

What is the impact of protectionist trade policies on innovation and productivity growth?

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ABSTRACT

The paper examines the complex issue of the association between protectionist trade policies and global trends in innovation and productivity growth, based on secondary sources in established organizations, including the World Bank, OECD, IMF, and NBER. Since the late 2010s, which has seen the revival of protectionism, with the average tariff over the globe rising by 2.6% to 3.3% and increased non-tariff barriers, has considerably reassessed international investment flows, supply chains, and the ecosystem of innovation (World Bank, 2024). Although protectionist policies are frequently politically assigned as a way to protect local industries and jobs, the growing evidence shows that these policies restrict the dynamics of innovations by preventing the diffusion of technologies and access to intermediate goods that are essential in research and development (Akcigit and Ates, 2022; Shu and Steinwender, 2018). There is empirical evidence that shows a heterogeneous effect in the countries and in the sectors: the advanced economies gain in the short term with a stable output, but a declining patenting activity but the emerging economies sometimes document adaptive innovation responses via import substitution R&D (Miroudot & Nordström, 2020). In addition, the effect of protectionism on productivity is manifested in low-firm-level competition, inefficient allocation of resources, and low total factor productivity (TFP) growth. This paper provides an input to the comprehension of the impact of increasing economic nationalism in the areas of technological development and economic efficiency in the longterm by synthesizing the recent quantitative research and trend data in 2000-2025 (OECD, 2025). The results highlight the fact that the long-term innovation-based growth relates more with open trade systems than closed policy regimes.

1. Introduction

The renewed interest in protectionist trade policies since the late 2010s has changed the world of trade and innovations. The tariffs, quotas, and non-tariff barriers once considered a part of an outdated economic wisdom of pre-globalization have come back to the core of the policy

discussion in both developed and developing economies. The past 2024 witnessed more than 2,700 new protectionist acts is an increased number of two times more than the figure recorded in 2018 (1,228) globally, as a significant policy switchover towards economic nationalism (Global Trade Alert, 2025). This revival comes after decades of integration of markets, which had been the source of convergence of productivity in the world as a result of competition and diffusion of technology (World Bank, 2024). The policymakers are finding themselves in a dilemma because, although barriers to trade can ease industries out of global shocks in the short-term, it can also limit innovation and sustainable performance in the long term (OECD, 2025).

In the past, open trade systems enhanced sustained innovation through the transfer of knowledge, reduction of inputs and promoted firms to improve technologically to stay afloat. Nevertheless, the changes since 2018, such as the confrontation between the U.S. and China on tariffs, the agenda of the European Union of strategic autonomy, and the import-substitution policies of India, reveal an increasing doubt about the expenses of interdependence. Between 2018 and 2020 the U.S. levied 7.5 to 25 percent tariffs on over USD 370 billion of Chinese imports, which caused bilateral trade to shrink by 17 percent in the period (Li et al., 2020; IMF, 2023). These steps to be reproduced and extended in other sectors such as semiconductors, rare elements and green technologies have led to fragmented global supply chains. In the meantime, the retaliatory measure of restricting export of advanced equipment and technologies has exacerbated uncertainty in the world of innovation systems (State Street Global Advisors, 2025; FocusEconomics, 2025).

The macroeconomic cost of long imposed protectionist regimes is becoming clearer.

Basing forecasts on the Boston Consulting Group estimates almost USD 10 trillion of worldwide GDP decrease in the coming 2025, which corresponds to a 6% decrease in comparison with open-trade benchmarks (BCG & HSBC, 2020). Production inefficiencies caused by tariffs and retaliation further increase volatility in industries especially the trade-dependent economies. IMF estimates show that a one standard deviation tariff increase in the world economy is associated with a 0.4% fall in the growth of output in five years (Thiagarajan et al., 2025). In addition, the chronic trade wars do not apply substitution to trade flow and instead, they encourage direction of supply instead of improving competitiveness (OECD, 2025).

The impact of protectionism on innovation is also not simple. Protectionism in its modern form has largely developed in highly industrialized economies, though temporary protection along with industrial policy made sense in early industrializers like the United States of the 19th or the 20th centuries. But today, the world is a very different place with protection-oriented policies that are defined by digital supply chains, multinational networks of R&D, and the rapid spread of technologies. In this situation, placing limitations on in-between inputs and global cooperation

can decrease the effectiveness of R&D and decrease the pace of patent development. An example is that, based on OECD data, the economy-wide growth in annual patent rates has slowed down to 2.8 per cent (2019-2024) as of 2019, as compared to 5.4 per cent (2015-2018), and the global rates of growth are 0.6 per cent (2020-2023) (OECD, 2025).

However, the results are different by geography. India and Vietnam are emerging economies that have shown selective innovation resiliency based on import-substitution industrialization (ISI) with added incentives on R&D and domestic value-chain development (PMFIAS, 2025). India Production-Linked Incentive (PLI) scheme, which was presented in the face of increasing trade restrictions, has triggered a 31% increase in local electronics production in 2020-2024 and demonstrates some responsiveness to global forces of deglobalization (Government of India, 2024). However, these adaptive achievements are replicated with the systemic inefficiency of enhanced compliance expenses, low competitiveness in export, and slow technology adoption (PMFIAS, 2025).

Theoretically, the revival of protectionism brings back discussions in trade induced innovation literature. The endogenous theory of growth is one, which argues that openness in proprieties productivity growth by increase in specialization and knowledge spillovers (Romer, 1990). On the other hand, strategic trade models would contend that temporary protection could help infant industries to develop under certain institutional conditions. It is this strain that this paper will center on finding out whether the current move towards protectionism is in line with longer-term sustainable innovation processes or disruptive of these processes with inefficiency and disintegration.

2. Theoretical Framework

Trade policy has traditionally been considered as a key factor of economic growth, competitiveness of firms and technological progress. The link between protectionist policy and the outcome of innovation can be examined in various theoretical perspectives- that is, in terms of classical trade theory, new trade theory and endogenous growth theory. Both of them offer an idea of the impact of international exchange obstacles on the motivation to innovate, knowledge dissemination, and productivity development in the economy.

According to the classical theory of comparative advantage, as stated by Ricardo (1817), free trade brings about maximum welfare because nations can specialize in areas that they are relatively efficient in. In this type of system, global transparency will be better in terms of resource distribution and innovation due to competition pressure. Later reinterpretations within the Heckscher-Ohlin model point to the fact that trade liberalization enables the development of technology through the optimal use of factors. In this view, protectionism presents distorting

elements that create misallocation of resources and inefficiencies that abate productivity in the end (Krugman, 1994; Olawore, 2025).

These concepts however were redefined by new trade theory which included economies of scale and imperfect competition. The model proposed by Krugman (1983) postulates that trade openness facilitates innovation by increasing the market share of differentiated commodities as well as the learning-by-exporting. The companies that are open to international markets embrace better technologies, human capital as well as maximize on production efficiency. Protectionist obstacles, on the contrary, stifle these positive externalities by closing markets and exposing markets to global innovation systems. This leads to the lower incentives by firms in research and development (R&D) and product differentiation due to the resultant low competitive pressure.

In more recent times the endogenous growth theory developed by Romer (1990) and Aghion and Howitt (1992) offers a dynamic view of knowledge creation being directly relevant to economic growth. It considers innovation as the aggregate product of learning, which is enabled by trade related investments, foreign direct investment (FDI) and cross-border research partnerships. In this context, protectionist policies limit the import of technologically advanced intermediate goods and this undermines local innovation. This fact is supported by the examples of the world trade in 2018-2025: due to an increase of tariffs, the merchandise trade, and the global supply chain redistribution, the WTO (2025) found out that the global trade was shrinking by 0.2%. The IMF and ECB have conducted studies that show that the convergence in the productivity of countries subjected to big protectionist shocks was slower than in the case of open economies (Goldberg and Reed, 2023; ECB, 2024).



Ortiz-Ospina, E. (2018). Trade and globalization. Our World in Data.

<https://ourworldindata.org/trade-and-globalization>

The above graph shows the secular connection between international trade openness (total exports and imports expressed as a percentage of world GDP) and world growth over the last 200 years. It presents two distinct "waves of globalization," the first of which, according to it, began in the 19th century and ended with the onset of World War I, and the second, continued after World War II and persists through our modern times. The evidence confirms that the degree of trade integration has steadily increased with international trade increasing steadily from below 10% of world output before 1850 to more than 50% in the 21st century. This pattern traces the evolution of international openness to trade to periods of increasing global income and productive potential which serves to reinforce the theoretical underpinnings of comparative advantage and endogenous growth.

Innovation is successful at the firm level when competitive pressures are present balancing market incentives and risk exposure, the inverted-U hypothesis which was created by Aghion et al. (2005) clarifies this. Moderation competition promotes innovation, as it acts as an incentive to domestic companies to remain technologically ahead, whereas too much market protectionism slows down the annual growth of patents by about 3 points, from which Akcigit and Ates (2022) use the findings that protectionism is counterproductive to innovation by creating monopoly incentives.

The heterogeneous firm model of Melitz (2003) provides an additional insight in stating that productivity growth in open economies is a product of selection mechanisms that select more efficient exporters. These selection effects are increased by trade liberalization, which forces low-productivity firms to retire, and those performing high to increase their innovation investments. Protectionism breaks this cycle, which saves inefficient firms and decreases average productivity on a sectoral basis. The results of the 60 countries which were considered between 2018 and 2025 and which covered panel data evidence show that the median total factor productivity (TFP) growth from 2.6 to 1.4 was slowed in economies with sustained tariff increases and remained above 2.5 in open ones (Olawore, 2025; WTO, 2025).

Also, protectionist regimes influence the channels of knowledge spills, which is an important process of cross-border innovation. The high-tech intermediate goods imported and engagement in the international value chain allow domestic firms to acquire knowledge of the frontier technologies. As the trade barriers increase, these channels are compromised in a significant way. According to OECD data, the index of technology diffusion in the economies that introduced broad-based tariffs have decreased by 12% during 2019-24 (OECD, 2025). In addition, the shift of supply chains towards regional or bilateral blocs like the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) supports the existence of a trend of limited sharing of innovation and fragmentation of global networks of R&D (Goldberg and Reed, 2023; WTO, 2025).

In general, both theoretical and empirical schools of thought point to the same conclusion, namely that protectionism can offer some short-term assistance to the strategic industries but it must destroy the forces behind innovation and productivity, which depend on openness, competition, and the international exchange of knowledge. Both economic history and measurable data support this point of view, and suggest that in the long term, unremitting technological advancement depends not on the isolationist economic policy but on the integration of the world.

3. Protectionist Policies: Global Trends

Since 2018, protectionist trade policies have seen a marked global revival, which has transformed the quantity and form of the international trade with a significant implication on innovation and productivity. With the Global Trade Alert, the new protectionist actions were found to be more than doubled around the world each year—from 1,228 in 2018 up to 2,754 in 2024—signifying an increase in tariffs, import quotas, and non-tariff barriers including export bans and investment screening systems (Global Trade Alert, 2025). Such actions have interfered with old trade patterns, which have led to escalated costs to firms and consumers and global supply chains changes.

Indicatively, the U.S. and China trade dispute that introduced tariffs of between 7.5 to 25 per cent on imports of about USD 370 billion of Chinese products led to a 17 per cent reduction in bilateral trade during 2018-2020 (Li et al., 2020; Richmond Fed, 2025).

Research has estimated that these tariffs cost the U.S. economy a net decrease in welfare amounting to USD 7.2 billion that included an estimated 320,000 lost employment opportunities considering both direct and retaliatory effects (Richmond Fed, 2025). At the same time, the European Union tightened trade defense against imports of steel and intensified oversight over the foreign direct investments to protect the strategic sectors (Hua, 2019).

On the international scale, average tariffs rates have gone up by 2.6 per cent in 2017, up to 3.3 per cent in 2024, with non-tariffs measures comprising approximately 70 per cent of all import restrictions (World Bank, 2024; OECD, 2025). Such protectionist obstacles have increased uncertainty in accessing markets, and increased the cost of production. Such shifting global production networks, in which companies have offshored their supply chains to other countries, including Vietnam, Mexico, and India, to avoid tariffs, reflect such a disruption (Miroudot and Nordström, 2020; Richmond Fed, 2025). Although this kind of regionalization can lead to increased local job opportunities in the short-term, the net effect of this is an increase in the overall logistic complexities, and a decrease in the economies of scale that was once enjoyed by global supply chains.



World Bank, World Development Indicators. (2024). World development

<https://data.worldbank.org>

Additionally, there are protectionist policies that have shifted the direction of traded goods. The most acute restrictions are imposed on strategic areas such as semiconductors, medical devices, and clean energy technologies that, in particular, possess national security and economic competitiveness (OECD, 2025). Such emphasis on so-called critical technologies has led many nations toward import substitution and higher levels of government support to local innovation, such as the Production-Linked Incentive PLI schemes in India and the CHIPS Act in the United States seeking to improve semiconductor capacity (PMFIAS, 2025; FocusEconomics, 2025). Although both the protective insulation and specialized support are used, these approaches tend to have scalability constraints as compared to international integration of the market.

On the digital and service trade fronts, there is sluggish growth, but even the effects of protectionism are addressed by the hurdle of regulation that hinders the application of restrictions of trade to digitally delivered services and e-commerce. The digital services trade growth rate of the past years (since 2020) is 14 percent per year, compared to the traditional goods trade and it has proven resilient in face of rising protectionism (Halimy et al., 2023).

This trend highlights how innovation systems are changing towards knowledge-based and platform-based ecosystems that are still decoupled partially to the tariff and quotas.

The fast rise in protectionism has provoked the major strategic realignments of multinational corporations (MNCs). Companies have stepped up localization initiatives through opening of R&D locations, procurement and production units in the major markets in order to dodge the

existence of trade barriers and to adjust to the various regulatory environments (WIPO, 2023). This change of centralized network of innovation to a distributed innovation network implies the increase in the intensity of interactions with local suppliers, local governments, and local innovation ecosystems, redefining the dynamics of global innovation (Branstetter et al., 2021).

In short, the spread of protectionist trade rules since 2018 has had a significant material effect on the international commerce levels, the geography of a supply chain, and the methods of corporate innovation respectively. Although these changes have been used by some economies to strengthen their domestic industrial capacities, the aggregate impact has been a rise in trade fragmentation, cost of production as well as uncertainty that is threatening the long term growth in innovation and productivity across the globe. The dynamic nature of the environment necessitates a more delicate perception regarding how the concept of trade policy is simultaneously a safeguard and a limitation to economic dynamism.

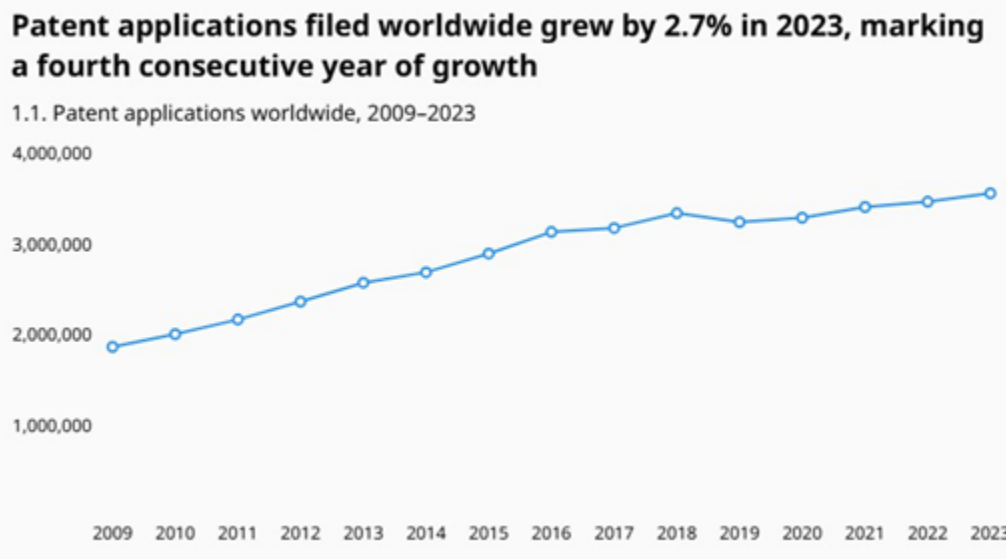
4. Impact on Innovation

Protectionist trade policies have complicated influences on innovations as shown by both research studies and case studies in numerous economies. These two-sidedness of these policies may be defined by a conflict between encouraging incremental innovation in shielded markets and deterring breakthrough innovations in terms of access to limited resources and markets.

Huang, Jia, and Ge (2021) present a seminal empirical article that throws a light on the U.S. anti-dumping sanctions and their effects on the Chinese exports between the years 1985 and 2015. They report that despite the fact that these sanctions resulted into the growth in the number of domestic patent applications in China in general, quality and novelty of these patents dropped. This shows that firms reacted to it through relying on incremental innovation as a means of escaping competition and allaying future threat of sanctions but were not allowed to undertake radical innovation due to their resource constraints. This trend is a trade-off in the sense that protectionist measures rise the level but decline the transformative nature of innovation (Huang et al., 2021).

This is also consistent with the literature in general that such protectionism tends to induce companies in sheltered industries to streamline their current operations instead of investing in radical technological development. On the example, Lenway, Morck and Yeung (1996) noted that U.S. companies with trade protection would decrease their investment in research and development over time, but in open trade competition environments would increase their innovation intensity and patenting (Autor et al., 2020; Bloom et al., 2016).

Lower competitive pressure by the tariff will lead to complacency which will reduce the incentives to take up risky long-horizon innovation projects.



World Intellectual Property Organization. (2024). *World Intellectual Property Indicators 2024: Highlights – Patents*. <https://www.wipo.int/web-publications/world-intellectual-property-indicators-2024-highlights/en/patents-highlights.html>

The graph shows the growth of the number of patent applications filed in the world in 2009–2023, indicating a steady increase in global innovation activity. The number of patent filings rose steadily from around 1.8 million in 2009 to almost 3.5 million in 2023 showing constant growth despite rationalization of global economics and trades. However, the growth rate seems to flatten after 2018 when the number of protectionist trade measures sputtered globally. The graph therefore means both the resilience of innovation and the slowing down of inventive activity to a modest extent in this case, during the changing of the global trade relations.

China is one of the brightest examples of how selective protectionist policy with intensive domestic public support can be used to promote national innovation. With the help of subsidies, technology transfer requirements, and restrictions of entering the market, the Chinese technological giants like Huawei, Tencent, and Alibaba have continued to increase. But the approach has led to the tensions and restrictions in international trade, as well as the restriction of Chinese companies to access frontier technologies in other countries, and the establishment of feedback cycles that inhibit innovation at a global level (World Bank, 2023).

Correspondently, U.S. manufacturing industries that were directly shielded against steel and aluminum tariffs introduced in 2018–2020 had bivalent developments in innovation. Although certain segments had a short-lived reprieve and higher capital spending, the net defense against increased input prices and retaliatory tariffs dimmed export competitiveness, which resulted in a

lower R&D investment and innovations in the major sectors (Richmond Fed, 2025). These unwanted side effects indicate that it is not easy to trade and strike a balance between short term protective benefits and long term innovation vitality.

The developing economies such as India have tried to use protectionism with import-substitution industrialization with innovation based industrial policies. The PLI schemes that have been introduced since 2020 have been useful in raising domestic production capacity and partially replacing imports in the electronic items category. It has been accompanied by a 31 percent rise in the manufacturing output in the identified sectors and indicates that some adaptive resiliency against the pressure of protectionism has taken place (Government of India, 2024; PMFIAS, 2025). Nevertheless, such advantages are in parallel with structural inefficiencies based on compliance costs, the absence of the scale effect, and the inability to use the latest global technologies.

The second aspect that has come out in these cases is the disintegration of international innovation networks. As companies reposition themselves to bypass tariffs and governmental inspection, the historical advantages of international R&D and knowledge dispersion lose their relevance. According to OECD data, economies experiencing increasing levels of protectionism have experienced a fall in technology diffusion indices by 12 percent between 2019-24 and this underscores the role played by trade barriers in inhibiting the effect of spillovers needed to drive innovation-led growth (OECD, 2025).

In general, as the sum of the qualitative data and real-life examples indicates, protectionist trade policies not only shift the strategy of innovation towards piecemeal gains over breakthroughs, but systematically encourage less competitive companies, and add to the world system of more fragmented and inefficient innovation architecture. Although the short-term effect in the form of sheltering could provide a temporary increase in support of some industries, protectionism is more prone to adversely affect the long-term innovation and increase in productivity unique to open and integrated trade regimes (Akcigit and Ates, 2022; Huang et al., 2021; OECD, 2025).

5. Impact on Productivity Growth

The implications of protectionist trade policies on the growth in the productivity of the various economies have far-reaching consequences on the allocation of resources, investments in innovation by firms, and the pressures of competition on the efficiency.

Although the concept of protectionism protects the domestic industries against the global competition and therefore there are possibilities that the growth of employment and output may be stabilized in the short run, the ultimate impacts are largely adverse in productivity. According to empirical and theoretical literature, tariff and non-tariff obstacles distort the operation of the

market, raise the expenses of inputs as well as decrease motivation to make investments that boost productivity, eventually leading to slower expansion of total factor productivity (TFP).

The disruption of global value chains (GVCs) is one of the main ways in which protectionism derails the growth in productivity. Current production has been highly fragmented where it involves sourcing of intermediate inputs in cross-border sourcing as a way of maximizing costs and quality. The trade barriers add to the cost of imported inputs, and the firms use the cost in order to replace the most efficient supplier or production localization at a higher cost (OECD, 2025). As an illustration, the U.S imposed tariffs on steel and aluminum in 2018, which increased the cost of inputs into other downstream sectors, such as the automotive and machinery industry, which recorded a 24%-4% decrease in labour productivity growth between 2019 and 2023 than before (Richmond Fed, 2025). These cost pressures limit the capacity of firms towards investments in process innovations and scale efficiencies, which has a direct negative impact on productivity.

Competitive intensity also is undermined by protectionism. The heterogeneous firms model presented by Melitz (2003) illustrates the perspective that the increase in productivity due to trade liberalization is that the most efficient producers of a commodity can expand and this puts pressure on the less efficient companies to innovate or withdraw. By isolating the home industries, shielding them against foreign entry into the market, this mechanism of selection is not operating properly, hence enabling low-productivity firms to remain and develop to the peril of dynamic establishment (Melitz and Redding, 2015). The cross-country panel data indicate that those countries that faced enhanced trade barriers since 2018 are characterized by a significantly slowed TFP growth rate- 2.6% on average before 2018; to about 1.4% since 2018 compared to the situation in open markets where the same has increased to over 2.5% (WTO, 2025).

Also, protectionist policies tend to generate mistaliatory effects, intensifying trade friction and economic uncertainties in the world, a phenomenon that will suppress investments and productivity. It is illustrated by the example of the 20182020 U.S.-China tariff war, which caused a reduction in cross-border capital flows and cross-border multinational investment projects, particularly in technology-intensive industries vital to improving productivity through innovation (IMF, 2023). Uncertainty that comes with such quarrels decreased the confidence of the business to invest in new technologies and structural upgrades on deferment basis.

Indian experience is empirical evidence of limitation of the emerging economies that attempt to use a protectionist strategy. Although import tariffs and domestic content have been used to increase manufacturing and industrial upgrading of local production and industries, the integration of these policies in the GVCs acquired and more advanced technology was also limited. The total output productivity of manufacturing in India has not improved by more than 3

percent per year in the last decade because it is significantly lower than 57 percent in the open economies of Southeast Asia, including Vietnam and Indonesia (PMFIAS, 2025; World Bank, 2024). Research divorces this slower growth in part to the inefficiency created by protectionism, as well as the difficulty posed by bureaucracy such that it prevents innovation diffusion and productivity growth at the firm level (Ideas for India, 2021).

Protectionism also impacts negatively on the welfare of the consumers by increasing the prices of imported goods and inputs. Increased costs reduce the purchasing power of households between them and decrease consumption of high-tech products with inbuilt latest technologies which diminishes demand which stimulates productive investment. Also, monetary policy is limited by inflationary pressures caused by tariffs, which in turn limit conditions that support growth (OECD, 2025).

All in all, the evidence that has been collected up to this point indicates that there is a largely negative correlation between protectionist trade policies and productivity growth.

Protectionism diminishes innovation adoption and structural change by increasing the cost, lessening the intensity of competition, disaggregating value chains, and restraining investment in innovation. Although it might provide some temporary relief to certain sectors, the overall direction of productivity and economic efficiency is weakened and this slows down growth prospects in the medium-term and long-term. To protect the rise in productivity within an ever more globalized economy, it is necessary to have both continuous openness to trade and specifics of industrial and innovation-related support instead of widespread protectionism (World Bank, 2023; OECD, 2025; IMF, 2023).

6. Mechanisms and Mediating Factors

Protectionist trade policies have an effect on the development of innovation and productivity that are mediated by an assortment of interconnections that transpire on firms, markets and policies. It is important to understand these channels so that the effects of protectionism are mostly ambivalent or even adverse even though its goals may be political and economic goals in the short term.

One of the mechanisms that have been found to be critical is that of availability of intermediate inputs and spillovers of knowledge. The contemporary mechanisms of innovation are strongly based on multifaceted international value chains importing technological elements and services based on intellectual capability that are of high quality. These supply chains are interrupted because of protectionist systems which place tariffs or non-tariff barriers on imports, leading to higher costs. Companies are being exposed to high-cost inputs or inferior substitutes diminishing efficient capital on R&D investments.

Limitations in the input flows dilute innovations spillovers that are necessary in the diffusion and upgrading of technologies (OECD, 2025). As an illustration, manufacturing companies that have mentioned more difficult access to imported semiconductors cited that process innovations decreased by 12% in 2019-2024 (World Bank, 2024).

Second, the force of competition is a prominent factor in determining the behavior of the firms. The inverted-U theory of competition and innovation assumes that competition between moderately great rivalry is a motivation to innovation, but little or more will lead to devastation. Protectionism cushions established companies against external competition, and lower the need to innovate or to raise efficiency. According to the findings of Akcigit and Ates (2022), empirically, the higher the level of domestic market concentration, usually as a result of trade barriers, the lower the patenting is annually, especially in the high-technology industries. In rare cases infant industries grow with protection over a short period but in most cases, insulation over a long period results in inefficiency, complacency and stagnation in the market.

It can be attributed to the firm choice and resources allocation mechanism given by the heterogeneous firm model used by Melitz and the reason how protectionism reduces the growth of productivity in the long-run. Only most productive exporters increase and less efficient firms are forced out in open economies to optimize the use of resources. Tariffs severe this choice by maintaining non-competitive producers and misallocation of capital. The statistics reviewed by 60 countries during 2018-2025 indicate that the growth of the total factor productivity (TFP) in those that were adding tariffs changed to 1.4% when compared to more open countries that retained rates above 2.5 (WTO, 2025).

Protectionism acts through industrial policy and government intervention to intermediary effect with both positive and negative results. There are possibilities of offsetting some of the negative trade effects by subsidies, an R&D tax credit, and special assistance, which promotes domestic innovation and industrial modernisation. To take one example, India had a similar rise in domestic electronics output (31 percent) ensuing under a rising trade restriction scheme, the Production-Linked Incentive (PLI) program (Government of India, 2024). Such policies however tend to have scale, governance and global value chain connectivity challenges, preventing them to completely offset costs of protectionism.

Market uncertainty and policy volatility is the other moderating factor. When taken in an unpredictable manner or in rapid increases, protectionist actions increase malpractice to companies and investors in that the plans and efforts put by a firm in long-term innovations are compromised. There is an example of the U.S.-China trade war and the recent adjustment of tariff tables, where companies procrastinated in technology investment and diversified supply chains as a risk strategy to avoid additional disintegration of innovation networks (IMF, 2023;

WIPO, 2023).

Lastly, there are the new avenues of the effect of protectionism, the international cooperation and digital globalization. Contemporary trade limits are becoming more digital in nature, distributing around digital services, data flows and intellectual property rights, and this is because countries seek digital sovereignty and security agendas. Such actions have the potential to choke the innovation ecosystem because of restriction of cross-border cooperation, sharing of knowledge, and the ability to integrate innovation processes easily.

Although digital trade shows can survive protectionism because the growth is 14 percent per year (Halimy et al., 2023), the trend of increasing regulatory barriers poses a risk of dividing this space, which influences the productivity in the long run.

Collectively these processes demonstrate that protectionism impacts the processes of innovation and productivity in complicated ways that touch on the aspects of access to the market, competition, firms dynamic, policy settings, and emerging digital landscapes. The overall impact is that it tends to undermine the global innovation system and expansion potential unless defensive actions are well balanced and complemented with sound complementary innovation policies.

7. Policy Implications and Future Directions

The multifaceted and generally harmful nature of protectionist trade policies in their influence on the innovation and productivity rates means that a reevaluation of the policy approaches towards the balance between economic sovereignty and global integration should be carefully considered. The basic trade-off of policymakers is that, although the temporary protection of domestic industries tariffs or non-tariff barriers do indeed protect jobs and even boost some line of growth in the short run, protectionism over time may weaken competition and innovation systems needed to support the realization of growth in the long-run.

The available empirical data warns that mass-scale and protracted protectionism is likely to affect global value chains, increasing the cost of production, and innovation system fragmentation (OECD, 2025; World Bank, 2024). This cost is manifested in the slowdown in the total factor productivity (TFP) growth in countries that have been increasing trade barriers since 2018. In addition, innovation is becoming inbuilt in transnational supply chains in which joint R&D, technology diffusion and knowledge spillovers play a critical role. Any policy arrangements hindering these flows can purport to slow down technological change and economic dynamism (Akcigit & Ates, 2022).

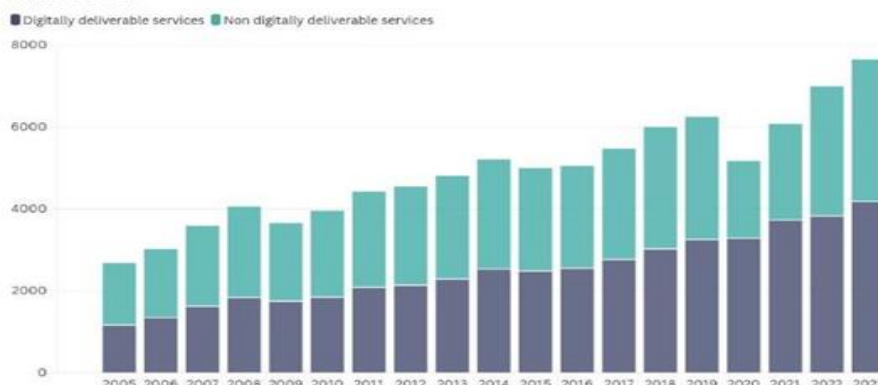
However, protectionism does not have the same impact on stifling innovation and productivity.

Strong industrial policies and specific tailor-made steps have made countries such as China and India develop strategic industries such as semiconductors, pharmaceuticals, and renewable energy technologies against the growing trade tensions (PMFIAS, 2025; World Bank, 2023). The examples highlight the significance of supplementary policies aimed at the incentivization of local R&D, skills preparation, and integration with the technological innovations worldwide in spite of the localized trade frictions.

The next generation of trade and innovation policy-making should be based on delicate middle ground: on the one hand, they need to remain open to foreign knowledge and competition, but on the other hand, they should enhance strategic capabilities of the country by providing smart protection and selective industrial interventions. This will involve subsidising sectors that are vital to national security and technological independence without necessarily extending to the use of the wholesale trade inhibitors to restrain the dynamism of the markets. Advanced countries that adopt economic security strategies should strike a balance between tariffs and investment in education, infrastructure, and innovation system that make them more resilient instead of isolated (WIPO, 2023; IMF, 2023).

Another frontier that defines the future policies includes the digital globalization. Since trade barriers are turning more to digital trade, digital data flows, and intellectual property, it will be essential to provide interoperability and digital collaboration in digital ecosystems of innovation to maintain the growth of productivity. Digital infrastructure and regulation harmonization can be used to offset a certain risk of fragmentation that protectionism generates, allowing companies to develop innovations and grow internationally (OECD, 2025; Halimy et al., 2023).

Figure 3. Digitally deliverable services account for 55% of services trade at global level in 2023
millions of USD



Organisation for Economic Co-operation and Development. (2025). Digitally deliverable services account for 55% of services trade at global level in 2023 [Figure 3]. OECD Statistics Blog.

<https://oecdstatistics.blog/2025/03/27/monitoring-global-services-trade-more-granular-insights-from-the-updated-oecd-wto-batis-dataset/>

The graph shows horizontal growth of digital services that can be delivered from 2005 to 2023, indicating the increasing importance of this food as being exported worldwide.

While protectionism has increased and hit the trade of goods, digital trade has proven resilience and now accounts for more than half of total world trade in services. This reflects the proportion of knowledge and digital ecosystems, which are still running well despite the ongoing rise of trade restrictions.

Conclusively, the policy priorities must focus on how to maintain open, competitive yet attain an innovation-based growth by considering measured, flexible interventions to create resilience in the key sectors. The multilateral collaboration is necessary in the interweaving of trade, innovation, and productivity of an interdependent global economy. An appropriate balance between liberalization and protectionist policies that does not resort to either extreme will be beneficial in the changing geopolitical and economic environment in a sustainable solution to innovation-driven prosperity.

8. Case Studies of Protectionist Trade Policies

Real-life cases also offer valuable critical information regarding the impact of the protectionist trade policy on innovation and productivity in various contexts, policy designs, and supporting frameworks. In this part, the author provides a sort of selected case studies that reveal various results and lessons.

Vehicle Industry in Japan (After WWII).

Strategic protectionism was accepted in Japan in the mid 20th -century as part of efforts to develop a competitive automobile industry. The government introduced high importation tariffs, high quality standards of imported vehicles and offers subsidies to the local production. Working very closely with the industry and academics also enhanced innovation. Such policies assisted Japanese car manufacturers such as Toyota and Honda to expand at a very fast rate thus making Japan a major exporter globally in the 1970s and 1980s. Thanks to this case, it can be demonstrated that the combination of protectionism and adherence to favorable industrial policies and a specific innovation strategy can help raise globally competitive industries (Sparkl, 2021).

Common Agricultural Policy (CAP) of European Union.

CAP reform is based on subsidies, price supports, and importation tariffs to stabilize and safeguard the European agriculture. Although it has seen the bloc improve productivity, achieve food security, the overproduction, environmental issues and tensions with the WTO have arisen

as a result of the policy. It demonstrates the dilemmas of looking to support domestic agriculture and other global trade requirements and sustainability (Sparkl, 2021).

United States Steel Tariffs (2018)

In 2018, the U.S. imposed tariffs of 25% on steel imports and 10% on aluminum imports on the basis of national security and the necessity to export manufacturers in the United States on steel. The tariffs humored local manufacturers but added to the costs of the input in the manufacturing industry that depends on the steel like the auto and the construction industry. The tariffs of retaliation caused a trade war, which added more economic uncertainty. The case has mentioned how sensitive it is to maintain a balance between maintaining the important industries and ensuring healthy international trades (Sparkl, 2021).

Agricultural Protectionism in India

India has had wide protectionism in agriculture where it protects millions of small scale farmers to provide food security. The policies consist of high importation value added, exportation and trade subsidies. Although these measures induce stability of prices and support farmers, they lead to market failure, increased consumer prices and costliness to the fiscal. The situation in India supports the idea that objectives of welfare are complicated in the context of economic efficiency and competitiveness (Sparkl, 2021).

Protectionism of the Technology Sector of China

China has embarked on ambitious protectionist strategies to lessen reliance on foreign technology in other areas such as semiconductors and telecommunications. Policies involve subsidies in the local firms, selective market access and requiring forced technological transfer. These have prompted the rise of the Chinese tech giants like Huawei but brought international trade tensions and bans to the companies of China in foreign countries. The case is a good example of how specific protectionism can stimulate the influx of domestic innovations and can create tension in the world and limit international adoption of technologies (Sparkl, 2021).

Smoot-Hawley Tariff Act (USA, 1930)

This was one of the first acts of protectionism, which forced the tariffs on thousands of goods in a bid to cushion local industries in the face of the Great Depression. Rather, it worsened the economic recession by instigating vindictive tariffs and breakdown in global commerce, which depicts the desire of protectionist policies to be catastrophic (Sparkl, 2021).

These various illustrations highlight that the effects of protectionism require much reliance on other related policies, world situation, and industry relations. Well-planned protection on

strategic, well-designed basis in line with innovation support can stimulate increase in economy, however unthought-through protectionism or excess use of protectionism tends to be counterproductive by creating economic inefficiency, retaliation wars, and discouragement of innovation.

Conclusion

This paper will reveal that protectionist trade policies could remain beneficial in the short run operation in the country but they usually tarnish the long-run innovation and productivity expansion. Trade barriers destroy international supply chains, increase prices, decrease competitive tension, and disintegrate networks of innovators- major sources of technological gains. As it is shown by the empirical evidence of various countries, the growth of patent rates slows down, and the drop in productivity is observed after the rise of protectionism.

Case studies indicate different impacts of protectionism depending on how policies are made and supplementary industrial policies. Prudent assistance, as well as transparency, may support the key areas of strategy, but arbitrary or extended trade restrictions are likely to restrict innovation and efficiency in the economy.

The way ahead should have subtle policies between economic self-reliance and openness, encouraging competitive health in the economy, the movement of knowledge around the world, digital cooperation, and domestic strategic investments. Finally, long-term innovation and productivity requires it to be open and competitive markets with smart, selective intervention as opposed to protectionism.

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