

**GETTING INVOLVED IN THE TECHNOLOGY SECTOR: THE
ROLE OF SOVEREIGN WEALTH FUNDS AND THEIR
CHALLENGES TO INTERNATIONAL ECONOMIC
GOVERNANCE**

MENGJING KONG*

ABSTRACT

While state-owned enterprises (SOEs) have been a controversial issue of the international trading system, sovereign wealth funds (SWFs) pose new challenges to existing international economic governance. As active players in the global investment market, SWFs will attract the scrutiny of the General Agreement on Trade in Services and international investment law. By becoming involved in the technology sector in various ways, SWFs may play a role in facilitating technology transfer, which may lead to the examination of the Trade-Related Aspects of Intellectual Property Rights Agreement. This Article offers a thorough examination of the way(s) that international economic governance deals with the status of state enterprises in the investment market and their technology investment and transfer activities. It reveals a series of challenges SWFs may face when they become involved with the technology sector. This Article argues that the World Trade Organization

* J.S.D. Candidate, New York University School of Law. I am grateful to my supervisor Robert Howse for his great help and insightful comments on this article. I thank Daniela Cala, Andrew Lang, and Tomer Broude for their valuable feedback and comments on the earlier drafts of this article. I benefit from the 15th Cornell Law School Inter-University Graduate Conference, Law and Economics Panel and 10th Conference of the Postgraduate and Early Professionals Academics Network of the Society of International Economic Law. I wish thank Winston Wenyan Ma and Efraim Chalamish for their valuable insights and teaching in sovereign finance. Thanks also to Lillian Stevens, Chase Hanson and Alexander Holmgren of University of Pennsylvania Journal of International Law for careful, helpful and conscientious editing.

(WTO) serves as a more appropriate forum to regulate SWFs than the International Center for Settlement of Investment Disputes (ICSID). Additionally, in order to properly address state capitalism, it is important to view state capitalism more broadly and objectively, and separately from U.S.-China geo-economic competition.

TABLE OF CONTENTS

Introduction.....	316
I. The Background of SWFs and Their Involvement In the Technology Sector.....	321
<i>a. SWFs' Origin and International Definition.....</i>	321
<i>b. SWFs' Involvement in The Technology Sector.....</i>	322
II. SWFs and Their Activities in The Technology Sector under International Trade Law	324
<i>a. The Status of State Enterprise</i>	324
<i>b. Technology Investment.....</i>	326
<i>i. The Definition of Technology.....</i>	326
<i>ii. The Definition of Investment</i>	330
<i>iii. The Temporal Dimension of Investment Protection </i>	330
<i>c. Technology Transfer</i>	330
<i>i. The Application of GATS.....</i>	331
<i>ii. The Application of TRIPS Agreement</i>	331
III. SWFs and Their Activities in the Technology Sector under International Investment Law.....	339
<i>a. The Status of State Enterprises.....</i>	339
<i>i. When a State Enterprise Acts as a Claimant</i>	340
<i>ii. When a State Enterprise Acts as a Respondent</i>	342
<i>b. Technology Investment.....</i>	344
<i>i. The Definition of Investment</i>	344
<i>ii. The Temporal Dimension of Investment Protection </i>	346
<i>c. Technology Transfer</i>	346
IV. The Challenges of SWFs and Their Activities in The Technology Sector to International Economic Governance.....	347
<i>a. Are SWFs and Their Technology Investments Covered Investors and Investments?.....</i>	347
<i>b. SWFs' Anti-Competitive Behaviors in Technology Investment.....</i>	348
<i>c. SWFs' Technology Transfer Activities.....</i>	350
V. Rethinking Institutional Institutions for Regulating SWFs: ICSID or WTO?	351
<i>a. Why WTO?</i>	351
<i>b. Improvements for the WTO.....</i>	353
VI. Conclusion.....	354

INTRODUCTION

Not only has state capitalism become pervasive,¹ but it has also evolved into a variety of new forms. While state-owned enterprises (SOEs) maintain their considerable power and influence in the global market, sovereign wealth funds (SWFs) have grown in both number and size, becoming a new aspect of state capitalism. As Preqin reported, the number of SWFs has increased from fifty-two to ninety-two between 2005 and 2017, and their assets under management have reached \$7.5 trillion.² In 2021, the size of the SWF industry exceeded the \$10 trillion mark for the first time in history.³ Even though both forms of state enterprises are state-owned or controlled, SWFs have features that distinguish them from their counterparts. These features pose new challenges to existing international economic governance and raise the question of how state capitalism should be addressed.

SOEs are enterprises fully owned and controlled by the government. The increased prominence of SOEs and their extension from home countries into foreign markets has raised controversial issues for the international trading system.⁴ To be specific, SOEs tend to receive various advantages, including, for example, financial

¹ See JOSHUA KURLANTZICK, *STATE CAPITALISM: HOW THE RETURN OF STATISM IS TRANSFORMING THE WORLD* 74 (2016) (describing the weaknesses in free-market models of capitalism as a major reason why state capitalism has caught on in developing countries); Ian Bremmer, *State Capitalism Comes of Age: The End of the Free Market?*, 88 FOREIGN AFFS. 40, 40 (2009) (noting the developing countries' strategic rejection of the free-market doctrine and the role state owned enterprises plays in the rise of state capitalism); see also Ilias Alami & Adam D. Dixon, *State Capitalism(s) Redux? Theories, Tensions, Controversies*, 24 COMPETITION CHANGE 70, 70-71 (2020) ("Recent transformations in the global economy have sparked renewed interest in the role of the state in capital accumulation.").

² PREQIN, PREQIN SPECIAL REPORT: SOVEREIGN WEALTH FUNDS 5 (2018).

³ DIEGO LÓPEZ & DANIEL BRETT, 2022 ANNUAL REPORT: STATE-OWNED INVESTORS 3.0, at 5 (2022).

⁴ See, e.g., Leonardo Borlini, *When the Leviathan Goes to the Market: A Critical Evaluation of the Rules Governing State-Owned Enterprises in Trade Agreements*, 33 LEIDEN J. INT'L L. 313, 314 (2020) ("SOEs and SWFs take up a significant proportion of international trade and foreign market investment."); see also Minwoo Kim, *Regulating the Visible Hands: Development of Rules on State-Owned Enterprises in Trade Agreements*, 58 HARV. INT'L L.J. 225, 230 (2017) (noting that privately owned competitor corporations face an uneven playing field in foreign markets because SOEs receive benefits and preferential treatment).

advantages in the form of debt and equity financing, and monopolies and exclusive rights seen in production permits or quotas.⁵ These advantages have given SOEs considerable leverage when competing with private market actors. Therefore, it is necessary for international trade governance to ensure a level playing field for SOEs and other private enterprises.⁶ Within the legal framework of the World Trade Organization (WTO), the General Agreement on Trade and Tariffs (GATT) Article XVII on State Trading Enterprise⁷ and the Agreement on Subsidies and Countervailing Measures (SCM Agreement)⁸ have been invoked when dealing with SOEs trading in goods. However, neither agreement is able to address SOEs' issues adequately. For example, the interpretation of GATT Article XVII does not carve out a competition-type obligation for state trading enterprises.⁹ When it comes to the SCM Agreement, what constitutes a "public body" has been a controversial issue.¹⁰ Moreover, the efforts made by other free

⁵ See, e.g., Robert Howse, *Making the WTO (Not So) Great Again: The Case Against Responding to the Trump Trade Agenda Through Reform of WTO Rules on Subsidies and State Enterprises*, 23 J. INT'L ECON. L. 371, 384-85 (2020) (noting Article XVII of GATT does not define state enterprise or restrict the concept in anyway, which leads to disciplines where the state grants to a private entity some privilege or advantage, either de jure or de facto).

⁶ See, e.g., OECD, *COMPETITIVE NEUTRALITY: MAINTAINING A LEVEL PLAYING FIELD BETWEEN PUBLIC AND PRIVATE BUSINESS 5* (2012) (emphasizing OECD member states' commitment to a level playing field).

⁷ General Agreement on Tariffs and Trade 1994, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1A, 1867 U.N.T.S. 187 [hereinafter GATT 1994].

⁸ Agreement on Subsidies and Countervailing Measures, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1A, 1869 U.N.T.S. 14.

⁹ Appellate Body Report, *Canada – Measures Relating to Exports of Wheat and Treatment of Imported Grain*, ¶ 145, WTO Doc. WT/DS276/AB/R (adopted Aug. 30, 2004) (refusing to interpret article XVII as imposing comprehensive competition-law-type obligations on state owned enterprises).

¹⁰ See, e.g., Gregory Messenger, *The Public-Private Distinction at the World Trade Organization: Fundamental Challenges to Determining the Meaning of "Public Body"*, 15 INT'L J. CONST. L. 60, 61-62 (2017) (discussing the ongoing debates over the definition of what constitutes a public body for the purposes of the SCM Agreement); see also Ru Ding, *The "Public Body" Issue in the WTO: Proposing A Comparative Institutional Approach to International Issues on State-Owned Enterprises (SOEs)* ii (2018) (S.J.D. thesis, Georgetown University Law Center) (identifying concerns on whether SOE activities are in essence governmental activities as a recurring theme in legal disputes).

trade agreements to discipline SOEs fail to have a significant influence on SOE behavior.¹¹

SWFs are a diverse group of sovereign investors. Due to their diversity and dynamics in terms of functions and activities, there is no agreed definition on SWFs. However, there is consensus regarding several key, common characteristics: SWFs are sovereign entities that have (1) high foreign exposure, (2) no explicit liabilities, (3) high-risk tolerance, and (4) a long-term investment horizon.¹²

The features distinguishing SWFs from SOEs have led to new legal issues in regard to current international economic governance. First, SWFs have become active investors in the global market. For example, Norway's Government Pension Fund Global (NGPF-G) is the largest SWF in the world. On average, the fund holds 1.5% of all the world's listed companies.¹³ In other words, while SOEs and their activities are mainly subject to GATT with regard to their trade in goods, SWFs may raise more legal issues in terms of the General Agreement on Trade in Services (GATS)¹⁴ and international investment law.

Second, in many cases, a SWF maintains a closer relationship with the financial system of its home countries, especially the ministry of finance (or domestic equivalent) or other domestic financial institutions. For example, the China Investment Corporation was created by the Chinese Ministry of Finance through issuing treasury bonds and using raised funds, and is subject to financial supervision by the Ministry.¹⁵ For Norway's NGPF-G, while the Norwegian Ministry of Finance has overall responsibility for the fund, Norges Bank manages the fund.¹⁶ Against this background, a SWF may acquire competitive

¹¹ See, e.g., Weihua Zhou, *Rethinking the (CP)TPP as a Model for Regulation of Chinese State-Owned Enterprises*, 24 J. INT'L ECON. L. 572, 574 (2021).

¹² Javier Capapé & Tomás Guerrero, *More Layers than an Onion: Looking for a Definition of Sovereign Wealth Funds 6* (June 1, 2013) (unpublished manuscript) (on file with the University of Pennsylvania Journal of International Law).

¹³ *About the Fund*, NORGES BANK INV. MGMT., <https://www.nbim.no/en/the-fund/about-the-fund/> [https://perma.cc/89XJ-RWZ5].

¹⁴ General Agreement on Trade in Services, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1B, 1869 U.N.T.S. 183 [hereinafter GATS].

¹⁵ *China Investment Corporation*, INT'L F. SOVEREIGN WEALTH FUNDS, <https://www.ifswf.org/member-profiles/china-investment-corporation> [https://perma.cc/7CLG-L2E8].

¹⁶ *Organisation*, NORGES BANK INV. MGMT., <https://www.nbim.no/en/organisation/> [https://perma.cc/J883-GBXS].

advantages or even monopoly power in the financial services of its home country. This issue could attract the scrutiny of GATS provisions relating to financial services.

Third, in response to SWFs and their investments, developed countries have established investment-screening mechanisms targeting SWFs and their investments. For example, the Committee on Foreign Investment in the United States has extended its jurisdiction over SWFs, particularly when they are involved in technology-related investment.¹⁷ This is because despite competitive advantages that SWFs may have, SWFs have raised concerns about the challenges they pose to national security.

Fourth, when scrutinizing the behaviors of SOEs, current international economic governance tends to use the commercial activities of private business actors as a benchmark.¹⁸ However, the long-term view taken by SWFs, such as sustainability linked investments, has allowed them to actively invest in the areas where private investors, driven by short-termism, rarely appear.¹⁹ This characteristic further questions the appropriateness of using traditional benchmarks to examine SWFs' activities.

Fifth, unlike SOEs which are predominant in traditional industries such as oil, mining, electricity, and shipping transport, many SWFs have been actively involved in the technology sector. For example, in 2020, one-fifth of the investments made by SWFs (including public pension funds) were in the areas of technology, media and telecommunications.²⁰ Hence, certain SWF activities, especially technology transfer, will be scrutinized under the Trade-

¹⁷ Grace Maral Burnett, *Analysis: CFIUS and Private Equity: What FIRRMA Means for Investment Funds*, BLOOMBERG L. (June 3, 2019, 2:11 PM), <https://news.bloomberglaw.com/bloomberg-law-analysis/analysis-cfius-and-private-equity-what-firrra-means-for-investment-funds> [<https://perma.cc/5787-G7M3>].

¹⁸ See, e.g., Robert Howse, *Official Business: International Trade Law and the Resurgence (Or Resilience) of the State as an Economic Actor*, 43 U. PA. J. INT'L L. 821, 827, 850-58 (2022).

¹⁹ See, e.g., Sarmad Khan, *Global Sovereign Wealth Funds Boost ESG Investments to \$22.7bn in 2021*, NAT'L NEWS (Jan. 14, 2022), <https://www.thenationalnews.com/business/markets/2022/01/15/global-sovereign-wealth-funds-boost-esg-investments-to-227bn-in-2021/> [<https://perma.cc/VJ6L-UHFH>].

²⁰ DIEGO LÓPEZ & DANIEL BRETT, 2021 ANNUAL REPORT: STATE-OWNED INVESTORS IN A POST-PANDEMIC AGE 12 (2021).

Related Aspects of Intellectual Property Rights Agreement (TRIPS Agreement).²¹

The purpose of this Article is to examine the new challenges that SWFs pose to current international economic governance. With a focus on the role of SWFs in the technology sector, this Article explores how existing international trade and investment law deals with SWFs' technology investment and technology transfer activities. I argue that several improvements need to be made to current international economic governance in order to properly and adequately address SWFs and their activities in the technology sector. Further, when it comes to an international institutional arrangement for regulating SWFs, the WTO, rather than the International Center for Settlement of Investment Disputes (ICSID), is a more appropriate forum, although there remains room for improvement.

This Article makes three main contributions. First, it offers a comprehensive analysis of the ways that both international trade and investment law regulate the status of state enterprises in the investment market and technology investment and transfer activities. Second, it identifies the challenges that SWFs may pose to existing international economic governance. Third, it investigates the weaknesses that the ICSID has in terms of regulating SWFs and explores how the WTO could be improved to serve as an appropriate institution for regulating SWFs.

This Article consists of six parts. Part I discusses the international definition of SWFs and examines different ways by which SWFs become involved in the technology sector. Parts II and III investigate the ways in which international trade and investment law regulates state enterprises and their technology investment and transfer activities in the investment market. Part IV examines the potential challenges that SWFs pose to current international economic governance. Part V argues that the WTO offers a more appropriate forum for regulating SWFs than the ICSID. Part VI concludes by suggesting a broader approach to viewing state capitalism separate from the U.S.-China geo-economic competition.

²¹ Agreement on Trade-Related Aspects of Intellectual Property Rights, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1C, 1869 U.N.T.S. 299 [hereinafter TRIPS Agreement].

I. THE BACKGROUND OF SWFs AND THEIR INVOLVEMENT IN THE TECHNOLOGY SECTOR

a. SWFs' Origin and International Definition

In the 1950s, the Kuwait Investment Board (which later became Kuwait Investment Authority) and the Kiribati Revenue Equalization Fund were established as the first SWFs.²² In the following decades, SWFs played a marginalized role in the global financial market. Only since the 2000s have they begun to increase in size and volume and attract public attention.

SWFs can be categorized into three groups according to their different purposes. The first group is associated with long-term savings funds for the country's future generations. They are often created by commodity-rich countries to promote economic diversification and development.²³ Two examples are Norway's NGPF-N and Saudi Arabia's Public Investment Fund, financed by oil and gas revenue, respectively. The second group deals with fiscal stabilization funds, which aim to ensure the stability of the country's economy and exchange rate in an external shock event.²⁴ The Economic and Social Stabilization Fund of Chile, founded in 2007, is a classic example, the main goal of which is to finance public debt and fiscal deficits.²⁵ The third group focuses on development funds as a means of boosting a country's productivity.²⁶ For example, the Irish Strategic Investment Fund and Russian Direct Investment Fund (RDIF) were established to invest in physical and digital infrastructure, diversify domestic economies, and build partnerships to attract foreign capital.²⁷ However, it should be recognized that as SWFs evolved and became involved in the global financial market as direct investors, their distinct purposes have become blurred. In general, they maintain a common goal: "to preserve capital and maximize the return on investments."²⁸

²² MARTIN A. WEISS, CONG. RSCH. SERV., RL34336, SOVEREIGN WEALTH FUNDS: BACKGROUND AND POLICY ISSUES FOR CONGRESS 4 (2009).

²³ WINSTON MA & PAUL DOWNS, THE HUNT FOR UNICORNS: HOW SOVEREIGN FUNDS ARE RESHAPING INVESTMENT IN THE DIGITAL ECONOMY 6 (1st ed. 2021).

²⁴ *Id.* at 11.

²⁵ *Id.*

²⁶ *Id.* at 14.

²⁷ *Id.*

²⁸ *Id.* at 2.

Due to the diversity and dynamics of SWFs in terms of their functions and activities, there is no international consensus on the definition of SWFs, although some international financial institutions such as the International Monetary Fund (IMF) have made efforts to conceptualize SWFs. Specifically, the IMF defines SWFs as “investment funds operated by governments to achieve various objectives, created by allocating funds intended for long-term investments.”²⁹

The Santiago Principles further developed this definition and described SWFs as:

Special purpose investments funds or arrangements, owned by the general government. Created by the general government for macroeconomic purposes, SWFs hold, manage, or administer assets to achieve financial objectives, and employ a set of investment strategies which include investing in foreign financial assets. The SWFs are commonly established out of balance of payments surpluses, official foreign currency operations, the proceeds of privatizations, fiscal surpluses, and/or receipts resulting from commodity exports.³⁰

b. SWFs' Involvement in The Technology Sector

SWFs have become involved in the technology sector in various ways. First, they have been an active technology investor in the foreign market. For example, during the COVID-19 pandemic, sovereign investors flocked to the biotech sector, with a value of \$13.4 billion healthcare investments in 2021.³¹

Second, in some cases, SWFs act as a technology investor with a focus on their domestic markets. For example, with a goal of transforming Abu Dhabi into a tech hub, UAE's Mubadala established Hub71, located in the financial district, offering

²⁹ FABIO BASSAN, *THE LAW OF SOVEREIGN WEALTH FUNDS* 26 (2011).

³⁰ INT'L WORKING GRP. OF SOVEREIGN WEALTH FUNDS, *SOVEREIGN WEALTH FUNDS: GENERALLY ACCEPTED PRINCIPLES AND PRACTICES "SANTIAGO PRINCIPLES"* 27 (2008).

³¹ LÓPEZ & BRETT, *supra* note 3, at 34 (“Direct investment accounted for 43% of this figure with 35% comprised of co-investments, 18% venture capital and the remainder allocated to healthcare-focused private equity funds and listed equities.”).

subsidized housing, office space, and health insurance packages to technology startups operating there.³² It also created two MENA technology investment vehicles: a \$150 million fund to invest in other funds that support Hub71 and a \$100 million direct fund targeting early-stage technology companies in order to address startups' financing needs.³³

Third, to ensure that its home country can enjoy new technological development, a SWF's technology investments may be combined with technology transfer. For example, Singapore's Temasek was one of the investors that helped German biotech firm BioNTech raise \$250 million in a private placement in 2020,³⁴ and invested in China's Clover Biopharmaceuticals, which is a developer of COVID-19 vaccines.³⁵ For SWFs, health-tech investments are a source of significant long-term yields.³⁶ More importantly, to serve their home countries, SWFs' health-tech investments help to prepare for any future public health crisis. As a shareholder, a SWF is able to not only access advanced technology, but also facilitate technology transfer by having greater opportunities to negotiate with the company's executives, persuade them to establish a research center or subsidiaries in the SWF's home country, or help its home country to negotiate more favorable commercial terms.

³² Abu Dhabi's Government Launches \$141 Million Tech Hub 'Hub 71' for Startups, Softbank and Microsoft Join as Founding Partners, MENABYTES (Mar. 24, 2019), <https://www.menabytes.com/hub71-abu-dhabi/> [https://perma.cc/R49Y-BU89].

³³ Zubair Naeem Paracha, Mubadala Launches \$150 Million Fund of Funds and \$100 Million Direct Fund, to Invest in Startups in MENA, MENABYTES (Oct. 21, 2019), <https://www.menabytes.com/mubadala-mena/> [https://perma.cc/N98J-36Y3].

³⁴ Leslie Shaffer, Singapore Temasek Invests in COVID Vaccine Testing Company, NIKKEI ASIA (June 30, 2020), <https://asia.nikkei.com/Spotlight/DealStreetAsia/Singapore-Temasek-invests-in-COVID-vaccine-testing-company> [https://perma.cc/82VW-6RUG].

³⁵ China's Clover Raises \$230 Mln, Plans Vaccines for COVID-19 Variants, REUTERS (Feb. 23, 2021), <https://www.reuters.com/business/healthcare-pharmaceuticals/chinas-clover-raises-230-mln-plans-vaccines-covid-19-variants-2021-02-23/> [https://perma.cc/VHC9-ENET].

³⁶ LÓPEZ & BRETT, *supra* note 3, at 37.

II. SWFS AND THEIR ACTIVITIES IN THE TECHNOLOGY SECTOR UNDER INTERNATIONAL TRADE LAW

a. The Status of State Enterprise

Within the WTO law, while GATT applies to trade in goods, GATS was created to govern trade in services,³⁷ including foreign direct investment. The GATS Annex on Financial Services defines and regulates the role of “public entity” as a kind of state enterprise.³⁸

The GATS applies to all service sectors, with two exceptions. One exception is “services supplied in the exercise of governmental authority . . . neither on a commercial basis, nor in competition with one or more service suppliers,” as stipulated in Article I(3)(b) and (c).³⁹ The other exception is the measures affecting air traffic rights and services directly related to the exercise of such rights, which are exempted from the Annex on Air Transport Services.⁴⁰ As one of the general obligations, GATS Article II on most-favored nations (MFN) requires member states to extend immediately and unconditionally to services or service suppliers of all other members “treatment no less favourable than that it accords to like services and service suppliers of any other country.”⁴¹ As specific commitments, GATS Article XVI on market access and XVII on national treatment constitute the main liberalizing tools endorsed in GATS.⁴² They take effect on the stipulation that member states make specific commitments based on one or more modes of supply. Also, under Article VI(1), member states shall ensure that “all measures of general application affecting trade in services are administered in a reasonable, objective and impartial manner.”⁴³

The GATS Annex on Financial Services applies to measures affecting the supply of financial services, including “all insurance and insurance-related services, and all banking and other financial

³⁷ GATS at 285.

³⁸ *Id.* at 308.

³⁹ *Id.* at 286.

⁴⁰ *Id.* at 307.

⁴¹ *Id.* at 286.

⁴² *Id.* at 297, 298; see, e.g., Panagiotis Delimatsis, *Don't Gamble with GATS – The Interaction Between Articles VI, XVI, XVII and XVIII GATS in the Light of the US-Gambling Case*, 40 J. WORLD TRADE 1059, 1062 (2006).

⁴³ GATS, at 289.

services.”⁴⁴ In specifying the financial services supplied in the exercise of governmental authority, the Annex excludes three kinds of financial services. They are (i) “activities conducted by a central bank or monetary authority or by any other public entity in pursuit of monetary or exchange rate policies;” (ii) “activities forming part of a statutory system of social security or public retirement plans;” and (iii) “other activities conducted by a public entity for the account or with the guarantee or using the financial resources of the Government.”⁴⁵ Importantly, activities under (i) may not be considered “services” within GATS, and also could not be scrutinized by GATS. However, the activities under (ii) and (iii) are services covered by GATS when permitted by financial service suppliers of its member state in competition with a public entity or a financial service supplier.⁴⁶

Article 5(c) of Annex on Financial Services defines “public entity” as “a government, a central bank or a monetary authority, of a Member, or an entity owned or controlled by a Member, that is principally engaged in carrying out governmental functions or activities for governmental purposes, not including an entity principally engaged in supplying financial services on commercial terms” or “a private entity, performing functions normally performed by a central bank or monetary authority, when exercising those functions.”⁴⁷

Based on this definition, state ownership or control has been an explicit criterion in defining the “public entity” under the GATS Annex on Financial Services. Also, in addition to “carrying out governmental functions,” conducting “activities for governmental purposes” seems to give a much broader scope to situations where an entity may be considered a “public entity.” Notably, the term “principally” puts some limits on the boundary in defining such entity. However, it remains unclear what elements shall be met in assessing whether a state-owned or controlled entity is “principally” carrying out government functions or activities for government purposes. Considering that many jurisdictions have progressively liberalized their domestic financial system, their once state-owned or -controlled financial suppliers have also undergone structural reforms. They tend to maintain multiple objectives including both

⁴⁴ *Id.* at 309.

⁴⁵ *Id.* at 308.

⁴⁶ *Id.*

⁴⁷ *Id.* at 310.

promoting major strategies of medium- and long-term development of national economy and acting like a private actor in capital market to pursue financial returns. It is difficult to compare these two kinds of activities and draw a conclusion about which is the “principal” activity of the financial service suppliers in question. For example, the China Development Bank (CDB) changed from being a policy bank under the direct leadership of the State Council of China to being a limited liability company.⁴⁸ It not only implements China’s economic strategies, but also engages actively in offering loans on commercial terms to overseas infrastructure projects undertaken by both Chinese SOEs and private entities. It is difficult to identify what CDB “principally” acts as. Additionally, while Article 5(c) of the Annex on Financial Services uses language such as “commercial terms” in guiding how to distinguish activities for carrying out governmental functions or purposes, and activities for profits-maximization goals, such criterion may not work well in practice. For example, when examining the CDB’s overseas lending on commercial terms, intended to assist with the development of the Belt and Road Initiative, a massive project endorsed by the Chinese Constitution,⁴⁹ it might be hard to disentangle those activities associated with governmental purposes from those intended for profit-making based solely on whether commercial terms are adopted.

b. Technology Investment

i. The Definition of Technology

When a certain technology investment is subject to international trade law, it is necessary to determine whether the technology in

⁴⁸ See generally *About CDB*, CHINA DEV. BANK, http://www.cdb.com.cn/English/gykh_512/khjj/. [perma.cc/9XMN-VHFX] (noting that in April 2017, China Development Bank adopted its current name and changed from a joint-stock company to a limited liability company).

⁴⁹ See, e.g., Xinhua, “Belt and Road” Incorporated into CPC Constitution, CHINA.ORG.CN (Oct. 24, 2017), http://www.china.org.cn/china/19th_cpc_congress/2017-10/24/content_41784305.htm [perma.cc/KNR4-L4UW] (noting the CPC incorporated pushing for Belt and Road development into its Constitution, according to a resolution approved by the 19th CPC National Congress.)

question should be classified as goods or services. This matters for several reasons. For business actors, the classification would determine the amount and kind of protection given to their products. For example, a technology product that is classified as 'goods' would be subject to the GATT and enjoy a greater level of trade liberalization than it would under the GATS.⁵⁰ Also, even when a technology is classified as a digital service, it may face uncertainties under the GATS classification.⁵¹

First, when it comes to the classification of digital products as either goods or services, current international trade law has no clear guidelines. The GATT contains no specific definition of "goods," while the scope of services according to the GATS is "any service in any sector except services supplied in the exercise of government authority," but does not specify the features of services. Based on WTO jurisprudence, the tangibility test serves as a main approach to distinguishing goods from services. In *Canada – Certain Measures Concerning Periodicals*, the WTO Appellate Body decided that periodicals were a tangible product of ink and paper so they could not be classified as services.⁵² This rule was also applied to *China – Publications and Audiovisual Products*.⁵³ The Appellate Body stated that "where the content of a film is carried by physical delivery materials, the Chinese restriction will inevitably regulate who may import goods for the plain reason that the content of the film is expressed through, and embedded in, a physical good."⁵⁴ However, it should be recognized that the tangibility test may fail to fit the classification of technology or digital products. For example, when

⁵⁰ Submission by the United States, *Work Programme on Electronic Commerce*, WTO Doc. WT/GC/16 (Feb. 12, 1999), https://www.wto.org/english/tratop_e/ecom_e/16_e.doc [<https://perma.cc/75BM-W5YK>] ("[T]here may be an advantage to a GATT versus GATS approach to products which could provide for a more trade-liberalizing outcome for electronic commerce.").

⁵¹ See Lee Tuthill & Martin Roy, *GATS Classification Issues for Information and Communication Technology Services*, in *TRADE GOVERNANCE IN THE DIGITAL AGE: WORLD TRADE FORUM 157*, 157-78 (Mira Burri & Thomas Cottier eds., 2012) (noting that delineating between services to which a member intended to commit and those on which it did not, especially when sub-sector definitions are not detailed or clear, poses a challenge once technologies and related commercial developments begin to outpace the definitions used).

⁵² Appellate Body Report, *Canada – Certain Measures Concerning Periodicals*, at 17, WTO Doc. WT/DS31/AB/R (adopted July 30, 1997).

⁵³ Appellate Body Report, *China – Publications and Audiovisual Products*, ¶ 188, WTO Doc. WT/DS363/AB/R (adopted Jan. 19, 2010).

⁵⁴ *Id.*

dealing with two situations where software is transported as either a physical product or digital product, the tangibility test may produce different answers.⁵⁵ Also, because information technology such as cloud computing allows software developers to have software installed directly onto the licensee's cloud computer, this eliminates the use of a physical carrier-media,⁵⁶ making the tangibility test inapplicable.

Second, within the GATS, services are described in terms of sectors. There is no guidance on how services should be classified or how sectors should be described. Most member states draw up their GATS 1994 schedules by following the WTO Services Sectoral Classifications List (W/120),⁵⁷ which links to the U.N. Provisional Central Product Classification 1991 (CPC) when defining the sectoral coverage of their commitments.⁵⁸ As Ruosi Zhang points out, the W/120 and CPC classification system under the GATS does not adequately capture the market reality which is being transformed by digital development.⁵⁹ For example, given the silence of the GATS on the elements determining the intrinsic nature of services,⁶⁰ the trend of digitalization would further complicate it by adding new features to existing services or even creating new services. Also, although in principle the categories under the W/120 and the CPC system should be mutually exclusive,⁶¹ digitalization

⁵⁵ See Joost Pauwelyn, *Squaring Free Trade in Cultural Goods and Services with Chinese Censorship: The WTO Appellate Body Report on China-Audiovisuals*, 11 MELB. J. INT'L L. 1 (2010) (making tangibility a necessary condition for something to be a "good" may also mean that, for example, in the trade in energy context electricity cannot be classified as a "good").

⁵⁶ See Althaf Marsoof, *A Case for Sui Generis Treatment of Software Under the WTO Regime*, 20 INT'L J.L. & INFO. TECH. 291, 306 (2012) (arguing that if the use of physical carrier-media is eliminated, there is no reason not to treat software as intellectual property).

⁵⁷ GATT Secretariat, *Services Sectoral Classification List*, GATT Doc. MTN.GNS/W/120 (July 10, 1991).

⁵⁸ U.N. DEP'T. OF ECON & SOC. AFFAIRS, PROVISIONAL CENTRAL PRODUCT CLASSIFICATION, U.N. Doc. ST/ESA/STAT/SER.M/77 (1991).

⁵⁹ Ruosi Zhang, *Covered or Not Covered: That Is The Question – Services Classification and Its Implications for Specific Commitments under the GATS 2, 7* (WTO Econ. Rsch. & Stat. Div., WTO Working Paper ERSD-2015-11, 2015).

⁶⁰ *Id.* at 10.

⁶¹ Appellate Body Report, *United States – Measures Affecting the Cross-Border Supply of Gambling and Betting Services*, ¶ 172, WTO Doc. WT/DS285/AB/R (adopted Apr. 20, 2015) ("The structure of the GATS necessarily implies two things. First, because the GATS covers all services except those supplied in the exercise of government authority, it follows that a Member may schedule a specific commitment in respect of any service. Secondly, because a Member's obligations

has led to overlaps between sectors or subsectors,⁶² which in turn leads to potential conflicts in their implementation and interpretation.⁶³

New technology may increasingly challenge the W/120 and the CPC system. For example, Venezuela in 2018 brought claims challenging the U.S. economic sanctions imposed on it before the WTO, which include U.S. executive orders banning Venezuela's national cryptocurrency (Petro).⁶⁴ Given there is no sector or subsector under the W/120 and the CPC system that explicitly refers to cryptocurrency or the distributed ledger technology operating it, Venezuela may have to define it as a service under the "Computer and Related Services" commitments with the telecommunication sector or argue that it is a digital security issue as Petro is backed by assets, with the goal of obtaining US protection under the financial services sector.⁶⁵ Both may be controversial.

regarding a particular service depend on the specific commitments that it has made with respect to the sector or subsector within which that service fall, a specific service cannot fall within two different sectors or subsectors. In other words, the sectors and subsectors in Member's Schedule must be mutually exclusive.").

⁶² Tuthill & Roy, *supra* note 51, at 166 ("In their reactions to the proposal, some Members sought greater clarity regarding the concept of enabling versus content and wondered how to deal with the overlap between certain computer and value-added telecom services.").

⁶³ Zhang, *supra* note 59, at 13.

⁶⁴ See Sandeep Thomas Chandy, *Venezuela Challenges US' Blockade of Its National Cryptocurrency at the WTO*, INT'L ECON. LAW & POL. BLOG (Jan. 15, 2019), <https://worldtradelaw.typepad.com/ielpblog/2019/01/guest-post-venezuela-challenges-us-blockade-of-its-national-cryptocurrency-at-the-wto.html> [<https://perma.cc/W4SL-XFVU>] ("Discriminatory coercive trade-restrictive measures with respect to transactions in Venezuelan digital currency, adopted pursuant to Executive Orders 13808, 13827 and 13835: (xi) The coercive trade-restrictive measures of the United States to which Venezuelan financial services and financial service suppliers are subject, under which suppliers receive treatment less favourable than that accorded to like services and service suppliers of WTO Member States not subject to the measures, are in violation of Article II:1 of the GATS. Furthermore, inasmuch as digital currencies originating in the United States are not subject to the same prohibitions as Venezuelan digital currencies, the United States is according less favourable treatment to Venezuelan financial services and service suppliers than to like domestic financial services and service suppliers, in violation of Article XVII:1 of the GATS. If it proceeds to the Panel stage, it would be the first time for the WTO dealing with a dispute involving cryptocurrencies (as a new digital product).").

⁶⁵ See Sandeep Thomas Chandy & Prakhar Bhardwaj, *Adjudicating Cryptocurrencies at the WTO: Potential Threshold and Substantive Issues*, 20 GLOB. JURIST 1, 10 (2019) (noting the implications for cryptocurrencies being classified as a security and the underlying distributed ledger technology being classified as a database or "computer and related service" as significant; a measure which bans

ii. The Definition of Investment

The GATS provides four different modes of service supply: the cross-border supply of a service by a supplier in another country (Mode 1), consumption abroad (Mode 2), the establishment of a legal entity that originates in the territory of one member state for the purpose of commercial presence in another member state (Mode 3), and the temporary movement of natural persons for the purpose of supplying a service in a different member country (Mode 4).⁶⁶ Among them, Mode 3 covers foreign direct investment. Notably, GATS Article XXVIII(m)(ii) indicates that a commercial presence by a juridical person of another member state is a juridical person that is owned or controlled by a (natural or legal) person of that member state.⁶⁷ In other words, GATS rules apply only where a foreign entity has control over the acquired company.

iii. The Temporal Dimension of Investment Protection

Investment protection could be given before an investment is established within the territory of a host state or extend only to the post-establishment stage. Within the GATS, both pre- and post-establishment investment measures of a member state shall be subject to the MFN obligation as a general rule in order to ensure the equality of treatment for foreign investments. Market access and national treatment are specific commitments. Therefore, member states are allowed to design and implement their pre- and post-establishment investment measures which often treat domestic and foreign investors differently without violating their GATS obligations.

c. Technology Transfer

In dealing with technology transfer, current international trade law attempts to protect the interests of intellectual property (IP)

the crypto-trading can simultaneously impact both these services and substantive claims can be advanced on both these fronts).

⁶⁶ GATS at 285.

⁶⁷ *Id.* at 288.

rights holders and to ensure that their contractual freedom is not interfered with by sovereign states. Within the WTO legal framework, both GATS and the TRIPS Agreement are applied to technology transfer activities.

i. The Application of GATS

A host state may take several measures to facilitate technology transfer from foreign investors. According to the U.S. Trade Representative, the measures could involve the application of foreign ownership restrictions, such as formal and informal joint venture requirements, or administrative approvals which are needed to establish and operate a business, in order to “require or pressure technology transfer.”⁶⁸ This issue has become one of the sources of economic tension between the United States and China.⁶⁹

GATS Article XVI on market access applies to the aforementioned measure, known as “forced” technology transfer. This provision extends beyond any conventional notion of access for foreign service suppliers to embrace all policies, mostly in the quantitative form, which restrict access to a market even in a non-discriminatory manner.⁷⁰ However, this measure can be applied only on the condition that the sector is covered by a host state’s commitment to ensuring market access and is not scheduled as a limitation on those commitments.⁷¹

ii. The Application of TRIPS Agreement

The TRIPS Agreement, which entered into force in 1995, incorporates most of the substantive provisions of non-trade-related

⁶⁸ OFF. OF THE U.S. TRADE REPRESENTATIVE, EXEC. OFF. OF THE PRESIDENT, 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, at 19 (2019).

⁶⁹ See, e.g., Julia Ya Qin, *Forced Technology Transfer and the US-China Trade War: Implications for International Economic Law*, 22 J. INT’L ECON. L. 743, 743-44, 746-53 (2019) (discussing the impact of US-China trade and forced technology transfer).

⁷⁰ See Delimatsis, *supra* note 42, at 1062.

⁷¹ See Alan O. Sykes, *The Law and Economics of “Forced” Technology and Its Participations for Trade and Investment Policy (And the US – China Trade War)*, 13 J. LEGAL ANALYSIS 127, 134 (2021).

instruments administered by the World Intellectual Property Organization,⁷² namely the Paris, Berne, and Rome Conventions.⁷³ Unlike the GATT and GATS, the TRIPS Agreement is not intended to liberalize trade, but to protect intellectual property.⁷⁴ This is indicated in the Preamble, which states that the agreement takes into account the need to promote effective and adequate protection of intellectual property while “ensur[ing] that measures and procedures to enforce intellectual property rights do not themselves become barriers to legitimate trade.”⁷⁵ In the *Australia – Tobacco Plain Packaging* case, the Appellate Body also explicitly addresses this distinctive nature of the agreement: “The TRIPS Agreement, as an agreement addressing intellectual property rights, is principally concerned with the creation and protection of *exclusive* private rights. By definition, these exclusive rights act to restrict commercial activity and require an active intervention of government to enforce these restrictions.”⁷⁶

In terms of the performance requirement, first, it may violate the national treatment obligation under Article 3 of the TRIPS Agreement.⁷⁷ The fact that only foreign service suppliers are subject to foreign ownership restrictions or conditional administrative approvals implies the discriminatory treatment of these suppliers.

Second, in a smaller number of cases, member states are allowed to take measures to facilitate technology transfer or address security concerns, which may otherwise violate their obligations to protect the rights of patent holders. The first situation, covered by TRIPS Agreement Article 73, which mirrors the language of GATT Article XXI and GATS Article XIV bis, member states are allowed to invoke national security in defense of their non-compliance.⁷⁸ In the *Saudi Arabia – Intellectual Property Rights* case, Saudi Arabia invoked

⁷² See Daniel J. Gervais, *TRIPS Pluralism*, 21 *WORLD TRADE REV.* 185, 197 (2021).

⁷³ *Guide to the TRIPS Agreement*, WTO, https://www.wto.org/english/tratop_e/trips_e/ta_modules_e.htm [<https://perma.cc/Q49Z-K7JR>].

⁷⁴ See Gervais, *supra* note 72, at 196.

⁷⁵ TRIPS Agreement at 320.

⁷⁶ Appellate Body Report, *Australia – Certain Measures Concerning Trademarks, Geographical Indications and Other Plain Packaging Requirements Applicable to Tobacco Products and Packaging*, ¶ 6.577, WTO Doc. WT/DS435/AB/R (adopted June 29, 2020) [hereinafter *Australia-Tobacco Plain Packaging*].

⁷⁷ TRIPS Agreement at 322.

⁷⁸ *Id.* at 351; GATT 1994 at 56; GATS at 295.

TRIPS Article 73(b)(iii) to defend its measures against Qatar.⁷⁹ The Panel made a fine distinction between the two measures in question when examining their connection with essential security interests, which are “protecting itself from dangers of terrorism and extremism.”⁸⁰ While viewing the anti-sympathy measures “preventing beIN from obtaining Saudi legal counsel to enforce its IP rights through civil enforcement procedures before Saudi courts” as an aspect of Saudi Arabia’s comprehensive measures aimed at protecting its essential security interests, the Panel held that the non-application of criminal procedures and penalties to beoutQ, the pirate television broadcaster, was remote from serving the protection goals.⁸¹ This suggests that with the goal of protecting international security and peace of mind, the WTO Panel was inclined to give more deference to defensive rather than offensive measures in order to prevent the negative effects of the latter, such as the escalation of geopolitical tensions. The second situation concerns the protection of undisclosed data. TRIPS Agreement Article 39 offers limited exceptions “where necessary to protect the public” or to “ensure that the data are protected against unfair commercial use.”⁸² In the third situation, covered by TRIPS Agreement Articles 30 and 31, states allow others to use patentable subject matter without the authorization of the IP right holder, but with a significant number of limitations.⁸³ These limitations include “normal exploitation,” protection of “legitimate interests of the patent owner,” a waiver “in the case of a national emergency or other circumstances of extreme urgency or in cases of public non-commercial use,” payment of “adequate remuneration in the circumstances of each case,” and others.⁸⁴ The fourth situation is where least-developed countries are exempt from meeting most of the substantive TRIPS obligations generally until July 1, 2034, and meeting pharmaceutical patent and clinical trial data protection obligations until January 1, 2033.⁸⁵ The time limits on these

⁷⁹ Panel Report, *Saudi Arabia – Measures Concerning the Protection of Intellectual Property Rights*, ¶ 7.230, WTO Doc. WT/DS567/R (adopted June 16, 2020).

⁸⁰ *Id.* ¶ 7.280.

⁸¹ *Id.* ¶¶ 7.283-7.289.

⁸² TRIPS Agreement at 336-37.

⁸³ *Id.* at 332-34.

⁸⁴ *Id.*

⁸⁵ *Id.* at 348.

exemptions have been extended several times using the WTO's authority of waiver.⁸⁶

Third, the Appellate Body jurisprudence may offer possible leeway for technology transfer. On the one hand, the Appellate Body has shown a more evolutionary approach to other international norms, which may contribute to a more balanced reading of the conflicts between IP protection norms under the TRIPS Agreement and other external norms such as public health. In the *United States – Import Prohibition of Certain Shrimp and Shrimp Products* case, the Appellate Body explicitly used Article 31(3)(c) of the Vienna Convention to interpret the chapeau of GATT Article XX, seeking additional interpretative guidance from the general principles of international law.⁸⁷ It found that the term “exhaustible natural resources” in GATT Article XX “must be read by a treaty interpreter in the light of contemporary concerns of the community of nations about the protection and conservation of the environment [not as it was understood in 1947].”⁸⁸ In doing so, the Appellate Body referred to a number of multilateral environmental treaties, none of which were binding on all WTO members and some of them were not binding even on all disputing parties in the particular case.⁸⁹ Nonetheless, according to the non-WTO treaties, the Appellate Body reached the conclusion that it reflects the “common intentions” of all WTO members and the “ordinary meaning” of term “exhaustible natural resources” as it is used in Article XX(g) of the GATT 1994.⁹⁰ Also, in the *Australia – Tobacco Plain Packaging* case, the Appellate Body allowed a broad scope for justification under external norms, namely the WHO Framework Convention on Tobacco Control (FCTC)⁹¹ and Guidelines to the FCTC. Deviating slightly from the Appellate Body's approach in the *US – Shrimp* case, the Panel intended to use the FCTC and Articles 11 and 13 of the FCTC

⁸⁶ CONG. RSCH. SERV., IF11858, POTENTIAL WTO TRIPS WAIVER AND COVID-19, at 1 (2021).

⁸⁷ Appellate Body Report, *United States – Import Prohibition of Certain Shrimp and Shrimp Products*, ¶ 158, WTO Doc. WT/DS58/AB/R (adopted Nov. 6, 1998) [hereinafter U.S. – Shrimp].

⁸⁸ *Id.* ¶ 129.

⁸⁹ *Id.* ¶¶ 130-134; see also JOOST PAUWELYN, CONFLICT OF NORMS IN PUBLIC INTERNATIONAL LAW: HOW WTO LAW RELATES TO OTHER RULES OF INTERNATIONAL LAW 485 (2003).

⁹⁰ *Id.* at 202, 260-62.

⁹¹ World Health Organization [WHO], the WHO Framework Convention on Tobacco Control, WHO DOC. A56/8/REV.1 (Feb. 27, 2005).

Guidelines as evidence rather than as an interpretative tool⁹² in reaching its conclusion that the complaints failed to establish that Australia did not comply with Article 20 of the TRIPS Agreement.⁹³ Specifically, the Panel considered that the FCTC and its Guidelines could inform, together with other relevant evidence its understanding of relevant aspects of the matters at issue, such as “tobacco control measures . . . to reduce . . . the prevalence of tobacco use.”⁹⁴ The Appellate Body upheld this interpretation.⁹⁵

Notably, this evolutionary approach might be helpful in facilitating global access to the COVID-19 vaccines, especially in regard to the transfer of relevant technology to the Global South. Specifically, in combating the pandemic, the World Health Organization has increasingly emphasized the importance of health equity in global health.⁹⁶ WGPR Interim Report to EB150 states the following on health equity:

[E]quity is essential in particular in prevention, preparedness and response to health emergencies, including with respect to capacity-building, equitable and timely access to and distribution of medical countermeasures and addressing barriers to timely access to and distribution of medical countermeasures, as well as related issues such as research and development, intellectual property, *technology transfer* and empowering/scaling up local and regional manufacturing capacity during emergencies to discover, develop and deliver effective medical countermeasures and other tools and technologies.⁹⁷

While health equity is an external (emerging) norm in the context of the WHO, the Appellate Body’s evolutionary approach may make it exempt from the TRIPS obligations and facilitate a broader transfer of vaccine-related technology.

On the other hand, GATT Article XX implies the importance of technology transfer in certain situations. In the *U.S. – Shrimp* case, the United States imposed an import ban on shrimp products from

⁹² Australia-Tobacco Plain Packaging, *supra* note 76, ¶ 6.702.

⁹³ *Id.* ¶ 6.707.

⁹⁴ *Id.* ¶ 6.702.

⁹⁵ *Id.* ¶ 6.719.

⁹⁶ See, e.g., WHO, HEALTH EQUITY, https://www.who.int/health-topics/health-equity#tab=tab_1 [<https://perma.cc/WK3C-LS9H>].

⁹⁷ WHO, *WGPR Interim Report to EB150*, at 4, WHO Doc. A/WGPR/6/3 (Jan. 10, 2022) (emphasis added).

non-certified countries that do not use a certain net when catching shrimp to protect turtles passing through their waters.⁹⁸ In examining whether U.S. measures constitute “unjustifiable discrimination” between exporting countries desiring to gain certification in order to gain access to the U.S. shrimp markets, the Appellate Body noted that compliance with the certification requirements “realistically assumes successful . . . technology transfer,” although “low or merely nominal efforts at achieving that transfer will . . . result in fewer countries being able to satisfy the certification requirements”⁹⁹ This suggests that when a country aims to achieve regulatory harmonization, it has the obligation to facilitate the necessary technology transfer to other countries that need to comply with the regulations in a non-discriminatory manner.

Fourth, in order to combat COVID-19 and promote vaccine manufacturing and equitable access, several international efforts are being made to facilitate technology transfer. For example, within the TRIPS Agreement, compulsory license provisions are insufficient to tackle already existing and emerging patent tickets and data exclusivity rules that impede production by manufacturers other than the holder of intellectual property rights.¹⁰⁰ Also, they do not address the need for technology transfer and the sharing of knowledge required to build local and regional manufacturing capacity.¹⁰¹ Additionally, by taking advantage of the TRIPS transition arrangement, several least-developed countries have been exempted from their TRIPS obligations and produced affordable generic versions of medicines in their markets. For example, after Pfizer’s initial trials showed the high potential of its new drug, Paxlovid, in treating COVID-19, two leading Bangladeshi pharmaceutical companies began working on the drug’s generic version in 2020.¹⁰² On December 30, 2021, Bangladesh’s Directorate General of Drug Administration granted authorization for the

⁹⁸ U.S. – Shrimp, *supra* note 87, ¶ 3.

⁹⁹ *Id.* ¶¶ 175-176.

¹⁰⁰ *Academic Open Letter in Support of the TRIPS Intellectual Property Waiver Proposal*, INFOJUSTICE (July 15, 2021), <http://infojustice.org/archives/43313> [<https://perma.cc/U2NU-Z2VW>].

¹⁰¹ *Id.*

¹⁰² Shehab Sumon, *First Generic Version of New Pfizer COVID-19 Pill Enters Bangladeshi Pharmacies*, ARAB NEWS (Jan. 3, 2022), <https://www.arabnews.com/node/1996466/world> [<https://perma.cc/4HXQ-J4T3>].

emergency use of the drug to treat mild-to-moderate COVID-19 in adults and children aged twelve years and above.¹⁰³ Notably, the end of 2021 saw a great step beyond the TRIPS transition arrangement in allowing more developing countries to access COVID-19 treatment-related technology transfer. In November 2021, Pfizer and the Medicines Patent Pool (MPP), a U.N.-backed public health organization,¹⁰⁴ signed a voluntary license agreement for Pfizer's COVID-19 oral antiviral treatment candidate PF-07321332.¹⁰⁵ The agreement grants MPP a nonexclusive license to the Pfizer patents and patent applications and documentary know-how, and the ability to grant nonexclusive, royalty-bearing sublicenses to eligible manufacturers with the aim of supplying products for the prevention and treatment of COVID-19.¹⁰⁶ It is anticipated that, through the head license agreement, qualified generic medicine manufacturers that are granted sub-licenses will be able to supply their medicines to ninety-five countries, covering approximately 53% of the world's population.¹⁰⁷

Regarding the TRIPS's flexibilities, the agreement contains no constraints. Specifically, it allows a sublicensee to supply licensed products to a country where the government has granted a

¹⁰³ Viswanath Pilla, *Bangladesh Drug Maker Beximco Launches World's First Generic of Pfizer's COVID Antiviral*, ECON. TIMES (Dec. 30, 2021), <https://economictimes.indiatimes.com/industry/healthcare/biotech/pharmaceuticals/bangladesh-drug-make-beximco-launches-worlds-first-generic-of-pfizers-covid-antiviral/articleshow/88593018.cms> [<https://perma.cc/M3VY-WNWX>].

¹⁰⁴ *Pfizer and the Medicines Patent Pool (MPP) Sign Licensing Agreement for COVID-19 Oral Antiviral Treatment Candidate to Expand Access in Low- and Middle-Income Countries*, MEDS. PAT. POOL (Nov. 16, 2021), <https://medicinespatentpool.org/news-publications-post/pfizer-and-the-medicines-patent-pool-mpp-sign-licensing-agreement-for-covid-19-oral-antiviral-treatment-candidate-to-expand-access-in-low-and-middle-income-countries> [<https://perma.cc/5P3Z-MCRE>] [hereinafter *Pfizer and the Medicines Patent Pool*] ("The MPP is working to increase access to, and facilitate the development of, life-saving medicines for low- and middle-income countries. Through its innovative business model, MPP partners with civil society, governments, international organizations, industry, patient groups, and other stakeholders, to prioritize and license needed medicines and pool intellectual property to encourage generic manufacture and the development of new formulations.").

¹⁰⁵ *Id.*

¹⁰⁶ MEDICINES PATENT PORTAL, REPORT OF THE MEDICINES PATENT POOL EXPERT ADVISORY GROUP ON THE PROPOSED LICENSE AGREEMENT BETWEEN MPP AND PF PRISM HOLDINGS B.V. (PFIZER) ON PF-07321332, at 1 (2021).

¹⁰⁷ *Pfizer and the Medicines Patent Pool*, *supra* note 104.

compulsory license for a particular product.¹⁰⁸ Two requirements must be met: (a) such sublicensee's supply is solely within a certain scope and geographic range and only for the duration of this compulsory license; and (b) the sublicensee does not use or misappropriate licensed know-how and/or misappropriate, use or require the use of, any of Pfizer's confidential information.¹⁰⁹

As a response initiated by South Africa and India in 2020, and co-sponsored by sixty other WTO members, including the United States and China, a revised proposal was made.¹¹⁰ It suggested waiving (for at least three years) WTO members' TRIPS obligations "in relation to health products and technologies including diagnostics, therapeutics, vaccines, medical devices, personal protective equipment, their materials or components, and their methods and means of manufacture for the prevention, treatment or containment of COVID-19."¹¹¹ In its Ministerial Decision of June 17, 2022, the WTO authorized eligible members, including all developing country members, to use the subject matter of patents required for the production and supply of COVID-19 vaccines, without the consent of the right holder, to the extent necessary to address the COVID-19 pandemic.¹¹² However, as many civil society groups point out, the present decision contains a range of constraints which reduce its effects in achieving the vaccine equity. First, given the terms proposed by the European Union,¹¹³ and the difference among member states regarding the details of waivers,¹¹⁴ the

¹⁰⁸ LICENSE AGREEMENT, PFIZER-MEDICINES PATENT POOL, art. 2.4 (2021), <https://medicinespatentpool.org/uploads/2021/11/Pfizer-MPP-License-and-Sublicense-website.pdf> [<https://perma.cc/CK4C-QVPC>].

¹⁰⁹ *Id.*

¹¹⁰ Council for Trade-Related Aspects of Intellectual Property Rights, *Waiver from Certain Provisions of the TRIPS Agreement for The Prevention Containment and Treatment of COVID-19*, WTO Doc. IP/C/W/669/REV.1 (May 25, 2021).

¹¹¹ *Id.*

¹¹² World Trade Organization, Ministerial Decision on the TRIPS Agreement of 22 June 2022, WTO Doc. WT/MIN(22)/30.

¹¹³ See *Communication from the European Union to the Council for TRIPS, Urgent Trade Policy Responses to the COVID-19 Crisis: Intellectual Property*, (June 4, 2021), https://trade.ec.europa.eu/doclib/docs/2021/june/tradoc_159606.pdf [<https://perma.cc/GM63-XCKA>].

¹¹⁴ See Peter Ungphakorn, *No Agreement on India's Call for WTO Ministers to Discuss COVID-19 Waiver*, TRADE β BLOG (Jan. 11, 2022), <https://tradebetablog.wordpress.com/2022/01/10/no-agreement-india-ministers-waiver/> [<https://perma.cc/LU4X-YCXY>] ("Among members' differences are: how long the waiver should last and whether it should only be terminated by consensus, which types of intellectual property should be waived protection (only patents, or other types as well), which products (only vaccines, or

decision was delayed for two years without helping developing countries in a timely manner. Second, instead of providing a waiver for COVID-19 diagnostics and therapeutics, the present agreement states that the WTO members will revisit that question within six months, although in some cases the WTO is not good at sticking to its timelines.¹¹⁵ Third, compared to the original proposal, this agreement falls short in scope and vision by, for example, excluding temporary waivers on trade secrets protections, copyrights, and industrial design, and by incorporating a prohibition on re-exporting vaccines, except for humanitarian purposes.¹¹⁶

III. SWFS AND THEIR ACTIVITIES IN THE TECHNOLOGY SECTOR UNDER INTERNATIONAL INVESTMENT LAW

a. The Status of State Enterprises

In order to examine the role of state enterprises under international investment law, two situations need to be considered: when a state enterprise invests abroad, and when an enterprise focuses on domestic investment. In the former case, if the state enterprise is treated in a negative way, it needs to qualify as a foreign investor in order to seek protection under international investment law. In the latter, if a foreign investor, whose investments are influenced negatively by a state enterprise when investing in the enterprise's home country, it is required to prove that certain behaviors of a state enterprise are attributable to the host state in order to be protected under international investment law.

other products as well), and other details such as how trade secrets should be handled.”).

¹¹⁵ See Andrew Green, *WTO Finally Agrees on a TRIPS Deal. But Not Everyone Is Happy*, DEVEX (June 17, 2022), <https://www.devex.com/news/wto-finally-agrees-on-a-trips-deal-but-not-everyone-is-happy-103476> [<https://perma.cc/98KP-ZX9L>] (noting the criticism of a civil society organization's legal and policy adviser that the WTO is notoriously bad at sticking to its deadlines).

¹¹⁶ See World Trade Organization, *supra* note 112.

i. When a State Enterprise Acts as a Claimant

First, the Convention on the Settlement of Investment Disputes between States and Nationals of Other States (ICSID Convention) sets out certain jurisdictional requirements which are to be met in order for an ICSID tribunal to be competent to hear and decide disputes before it.¹¹⁷ Specifically, ICSID Convention Article 25(1) provides that “the jurisdiction of the Centre shall extend to any legal dispute arising directly out of an investment, between a Contracting State (or any constituent subdivision or agency of a Contracting State designated to [ICSID] by that State) and a national of another Contracting State.”¹¹⁸ Therefore, a state enterprise shall be a national of its home state. When it comes to wholly or partly government-controlled companies, it is less clear whether it could be a party to proceedings brought by or against a foreign state. A helpful guideline was formulated by Broches in 1972:

[t]here are many companies which combine capital from private and governmental sources and corporations all of whose shares are owned by the government, but who are practically indistinguishable from the completely privately owned enterprise both in their legal characteristics and in their activities. It would seem, therefore, that for purposes of the Convention a mixed economy company or government-owned corporation should not be disqualified as a “national of another Contracting State” unless it is acting as an agent for the government or is discharging an essentially governmental function.¹¹⁹

Second, when it comes to whether state enterprises are investors covered by International Investment Agreements (IIAs), Mark McLaughlin observes that the vast majority of IIAs tend to distinguish whether the legality of a person and a legal person that was established in accordance with the law of a contracting party, rather than on the basis of ownership.¹²⁰ Also, there is a definite

¹¹⁷ Convention on the Settlement of Investment Disputes between States and Nationals of Other States arts. 25-27, Mar. 18, 1965, 575 U.N.T.S. 160 [hereinafter ICSID].

¹¹⁸ *Id.* art. 25.

¹¹⁹ THE ICSID CONVENTION: A COMMENTARY 161 (Christoph H. Schreuer, Loretta Malintoppi, August Reinisch & Anthony Sinclair eds., 2009).

¹²⁰ Mark McLaughlin, *Defining a State-Owned Enterprise in International Investment Agreements*, 34 ICSID REV. 595, 610 (2019).

trend to include SOEs in the definition of ‘investor’ in the IIAs.¹²¹ While most IIAs remain silent on whether SOEs qualify for protection,¹²² some IIAs explicitly indicate that public institutions and government agency investors are covered. For example, in defining “investor,” the Saudi Arabia–Germany Bilateral Investment Treaty includes “the Government of the Kingdom of Saudi Arabia and its financial institutions and authorities such as the Saudi Arabian Monetary Agency, public funds and other similar governmental institutions existing in Saudi Arabia.”¹²³ Also, a few recent IIAs include SWFs in the definition of protected investor, such as Article 1(3) of the 2016 Iran-Slovakia Bilateral Investment Treaty and the 2018 EU-Singapore Investment Protection Agreement, which has yet to take force.¹²⁴

Third, to determine whether state enterprises qualify as investors under international investment law, the *CSOB v. Slovak Republic* (CSOB) tribunal offered a detailed analysis. In CSOB, a state enterprise in question acted “on behalf of the State in facilitating or executing the international banking transactions and foreign commercial operations the State wished to support,”¹²⁵ and did the state’s bidding under the control of the state.¹²⁶ The tribunal chose not to depend “upon whether or not the company is partially or wholly owned by the government.”¹²⁷ Rather it considered “for purposes of the Convention a mixed economy company or government-owned corporation should not be disqualified as a ‘national of another Contracting State’ unless it is acting as an agent for the governmental or is discharging an essentially government function.”¹²⁸ Further, in determining whether a state enterprise exercises governmental functions, “the focus must be on the nature of these activities and not their purpose.”¹²⁹ In other words, even

¹²¹ *Id.*

¹²² Markus Burgstaller, *Sovereign Wealth Funds and International Investment Law*, in *EVOLUTION IN INVESTMENT TREATY LAW AND ARBITRATION* 178 (Chester Brower & Kate Miles eds., 2011).

¹²³ *Id.*

¹²⁴ HUSSEIN HAERI, YARIK KRYVOI, ROBERT KOVACS & CAMILLA GAMBARINI, *SOVEREIGN WEALTH FUNDS: TRANSNATIONAL REGULATION AND DISPUTE RESOLUTION* 21-22 (2021).

¹²⁵ *Ceskoslovenska Obchodni Banka, A.S. v. Slovak Republic*, ICSID Case No. ARB/97/4, *Objections to Jurisdiction*, ¶ 20 (May 24, 1999), 5 ICSID Rep. 330 (2002).

¹²⁶ *Id.*

¹²⁷ *Id.* ¶ 17.

¹²⁸ *Id.* ¶ 17.

¹²⁹ *Id.* ¶ 20.

though in some cases a state enterprise conducts business for governmental purposes, the enterprise shall be treated as an investor covered under international investment law if the activities in question are essentially commercial in nature. This approach was also adopted by the tribunals in *CDC v. Seychelles*, *Telenor v. Hungary*, and *Rumeli v. Kazakhstan*.¹³⁰

ii. When a State Enterprise Acts as a Respondent

In a situation where a foreign investor brings claims against a state enterprise before the ICSID tribunal, a respondent could raise an objection to jurisdiction on the basis that the state enterprise is a separate entity from the state, or challenge the notion that the acts of the state enterprise should be attributable to its home state during the merit proceedings. According to ICSID Convention Arbitration Rule 41(2), arbitral tribunals have wide discretion to consider “whether the dispute or any ancillary claim before it is within the jurisdiction of the Centre and within its own competence.”¹³¹ When an objection to jurisdiction is raised, the tribunal may deal with it as a preliminary question with or without suspending consideration of the merits, or overrule the objection and resume the proceeding on the merits issuing a decision, or join the objection to the merits of the dispute.¹³²

As Giulio Alvaro Cortesi notes, when a state enterprise is the respondent, arbitral tribunals take different approaches.¹³³ In the first group of cases, without conducting an inquiry into the relationship between the state and its state enterprise, arbitral tribunals have taken a formalistic approach. For example, in *Salini v. Morocco*, Morocco raised an objection to jurisdiction by claiming that the dispute was between an investor and a state enterprise, distinct

¹³⁰ Burgstaller, *supra* note 122, at 179.

¹³¹ Rule 41 – Preliminary Objections, INTERNATIONAL CENTRE FOR SETTLEMENT OF INVESTMENT DISPUTES, <http://icsidfiles.worldbank.org/icsid/icsid/staticfiles/basicdoc/partfchap05.htm#r41> [<https://perma.cc/3MQP-4A22>].

¹³² Preliminary Objections – ICSID Convention Arbitration (2006 Rules), INTERNATIONAL CENTRE FOR SETTLEMENT OF INVESTMENT DISPUTES, <https://icsid.worldbank.org/services/arbitration/convention/services/preliminary-objections> [<https://perma.cc/5DSP-697H>].

¹³³ Giulio Alvaro Cortesi, *ICSID Jurisdiction with Regard to State-Owned Enterprises – Moving Toward an Approach Based on General International Law*, 16 L. PRAC. INT’L CT. TRIBUNALS 108, 118 (2017).

from the state.¹³⁴ The tribunal responded that “since the claims [. . .] are being directed against the State and are founded on the violation of the Bilateral Treaty,”¹³⁵ further discussion on whether the enterprise at issue was a state enterprise was unnecessary.¹³⁶

The second group of cases takes a *prima facie* approach. First, for the purpose of determining the jurisdiction and the competence of the tribunal, it verifies whether the entity in question is a state enterprise, and then considers whether the conduct of the entity should be attributable to the state at the merit stage.¹³⁷ For example, in *Maffezini v. Spain*, the tribunal developed a test, which consists of a structural assessment of the agency relationship¹³⁸ and a function assessment to identify the objectives behind the creation of the entity in question. The tribunal stated that the fact that “the entity is owned by the State, directly or indirectly, gives rise to a rebuttable presumption that it is a State entity.”¹³⁹ Also, “an entity’s purpose or objectives is the carrying out of functions which are governmental in nature or which are otherwise normally reserved to the State, or which by their nature are not usually carried out by private businesses or individuals.”¹⁴⁰ By meeting the two conditions, this entity constitutes a state enterprise. The test was used in both jurisdictional and merit proceedings by the *Maffezini* tribunal.

In the third group of cases, the International Law Commission (ILC) Articles on Attribution play a significant role. Even though the attribution issue may need to be considered only in the merit stage, some tribunals seem to have partially conflated both jurisdictional and merits procedures.¹⁴¹ For example, in *Toto Costruzioni v. Lebanon*, the tribunal referred to ILC Article 5 and claimed that the entities in question were exercising “in the context of the Contract the governmental authority of the Republic of Lebanon.”¹⁴² This

¹³⁴ *Salini Costruttori S.p.A. & Italstrade S.p.A. v. Kingdom of Morocco*, ICSID Case No. ARB/00/4, Decision on Jurisdiction, ¶ 13 (July 31, 2001), 6 ICSID Rep. 398 (2004).

¹³⁵ *Id.* ¶ 30.

¹³⁶ *Id.*

¹³⁷ *Cortesi*, *supra* note 133, at 120.

¹³⁸ *Emilio Agustín Maffezini v. The Kingdom of Spain*, ICSID Case No. ARB/97/7, Award, ¶ 47 (Nov. 13, 2000), 5 ICSID Rep. 387 (2002).

¹³⁹ *Emilio Agustín Maffezini v. The Kingdom of Spain*, Case No. ARB/97/7, Objections to Jurisdiction, ¶ 77 (Jan. 25, 2000), 5 ICSID Rep. 387 (2002).

¹⁴⁰ *Id.* ¶ 76.

¹⁴¹ *Cortesi*, *supra* note 133, at 124.

¹⁴² *Toto Costruzioni Generali S.p.A. v. The Republic of Lebanon*, ICSID Case No. ARB/07/12, ¶ 60 (Sept. 11, 2009).

approach was also taken in subsequent cases such as *Gustav Hamester v. Ghana* and *Electrable v. Hungary*.¹⁴³ However, some other tribunals tend to leave the inquiry on attribution to the merit stage. For example, in *UAB v. Latvia*, the tribunal determined whether the conduct of two municipally-owned companies responsible for the provision of public heating was attributable to the host state in the merit stage.¹⁴⁴ After examining ILC Article 5, it concluded that “the mere fact that the Municipality was responsible for organising district heating” could not be transformed into “an exercise of governmental authority”.¹⁴⁵ Then, referring to ILC Article 8, the tribunal pointed out that the issue was not whether the state exercised general control over the state enterprise, but whether the state “instructed, directed or controlled” the conducts in question.¹⁴⁶ Finally, it decided that the specific acts of the companies were attributable to the state.¹⁴⁷

b. Technology Investment

i. The Definition of Investment

In practice, foreign direct investment (FDI) and portfolio investment are the two major forms of foreign investment. While FDI concentrates on and is defined by the acquisition of a full or partial management stake, portfolio equity investment is diffuse and merely a claim on future cash flow, which carries no managerial control.¹⁴⁸ FDI tends to be entitled to protection under international investment law; however, whether portfolio investment could be granted such protection is still subject to more examination.

There is a growing trend for IIAs, especially so-called “new generation IIAs,” to embrace portfolio investment, albeit in the

¹⁴³ Cortesi, *supra* note 133, at 124.

¹⁴⁴ *UAB E Energija (Lithuania) v. Republic of Latvia*, ICSID Case No. ARB/12/33, Award (Dec. 22, 2017), 18 ICSID Rep. 631 (2020).

¹⁴⁵ *Id.* ¶ 817.

¹⁴⁶ *Id.* ¶ 825.

¹⁴⁷ *Id.* ¶¶ 825-30.

¹⁴⁸ See SARAH BAUERLE DANZMAN, MERGING INTERESTS: WHEN DOMESTIC FIRMS SHAPE FDI POLICY 92 (2019) (explaining that in the context of raising capital, portfolio investors are by definition “outsiders” while direct investors become “insiders”).

absence of a comprehensive definition.¹⁴⁹ When there is no such explicit inclusion, and ICSID Article 25(1) does not stipulate the elements that constitute investment, case law diverges, taking either the “consensual approach” or the “typical characteristics approach.”¹⁵⁰ In the former approach, tribunals tend to give more deference to parties’ consent.¹⁵¹ With the latter approach, a deeper analysis is conducted of the elements constituting an investment. For example, the *Salini v. Morocco* tribunal developed the “*Salini test*” to determine whether the parties made an investment based on the ICSID Convention.¹⁵² It requires (1) a contribution of money or assets, (2) a certain duration over which the project is to be implemented, (3) an element of risk, and (4) a contribution to the host state’s economic development.¹⁵³ However, if the *Salini test* is applied to the assessment of a portfolio investment, some uncertainties may arise. Specifically, bond and equity markets create opportunities for speculative behavior, and openness to short-term capital flows can expose governments to volatile and sharp movements in the capital account.¹⁵⁴ Thus, portfolio investment may have destabilizing effects on the host state’s economy, rather than contributing to it. However, some attention should also be paid to the situation of a host state when a portfolio investment is made. For example, when a host state and its domestic financial institutions are experiencing financial crisis or just lacking sufficient international currency (like US dollars) for necessary food imports, both FDI and portfolio investments may serve the same function in terms of offering liquidity and saving the state’s economy.

¹⁴⁹ Giorgio Rizzo, *Portfolio Investment in ICSID Arbitration: Just a Matter of Consent*, 37 J. INT’L ARB. 341, 344 (2020).

¹⁵⁰ *Id.* at 346.

¹⁵¹ *Id.* at 346-47.

¹⁵² *Salini Costruttori S.p.A. & Italstrade S.p.A. v. Kingdom of Morocco*, ICSID Case No. ARB/00/4, Decision on Jurisdiction, ¶ 52 (July 31, 2001), 6 ICSID Rep. 398 (2004).

¹⁵³ *Id.*; see also Alex Grabowski, *The Definition of Investment Under the ICSID Convention: A Defense of Salini*, 15 CHI. J. INT’L L., 287, 309 (2014) (noting that the *Salini test* should be retained, as removing it would have a chilling effect on international investment and slow economic development).

¹⁵⁴ See, e.g., M. Ayhan Kose & Eswar S. Prasad, *Capital Accounts: Liberalize or Not?*, IMF FIN. & DEV. (Feb. 24, 2020) (noting short-term capital inflows can be quickly reversed when a country is hit by an adverse macroeconomic shock, amplifying the effect).

ii. The Temporal Dimension of Investment Protection

Investment measures can be divided into two categories from a temporal perspective. There are measures affecting the right to establishment, and measures affecting post-establishment activities. For instance, an investment-screening mechanism is a kind of measure which is intended to regulate investments before they are established in the host state's market. The majority of IIAs prefer not to include binding provisions concerning the admission of foreign investment.¹⁵⁵ What is noteworthy is that the United States has adopted a distinctive approach to regulating measures affecting investors' right to admission in its IIAs by subjecting it to national treatment obligations. For example, the United States-Mexico-Canada Agreement Article 14.4(1) provides: "Each Party shall accord to investors of another Party treatment no less favorable than that it accords, in like circumstances, to its own investors with respect to the establishment, acquisition, expansion, management, conduct, operation, and sale or other disposition of investments in its territory."¹⁵⁶

c. Technology Transfer

In recent years, some IIAs have incorporated specific provisions targeting "forced" technology transfer activities. For example, the EU-China Comprehensive Agreement on Investment¹⁵⁷ set out clear rules, including (1) the prohibition of several types of investment requirements that compel technology transfer of technology, such as requirements to transfer technology to a joint venture partner; (2) prohibitions against interfering in contractual freedom in technology licensing; and (3) protection of confidential business information collected by administrative body.¹⁵⁸

¹⁵⁵ Burgstaller, *supra* note 122, at 180.

¹⁵⁶ The United States-Mexico-Canada Agreement, U.S.-Mex.-Can., art. 14.4(1), Oct. 1, 2018, 134 Stat. 11.

¹⁵⁷ EU-China Comprehensive Agreement on Investment, EU-China, Dec. 30, 2020.

¹⁵⁸ Paolo Beconcini, *International Challenges Help China and the EU Find Agreement on Technology Transfer*, NAT'L L. REV. (Jan. 14, 2021), <https://www.natlawreview.com/article/international-challenges-help-china-and-eu-find-agreement-technology-transfer> [<https://perma.cc/96T2-VSYB>].

IV. THE CHALLENGES OF SWFs AND THEIR ACTIVITIES IN THE TECHNOLOGY SECTOR TO INTERNATIONAL ECONOMIC GOVERNANCE

Having considered how international economic governance deals with sovereign investors and their technology investment and transfer activities, this section examines how well they can respond to SWFs and their activities in the technology sector. There are three issues to be examined: First, whether SWFs and their technology investments are covered by international trade and investment law. Second, whether SWFs' possible anti-competitive behaviors could be addressed. Third, in regard to controversial technology transfer, whether and how much space a SWF may have to facilitate the transfer.

a. Are SWFs and Their Technology Investments Covered Investors and Investments?

First, with a focus on the nature of activities conducted by a state entity in question, it is likely for investment tribunals to consider SWFs as covered investors when they invest in technology companies. However, a potential tension may arise. When determining whether the activities of a SWF are commercial in nature, investment tribunals tend to consider as a benchmark how private investors would behave in the market. It may fail to fully reflect SWFs' long-term investment horizon, and even lead to the misinterpretation of its investment strategies. For example, during a period of abundant liquidity, long-term investors like SWFs would buy assets yielding higher short-term returns regardless of risks. This allows them to purchase illiquid assets during the crisis when these assets become cheaper. However, most private investors with short-term liabilities might not choose this investment strategy and therefore have no cash to invest during the crisis.¹⁵⁹ It is inappropriate to consider a SWF's investments in this situation as non-commercial just because private investors do not behave this way. This issue becomes more acute in environmental, social, and governance (ESG)-oriented investments, or new technology investments. The uncertainties and high risks may prevent private

¹⁵⁹ RICCARDO BOFFO & ROBERT PATALANO, *ESG INVESTING: PRACTICES, PROGRESS AND CHALLENGES* 6 (2020).

investors from entering at the early investment stage, although some state-backed entities like SWFs can become a major player in these investments. In this circumstance, if a tribunal does not accept that the activities of SWFs are commercial in nature and deprives them of investment protection, this would appear to encourage the short-termism embedded in the capital market, which is no doubt improper and illegitimate.

Second, technology investments in general could qualify as covered investments. Notably, two slight challenges may emerge. First, in a situation when a SWF makes portfolio investments in technology companies, if a relevant IIA does not explicitly mention a portfolio investment as a covered investment, a tribunal applying the “*Salini test*” may face the challenge of establishing the connection between the investment and the economic development of the host state. Second, GATS has limited applicability to SWFs. SWFs’ minority investments might not meet the control or ownership requirement provided in GATS Mode 3. Even when GATS Mode 3 applies to SWFs, it has no classification system that can capture the emergence and development of new technologies, thus leading to various uncertainties, and undermining the applicability of the GATS.

b. SWFs’ Anti-Competitive Behaviors in Technology Investment

A SWF could give rise to anti-competitiveness. For example, it may create a monopolistic digital ecosystem for a new technology, favoring domestic enterprises and excluding foreign service-providers. Also, it may offer preferential treatment to the foreign enterprises in which it invests, which disrupts the competitive equality between SWF-invested enterprises and non-SWF-invested enterprises. In this case, it is international trade law that deals with this issue.

First, when a SWF exploits its monopoly in order to control access to basic infrastructure services, it may enjoy more favorable treatment when competing with foreign service suppliers who rely on such infrastructures or networks.¹⁶⁰ As Howse points out, while

¹⁶⁰ See, e.g., Lina M. Khan, *The Separation of Platforms and Commerce*, 119 COLUM. L. REV. 973, 984-1007 (2019) (arguing that allowing a firm that controls an essential service or form of infrastructure to exploit control in ways that enrich the firm and harm third-party dependents may amount to private coercion).

WTO law on state enterprises applies only to goods—and remains unclear on this issue—this is surely an issue that is much broader than the question of state enterprises.¹⁶¹ The GATS seems to be well-equipped to tackle these anti-competitive behaviors. On the one hand, GATS Article XVI on market access, Article XVII on national treatment, and Article VIII on monopoly and exclusive service suppliers have fully considered and addressed these behaviors.¹⁶² On the other hand, in sectors such as air transport services, financial services, and telecommunications, the GATS offers more specific rules.¹⁶³ However, when it comes to whether a SWF falls within the scope of “public entity” in Financial Services Annex of the GATS, some tensions may arise. As discussed, while a SWF is obviously a state-owned or -controlled entity, the meaning of “principally” engaged in carrying out governmental functions or activities for governmental purposes may lead to debates about the conduct of a SWF. To be specific, SWFs tend to have multiple functions, including carrying out governmental functions or purposes and seeking financial returns. Therefore, the criteria for defining “principally” remain unclear. Also, in a hypothetical situation, a SWF provides certain financial services for both governmental and profits-earning purposes, and the entity plays a major or monopolistic role in a market without commercial terms provided by other private competitors as a benchmark. It might become more controversial when determining whether the SWF falls within the scope of “public entity” within the Financial Services Annex of the GATS.

Second, regarding the discriminatory treatment between enterprises, including between domestic and foreign enterprises, and between SWF-invested enterprises and non-SWF-invested enterprises, WTO law is able to address this issue. Specifically, while the national treatment obligation only extends to the equality of competitive conditions between like goods and services, the assessment of public policy exceptions under Article XX of the GATT and Article XIV of the GATS could help to extend national treatment as equality of competitive conditions to investments.¹⁶⁴ Also, Article XVII of the GATS requires national treatment to be no less favorably applied to not only like services, but also like services

¹⁶¹ Howse, *supra* note 18, at 875.

¹⁶² *Id.* at 875-76.

¹⁶³ *Id.* at 876.

¹⁶⁴ *Id.* at 869.

suppliers.¹⁶⁵ When it comes to international investment law, most IIAs with comprehensive investment protection, including national treatment obligation of fair and equitable treatment, have sufficient instruments to address any anti-competitive behaviors of SWFs.

c. SWFs' Technology Transfer Activities

When it comes to SWFs' technology transfer and its status under current international economic governance, two situations need to be taken into account. First, a SWF sets out the joint venture requirement as a market access condition for a foreign technology company with a goal of facilitating technology transfer. Assuming that the attribution and state responsibility requirement is met, Article XVI on market access of the GATS and Article 3 of the TRIPS Agreement seem to address this measure adequately. When examining this measure in terms of international investment law, whether investment protection is granted in the pre-establishment phrase is key to addressing this issue.

The second situation is when a SWF, directed by its home government, uses the subject matter of a patent without the authorization of the intellectual property rights holder, who is a foreign investor or discloses information protected under relevant laws, but invokes national security as a defense. Take the COVID-19 pandemic as an example, to which terms such as "emergency," "where necessary to protect the public," or "national emergency" within TRIPS Agreement Articles 73(b)(iii), 30, 31, and 39 apply. However, these rulings require the state to bear the responsibility of providing adequate remuneration in each case, which may in effect prevent states from using them. Also, while some efforts are being made to facilitate COVID-19 treatment-related technology transfer, SWFs may intensify the long-term conflicts between the TRIPS obligations and the technological needs of many developing countries. Specifically, while the former prioritizes the protection of patent holders, the latter demands an equitable allocation of technology between the Global North and South. Technology transfer with a goal of combating climate change challenges might be a potential battlefield.

¹⁶⁵ GATS at 298.

V. RETHINKING INSTITUTIONAL INSTITUTIONS FOR REGULATING SWFs: ICSID OR WTO?

SWFs and their activities in the technology sector are subject to both international trade and investment laws. This begs the question: in dealing with the evolving SWF industry, should we regulate it through international arbitration administered by ICSID or under the WTO? This Part first explains why the WTO, rather than ICSID, is a more appropriate institution to regulate SWFs and their activities. Second, it discusses improvements necessary in order for the WTO to govern the SWF industry effectively.

a. Why WTO?

As a regulator of the SWF industry, ICSID has several shortcomings, making it unsuited to the nature and development of SWFs. The argument that ICSID is an appropriate forum for regulating SWFs is based on two main grounds. First, it could help to depoliticize the state-owned or controlled entity by treating them as private investors.¹⁶⁶ Second, it may reduce the suspicion of host states towards SWFs' political motivations behind their investments.¹⁶⁷ In practice, the efforts to depoliticize SWFs appear to have failed, but also may hamper the contribution that SWFs can make. In 2008, the Santiago Principles emerged as a result of national security concerns of developed economies like the United States.¹⁶⁸ To address these concerns, the Santiago Principles require that SWFs be monitored or regulated to ensure that their investments are made solely on financial grounds without political involvement in investment decision-making.¹⁶⁹ However, these efforts to depoliticize SWFs have been ineffective. In recent years, SWFs have

¹⁶⁶ Meg Lippincott, *Depoliticizing Sovereign Wealth Funds Through International Arbitration*, 13 CHI. J. INT'L L. 649, 675 (2013).

¹⁶⁷ *Id.* at 563.

¹⁶⁸ IFSWF, *THE ORIGIN OF SANTIAGO PRINCIPLES: EXPERIENCES FROM THE PAST; GUIDANCE FOR THE FUTURE* 13 (2018) ("The US was particularly concerned due to several large projects targeted in the US in 2005 and 2006, including China National Offshore Oil Corporation's (CNOOC) bid for US oil company Unocal, as well as Dubai Ports World's purchase of the UK's P&O and its contracts to manage US port assets. Both transactions were pursued against a backdrop of growing concerns over national security risks related to such foreign direct investment.").

¹⁶⁹ *Id.* at 34-35.

become more active in the global financial market. Without viewing them as private investors, a growing number of host states have established investment-screening mechanisms which target SWFs and their investments. On the other hand, to depoliticize SWFs by using private investors as a benchmark may conceal the problems facing the private sectors, such as short-termism in the capital market. Also, it ignores the contribution that SWFs with their long-term view can make, especially in ESG-oriented investments.

Further, the mechanism of international investment arbitration has some drawbacks when dealing with SWFs and their investments. On the one hand, most SWFs tend to maintain a low-profile investment strategy, although frequent litigations before the ICSID may expose them to public sight and interfere with their investment strategies. In practice, there are few reported cases involving SWFs as claimants against host states.¹⁷⁰ It evidences the relatively limited use of ICSID by SWFs and indicates SWFs prefer in some cases to rely on diplomacy.¹⁷¹ On the other hand, the huge costs associated with arbitration may lead to potential tensions. For example, when a SWF is a respondent and loses an investment case before the ICSID, the high arbitration costs and compensation it is required to pay may lead to public concerns or even criticisms of the SWFs' accountability regarding the appropriate use of public money.

Unlike the ICSID, the WTO will take into account the political nature of SWFs and their geopolitical implications when they are involved in the global financial market. Also, the institution can offer a deliberation forum for developing new norms for regulating SWFs, which might be more effective than arbitration. First, primarily established with the goal of maintaining international peace and security,¹⁷² the WTO is able to maintain a broader vision when dealing with SWFs and their geopolitical implications. Instead of being concerned only with trade liberalization, the WTO takes other important issues into consideration, such as sustainable

¹⁷⁰ Burgstaller, *supra* note 122, at 19.

¹⁷¹ *Id.*

¹⁷² See, e.g., Hunter Nottage, *Trade In War's Darkest Hour: Churchill and Roosevelt's Daring 1941 Atlantic Meeting that Linked Global Economic Cooperation to Lasting Peace and Security*, WTO, https://www.wto.org/english/thewto_e/history_e/tradewardarkhour41_e.htm [https://perma.cc/3EQX-CWLZ] (last visited Jan. 15, 2023) (discussing the origins of robust economic cooperation as a result WW2 and its explicit link to global peace a security).

development.¹⁷³ This implies that the WTO is able to appreciate and preserve the advantages of SWFs and their investments while addressing their challenges.

Second, because the development of the SWF industry is at an early stage, it is important to develop new norms to regulate their behaviors. To achieve this, an inclusive deliberation is more effective than arbitration. WTO has played a vital role in fostering transparency of trade, monitoring the trade policies of members, and providing a platform for deliberation.¹⁷⁴ Therefore, it has the potential to create a deliberative forum for regulating SWFs. Also, instead of binding law, the deliberation is expected to contribute to the shaping of “soft” norms, which are advantageous when regulating SWFs. On the one hand, given that the SWF industry is evolving, and many differences may exist when exploring appropriate regulatory responses to it, it is too early to develop “hard law” for SWFs. On the other hand, “soft law” has valuable merits. As Robert Howse and Ruti Teitel note, soft law is effective as “it possesses the relevant or desirable ‘law’ characteristics for the purpose in question (transparency, generality, connection to common or widely shared norms and practices), while not itself processing the ‘bindingness’ characteristic.”¹⁷⁵ It could also contribute to the interpretation of international trade law.¹⁷⁶

b. Improvements for the WTO

While the WTO shows the potential to regulate the SWF industry properly, it needs a series of improvements in terms of building an information base and inclusive deliberation mechanism. First,

¹⁷³ Robert Howse, *The World Trade Organization 20 Years On: Global Governance by Judiciary*, 27 EUR. J. INT’L L. 9, 38 (2016) (noting in the Shrimp-turtle case, the Appellate Body read “exhaustible natural resources” under Article XX(g) of the GATT in light of sustainable development, a goal stated in the preamble to the framework agreement establishing the WTO).

¹⁷⁴ See BERTELSMANN STIFTUNG, REVITALIZING MULTILATERAL GOVERNANCE AT THE WORLD TRADE ORGANIZATION: REPORT OF THE HIGH-LEVEL BOARD OF EXPERTS ON THE FUTURE OF GLOBAL TRADE GOVERNANCE 11 (2018) (discussing present issues with the WTO, suggesting it must be revitalized by its members with an emphasis on renewed multilateral dialogue on the use and effects of trade-distorting policies in both developed and developing nation).

¹⁷⁵ Robert Howse & Ruti Teitel, *Beyond Compliance: Rethinking Why International Law Really Matters*, 1 GLOB. POL’Y 127, 135 (2010).

¹⁷⁶ *Id.* at 135.

Article XVII(4) of the GATT requires all WTO members to submit their notifications regarding state trading enterprises to the Council for Trade in Goods, for review by the working party on state enterprises.¹⁷⁷ This mechanism could be further developed by including SWFs as the subject of notifications, and by collecting information regarding SWFs and their economic activities. This mechanism should also be allowed to collect information and keep track of the behaviors and impacts of SWFs more actively. For example, it could act on its own initiative or in collaboration with other international institutions, such as the United Nations Conference on Trade and Development and World Economic Forum that have a better understanding of the SWF industry. Second, based on a comprehensive database, a regular deliberation mechanism could be established with the goal of developing possible norms for SWFs and their various economic activities.

VI. CONCLUSION

While SOEs have been a controversial and even thorny issue of international trade governance, SWFs have posed new challenges to international economic governance, and raised the issue of how to address state capitalism appropriately. Unlike SOEs, which are usually viewed negatively in terms of their trade-distortion effects, SWFs have positive implications for the global markets, such as their leadership in driving ESG investments. In this regard, in order to encourage SWFs' long-term investing strategies, it is necessary for international economic governance not to use private business entities with short-termism as a benchmark when examining SWFs' activities. Looking beyond SWFs' behaviors and implications, it is necessary to consider the reasons that many developing countries choose to establish their own SWFs.¹⁷⁸ In the technology sector, one reason might be the long-term demands of developing countries to benefit from technological development. This need might become more acute when it comes to having access to the COVID-19 vaccine-related technologies and necessary technologies for mitigating

¹⁷⁷ GATT 1994 at 48.

¹⁷⁸ See, e.g., Tao Sun & Heiko Hesse, *Sovereign Wealth Funds and Financial Stability*, VOXEU (Mar. 30, 2009), <https://voxeu.org/article/sovereign-wealth-funds-and-financial-stability> [<https://perma.cc/UFA3-V7X9>] (summarizing the results of recent studies on SWFs and their consequences for financial stability, suggesting that SWFs are a stabilizing force in global financial markets).

climate change in the future. Therefore, for current international economic governance, it might be necessary to shift the focus from protecting IP rights to providing sufficient space for technology transfer in these areas. Additionally, as a response to state enterprises, international economic governance tends to adopt a strategy intended to de-politicize them.¹⁷⁹ However, this strategy might not be effective in dealing with SWFs. Compared to SOEs, SWFs have shown a higher level of entanglement between politics and economics. This calls for new governance that recognizes this feature and helps SWFs to address many global challenges, where politics cannot be separated from economics.¹⁸⁰

This Article argues that the WTO serves as an appropriate forum through which SWFs can be regulated correctly and effectively. However, apart from resolving institutional constraints as proposed, the relationship between state capitalism and today's U.S.-China geo-economic competition¹⁸¹ needs to be properly addressed. The U.S.-China competition is often understood as a "war" between the free-market model and the state capitalism model; and the latter is also regarded as a source of the competition.¹⁸² For example, in efforts to promote the WTO's reforms of state enterprises, some proposals based on this perception view the question of state enterprises as China's question and aim to use the WTO as a forum to deal with them.¹⁸³ However,

¹⁷⁹ Lippincott, *supra* note 166.

¹⁸⁰ See, e.g., Geoffrey R.D. Underhill, *State, Market, and Global Political Economy: Genealogy of an (Inter-?) Discipline*, 76 *RIIA* 805, 806 (2000) ("[T]he political and economic domain cannot be separated in any real sense, and even doing so for analytical purposes has its perils.").

¹⁸¹ See generally Gregory Shaffer, *Governing the Interface of U.S.-China Trade Relations*, 115 *AM. J. INT'L L.* 622 (2021) (addressing three dimensions of the US-China relationship: the economic dimension, the geopolitical/national security dimension, and the normative/social policy dimension. In so doing, the article seeks a middle ground between those who want to bolster the WTO and those who reject it, proposing reforms).

¹⁸² See, e.g., Jude Blanchette, *Confronting the Challenge of Chinese State Capitalism*, *CSIS* (Jan. 22, 2021),

<https://www.csis.org/analysis/confronting-challenge-chinese-state-capitalism> [<https://perma.cc/3B2G-D4DA>] (discussing the economic challenge China poses for the US and proposes that the US should recognize its limits, task relevant agencies with drafting summaries of existing legal and regulatory tools that might be employed to better protect U.S. interests and continue to build and expand the capacity of government agencies and the intelligence community to monitor and track the sprawling network of Chinese firms).

¹⁸³ See, e.g., Press Release, Office of the United States Trade Representative, Joint Statement of the Trilateral Meeting of the Trade Ministers of Japan, the United

the emerging SWF industry as a new aspect of state capitalism has challenged this perception. As discussed, unlike SOEs, which might have a protectionist intent and distort competitive conditions in the market, SWFs have made positive contributions. In other words, state capitalism should not be viewed as only problematic or clashing with the free market model. Instead, it can help to address some weaknesses of the free market model.¹⁸⁴ Also, both SOEs and SWFs have been actively involved in the global trade and investment markets, and played an important role in their home economies.¹⁸⁵ During the COVID-19 era, Turkey's SWF injected about \$3 billion into three state banks.¹⁸⁶ Singapore's Temasek rescued the country's flagship airline, Singapore Airlines, with a \$13 billion financial package,¹⁸⁷ and backed Sembcorp Marine's \$1.5 billion rights issue.¹⁸⁸ Therefore, it is inappropriate to regard state

States and the European Union (Jan. 14, 2020) (available at <https://ustr.gov/about-us/policy-offices/press-office/press-releases/2020/january/joint-statement-trilateral-meeting-trade-ministers-japan-united-states-and-european-union> [<https://perma.cc/79TS-DR5U>]) (calling for the strengthening of existing WTO rules on industrial subsidies and further cooperation.).

¹⁸⁴ See, e.g., PHILIP ALSTON, BASSAM KHAWAJA & REBECCA RIDDELL, PUBLIC TRANSPORT, PRIVATE PROFIT: THE HUMAN COST OF PRIVATIZING BUSES IN THE UNITED KINGDOM (2021) (discussing the privatization of the bus sector in the United Kingdom which created an expensive and inadequate service; consequently, the report notes its negative effects on people, such as lost jobs, missed medical appointments, loss of food and utilities, and limitations on seeing friends and family).

¹⁸⁵ See, e.g., Ilias Alami & Adam D. Dixon, *The Strange Geographies of the 'New' State Capitalism*, POL. GEOGRAPHY, Oct. 2020, at 1, 1 (analyzing new state capitalism with a critical geopolitical lens. The authors argue that the new spatiality of the global economy has created a need for new discursive frames of reasoning, that this need is fulfilled by state capitalism and that state capitalism enables Western business and state actors to justify tougher policy stances).

¹⁸⁶ Reuters Staff, *Turkey Plans Almost \$3 Billion Capital Injection for State Banks*, *Sources Say*, REUTERS (May 8, 2020), <https://www.reuters.com/article/us-turkey-banks-capital/turkey-plans-almost-3-billion-capital-injection-for-state-banks-sources-say-idUSKBN22K1Z1> [<https://perma.cc/P7CC-JE7Y>].

¹⁸⁷ Anshuman Daga, *Singapore Airlines Obtains \$13 Billion Rescue Package amid Coronavirus Shock*, REUTERS (Mar. 26, 2020), <https://www.reuters.com/article/us-health-coronavirus-singapore-air-tema/singapore-airlines-obtains-13-billion-rescue-package-amid-coronavirus-shock-idUSKBN21D3AE> [<https://perma.cc/UST4-JV7U>].

¹⁸⁸ Ven Sreenivasan, *Sembcorp Marine's Controversial \$1.5 Billion Rights Issue Oversubscribed by 1.18 Times*, STRAIT TIMES (Sept. 19, 2021), <https://www.straittimes.com/business/companies-markets/sembcorp-marines-controversial-15-billion-rights-issue-oversubscribed#:~:text=Sembcorp%20Marine's%20controversial%20%241.5%20billion%20rights%20issue%20oversubscribed%20by%201.18%20times,-Minority%20shareholders%20had&text=SINGAPORE%20%2D%20Sembcorp%20>

capitalism as China's issue. Instead, state capitalism should be understood in a broader and more objective way, and it should be kept separate from the discussion of the great power competition. Given that trust between the United States and China is very low at the WTO,¹⁸⁹ placing the discussion of SWFs in a context which is separate from the great power tensions will help to create more space for an active and deep discussion about them.

Marine's%20(Sembmarine),offer%20oversubscribed%20by%201.18%20times
[<https://perma.cc/FJ9B-3N3U>].

¹⁸⁹ See, e.g., Robert Howse, *The Limits of the WTO*, 116 AM. J. INT'L L. UNBOUND 41 (2022) (suggesting that legal rules and dispute mechanisms can play a major role in managing conflict between China and the United States while also disputing the centrality of the WTO in addressing many of the governance challenges that are at play).