public policy.

> The transition to a more advanced development model does not require abandoning the achievements of the catch-up period. On the contrary, Poland's earlier success provides the foundations for a more mature strategy.

The central question is no longer simply how quickly Poland can grow, but what kind of economy it seeks to become: one dependent on cost advantages and imported technologies, or one capable of generating competitive advantages through innovation, entrepreneurship, human capital, and high-quality institutions. A country's competitiveness should be understood not merely in terms of low costs or short-term export performance, but in terms of its capacity to create conditions that enable firms to achieve sustained productivity gains, upgrade their activities, and strengthen their position in international markets (Porter, 1990; Ketels and Porter, 2018). *Poland: Competitiveness Report 2025* likewise situates Poland's competitive position against the backdrop of

* Prof. Marzenna Anna Weresa—SGH Warsaw School of Economics, World Economy Research Institute.

reconfiguring global value chains and highlights the need to build more durable, knowledge-based sources of advantage (Kowalski and Weresa, 2025).

To support the transition from catch-up growth to a knowledge-based and resilient economy, Poland should place greater emphasis on research and development (R&D), making it one of the central pillars of the new development model. In modern economies, R&D is more than a source of patents and new products. It expands the knowledge base, strengthens organizational capabilities, and enhances the capacity of firms and public institutions to respond to technological, geopolitical, climatic, and demographic shocks. Investment in science, technology, and human capital can therefore promote both productivity growth and economic resilience. Yet the relationship between R&D expenditure and competitiveness is not automatic. It depends on the quality of institutions, the organization of the research system, the effectiveness of technology transfer, and the extent to which knowledge is embedded in domestic firms and cooperative networks.

The 2026 edition of *Poland: Competitiveness Report* highlights this dual role of R&D, presenting it both as a source of innovation and productivity growth and as a factor that strengthens resilience in the face of geopolitical, demographic, technological, and climate-related shocks. Poland is progressing toward more technologically advanced segments of production and trade, but it continues to face weaknesses in R&D intensity, science—business cooperation, the commercialization of intellectual property, and the technological capabilities of many enterprises (Kowalski and Weresa, 2026).

The future development and competitiveness model that Poland seeks to pursue must therefore emphasize both domestic R&D and absorptive capacity, understood as the ability to develop, adopt, adapt, improve, and commercialize advanced solutions. A successful strategy should combine openness to foreign capital with policies that strengthen domestic technological capabilities, local supplier networks, intellectual-property protection, and the international expansion of Polish firms. Small and medium-sized enterprises are especially important in this context. Their innovation needs differ considerably: some require support for internal R&D, digitalization, engineering skills, and technology absorption; others would benefit more from access to international networks, research partnerships, public financing, and participation in global value chains. Innovation policy should therefore be differentiated rather than uniform. Its purpose is not to replace firms' strategic decisions, but to create an institutional environment that supports entrepreneurship, investment, innovation, and international expansion (Richardson et al., 2024).

A knowledge-based development model also requires renewed attention to education and human capital. Poland's educational achievements have been an important source of economic success, but they cannot be taken for granted. Demand for advanced digital, engineering, analytical, financial, and managerial skills is increasing rapidly, while demographic decline will reduce the supply of labor and intensify competition for highly qualified workers. This makes investment in education, lifelong learning, labor-market participation, and the continued employment of older workers increasingly important. Poland needs not only more scientists and engineers, but also managers capable of organizing innovation, entrepreneurs willing to take risks, and public institutions able to design effective long-term policies.

Demographic change gives particular urgency to the transition toward a more productive and capital-intensive economy. A shrinking working-age population and a growing population of retirees will place pressure on public finances, healthcare, pensions, and social services. Investment in automation, artificial intelligence, modern infrastructure, and organizational innovation will be essential if Poland is to sustain economic dynamism despite less favorable demographic conditions. Migration policy, age management in enterprises, and the development of the silver economy should complement these measures.

The new development model must also respond to a changing international environment. Economic security increasingly encompasses energy security, technological sovereignty, resilient supply chains, access to critical raw materials, and the protection of strategic infrastructure and data. Digital transformation offers Poland an opportunity to become a regional leader in selected technologies, including artificial intelligence and advanced digital services. At the same time, dependence on global platforms and foreign digital infrastructure raises questions about data control, cybersecurity, and long-term technological autonomy. Public policy should support digital transformation while strengthening Poland's capacity to develop and manage critical technologies.

Similarly, the green transition should be seen not only as an environmental obligation but also as a development opportunity. Investment in clean energy, energy efficiency, modern transport, and low-emission technologies can stimulate innovation, strengthen energy security, and improve competitiveness. The reliability, diversification, and affordability of energy supplies affect production costs, investment decisions, export capacity, and resilience to external shocks (Nyga-Łukaszewska and Napiórkowski, 2023). At the same time, the transition must be designed to protect competitiveness and social cohesion. Regulatory uncertainty, high energy costs, or poorly coordinated policies could weaken Polish industry.

> A successful strategy should combine climate objectives with industrial policy, investment incentives, regional development, and support for workers and communities affected by structural change.

Finally, Poland's future development model depends on the quality of its institutions. Long-term investment and innovation require predictable regulation, effective public administration, credible fiscal policy, property-rights protection, and trust among citizens, business, academia, and the state. Political polarization and institutional instability weaken these conditions by increasing uncertainty and making it more difficult to sustain strategic priorities. Poland needs a broad social and political consensus around greater investment in R&D and education, sustainable public finances, energy and technological security, support for entrepreneurship, and a more active role in shaping European policies.

> Poland has already demonstrated its capacity for extraordinary economic progress. The next stage is likely to be more demanding because it cannot rely primarily on imitation, cost advantages, or external capital.

It will require a development model based on innovation, human capital, institutional trust, and the ability to combine economic efficiency with resilience and social responsibility. The central task is to convert Poland's success in catching up into an endogenous capacity for innovation, enterprise development, technological absorption, and strategic adaptation. To advance these objectives, economic policy should focus on the following priorities:

- Turning research into economic value by increasing R&D investment and improving the diffusion and commercialization of knowledge.
- Connecting businesses more closely with universities and research institutions.
- Strengthening firms' capacity to develop and scale advanced technologies.
- Tailoring innovation support to the differing needs of small and medium-sized enterprises.
- Strengthening education and lifelong learning, particularly with regard to digital, engineering, analytical, and managerial skills.
- Using automation, artificial intelligence, and labor-market policy to address demographic pressures.
- Linking the green and digital transitions with competitiveness and energy security.
- Ensuring stable institutions, predictable regulation, and long-term coordination.

Achieving these goals will require improving the quality of policymaking through stronger analytical capacity, systematic policy evaluation, and evidence-based decision-making. Equally important will be building a broad and durable policy consensus around long-term priorities in innovation, education, energy security, and institutional development.

References

Aghion P., Antonin C., Bunel S. (2021), *The Power of Creative Destruction: Economic Upheaval and the Wealth of Nations*. Cambridge, MA: Harvard University Press.

Gomułka S. (2023), *Global Long-term Economic Growth and the Economic Transformation of Poland and Eastern Europe*. Warsaw: Wydawnictwo Naukowe Scholar.

Gorynia M. (2019), Competition and Globalisation in Economic Sciences: Selected Aspects, *Economics and Business Review*, 5(3), pp. 118–133. DOI: https://doi.org/10.18559/ebr.2019.3.7.

Ketels C., Porter M. (2018), Towards a New Approach for Upgrading Europe's Competitiveness, *Harvard Business School Working Paper* No. 19-033, https://www.hbs.edu/ris/download.aspx?name=19-033.pdf.

Kowalski A.M., Weresa M.A. (eds.) (2025), *Poland: Competitiveness Report 2025. Reconfiguring Global Value Chains and Shaping Competitive Advantages*. Warsaw: SGH Publishing House. DOI: 10.33119/978-83-8030-743-8_2025.

Kowalski A.M., Weresa M.A. (eds.) (2026), *Polska. Raport o konkurencyjności 2026. Działalność B+R jako czynnik przewagi konkurencyjnej* [*Poland: Competitiveness Report 2026. R&D Activity as a Source of Competitive Advantage*], Warszawa: Oficyna Wydawnicza SGH (forthcoming).

Nyga-Łukaszewska H., Napiórkowski T.M. (2023), Energy Security as a Source of International Competitiveness in New EU Member States, *International Journal of Management and Economics*, 59(3), pp. 209–224, https://doi.org/10.2478/ijme-2023-0015.

Piątkowski M. (2025), *Europe's Growth Champion: Insights from the Economic Rise of Poland* (second edition). Oxford: Oxford University Press.

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

Próchniak M. (2025), Income Convergence: Poland in the European Union—the Pentagon of Competitiveness, in: Poland. Competitiveness Report 2025. Reconfiguring Global Value Chains and Shaping Competitive Advantages, Kowalski A.M., Weresa M.A. (eds.). Warsaw: SGH Publishing House, pp. 77–97.

Richardson K., Renda A., Balland P.-A., Castaño Marín M.L., Muntean B., Weresa M., Dunlop K., Potočnik D., Christophilopoulos E., Walz R., Grabbe H., Alkemade F., Świeboda P., Huchet J.-F., Simonsson J. (2024b), *Combining Regional Strengths to Narrow the EU Innovation Divide* (Policy Brief No. 7, Expert Group on the Economic and Societal Impact of Research and Innovation—ESIR), European Commission, https://data.europa.eu/doi/10.2777/87992.

Schumpeter J. (1934), *The Theory of Economic Development. An Inquiry into Profits, Capital, Credit, Interest, and the Business Cycle*, Cambridge Mass.: Harvard University Press.