12

Managed Trade and Technology Protectionism

A Formula for Perpetuating Inequality?

Frederick M. Abbott[*]

12.1 DEVELOPING ECONOMIES AND TECHNOLOGY CAPACITY

12.1.1 *Technology and Disparity*

There are a variety of factors that perpetuate economic disparity. Among these is a disparity in levels of technological development. Successful industrial policy is not only a matter of access to technology. Access to capital, infrastructure development, education and training, design of social welfare systems, and other factors are important to economic development and welfare. Whether a particular form of government is a strong determinant of successful economic development is an open question. In recent years, some autocratically governed countries employing substantial state intervention in economic activity have performed well in economic development metrics. The Western liberal idea that democracy and economic progress are necessarily linked has been challenged.

While technology is not the sole determinant of economic development, it is an important determinant because the efficiency of national industry and the international competitiveness of economies are dependent on the capacity to develop and implement technical solutions. The question addressed in this chapter is how the recent trend toward "economic nationalism" that employs managed trade relations to pursue strategic interests may affect the ability of low- and middle-income countries (LMICs) to develop and implement new technologies, potentially resulting in a deterioration of the relative economic performance of LMICs vis-à-vis the dominant national or regional economies. If deterioration is a realistic prospect, are there policy measures LMICs may take to protect against that?

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In some areas, the possibility is present for LMICs to keep pace with the leading economic powers in terms of innovation. For example, the barriers to entry in software development and digital platform creation are relatively low. India has exploited this opening in the development of its digital sector. But in areas such as the development of new microprocessors, electric and autonomous vehicles, biotechnology, and aerospace, the barriers to entry remain high. Innovation expenditures in these fields are typically in the billions of U.S. dollars. To compete in these areas, LMICs likely need technology policies that attract foreign investment and cooperation.

Patent databases show that the vast preponderance of new technologies is being developed in a relative handful of countries.[1] The list has a new major entrant – China – but China is the exception, not the rule. Otherwise, the United States, Japan, the European Union, South Korea, and Taiwan dominate.[2] The United States continues to lead in the number of patents filed abroad.[3]

12.1.2 *The Continuing Vulnerability of Developing Economies*

The past decade has seen a narrowing of the gap in GDP per capita between developed and developing economies. However, much of that narrowing has been accounted for by GDP growth in China and other countries of East Asia.[4] Yet there remains a wide disparity in average income levels among countries.

In its *2019 Handbook of Statistics*, the U.N. Conference on Trade and Development (UNCTAD) summarizes:

[1] See Daniel Benoliel & Michael Gishboliner, *The Effect of Economic Crises on Patenting Activity across Countries*, 14 Chi.-Kent J. Intell. Prop. 316 (2015), and sources therein.

[2] Stephanie Nebehay, *In a First, China Knocks U.S. from Top Spot in Global Patent Race*, Reuters Tech. News (Apr. 7, 2020), www.reuters.com/article/us-usa-china-patents/in-a-first-china-knocks-us-from-top-spot-in-global-patent-race-idUSKBN21P1P9:

> The World Intellectual Property Organization, which oversees a system for countries to share recognition of patents, said 58,990 applications were filed from China last year, beating out the United States which filed 57,840.
>
> China's figure was a 200-fold increase in just 20 years, it said. The United States had filed the most applications in the world every year since the Patent Cooperation Treaty system was set up in 1978.
>
> More than half of patent applications – 52.4% – now come from Asia, with Japan ranking third, followed by Germany and South Korea.
>
> India has made some progress as a source of relative patent filings.

[3] World Intell. Prop. Org., World Intellectual Property Indicators 2021, at 14–16 (2021).

[4] Countries cannot be neatly divided into developed and developing. There is a range of levels of economic development. It is conventional today to refer to high-income countries, middle-income countries (MICs), and low-income countries (LICs), as well as to combine reference to MICs and LICs as LMICs. This chapter adopts that convention.

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> Over the last 10 years, the global distribution of nominal GDP per capita between economies has become more equal. For example, in 2008, the poorest economies, accounting for 80 per cent of the world's population, contributed 23 per cent to world GDP. By 2018, their share in GDP rose to 33 per cent. Between 2013 and 2018, however, inequalities in GDP per capita reduced mainly among economies with moderately high income. The relative distance between the richest and poorest economies in the world remained almost unchanged.[5]

Recognizing this progress, it nonetheless remains that LMICs are far more vulnerable to economic shock than developed economies.[6] One of the principal reasons for this is the buffer of financial capital available to these economies. As the manager of the world's reserve currency, the United States maintains extensive power to "print money" in times of crisis.[7] The European Union, through the European Central Bank and the euro, has a similar, even if less extensive, capacity to create capital.[8] Such observations can also be made about the Bank of Japan and, to a lesser extent, the People's Bank of China.[9] In addition, with well-functioning securities markets, the United States and the European Union tend to be less vulnerable to equity shocks.

While developing country central banks can undertake operations in the same way as the U.S. Federal Reserve, they face significant challenges in printing money to meet obligations because they must pay their external debts in one of the major reserve currencies (such as U.S. dollars).[10] Moreover, as evidenced throughout the

[5] UNCTAD, 2019 Handbook of Statistics 45 (2019). UNCTAD adds: "Not all regions of the world recorded equal economic growth in 2018. Growth remained high, at 5.3 per cent, in developing Asia and Oceania, whereas in the developing economies of America GDP increased by only 0.7 per cent. The growth rate of transition and developed economies stood at 2.8 and 2.2 per cent, respectively." *Id.*

[6] The ability of the U.S. Federal Reserve to mitigate a near-catastrophic financial shock by acting as the monetary mechanism of last resort was illustrated during the 2008 mortgage-backed security–related meltdown. See, for example, Fin. Crisis Inquiry Comm'n, The Financial Crisis Inquiry Report: Final Report of the National Commission on the Causes of the Financial and Economic Crisis in the United States 6 (2011).

[7] The Federal Reserve Bank creates credits and purchases Treasury securities, funding the federal government and maintaining low rates of interest for borrowers. Although the Treasury Department is obligated to pay principal and interest to non-Federal Reserve purchasers of Treasury securities (e.g., foreign government buyers), the Federal Reserve can simply "cancel out" obligations otherwise owed and payable to it by the Treasury.

[8] See European Central Bank (www.ecb.europa.eu/ecb/tasks/stability/tasks/html/index.en.html).

[9] With respect to China, this is mainly because the renminbi is not generally accepted as a reserve currency because of the control by the political branches of the Chinese government over its reserve bank. However, as an alternative means for maintaining economic stability in times of stress, China has built up very substantial foreign currency reserves, including through purchase of U.S. treasury securities that can all be liquidated or otherwise deployed as circumstances warrant. *See* Qiao Yu, *Relocating China's Foreign Reserves*, Brookings Rep. (Nov. 21, 2013), www.brookings.edu/research/relocating-chinas-foreign-reserves/.

[10] Increasing the domestic money supply within a country means that a greater amount of currency in circulation is available to purchase an equivalent quantity of goods and services. All things being equal, this reduces the value of the currency and has an inflationary impact.

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COVID-19 pandemic, the policies of LMIC central banks and treasuries depend on policies determined by the U.S. Federal Reserve that place U.S. interests first while taking into account the impact on the broader global economy.

The International Monetary Fund and other major international financial institutions recognized that the COVID-19 pandemic would have a more significant impact from a relative standpoint on developing economies than developed ones, acknowledging that the impact on developed economies was severe.[11]

12.2 THE MOVE TO MANAGED TRADE

12.2.1 *The Resurgence of Economic Nationalism and "Reshoring"*

Recent global developments do not portend an economic shift in favor of LMICs. Beginning in 2016, the United States led a sharp turn away from multilateral cooperation under the umbrella of the "Make America Great Again" agenda pursued by then-president Trump. The United States withdrew from the Paris Agreement on climate change, imposed trade barriers inconsistent with World Trade Organization (WTO) norms while blocking the appointment of WTO Appellate Body members, threatened withdrawal from the World Health Organization, and so on.[12] With the election of President Biden, U.S. policy began shifting back toward cooperation (including rejoining the Paris Agreement). Still, the return to its traditional multilateralist approach has been gradual and incomplete (such as in relation to the WTO), reflecting continued wariness regarding the strategic interests of other countries. The United States is not alone. The United Kingdom has withdrawn from the European Union. India is pursuing a "Make in India" agenda. Before the most recent deterioration, China adopted its Made in China 2025 program, which focused on making China the world leader in important technologies, including biotechnology, electric vehicles, robotics, and aerospace.[13] High-income countries (HICs) and more economically advanced middle-

Foreign purchasers of the currency need a larger amount to secure the same goods or services, depreciating its relative value. This may (or may not) stimulate domestic economic activity and growth, but it typically makes repayment of reserve currency (e.g., dollar-denominated) debt more costly. In addition, it is not as easy for LMIC companies to obtain new funding by issuing equity securities as it is for U.S. and European companies.

[11] Staff of Int'l Monetary Fund, *COVID-19 – Impact and Policy Considerations* (Int'l Monetary Fund, G-20 Surveillance Note, 2020), www.imf.org/external/np/g20/pdf/2020/041520.pdf.

[12] See, for example, Frederick M. Abbott, *Confronting COVID-19 in a World without WHO – Seriously?*, Health Pol'y Watch (Apr. 14, 2020), https://healthpolicy-watch.org/confronting-covid-19-in-a-world-without-who-seriously/.

[13] *See* Off. of the U.S. Trade Representative, Findings of the Investigation into China's Acts, Policies, and Practices Related to Technology Transfer, Intellectual Property, and Innovation under Section 301 of the Trade Act of 1974 (2018).

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income countries (MICs) are turning inward with policies intended to redirect capital to domestic investment, including by boosting the role of automated production processes to reduce reliance on lower-cost foreign sources of labor.

The COVID-19 pandemic has exacerbated deterioration in international relations as the United States accused China of aggravating the impact of the virus. It has also, perhaps more important for present purposes, strengthened the resolve of governments to assure self-sufficiency in the production of important products, especially in the pharmaceutical and health arena. The United States encourages "reshoring" manufacturing, particularly from China.[14] In a similar vein, the Japanese government is encouraging reshoring from China. The European Union has been looking for regional industrial champions to counter the scale of Chinese penetration of its markets and to better compete with China in external markets.[15]

Many countries historically emphasized the importance of "food security." Concern for food security played an important role in the special situation of agriculture (including agricultural subsidies) in international trade relations. It will not be surprising if the concept enjoys a rebirth in the aftermath of the pandemic.[16]

12.2.2 *Diversification*

Countervailing the reshoring trend is a diversity trend, in which multinational corporations (MNCs) seek to diversify sources of supply for their supply chains. While this interest in supply-chain diversification may appear inherently contradictory with interest in reshoring, it reflects a practical recognition by the MNC business community that reshoring to the United States (and *pari passu* in the cases of the European Union and Japan)[17] is structurally limited. The U.S. labor force, for example, will resist the transition to repetitive assembly jobs (e.g., sewing jeans or assembling computer monitors) and would demand substantially higher wages than those paid in East Asia. Moreover, the pool of technically skilled labor "sitting on the sidelines" in the United States, Europe, and Japan is limited. Even considering that

[14] See, for example, Russell J. Greenberg, *Reshoring, Tariffs Brighten US Manufacturing Outlook*, IndustryWeek (Mar. 3, 2020), www.industryweek.com/the-economy/article/21125312/reshoring-tariffs-brighten-us-manufacturing-outlook; Rick Sobey, *Coronavirus Fallout: Reshoring Manufacturing Is Key for Economy and National Security, Experts Say*, Bos. Herald (Apr. 19, 2020), www.bostonherald.com/2020/04/19/coronavirus-fallout-reshoring-manufacturing-is-key-for-economy-and-national-security-experts-say/.

[15] See, for example, Jorge Valero, *Europe Looks for Its "Formula" to Create Industrial Champions*, Euractiv (July 23, 2019), www.euractiv.com/section/economy-jobs/news/europe-looks-for-its-formula-to-create-industrial-champions/.

[16] See, for example, Samuel Mehmet, *Brazilian Officials Warn of "Agriculture Nationalism" amid Pandemic*, New Food Mag. (May 5, 2020), www.newfoodmagazine.com/news/109871/brazilian-officials-warn-of-agriculture-nationalism-amid-pandemic/.

[17] See, for example, Mercy Kuo, *Japan Prods Firms to Leave China, Affecting Ties with Beijing and Washington*, Japan Times (May 8, 2020), www.japantimes.co.jp/news/2020/05/08/national/politics-diplomacy/tokyo-china-us-relations-business/.

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MNCs are deploying automated production processes as part of reshoring efforts, diversification creates opportunities for LMICs outside China to attract relocating foreign direct investment (FDI). So far, major beneficiaries of that diversification trend have been countries of East Asia, such as Vietnam, Malaysia, and Thailand.[18]

The possibilities for individuals and businesses to use technologically advanced products have expanded dramatically, mainly due to the Internet, electronic commerce, and other digital technologies. However, while access to products embodying new technologies improves the quality of life, that may not translate into enhancing the domestic innovation infrastructure in LMICs. Suppose South Korea and China offer low-price cellular telephones that individuals in LMICs can afford. In that case, the possibilities for LMIC local industries to develop handsets that compete with those offerings – given the capital intensity of the R&D – are quite limited. The incentives for undertaking such efforts are not so clear. Though there are openings in some higher value-added points of the global supply chain, LMICs may find it difficult to escape from the trap of serving as low-labor-cost assembly platforms. Even that position could be threatened as robotics manufacturing technologies advance.

12.2.3 *De-Legalization*

We are moving away from the "legalized" international trading structure embodied in the WTO.[19] One reason for this move to "de-legalization" is frustration among U.S. trade officials with what is perceived as an abuse of the rule-based system by China. The U.S. frustration is not without some cause, even though China's policies, from a developmental standpoint, have helped it transform its economy and transition many millions of individuals into the middle-income class. The United States has spent decades negotiating bilateral agreements with China intended to improve the protection of U.S.-origin intellectual property[20] and to address matters such as cyberpiracy (including state-sponsored cyberpiracy).[21]

[18] See, for example, Michael Ryan, *Pivot to Vietnam: Reorienting America's Supply Chain*, Industry Week (Feb. 11, 2020), www.industryweek.com/the-economy/trade/article/21122771/pivot-to-vietnam-reorienting-americas-supply-chain.

[19] *See* Frederick M. Abbott, *Technology Governance in a Devolved Global Legal Order: Lessons from the China-USA Strategic Conflict*, *in* A New Global Economic Order (Cheng Chia-Jui ed., 2021).

[20] See, for example, China–U.S. bilateral agreements of 1992 and 1995 requiring modifications of Chinese intellectual property laws and enforcement procedures, *reprinted in* 2 Frederick Abbott, Thomas Cottier & Francis Gurry, The International Intellectual Property System: Commentary and Materials 1592–1608 (1999).

[21] The WTO has not been particularly helpful as a way for the United States to address its concerns with respect to China's intellectual property and transfer of technology practices. The United States attempted to redress what it perceived as deficiencies in China's intellectual property enforcement rules in *China – Measures Affecting the Protection and Enforcement of*

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Following the imposition of WTO-inconsistent trade sanctions on China, the United States negotiated the Economic and Trade Agreement between the Government of the United States of America and the Government of the People's Republic of China, which incorporated the U.S. negotiating objectives of precluding so-called "forced technology transfer," whether express or tacit and strengthening rules regarding electronic intrusion (i.e., cyberpiracy).[22] There is no more assurance that China will change its behavior through effective implementation of this Agreement as compared with any other of the arrangements China has made with the United States previously, particularly as China accepted the terms of this arrangement "under duress" in the form of WTO-inconsistent tariff sanctions. Perhaps the most interesting element of the agreement is the complete eschewing of legalized dispute settlement, which has been replaced with the judgment and "untethered" discretion of diplomats. If either side is dissatisfied with the judgments and discretion, they walk away from the Agreement. There is no attempt to disguise this Agreement as anything other than implementing a balance-of-power diplomacy.

12.3 FOREIGN DIRECT INVESTMENT AND ITS LIMITS

12.3.1 *TRIPS Constraints*

The point of the WTO Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS Agreement) was to foreclose developing countries from "appropriating" developed countries' technology.[23] For MICs, the obligation to provide patents across all subject matters that became fully operational in 2005 should prevent locally based companies from using foreign-owned, patented technology without the consent of the patent owners. As is well known, this foreclosure is subject to some exceptions or "flexibilities," but those flexibilities are not like an innovation pathway. (For least developed countries (LDCs), the obligation to provide patent protection generally can be avoided until 2034,[24] yet many LDCs have not indicated an intention to take advantage of this flexibility and continue to grant and enforce patents.)

The question of whether LMICs have the flexibility to make use of foreign-owned technology is only important if the other elements necessary to create successful

Intellectual Property Rights (2009) and was fatally hampered by the unwillingness of its U.S.-based companies to provide identifiable evidence to support the case.

[22] This Phase One trade deal was signed on January 15, 2020. See discussion of relevant provisions in U.S. trade and investment agreements (TIAs) in Section 12.3.3.

[23] *See* Frederick M. Abbott, *Protecting First World Assets in the Third World: Intellectual Property Negotiations in the GATT Multilateral Framework*, 22 VAND. J. TRANSNAT'L L. 689 (1989).

[24] Council for Trade-Related Aspects of Intellectual Property, Extension of the Transition Period under Article 66.1 for Least Developed Country Members: Decision of the Council for TRIPS of 29 June 2021, WTO Doc. IP/C/88 (June 29, 2021).

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business enterprises are present. These include adequate capital, infrastructure, and technically trained staff to successfully implement innovative technologies.[25]

Because of limitations concerning these elements, the path for moving up the innovation curve has been encouraging FDI. Although large privately owned MNCs may prefer to invest in geographic areas with adequate infrastructure, if the opportunity is substantial enough, even electricity generation can be addressed through small power generation stations. Of course, the MNC brings with it capital and trained personnel.[26]

In this regard, there is a well-worn path – hosting FDI – for LMICs to develop manufacturing industries that use more advanced technologies. The question is whether this well-worn path leads to indigenous capacity for innovation and the creation of locally owned advanced technology industries or merely creates a perpetual situation of inequality between the technology "haves" and "have-nots." Can LMICs influence the arc of technological progress through policy options?

12.3.2 *Technology Transfer Obligations*

Through legislation and/or regulatory measures, governments can improve the terms of trade for local businesses by setting ground rules that improve the capacity, that is, bargaining power, of local enterprises in negotiating the terms of FDI.[27] One mechanism for accomplishing this objective is to establish requirements that foreign direct investors enter into joint venture arrangements with local enterprises to pursue their objectives and share technology with those joint venture partners as part of such arrangements.

There are myriad potential configurations for joint venture arrangements and other technology-sharing arrangements. The business and legal questions that must be addressed include the relative percentages of ownership and control over the business, the composition of management, how the capital of the business will be contributed and/or raised, how funds will be repatriated, and so forth. The technology-sharing questions include the defined subject matter of the relevant technology (including such matters as identification of relevant patent portfolios), potential geographic limitations on the sale of products incorporating the

[25] *Cf.* World Health Org., Indian Policies to Promote Local Production of Pharmaceutical Products and Protect Public Health (2017); World Health Org., China Policies to Promote Local Production of Pharmaceutical Products and Protect Public Health (2017). This author prepared both studies.

[26] Using its own model, China is today well-known for creating largely self-sustaining manufacturing operations in developing countries, including with Chinese national staff.

[27] The use by a developing country of the requirement that a foreign direct investor engage with a local partner in order for an investment to be approved may constitute a technology transfer requirement, notwithstanding the absence of a specific reference in legislation or regulations to technology *as such*. Virtually by definition, a foreign direct investor from a high-technology country engaging with a local partner will be bringing technology into the arrangement.

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technology, ownership and control of technologies newly developed by the joint venture, contributions of trade secrets and other information, residual interests in technology upon dissolution or sale of the joint venture or party interest, and so forth.

Just as there are myriad potential configurations for joint venture and technology sharing, there are many ways that host governments may go about creating and implementing the requirements that may be established. Principally, this would involve choices between macro- and micro-management. The government might establish macro-benchmarks such as requirements regarding percentages of ownership and control and largely leave to the parties the negotiation of the specific terms and conditions of the arrangement, including for technology transfer. Alternatively, the government might more precisely establish expected terms and conditions – for example, concerning technology licensing conditions. There is also a question of whether the government would seek to maintain a review and approval mechanism before the commencement of business operations. Alternatively, it might be left to the parties to assure compliance with the preestablished rules, with the possibility of ex post facto regulatory intervention.

A substantive objection by the United States to China's policies and practices concerning joint ventures and technology sharing was, and still is, that demands by Chinese authorities were conveyed informally and "off the record" as a condition to FDI approval. The maintenance of nontransparent regulatory requirements creates a risk of discriminatory treatment of investors that could be based on various factors (e.g., national origin) and should not be recommended. This is of particular concern if public securities markets and investors are involved in a venture, as the investors will not have an adequate basis to evaluate the business without transparency.

Recent economic research strongly supports the conclusion that China's joint venture requirements for foreign investors have resulted in more robust technology transfer to Chinese enterprises (including downstream enterprises) than wholly foreign-owned investments.[28] In the case of China, the available evidence suggests that "forced technology transfer" in the context of investment approvals has exerted a positive internal impact.

12.3.3 *Limitations in Preferential Trade and Investment Agreements*

12.3.3.1 Transfer of Technology

There is a trend of incorporating provisions precluding technology transfer conditions in preferential trade and investment agreements (TIAs). This is not a new

[28] Kun Jiang, Wolfgang Keller, Larry D. Qiu & William Ridley, *International Joint Ventures and Internal vs. External Technology Transfer: Evidence from China* (Nat'l Bureau of Econ. Rsch., Working Paper No. 24455, 2019).

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phenomenon. The United States secured commitments from developing countries, at least as early as its bilateral free trade agreement (FTA) with Chile in 2004, that approval of investments would not be conditioned on a performance requirement: "to transfer a particular technology, a production process, or other proprietary knowledge to a person in its territory."[29] This provision, in a substantially similar format, has become a "staple" of U.S.-negotiated TIAs and is found in the text of the Trans-Pacific Partnership Agreement (TPP),[30] preserved in the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP).

The United States is not alone in demanding restrictions on technology transfer obligations. The recently concluded Comprehensive Economic and Trade Agreement (CETA) between Canada and the European Union includes a restriction on technology transfer requirements.[31]

The Regional Comprehensive Economic Partnership Agreement (RCEP) includes a performance requirement similar to that in the TPP regarding technology transfer.[32] Of some interest, the RCEP has a carveout in its investment chapter of the prohibition on technology transfer requirements in favor of Cambodia, Lao PDR, and Myanmar. India pushed back against including such a provision during the RCEP negotiations, and its unwillingness to accept a provision of that type may have partly been why India did not join the RCEP.[33]

12.3.3.2 Competition

Transfer of technology, and economic growth more generally, may be stymied by anticompetitive practices engaged in by market actors. Commercial arrangements that might otherwise improve the position of locally based businesses and entrepreneurs may be frustrated through licensing and other conditions that make it difficult

[29] Chile–United States Free Trade Agreement, Chile–U.S., June 6, 2003, art. 10.5.1(f).

[30] Article 9.9.1 of Trans-Pacific Partnership Agreement provides:

> No Party shall, in connection with the establishment, acquisition, expansion, management, conduct, operation, or sale or other disposition of an investment of an investor of a Party or of a non-Party in its territory, impose or enforce any requirement, or enforce any commitment or undertaking . . . to transfer a particular technology, a production process or other proprietary knowledge to a person in its territory . . . .

[31] Article 8.5.1 of CETA provides:

> A Party shall not impose, or enforce the following requirements, or enforce a commitment or undertaking, in connection with the establishment, acquisition, expansion, conduct, operation, and management of any investments in its territory to . . . transfer technology, a production process or other proprietary knowledge to a natural person or enterprise in its territory . . . .

[32] Regional Comprehensive Economic Partnership Agreement, Nov. 15, 2020, art. 10.1(f).

[33] See, for example, V.S. Seshadri, *Regional Comprehensive Economic Partnership Agreement: Need for a Strategy* (Rsch. & Info. Sys. for Developing Countries, Discussion Paper No. 209, 2017), www.ris.org.in/regional-comprehensive-economic-partnership-agreement-need-strategy-0.

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for technology transferees to employ the relevant technologies or that impose oppressive conditions otherwise. In addition, assuming that locally based businesses emerge to compete with more established foreign-owned enterprises, their evolution into effective competitors may be hampered by anticompetitive practices of dominant actors.

In recent years, competition authorities in LMICs have begun to assert themselves more vigorously and are actively prosecuting cases involving anticompetitive behaviors, including those concerning licensing agreements.[34] One potential risk that LMICs face is the trend toward incorporating competition chapters in TIAs that establish rules for conducting competition investigations. Most of these chapters are directed toward procedural protections, though some involve substantive rules.

While, in principle, the assurance of fair process in governmental investigations, including competition law investigations, is important, the historical assertion of TIA rules by HICs has a blemished record. Seemingly benign procedural rules regarding the conduct of competition investigations may provide the basis for threats of trade sanctions that, in turn, may have a chilling effect on the willingness of competition authorities to pursue such actions. LMICs should very cautiously approach the negotiation of competition chapters in TIAs. Competition authorities worldwide may enter into cooperative arrangements for conducting investigations, sharing information, and so forth without codifying these rules in TIAs. Though it is important to assure fairness in investigation processes, this can be accomplished under national law in LMICs without embedding the possibility that the investigation targets will have recourse to threats from their home governments to obstruct those investigations.

12.3.3.3 Investor–State Dispute Settlement

Until recently, there was a distinct trend in TIAs to incorporate an investor–state dispute settlement (ISDS) mechanism for disputes between nationals of the parties and the host country of investment.[35] Typically, recourse might be had by the private investor to third-party arbitration under the auspices of the International Centre for the Settlement of Investment Disputes (ICSID) and/or pursuant to United Nations Commission on International Trade Law (UNCITRAL) rules. However, ISDS has fallen out of favor for several reasons. First, defining limitations on the types of disputes that could be initiated proved challenging. Private investors

[34] *See generally* Frederick M. Abbott, *Let International Competition Negotiations Sleep a While Longer: Focus on Tools and Capacity*, 49 Int'l Rev. Intell. Prop. & Compar. L. 259 (2018).

[35] Private investors tend to prefer ISDS because they control the process from the standpoint of their own interests and do not need to rely on their government to pursue (i.e., espouse) and resolve a claim. Private investors are concerned that their interest may be compromised by their own government for political or other reasons that are outside the private investor's immediate economic interest.

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brought claims concerning alleged regulatory or judicial takings that went well beyond traditional concepts of nationalization or expropriation. These included claims regarding government regulation of tobacco advertisement and ordinary judicial patent invalidation processes.[36] Second, the establishment of ISDS implies a lack of sovereign capacity to fairly administer judicial proceedings within a host state. More recent TIAs have made efforts to limit the scope of the claims that may be brought and/or the characteristics of the arbitral tribunal that will decide ISDS disputes.[37] The United States–Mexico–Canada Agreement (USMCA) nearly eliminates ISDS. Several countries have announced their intention to move away from including ISDS provisions in their TIAs.[38] Innovation in the area of ISDS is taking place to limit efforts to redress abuse to the traditional concepts of expropriation and nationalization.

From the standpoint of LMICs, ISDS presents special difficulties. Such proceedings are very costly to defend and are likely to absorb significant government legal and financial resources that could be better deployed elsewhere.[39] Because claims will arise under customary international law, there is no need to specially incorporate a state-to-state investment dispute settlement mechanism in a TIA. It is within the customary international legal practice for a state that obtains compensation on behalf of a private investor to return that compensation to the investor.[40]

12.3.3.4 Tread Cautiously with TIAs

LMICs need to be on guard in the negotiation of TIAs to avoid the surrender of important policy options with respect to technology transfer and economic development. There is no good reason from an LMIC perspective to accept a provision precluding governmental measures requiring joint venturing and/or technology

[36] Regarding tobacco packaging regulation, see Philip Morris Asia Ltd. v. The Commonwealth of Austl., PCA Case No. 2012-12, Award on Jurisdiction and Admissibility (Dec. 17, 2015); Philip Morris Brands Sàrl v. Oriental Republic of Uru., ICSID Case No. ARB/10/7, Award (July 8, 2016). Regarding patent invalidation proceedings, see Eli Lilly v. Government of Can., ICSID Case No. UNCT/14/2, Final Award (Mar. 16, 2017).

[37] See, for example, the Comprehensive and Economic Trade Agreement (CETA) between Canada and the European Union, which establishes a standing Arbitral Tribunal and an associated Appellate Tribunal. Comprehensive Economic and Trade Agreement between Canada and the European Union and Its Member States, Can.-EU, ch. 8, § F, Oct. 30, 2016.

[38] *See* UNCTAD, *Reforming Investment Dispute Settlement: A Stock-Taking* 1 (UNCTAD, IIA Issues Note, 2019), https://unctad.org/en/PublicationsLibrary/diaepcbinf2019d3_en.pdf.

[39] Incorporation of a state-to-state espousal mechanism is recognized as an alternative. *Id.* Traditionally, when a foreign private investor (i.e., an alien) considered that a host state had undertaken a wrongful act, such as expropriating an investment without paying adequate compensation, the private investor sought "espousal" of its claim by its home state against the host state alleged to have acted wrongfully. The claim became the subject of state-to-state dispute settlement.

[40] In principle, the private investor does as well under a state-to-state dispute settlement procedure as through ISDS.

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transfer obligations in the context of FDI. Nor is there a good reason to include a competition chapter in a TIA that can be used as the basis for HIC threats to withdraw trade concessions as a reaction to competition enforcement actions. Whether LMICs have the bargaining power to avoid these types of obligations is a different question. It is worth bearing in mind that ISDS obligations seemed to be an inevitability only a few years ago, and public perceptions about ISDS obligations shifted.

12.4 OPTIONS FOR LMICS

12.4.1 *Revitalizing Multilateralism?*

The idea that LMICs will climb the technology curve through some voluntary technology transfer programs adopted by HICs does not appear to be a particularly viable development solution. The multilateral system is largely broken down; even when it was "working," there was very little in the nature of HIC government support for technology transfer. This is at least substantially explainable by the fact that technology is predominantly owned and controlled by private enterprises. Even if the will was present, HIC governments would face substantial obstacles in mandating that businesses make their technology available through some type of institutional program.

With the world economy shifting to a "beggar thy neighbor" approach in which the major technology powers seek to undermine each other's progress, LMICs need to fend for themselves. We may be reverting to a late nineteenth-century model, where preferential alliances replace the mid-twentieth-century most-favored-nation model. In this devolved scenario, LMICs may find themselves with some technology acquisition bargaining power if they can successfully trade access to their markets for better terms of trade. It is hard to have confidence in such a model, given the disparities in economic strength. But it may be where we are headed.

12.4.2 *Leapfrog Technologies*

As noted earlier, there may be some subject-matter areas where the barriers to entry for advanced technology industries are lower than others. Some of these are areas that countries such as India have exploited. The Internet has made available vast libraries of technical know-how at negligible cost.[41] When there are gaps in knowledge and skills, there are consultants to help LMICs fill those gaps and train local

[41] Just as the average homeowner may today choose to repair his or her own washing machine by watching a YouTube video on disassembly, identification of faulty parts, and reassembly, along with purchasing the necessary parts from eBay or Alibaba, so may technologists in LMICs use access to the Internet for know-how regarding matters such as planning and executing infrastructure development. See, for example, Jose Luis Blanco, Andrew Mullin, Kaustubh Pandya & Mukund Sridhar, *The New Age of Engineering and Construction Technology*, McKinsey & Co. (July 2017), www.mckinsey.com/industries/capital-projects-and-infrastructure/our-insights/the-new-age-of-engineering-and-construction-technology.

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individuals.[42] Information, including patent databases, is far more readily available worldwide than at any time in human history.

It is not only the possibility for creating new, locally developed technical solutions that may be enhanced through bypassing steps in the technology chain but also for deploying infrastructure that previously required large-scale investments of capital but which now can be accomplished with much more modest investment. The build-out of telecommunications infrastructure relying on satellite relays in contrast to wires and cables is one illustration.

Given the expansion of available information, building capacity for technology absorption may be the priority task for most developing countries. The benefits that can be obtained by piggybacking on externally created innovation will depend on the level of expertise within the recipient country. This depends on education – which historically required the physical presence of trained educators and hard-copy instructional materials. Access to online educational resources that were previously the province of a few select educational institutions mainly located in HICs represents another change that opens up new possibilities for LMICs.[43]

Developments in smartphone technology and associated financial payment systems have made it possible for countries to upgrade their transaction processing

[42] The extent of the global transformation in the availability of technical resources is difficult to overstate. As recently as the conclusion of the GATT Uruguay Round, the Internet was an emerging technology, and the WTO TRIPS Agreement barely accounted for the digitization of information. Access to patent data typically involved subscriptions to hard-copy patent office journals. Particularly for LMICs, access to scientific publications was a costly and limited means for keeping abreast of developments. Demands for assistance with technology transfer took account of the barriers that needed to be overcome to move scientific and technical information from Point A to Point B. Today databases at the major patent offices (including through WIPO) are largely open to anyone with an Internet connection. Except for constraints imposed by intellectual property laws, including patents and trade secrets, most barriers are gone. This is not to suggest that advancing technologically is easy, but that access to technology resources is a much different matter than the 1970s debates on a New International Economic Order.

Self-evidently, the open Internet is proving to represent both very positive and very negative attributes. Access to technology is counterbalanced by cybersecurity breaches and misappropriation of valuable commercial and personal information. As governments grapple with the downsides of the open Internet, it is not clear that today's access to technology will persist indefinitely. But the long run defies prediction.

[43] See, for example, *UNESCO Launch for Massive Open Online Courses Guide for Developing Countries*, UNESCO (June 24, 2016), www.unesco.org/new/en/media-services/single-view/news/unesco_launch_for_massive_open_online_courses_guide_for_deve/; Coursera (www.coursera.org/); edX (www.edx.org/); World Bank, Open Learning Campus, olc.worldbank.org/. Using these educational resources entails some expenses, such as purchasing computers, providing Internet access (e.g., through satellite dish), and engaging supervisory personnel to assist students. But, with a modest expenditure of resources, an LMIC government can put together schools from early learning through advanced degrees, notwithstanding a limited number of locally trained specialist teachers. The obstacles to distance learning are not to be underestimated. But there is a good deal of charitable or foundation support for this endeavor, and companies are willing to contribute to these efforts.

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in ways that enable low-income individuals to transact business without the build-out of expensive technological infrastructure.[44] The major beneficiaries of mobile payment system innovation may be the micro-scale operators – proprietors of street stalls and so forth. In addition, the evolution of payment systems is dramatically lowering the costs of repatriating foreign-earned income for expatriate workers, all to the potential benefit of LMICs. Mobile Internet technology has facilitated possibilities for efficient communication, planning, and execution in business.

Small-scale solar energy generation stations and other sustainable energy generation technologies have created opportunities for more remote areas to electrify without large infrastructure expenditure.[45] This is perhaps a more challenging area than education or payment systems in the sense that sustainable energy systems require building physical energy storage capacity for continuous use.[46] Similarly, much work is being done to reduce the costs of water purification systems, including developing small-scale water purification units. This type of technology is extremely important to many LMIC environments.

The foregoing references are just a few of the areas where recent advances in technology are creating new possibilities for LMICs.[47] It is not simply that it may be cheaper and easier to improve quality of life, such as through improved telecommunications and electronic payments, but that as technical solutions increase connectivity to a larger innovative community, local innovators are likely to adapt and advance that technology. This is not intended to suggest an over-optimistic portrayal of current conditions or the future, but some building blocks are present for advancing an economy by leapfrogging stages of technological development.

12.4.3 *Attracting Capital Investment*

The scarce resource for LMICs is the investment capital necessary to implement concepts. This perhaps states an obvious, if not a circular, proposition. That is,

[44] Aaron Klein, *Is China's New Payment System the Future?*, Brookings Inst. (June 2019), www.brookings.edu/wp-content/uploads/2019/05/ES_20190617_Klein_ChinaPayments.pdf.

[45] See, for example, *Small-Scale Renewable Energy in Developing Countries*, Energy Cent. (Feb. 24, 2012), www.energycentral.com/c/ec/small-scale-renewable-energy-developing-countries; Int'l Energy Agency, Renewable Energy Services for Developing Countries: In Support of the Millennium Development Goals: Recommended Practice & Key Lessons (2008); *A 750 Ultra-Mega Solar Plant Will Help Power Delhi's Metro Rail System in India*, Solar (World Bank) (Nov. 29, 2017), www.worldbank.org/en/results/2017/11/29/solar.

[46] Nonetheless, even if only daytime solar energy generation is possible for areas previously without access to electricity, this is a major step forward.

[47] *See also* Keun Lee, The Art of Economic Catch-Up: Barriers, Detours and Leapfrogging in Innovation Systems (2019).

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LMIC economies would do better with more money.[48] From a global perspective, ample capital is available for investment, and that investment is seeking returns.[49] The question for LMICs is how to "package" their national economies to attract that investment capital.[50]

12.4.3.1 Sound Governance

One approach to attracting investment involves establishing a reputation for "sound governance," which refers to a sound legal system[51] and the absence of corruption in regulatory institutions.[52] For the investor, the enforceability of contractual arrangements and consistency in implementing regulatory norms is important to executing

[48] Though it is not clear that objective evidence supports the criticism, there have been concerns regarding whether Chinese investments in Africa, including associated loans, are overburdening the recipients with debt. See, for example, *"No Strings Attached" to Africa Investment, Says China's Xi*, France 24 (Sept. 3, 2018), www.france24.com/en/20180903-africa-china-summit-beijing-investment-infrastructure-debt-xi-jinping; Joseph Goldstein, *Kenyans Say Chinese Investment Brings Racism and Discrimination*, N.Y. Times (Oct. 15, 2018), www.nytimes.com/2018/10/15/world/africa/kenya-china-racism.html. There have also been concerns regarding the construction of communities of Chinese nationals within certain East Asian countries, and such construction has begun to face pushback. See, for example, Andy Mukherjee, *No Chinese Belt, Road or Bedrooms for Mahathir's Malaysia: The Prime Minister Is Throwing Up Hurdles to China's Influence in the Country*, Bloomberg (Aug. 28, 2018), www.bloomberg.com/opinion/articles/2018-08-28/malaysia-shuts-out-chinese-infrastructure-property-projects.

[49] See, for example, Ewa Skormas & Elisabeth Bautista Suarez, *2022 Global Private Equity Outlook*, *S&P Global Market Intelligence*, S&P Glob. Mkt. Intel. (Apr. 20, 2022), www.spglobal.com/marketintelligence/en/news-insights/research/2022-global-private-equity-outlook; Frederick M. Abbott, Ryan B. Abbott, Joseph Fortunak, Padmashree Gehl Sampath & David Walwyn, Opportunities, Constraints and Critical Supports for Achieving Sustainable Local Pharmaceutical Manufacturing in Africa: With a Focus on the Role of Finance 33–48 (2021), https://nova-worldwide.com/OSF-PHP_report.

[50] There is an inherent relationship between "risk" and "reward." Some investors may be willing to accept a high level of risk by investing in an LMIC environment, where there is insecurity and/or limits on the capacity to repatriate investments. Still, on the whole, such investments appeal to a limited segment of potential investors.

[51] One of the hallmarks of a well-functioning market economy is the presence of a robust legal framework in which private and government contracts are enforceable. Payments should be made when goods and services are delivered unless there are legally justified grounds for nonpayment. Traditional mechanisms can be used as substitutes for legally enforceable contracts, such as letters of credit assuring payment upon delivery of goods and appropriate documentation. Increasingly, blockchain solutions will be offered as substitutes for contract enforcement. With that said, a well-functioning legal system is a relatively efficient mechanism for assuring the secure flow of goods and services.

[52] Government corruption is a heavy tax on businesses and the consumer. It is a serious obstacle to economic development in LMICs, and government corruption has adversely impacted areas such as public health in significant ways. There is no obvious "easy solution" to addressing corruption. Particularly in low-income environments, the temptations presented by financial mismanagement are considerable. Ultimately it is up to the public to demand accountability from government officials. In countries where the government is not responsive to the public, it is difficult for the public to achieve this objective.

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business plans. The absence of sound governance is a risk factor that necessarily increases the cost of capital and creates a drag on the economy. Achieving sound governance is a long-term project for any country, especially for LMICs.[53]

12.4.3.2 Autonomous Investor Agreements

In addition to trying to assure the neutrality of courts and regulators, an LMIC and its private-sector enterprises may also support and negotiate contractual arrangements that entail defining with some specificity the terms of investment, including the potential for third-party arbitration. Given that LMICs have arguably faced difficulties with some existing international arbitration institutions, carefully defined self-standing agreements might be an alternative.[54]

The subject of international commercial arbitration is dealt with in detailed literature in which the potential issues have been laid out.[55] Alternative dispute settlement arrangements may be important to establish a secure environment for investors in LMICs.[56] At the same time, it is important that LMICs can negotiate third-party arbitration mechanisms that do not tilt against their interests.

In recent years, international donors have stressed financial management oversight as part of their activities, and this may be of some help. Investors of private capital in local projects can, of course, attempt to put in place strict financial controls. It is easier for private companies to demand accountability from their employees and joint venture partners because future contributions of capital and other investments can be withheld in the event of a breach of trust. However, a reputation for dishonest private dealings within a particular country will also have the effect of raising risk and limiting investment.

[53] This is not to suggest that HIC governments do not face problems of corruption and misuse of political power.

[54] An issue from the standpoint of LMIC private business operators is that subjecting disputes to arbitration by one of the prominent dispute settlement providers, such as the International Chamber of Commerce, will result in the appointment of an arbitrator or arbitrators more likely to favor the interests of a foreign investor or contract party and may entail a high level of expense that makes participation problematic.

[55] On international commercial arbitration generally, see Gary B. Born, International Commercial Arbitration (2d ed. 2014). To be more specific, private parties based in different national legal jurisdictions entering into commercial arrangements are ordinarily subject to litigation in the place where a contract is carried out (i.e., the place of performance). However, there are alternative bases that might subject the parties to jurisdiction in other places (e.g., the place of contract negotiation and execution, or the place where an injury occurs). Absent an alternative arrangement, the parties are typically subject to the jurisdiction of the local courts where there is a sufficient jurisdictional nexus. The concern of prospective private-party investors in an LMIC is that business disputes involving contracts, including joint venture arrangements, will be subject to the jurisdiction of the local courts. For one or more reasons, the private investor believes that the local courts will not treat its claims (or defenses) fairly. Putting aside the concerns about corruption, there may be potential delays due to insufficient legal infrastructure and/or multiple layers of appeal that make dispute settlement by the local courts appear problematic.

[56] A few elements that might be considered in such agreements include (1) selection of an arbitrator or arbitrators during the contracting phase and (2) agreement that the award of the

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12.4.3.3 Support for Private-Sector Initiative

Because many small- and medium-sized enterprises (SMEs) in LMICs do not have the experience and expertise to negotiate sophisticated investment and licensing agreements with foreign investors, it is important that governments try to make available consulting resources for assisting SMEs with their transactions.

12.4.4 *Balancing Protective Measures*

A key question for any developing or emerging market government is how much of the national economy to "protect" through tariff, trade, or tax measures to provide local development space. Consumers bear the cost of protectionism, which can and should be tolerated at a certain level, but blanket protectionism simply makes the functioning economy too expensive.

As the United States has moved away from a low-tariff approach to international trade relations toward strategic targeting of its trading partners, the idea that growth can be promoted by granting preferences to local companies is likely to gain traction. The net effect will be a reduction in global output, but this does not mean that the strategic use of tariffs will not benefit a particular country in individual cases. For an LMIC, it may be necessary to provide at least transitory tariff and/or quota protection for an "infant industry." But it is important to limit the use of tariffs and quotas because they otherwise have the effect of raising prices for consumers and may harm general welfare.[57]

12.5 PERPETUATING INEQUALITY?

LMICs are confronted with a new world order in which the major economic powers that promoted multilateralism have moved toward nationalism, localization of

arbitrator is automatically enforceable and, if necessary, through a compulsory process in the appropriate jurisdictions (e.g., where the parties have assets).

The selection of an arbitrator in advance of the dispute is not a foolproof mechanism in the sense that events, such as those affecting the health of the arbitrator, may intervene, but such contingencies may be addressed. Perhaps ideally, the contracting parties may, in advance, identify a single person with whom both parties would be willing to repose confidence in resolving a prospective dispute. This would likely reduce the costs and complexity of an eventual arbitration.

[57] Intellectual property is a two-edged sword in the development context. On the one hand, it provides the mechanism for private parties to securitize technology and engage in out-licensing and other technology transfer components, such as training. It is also important to allow local businesses to protect investments in branding, expression, and innovation. On the other hand, it provides a mechanism by which foreign investors and intellectual property owners protect monopolies within the local market, restricting access to local entrepreneurs and solidifying their potential market dominance. Patents and other forms of exclusivity covering new technologies may inhibit LMIC adoption of specific solutions or approaches. Still, much use can be made of technologies that are a generation back, and licensing may be a reasonable approach in other cases.

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production, and de-legalization of dispute settlement in favor of balance of power diplomacy. A counterpart to this trend is declining interest in developmental assistance, whether actual or rhetorical.

There is a military overlay, so this new world may also be dangerous. It remains to be determined how countries that are not part of the new great power dynamic will acclimate to this new world. During the Cold War that lasted from 1946 to 1989, a bit more than four decades, countries of the so-called Third World sought to play the First and Second World countries off against each other, seeking economic and military alliances with one side or another. It may be that we are moving into a new technological world order in which the less powerful countries must choose to ally themselves in a technological sense with one or another of the dominant technology powers. This should not be taken as a proposal but rather an identification of one potential new reality.

Regrettably, as part of the "exercise of power" equation, there is a trend among the capital-exporting countries to negotiate bilateral and plurilateral agreements with LMICs that preclude regulatory measures requiring a transfer of technology as a condition of FDI, including within joint venture arrangements. Because individual private investors within LMICs may lack substantial bargaining power, this diminishes the capacity of LMICs to secure favorable terms for the transfer of technology. There is no obvious solution to this problem other than seeking to avoid commitments of this nature.

At the same time, based largely on the evolution of digital technologies, LMICs have the opportunity to leapfrog in the current technological environment. There remains the requirement of securing adequate capital investment, including through the private sector. Attracting that capital entails creating conditions in which investors are reasonably secure.

Sound governance and transparency may be important elements. National self-interest should move a country in that direction, regardless of its effect on the perception of prospective investors. Developing mechanisms for fair third-party arbitration of private commercial disputes may help foster an attractive investment climate.

LMICs have seen their relative economic circumstances deteriorate vis-à-vis the HICs due to the COVID-19 pandemic.[58] All economies were hit hard, but the HICs had more capacity to absorb the shock and are recovering reasonably well. LMICs confront terms of trade that favor the HICs, including provisions in TIAs that preclude requirements for the transfer of technology, as well as the ascendance more broadly of managed trade policy among economically powerful states. These factors portend the perpetuation of the marked disparity in the distribution of global income and wealth. There are no "magic bullet" solutions on the horizon.

[58] See, for example, Venkat Gopalakrishnan, Divyanshi Wadhwa, Sara Haddad & Paul Blake, *2021 Year in Review in 11 Charts: The Inequality Pandemic*, World Bank (Dec. 21, 2021), www.worldbank.org/en/news/feature/2021/12/20/year-2021-in-review-the-inequality-pandemic.

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