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*Avery E. Aulds**

ABSTRACT

Migration has occurred for as long as mankind has been on earth and has been triggered by environmental factors for just as long. However, as the threat of climate change increases, more and more people are migrating from their homes due to these environmental disasters. With this new influx of border-crossings, governments and policymakers must grapple with what to do. As it stands, the rights of asylum seekers expressed in international treaties focus on migrants fleeing conflict and violence. This has left a gaping hole for environmental migrants who are left without international protection. Despite the lack of protections under international law, there is still hope through the use of domestic constitutional law. By comparing the constitutions of France, Italy, Ecuador, and Mexico, this paper seeks to offer a simple equation to provide protection for environmental migrants: the constitutional right to asylum + the right to life + the right to a healthy environment = a roadmap to extending constitutional asylum rights to environmental migrants. The goal is that, with this equation, the rights of environmental migrants can become more universally recognized.

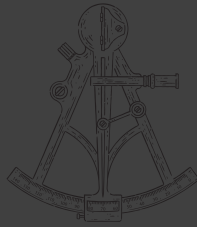


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“Migration is an expression of the human aspiration for dignity, safety and a better future. It is part of the social fabric, part of our very make-up as a human family.”¹

I. INTRODUCTION

What is freedom of movement and why does it matter? The freedom of movement has been characterized as a human right based on one’s right to self-determination.² This right guarantees a person’s ability to move freely within their state or leave altogether,³ something especially important for migrants as they choose to leave their state and enter another. However, not everyone can enjoy freedom of movement as easily. With rising instances of environmental crises, it is becoming apparent that environmental migrants’ ability to move freely is restricted. As this paper will show, there are no protections under international law for environmental migrants. Because of this, environmental migrants may now have to turn to domestic constitutional law in order to have their claims heard.

Why is the plight of environmental migrants so important to pay attention to now? The short answer: climate change. Climate change has been labelled as a “wicked problem” – it is a multidimensional challenge that affects every aspect of society and does not have a clear solution or perpetrator.⁴ Despite collective warnings from scientists and climate activists that change is necessary, many policymakers have struggled to take action to adequately address climate change.⁵ The complexity of the issue and the different ideologies regarding climate change have made it difficult and sometimes even impossible for effective legislation to be passed in many jurisdictions—including legislation regarding environmental migration.⁶ This is why climate change is known as a wicked problem: it is a complex issue that is almost impossible to solve due to incomplete research and differing political views.⁷ Additionally, climate change is a wicked problem because of how it interacts with all sectors of society. In other words, everyone on Earth will feel its heat.

*Assistant District Attorney, King’s County District Attorney’s Office. J.D. Graduate of the University of North Carolina at Chapel Hill School of Law. I would like to thank Professor Holning Lau, Willie Person Mangum Distinguished Professor of Law at the University of North Carolina at Chapel Hill School of Law for his continued support in writing this paper. I would also like to thank my sister, Meredith Aulds, Candidate for the PhD, Anthropology Department, Purdue University for helping prepare this piece for publication. Last, but not least, thank you to my family for always being there for me and helping me reach my potential.

¹ INT’L FED’N OF RED CROSS AND RED CRESCENT SOCIETIES, *Health and Care for Migrants and Displaced Persons*, 4 (quoting Ban Ki-Moon, South Korean politician and former Secretary-General of the United Nations from 2007 to 2016).

² José D. Inglés (Special Rapporteur of the Sub-Comm’n. on Prevention of Discrimination and Prot. of Minorities), *Study of Discrimination in Respect of the Right of Everyone to Leave Any Country, Including His Own, and to Return to His Country*, at 9, U.N. Doc. E/CN.4/Sub.2/220/Rev.1, (1963); *see also* U.N. Hum. Rts. Comm’n., General Comment No. 27, Article 12, Freedom of Movement, ¶ 1, U.N. Doc. CCPR/C/21Rev.1/Add.9 (1999) (stating that freedom of movement is “an indispensable condition for the free development of a person.”)

³ G.A. Res. 217 (III) A, Art. 13, Universal Declaration of Human Rights (Dec. 10, 1948).

⁴ Gerald Stang & Balazs Ujvari, E.U. Inst. for Sec. Stud., *Climate Change as a ‘wicked problem’*, 1 (Nov. 2015).

⁵ Helen L. Walls, *Wicked Problems and a ‘Wicked’ Solution*, GLOBALIZATION & HEALTH 1 (2018), <https://perma.cc/YL97-3FLF>.

⁶ *Id.* at 2.

⁷ Stang & Ujvari, *supra* note 4.

The consequences of climate change, “floods, drought, heat stress, species loss, and ecological change,” affect poverty and food production, among other “psychological, social, cultural, and political-economic processes.”⁸ All of these impacts compounding together will cause more people to migrate from their homes. Now, more than ever, it is important to acknowledge the struggles of environmental migrants and offer viable solutions.

This paper seeks to offer a simple equation to this complex problem: the constitutional right to asylum + the right to life + the right to a healthy environment = a roadmap to extending constitutional asylum rights to environmental migrants. Though this equation may seem easy and straightforward, climate change is a complicated issue that is still in its infancy. This paper seeks to help lay the groundwork for this equation to take flight.

This paper proceeds in six parts. Part II will discuss the issue of climate migration and lay the foundation for the problem faced by environmental migrants. It will also give necessary definitions and background information. Part III will cover current refugee law, on an international and domestic level, focusing on the constitutional law of four nations: France, Italy, Ecuador, and Mexico. Part IV of this paper will then describe the argument. The first section will discuss the right to life and the right to a healthy environment, arguing that by combining these constitutional provisions, environmental migrants have a better chance of winning asylum claims. The second section of Part IV will give illustrative examples of certain scenarios where environmental migrants could win asylum claims. Part V acknowledges and addresses concerns that could be raised by this proposition. Finally, Part VI summarizes and concludes this paper.

II. THE PROBLEM OF ENVIRONMENTAL MIGRATION

Despite the prolific movement of people due to environmental factors, a set term does not exist to describe this demographic of migrants. Some terms that are used include “environmentally displaced persons,” “environmental migrants,” “climate migrants,” “ecological migrants,” “environmental refugees,” and “climate refugees,” just to name a few.⁹ While the term “climate migrant” has become a popular choice among academics,¹⁰ this paper will only use the term “environmental migrant.” This broader term better encapsulates the wide variability inherent in migration caused by environmental impacts, whereas the term climate migrant only encompasses migration caused by climate change.¹¹ Environmental migrants are defined as,

persons or groups of persons who, for compelling reasons of sudden or progressive changes in the environment that adversely affect their lives or living conditions, are obliged to leave their habitual homes, or

⁸ John S. Dryzek, et al., *Climate Change and Society: Approaches and Responses*, in THE OXFORD HANDBOOK OF CLIMATE CHANGE AND SOCIETY 1, 4, 88 (2011).

⁹ Eliza Pan, *Reimagining the Climate Migration Paradigm: Bridging Conceptual Barriers to Climate Migration Responses*, 50 ENV'T. L. 1173, 1196 (2020).

¹⁰ *Id.* at 1182.

¹¹ *Id.* at 1196.

choose to do so, either temporarily or permanently, and who move either within their country or abroad.¹²

This is an all-inclusive definition that allows for people who are fleeing natural disasters or environmental degradation caused by climate change to be combined under the umbrella of environmental migrants.¹³ For example, a person could be considered an environmental migrant whether they are fleeing a natural disaster, like a flood, or leaving their home due to chronic climate change, such as sea-level rise.¹⁴ What is important in the definition is that, in both scenarios, the migrant's current home has become uninhabitable due to environmental changes, *forcing* them to leave.¹⁵

Another obstacle to understanding environmental migration is the difficulty of quantifying the problem.¹⁶ Many people migrate for a plethora of reasons, only one of which may be environment-related.¹⁷ Second, not all movement is documented, making it difficult to capture the full volume of people affected by environmental migration.¹⁸ Despite these challenges, it is estimated that 22.5 to 24 million people were forced to migrate in 2017 due to “sudden onset’ weather events [such as] flooding, forest fires after droughts, and intensified storms.”¹⁹ Additionally, it is predicted that this number will grow exponentially with “[f]orecasts of [environmental] migration [ranging] from 200 million to one billion migrants by 2050, with more than 143 million internal migrants projected for sub-Saharan Africa, South Asia, and Latin America alone.”²⁰

This dramatic rise in environmental migration is due in large part to the destructive nature of climate change.²¹ As the world gets hotter, regions with specific climate-types become uninhabitable.²² Many parts of the world will become drier, with drought becoming a bigger issue for more people.²³ Rainfall patterns will change and intensify, increasing flooding.²⁴ Crop yields and fish stock will decrease, and human health issues will increase.²⁵ Furthermore, the parts of the world that are most affected by these drastic changes are

¹² International Organization for Migration [IOM], *Discussion Note: Migration and the Environment*, at 1-2 MC/INF/288 (Nov. 1, 2007), <https://perma.cc/J9SG-G9BX>.

¹³ *Id.*

¹⁴ *5 Facts on Climate Migrants*, U.N UNIV. (Nov. 26, 2015), <https://perma.cc/7KCU-A3VN>.

¹⁵ *Id.* (emphasizing that climate migrants are forced to leave their homes and not given the luxury of a choice to stay).

¹⁶ *Environmental Migration*, MIGRATION DATA PORTAL, <https://perma.cc/L6YB-29GM> (last visited May 4, 2023); see also *5 Facts on Climate Migrants*, *supra* note 14.

¹⁷ *5 Facts on Climate Migrants*, *supra* note 14.

¹⁸ *Id.*

¹⁹ John Podesta, *The Climate Crisis, Migration, and Refugees*, BROOKINGS (July 25, 2019), <https://perma.cc/59TQ-2AXZ>.

²⁰ Pan, *supra* note 9, at 1175 (internal citation omitted).

²¹ *Id.* at 1185.

²² Oli Brown, *Migration and Climate Change*, INTERNATIONAL ORGANIZATION FOR MIGRATION [IOM], at 16 (2008).

²³ *Id.*

²⁴ *Id.*

²⁵ *Id.*

vulnerable populations such as those on small island states, those in rural areas, and lower-income individuals.²⁶

However, even if a person is able to migrate out of their country due to environmental stressors, they are not protected as refugees.²⁷ Environmental migrants are not considered refugees and are thus not protected under international law.²⁸ The justification used for excluding environmental migrants from obtaining refugee status hinges on the supposition that environmental migrants are unable to “show a fear of persecution due to membership in a particular group” as required by international law.²⁹

III. BRIEF BACKGROUND OF REFUGEE LAW

To better understand the current landscape of asylum law, this Part will focus on both international and domestic law. Section A will explain the background of international law whereas Section B will center on the constitutional law of asylum in France, Italy, Ecuador, and Mexico.

A. INTERNATIONAL REFUGEE LAW

Immediately following World War II, the United Nations (“U.N.”) created the International Refugee Organization (“IRO”) in 1947.³⁰ The IRO sought to create a more feasible solution to the mass upticks in migration that was being seen throughout Europe.³¹ The IRO defined a refugee as someone “who has left, or who is outside of, his country of nationality or of former habitual residence, and who, whether or not he had retained his nationality, belongs to one” of three specified categories.³² The IRO also included in the definition of a refugee someone “who is outside of his country of nationality or former habitual residence, and who, as a result of events subsequent to the outbreak of the second world war, is unable or unwilling to avail himself of the protection of the Government of his country of nationality or former nationality.”³³

However, despite the existence of the IRO, there was still not a comprehensive legal framework aimed at protecting refugees. This led to the creation and adoption of the

²⁶ 5 *Facts on Climate Migrants*, *supra* note 14.

²⁷ *Environmental Migration*, *supra* note 16.

²⁸ See U. N. Convention Relating to the Status of Refugees (July 28, 1951) [hereinafter Refugee Convention] (noting that the definition of “refugee” under this Convention applies to those who are facing political persecution and violence, not environmental harm).

²⁹ Lucia Rose, *The World After Teitiota: What the HRC Decision Means for the Future of Climate Migration*, 12 SAN DIEGO J. CLIMATE & ENERGY L. 41, 46 (2021).

³⁰ G.A. Res. 62 (I) at 97 (Dec. 15, 1946).

³¹ MICHELLE FOSTER & HÉLÈNE LAMBERT, *INTERNATIONAL REFUGEE LAW AND THE PROTECTION OF STATELESS PERSONS* 25 (Oxford Univ. Press ed.) (2019).

³² U.N. Constitution of the International Refugee Organization Annex I, Part 1, Section A, art. 1, Dec. 15, 1946, 18 U.N.T.S. 3 (stating that the three specified categories pertain to people fleeing the Axis powers, those fleeing Spain, and those who were considered refugees before World War II for “reasons of race, religion, nationality or political opinion.”).

³³ *Id.* at art. 2.

Convention Relating to the Status of Refugees in 1951 (“Refugee Convention”).³⁴ The Refugee Convention seeks “to establish an international code of rights of refugees on a general basis.”³⁵ It defines the term “refugee” as someone who has a

well-founded fear of being persecuted for reasons of race, religion, nationality, membership of a particular social group or political opinion, is outside the country of his nationality and is unable or, owing to such fear, is unwilling to avail himself of the protection of that country; or who, not having a nationality and being outside the country of his former habitual residence as a result of such events, is unable or, owing to such fear, is unwilling to return to it.³⁶

Apart from the general definition, the Refugee Convention entitles refugees to certain rights dealing with expulsion and non-refoulement. In Article 32, the Refugee Convention guarantees a refugee due process of law in instances where the contracting state is seeking to expel the refugee, as well as reasonable time to seek lawful refuge in another contracting state.³⁷ Article 33 says that a contracting state may not return a refugee to the original country from which they fled if “his life or freedom would be threatened on account of his race, religion, nationality, membership of a particular social group or political opinion.”³⁸

B. THE CONSTITUTIONAL RIGHT TO ASYLUM

The original intent of the Refugee Convention was to be a broad instrument, but it does not cover all refugees. The Refugee Convention defines a refugee more narrowly, limiting the status to those who flee their country due to persecution based on “race, religion, nationality, membership of a particular social group or political opinion.”³⁹ Because of this narrow definition, the focus of this paper will be on the constitutional provisions of four nations that have expanded the rights of refugees beyond the Refugee Convention—France, Italy, Ecuador, and Mexico.⁴⁰

1. FRANCE

³⁴ Nehemiah Robinson, *Convention Relating to the Status of Refugees: Its History, Significance and Contents*, INST. JEWISH AFFS. (1953).

³⁵ *Id.* at 6.

³⁶ U.N. Conference of Plenipotentiaries on the Status of Refugees and Stateless Persons convened under General Assembly resolution 429 (V), *Convention Relating to the Status of Refugees*, art.1(2) (28, July 1951).

³⁷ *Id.* at art. 32.

³⁸ *Id.* at art. 33; see also Atle Grahl-Madsen, Commentary, *The Refugee Convention, Articles 2-11, 13-37*, DIV. OF INT’L PROT. OF THE UNITED NATIONS HIGH COMM’R FOR REFUGEES (1997).

³⁹ Refugee Convention, *supra* note 28 at art.1(2).

⁴⁰ This paper will not focus on the United States because its Constitution does not guarantee a right to a healthy environment, nor does it expand on refugee rights. However, as both environmental and immigration law develop, the United States could become a potential case.

The French Constitution is unique and apt for study for a few reasons. First, unlike other nations in the European Union, the French Constitution includes the right to asylum in its Preamble, showcasing the importance of the right to the French government.⁴¹ Second, France's original constitutional right to asylum was created before the Refugee Convention.⁴² Lastly, France amended the constitutional right in 1958, creating "a broad, human rights based conception of asylum status; it grants asylum to 'any foreigner who is persecuted for his action in pursuit of freedom or who seeks the protection of France on other grounds.'"⁴³ This includes a guarantee that "[a]ny man persecuted in virtue of his actions in favour of liberty may claim the right of asylum upon the territories of the Republic."⁴⁴ Ultimately, the constitutional right to asylum is broader than the rights given under the Refugee Convention.

It is noteworthy to mention that, though this constitutional right exists, France mainly adjudicates asylum claims under the Refugee Convention.⁴⁵ Even so, using the constitutional right to asylum is not completely obsolete. In 2014, a Syrian family applied for a short-term visa in order to travel to France and apply for asylum.⁴⁶ The application was denied and the family filed suit in the Administrative Tribunal in Nantes.⁴⁷ The Tribunal held that, under the French Constitution, the right to seek asylum was fundamental, and that refusing the plaintiff a visa constituted "a serious and manifestly unlawful violation of a fundamental freedom with serious consequences for the asylum seekers in question."⁴⁸

2. ITALY

The second nation that this paper analyzes is Italy because of its extremely broad constitutional right to asylum. However, what makes Italy particularly interesting is its journey through changing migration policy. On the one hand, Italy is a cautionary tale about the dangers of not enforcing rights found in its constitution.⁴⁹ On the other hand, Italy is an example of hope that policies can change for the better and protect more categories of migrants.⁵⁰

⁴¹ Stephen Meili, *The Constitutional Right to Asylum: The Wave of the Future in International Refugee Law?*, 41 *FORDHAM INT'L L.J.* 383, 406 (2018).

⁴² *Id.*

⁴³ *Id.*, at 402-03.

⁴⁴ See 1946 CONST. Preamble §§ 1-2, 4 (Fr.) (noting that the Preamble to the 1958 French Constitution – the most recent in that country – incorporates the principles enumerated in the 1946 Constitution).

⁴⁵ H el ene Lambert et al., *Comparative Perspectives of Constitutional Asylum in France, Italy, and Germany: Requiescat in Pace?*, 27 *REFUGEE SURV. Q.* 16, 21 (2008).

⁴⁶ TA Nantes, Sept. 16, 2014, 1407765, 3-4.

⁴⁷ *Id.*

⁴⁸ Maria-Teresa Gil-Bazo, *Observations to Request for Advisory Opinion Submitted by the State of Ecuador*, INTER-AM. CT. H.R. 1, 26 (2017), https://www.corteidh.or.cr/sitios/observaciones/oc25/44_gil_bazo.pdf (citing TA Nantes, Sept. 16, 2014, 1407765, 3-4).

⁴⁹ Maxwell Newsome, *A Constitutional Right to Asylum? A Comparative Analysis Could Ground the Design of Better Protection for Asylum Seekers*, 48 *U. DAYTON L. REV.* 99, 106 (2022).

⁵⁰ Gaia Testore, *Italy: A New System of Reception and Integration*, EUR. COMM'N (Jan. 25, 2021), <https://perma.cc/PY69-T7XA>.

The Italian Constitution of 1948 includes an asylum provision that is one of the most broadly worded rights of any nation in the European Union. According to the constitution, “[a] foreigner who, in his home country, is denied the actual exercise of the democratic freedoms guaranteed by the Italian constitution shall be entitled to the right of asylum under the conditions established by law.”⁵¹ In theory, this would mean that a person has a right to seek asylum in Italy if they are deprived of any of the rights enjoyed by Italian residents.⁵²

However, in practice, only about 200 of the 25,000 refugees granted asylum in Italy have done so via the constitutional route.⁵³ This is partly because Italy never passed any laws to regulate this right, even though they did so under the Refugee Convention.⁵⁴ Another reason for the low number is that it was not until 1997 that the Italian Supreme Court of Cassation—Italy’s apex court—held that the constitutional right to asylum is a binding legal norm.⁵⁵ However, even with the right becoming a subjective right, there have been limitations put in place. In a string of cases spanning from 2005-2007, the Court of Cassation limited the scope of the right, holding that it only entitles an asylum-seeker to enter Italy and remain in the country while their application for refugee status under the Refugee Convention is processed.⁵⁶

Despite this, the constitutional claim is not entirely dead. Local courts in Italy have the power to recognize constitutional asylum, and some judges could rely on this right in adjudication over the Refugee Convention from time to time.⁵⁷ For example, in 1997 the Court of Cassation utilized Article 10 and referred to the provision’s recognition of the right to asylum for foreigners who are “deprived of the actual exercise of democratic freedoms” in their own countries.⁵⁸ This case dealt with a Nigerian citizen who fled his home country due to political persecution.⁵⁹ Italy denied him asylum and returned him to Nigeria where he was immediately detained.⁶⁰ The Court held that the Italian government violated the constitutional right to seek asylum as well as the principle of non-refoulement which states that a person cannot be returned to a country if the sending country knows that the person would face cruel or inhuman treatment.⁶¹

Italy also has procedures for humanitarian protection where permits are granted when a person is not able to apply for refugee status, but the individual cannot be returned back to their home country due to “objective and serious personal situations.”⁶² The concept of humanitarian protection has had a rocky road in Italy.⁶³ In 2020, the Italian government

⁵¹ Art. 10 COSTITUZIONE [COST.] (It.).

⁵² Lambert et al., *supra* note 45, at 23-4.

⁵³ Newsome, *supra* note 49, at 104.

⁵⁴ *Id.*

⁵⁵ Meili, *supra* note 41, at 414, n. 105 [citing Cass., sez. un. 26 maggio 1997, n. 4674, *Rivista di diritto internazionale* 1997, 80, 843 (It.)].

⁵⁶ Cass. civ., sez. un., 25 novembre 2005, n. 25028, *Foro it. I*, 2006, 2851/2852-2859/2860 (It.).

⁵⁷ Lambert et al., *supra* note 45, at 25.

⁵⁸ Cass. civ., sez. un. 1997, 26 maggio 1997, n. 4674, (It.) (author translation).

⁵⁹ *Id.*

⁶⁰ *Id.*

⁶¹ *Id.* see also G.A Res. 39/46, art. 3(1) (Dec. 10, 1984) (“No State Party shall expel, return (“refouler”) or extradite a person to another State where there are substantial grounds for believing that he would be in danger of being subjected to torture.”).

⁶² Testore, *supra* note 50.

⁶³ *Id.*

abolished the permits, stating that the system was being abused.⁶⁴ However, the special protection permits were quickly reinstated and even broadened, giving hope to positive migration reform in Italy.⁶⁵

3. ECUADOR

Ecuador's constitution has particularly progressive policies. The nation has been on the forefront of expanding the number of terms that fall under the human rights umbrella.

Article 41 of the Ecuadoran Constitution states that “[the] rights to asylum and sanctuary are recognized, in accordance with the law and international human rights instruments.”⁶⁶ This Article incorporates many international instruments, including the Cartagena Declaration, which broadened the scope of the right to asylum found in the Refugee Convention and includes people fleeing generalized violence.⁶⁷

According to the Constitution, any international treaties ratified by Ecuador are explicitly and directly incorporated into domestic law.⁶⁸ Some treaties that have been incorporated include the Refugee Convention; the Convention against Torture and Other Cruel Inhuman or Degrading Treatment or Punishment; and the International Covenant on Civil and Political Rights.⁶⁹

The Constitutional Court of Ecuador has repeatedly held that the constitutional right to asylum must be read as a human right.⁷⁰ In one case, the Court stated that the right to asylum is of important significance to the constitutional framework “insofar as [asylum] arises from the need to restore the fundamental human rights of individuals who have been forced to leave their countries of origin.”⁷¹ In another case, the Court reemphasized the need to interpret the right in line with international law as well as international human rights norms, especially when their scope protects more than domestic legislation.⁷²

4. MEXICO

Mexico is a strong case study because it has seen a dramatic increase in migration. In 2019, the number of first-time asylum applicants increased by 140% from 2018.⁷³ One cause of this increase is Mexico's proximity to the United States, which has had a policy of

⁶⁴ *Id.*

⁶⁵ *Id.*

⁶⁶ Constitution of the Republic of Ecuador Oct. 20, 2008, art. 41.

⁶⁷ Rose, *supra* note 29, at 55-56.

⁶⁸ Constitution of the Republic of Ecuador Oct. 20, 2008, art. 11(3), 417, 424.

⁶⁹ Ratification Status for Ecuador, U.N. TREATY BODY DATABASE, <https://perma.cc/V5FC-6W3J> (last visited May 4, 2023).

⁷⁰ Gil-Bazo, *supra* note 48, at 25.

⁷¹ Corte Constitucional del Ecuador [Ecuador Constitutional Court] Aug. 14, 2014, Judgment No 002-14-SIN-CC, Case No 0056-12-IN & 0003-12-IA Acumulados, 38 (author translation).

⁷² *Id.* at 38, 51.

⁷³ *International Migration Outlook 2020 Mexico*, OECD Library, <https://perma.cc/VQP5-9S72> (last visited May 4, 2023).

returning asylum seekers to Mexico as they await U.S. court dates.⁷⁴ Additionally, Mexico itself is particularly vulnerable to the effects of climate change and will see an uptick in environmental migration both internally and externally as migrants from Central America move into Mexico.⁷⁵

Article 11 of the Mexican Constitution, as amended in 2016, states that “[t]he recognition of refugee status and the granting of political asylum will be carried out in conformity with international treaties. The law shall govern its origins and exceptions.”⁷⁶ Like Ecuador’s Constitution, this Article of the Mexican Constitution incorporates treaties that Mexico has ratified, such as the Cartagena Declaration and makes refugee status a constitutional right under Mexican law.⁷⁷

Additionally, in 2010, Mexico passed a law allowing “complementary protection for people not considered as refugees but whose life has been threatened or could be at risk of torture, ill treatment, or other forms of cruel inhuman treatment.”⁷⁸

IV. MAKING THE ARGUMENT FOR THE RIGHTS OF ENVIRONMENTAL MIGRANTS

This Part seeks to further flesh out potential asylum rights for environmental migrants. It first describes the constitutional right to life and the right to a healthy environment. Additionally, this part develops the proposition that the combination of these rights helps environmental migrants attain asylum. The second section will offer scenarios to better explain the limitations of this proposition.

A. THE FORMULA

The formula this paper offers in its simplest form is that, by combining the constitutional right to asylum, the right to life, and the right to a healthy environment, environmental migrants will have the right to seek refuge within the receiving country. Each portion of this formula is necessary for the equation to work. For example, as the next portion of this section shows, the right to life on its own is insufficient to guarantee environmental migrants asylum rights.

1. THE CONSTITUTIONAL RIGHT TO LIFE

⁷⁴ *Id.* (“Refugees and asylum seekers to the United States are returned to Mexico to wait until their claims are processed by US courts. At the end of 2019, there was an estimated 70 000 asylum seekers in Mexican border cities awaiting US court dates.”).

⁷⁵ Nic Wirtz, *Climate Change and Migration in Mexico: Fifth in our Series*, GLOBAL AMERICANS (Oct. 16, 2017), <https://perma.cc/3X7V-GAHE>.

⁷⁶ Constitución Política de los Estados Unidos Mexicanos, CP, art. 11, Diario Oficial de la Federación [DOF] 05-02-1917 (Mex.), translated in Instituto de Investigaciones Jurídicas (Universidad Nacional Autónoma De México, 2005).

⁷⁷ Stephen Meili, *Constitutionalized Human Rights Law in Mexico: Hope for Central American Refugees?*, 32 HARV. HUM. RTS. J. 103, 117 (2019).

⁷⁸ Andrej Mahecic, *UNHCR Welcomes New Refugee Law in Mexico*, UNHCR (Jan. 28, 2011), <https://perma.cc/B4GY-STCX>.

As described in the beginning sections of this paper, the Refugee Convention's definition of refugee does not extend to environmental migrants. Because of this, those migrating to new countries due to increasing environmental degradation have had to try and think of new ways to argue that they have a right to seek asylum and remain in the receiving country. Using the right to life is one such argument. Though the current right to life debate has been centered on international law, it is still helpful for this paper's constitutional analysis. Each of the four nations have ratified the International Covenant on Civil and Political Rights ("ICCPR")⁷⁹ and include Articles in their Constitutions giving force of law to ratified treaties.⁸⁰ This means that the right to life (and therefore the principle of non-refoulement) has constitutional force in each of these four nations.

The right to life is widely recognized both domestically and internationally.⁸¹ In general, the fundamental right includes "the right of individuals to enjoy a life with dignity,"⁸² as well as preserving a governmental duty "of generating minimum living conditions that are compatible with the dignity of the human person and of not creating conditions that hinder or impede it."⁸³

Using this foundation, environmental migrants have tried to argue that States violate the right to life guaranteed in the ICCPR⁸⁴ when migrants are returned back to the country from which they fled due to environmental degradation.⁸⁵ They employ the ICCPR because there are 173 state parties to the treaty⁸⁶ and it has an implied principle of non-refoulement.⁸⁷

⁷⁹ *Ratification Status for CCPR - International Covenant on Civil and Political Rights*, U.N. HUM. RTS. TREATY BODIES DATABASE, <https://perma.cc/KY2M-UWFB> (last visited Feb. 08, 2024) (listing all of the nations that have ratified the ICCPR along with the date of ratification).

⁸⁰ 1946 CONST. art. 55 (Fr.) ("Treaties or agreements duly ratified or approved shall, upon publication, prevail over Acts of Parliament, subject, with respect to each agreement or treaty, to its application by the other party."); Art. 117 COSTITUZIONE [COST.] (It.). ("Legislative powers shall be vested in the State and the Regions in compliance with the Constitution and with the constraints deriving from EU legislation and international obligations."); Constitution of the Republic of Ecuador Oct. 20, 2008, art. 417. ("The international treaties ratified by Ecuador shall be subject to the provisions set forth in the Constitution. In the case of treaties and other international instruments for human rights, principles for the benefit of the human being, the nonrestriction of rights, direct applicability, and the open clause as set forth in the Constitution shall be applied."); Constitución Política de los Estados Unidos Mexicanos, *supra* note 76, at art. 1, *Diario Oficial de la Federación [DOF] 05-02-1917 (Mex.)*, translated in *Instituto de Investigaciones Jurídicas (Universidad Nacional Autónoma De México, 2005)*. ("In the United Mexican States, all individuals shall be entitled to the human rights granted by this Constitution and the international treaties signed by the Mexican State, as well as to the guarantees for the protection of these rights.")

⁸¹ Alexandra R. Harrington, *Life as We Know It: The Expansion of the Right to Life Under the Jurisprudence of the Inter-American Court of Human Rights*, 35 *LOY. L.A. INT'L & COMP. L. REV.* 313, 33 (2013), ("Indeed, a survey of international and regional human rights treaties and conventions demonstrates the uniformity of inclusion of the right to life, as a guaranteed right, across divergent state parties and instrument-promulgation goals.")

⁸² U.N. International Covenant on Civil and Political Rights, Human Rights Comm., *Teitiota v. New Zealand*, UN Doc. CCPR/C/127/D/2728/2016 ¶ 9.4 (Oct. 24, 2019).

⁸³ *Yakye Axa Indigenous Community v. Paraguay*, Merits, Reparations, and Costs, Judgment, Inter-Am. Ct. H.R. (ser. C) No. 125, ¶ 162 (June 17, 2005).

⁸⁴ G.A. Res. 2200A (XXI), International Covenant on Civil and Political Rights, Art. 6 (Dec. 19, 1966).

⁸⁵ *Teitiota*, *supra* note 82, ¶ 3.

⁸⁶ *Ratification Status for CCPR - International Covenant on Civil and Political Rights*, *supra* note 79.

⁸⁷ G.A. Res. 2200 (XXI) A, *supra* note 82, at 6.

Non-refoulement is at the core of international refugee and human rights law.⁸⁸ This principle reflects the idea that no person should be returned to a country where they would face torture or inhumane treatment.⁸⁹ Non-refoulement “prohibits States from transferring or removing individuals from their jurisdiction or effective control when there are substantial grounds for believing that the person would be at risk of irreparable harm upon return, including persecution, torture, ill-treatment, or other serious human rights violations.”⁹⁰ Importantly, the concept of non-refoulement applies to all persons regardless of their status, including, in theory, environmental migrants.⁹¹

Using these principles, environmental migrants have argued that their right to life would be violated if they were returned, thus triggering the principle of non-refoulement. Despite this line of reasoning, no such claims have succeeded to date.⁹² However, one such case is worth analyzing for its potential use in future claims.

In 2007, the Teitiota family left their Pacific Island-nation home of Kiribati and moved to New Zealand.⁹³ In 2010, the family’s visa expired. Mr. Teitiota applied for refugee status claiming that he and his family could not return to their island home due to a sea-level rise projected to completely submerge the island by 2050.⁹⁴ Several government agencies and tribunals denied Teitiota’s claim before the New Zealand Supreme Court affirmed his deportation in 2015.⁹⁵

Teitiota subsequently filed a complaint with the Human Rights Committee, claiming that his deportation violated his right to life as guaranteed by the ICCPR.⁹⁶ In his complaint, Teitiota alleged that the sea-level rise in Kiribati had endangered his right to life because it had resulted in “the scarcity of habitable space, which has in turn caused violent land disputes that endanger the author’s life, and environmental degradation, including saltwater contamination of the freshwater supply.”⁹⁷ The Committee agreed that “environmental degradation, climate change and unsustainable development constitute some of the most pressing and serious threats to the ability of present and future generations to enjoy the right to life.”⁹⁸

⁸⁸ Eur. Parl. Ass., *Pushback Policies and Practice in Council of Europe Member States*, 27th Sess., Res. 2299 (2019).

⁸⁹ U.N. Office of the High Commissioner, *The Principle of Non-Refoulement under International Human Rights Law* (Jan 1, 2018).

⁹⁰ *Id.*

⁹¹ Emanuela-Chiara Gillard, *There’s No Place Like Home: States’ Obligations in Relation to Transfers of Persons*, 90 INT’L REV. OF THE RED CROSS 703, 704 (2008) (“Traditionally, its protection is invoked by asylum seekers or by persons facing extradition or deportation. However, there is no reason for its application to be limited to such situations, as the underlying protection concerns and obligations of states with effective control over persons can arise in a variety of other situations – indeed, on every occasion when a state assumes effective control over a person.”).

⁹² Jane McAdam, *Current Developments Protecting People Displaced by the Impacts of Climate Change: The UN Human Rights Committee and the Principle of Non-Refoulement*, 114 AM. J. INT’L L. 708, 708 (2020).

⁹³ *Teitiota v. The Chief Executive of the Ministry of Business, Innovation and Employment* [2013] NZHC 3125 [19] (N.Z.).

⁹⁴ Rose, *supra* note 29, at 46-47.

⁹⁵ *Teitiota v. The Chief Executive of the Ministry of Business, Innovation and Employment* [2015] NZSC 107 (N.Z.).

⁹⁶ Human Rights Comm., *Teitiota v. New Zealand*, UN Doc. CCPR/C/127/D/2728/2016 (Oct. 24, 2019).

⁹⁷ *Id.* ¶ 3.

⁹⁸ *Id.* ¶ 9.4.

However, the Committee disagreed that Teitiota met this threshold, holding that Teitiota “did not establish that he faced a risk of an imminent, or likely, risk of arbitrary deprivation of life upon return to Kiribati.”⁹⁹ The Committee described the high threshold necessary for Teitiota to overcome to prove that his right to life was in imminent danger of violating. Essentially, Teitiota needed to show that “the supply of fresh water [was] inaccessible, insufficient or unsafe so as to produce a reasonably foreseeable threat of a health risk that would impair his right to enjoy a life with dignity or cause his unnatural or premature death” as well as “a real and reasonably foreseeable risk that he would be exposed to a situation of indigence, deprivation of food and extreme precarity that could threaten his right to life, including his right to a life with dignity.”¹⁰⁰

Ultimately, the Committee agreed that Kiribati would likely become uninhabitable in the next ten to fifteen years, but that the timeline for such events was too far in the future to necessitate action now.¹⁰¹ Additionally, the Committee noted that Kiribati was “taking adaptive measures to reduce existing vulnerabilities and build resilience to climate change-related harms.”¹⁰² The main problem the Committee had faced in the Teitiota case was the imminence issue. The threat to Teitiota’s life was not pressing enough to warrant a violation of his right to life and enable protection under international law.

As this section has shown, the right to life is not sufficient to protect environmental migrants on its own. Thus, a new formula is necessary for the protection of this vulnerable class of persons. A major component of this formula is the protection of the right to a healthy environment guaranteed by domestic constitutions.

2. THE CONSTITUTIONAL RIGHT TO A HEALTHY ENVIRONMENT

Today, a majority of states worldwide have incorporated some form of environmental rights into their constitution.¹⁰³ In 2004, France created the Charter for the Environment and incorporated it into the French Constitution in 2005.¹⁰⁴ Article 1 of the Charter states that “Everyone has the right to live in a balanced environment which shows due respect for health.”¹⁰⁵ In 2021, the French Constitutional Council, which enforces the rights of the Constitution,¹⁰⁶ recognized that the fight against climate change was a constitutional objective, affirming that the protection of the environment is a matter of major public

⁹⁹ *Id.* ¶ 9.6.

¹⁰⁰ *Id.* ¶ 9.9.

¹⁰¹ *Id.* ¶ 9.12.

¹⁰² *Id.*

¹⁰³ David R. Boyd, *Catalyst for Change: Evaluating Forty Years of Experience in Implementing the Right to a Healthy Environment*, in *THE HUMAN RIGHT TO A HEALTHY ENVIRONMENT* 18 (John H. Knox & Ramin Pejan eds., 2018) (“At the national level, the right to a healthy environment enjoys direct constitutional protection in 100 countries.”). See also Erin Daly, *Environmental Constitutionalism in Defense of Nature*, 53 *WAKE FOREST L. REV.* 667, 674 (2018) [“At last count, 177 national constitutions (out of 193 member states of the United Nations) address the environment in some fashion.”].

¹⁰⁴ 1958 CONST. Preamble (Fr.) (the Charter was attached to the end of the Constitution of 1958, incorporating it into the document).

¹⁰⁵ *Id.*

¹⁰⁶ David Marrani & Stephen J. Turner, *The French Charter of the Environment and Standards of Environmental Protection*, in *ENVIRONMENTAL RIGHTS: THE DEVELOPMENT OF STANDARDS* 309 (Stephen J. Turner et. al eds., 2019).

interest.¹⁰⁷ This decision recognized the need to protect the environment as well as the potential for major impacts on human lives. Article 9 of Italian constitution states that the environment, biodiversity and ecosystems should be safeguarded, even in the interest of future generations.¹⁰⁸ Additionally, Article 41 holds that private economic interests shall not be carried out “in such a way as may harm health [or] the environment.”¹⁰⁹ Ecuador is unique in that it has both the right to a healthy environment and gives rights to nature.¹¹⁰ Article 74 states that “[p]ersons, communities, peoples, and nations shall have the right to benefit from the environment and the natural wealth enabling them to enjoy the good way of living.”¹¹¹ Article 66(27) gives “[t]he right to live in a healthy environment that is ecologically balanced, pollution-free and in harmony with nature.”¹¹² Furthermore, the Ecuadorian constitution dedicates an entire Chapter to the rights of nature.¹¹³ The first article states that “Nature, or Pacha Mama, where life is reproduced and occurs, has the right to integral respect for its existence and for the maintenance and regeneration of its life cycles, structure, functions and evolutionary processes.”¹¹⁴ Finally, the Mexican Constitution also protects the right of a healthy environment, stating that “[a]ny person has the right to a healthy environment for his/her own development and well-being. The State will guarantee the respect to such right.”¹¹⁵

Not only has the right to a healthy environment been enshrined in constitutions, but it has been adjudicated as well. In 2021, for example, plaintiffs filed suit in Italy claiming that the government had failed to take necessary action to combat climate change.¹¹⁶ Still pending before a court in Rome, this case is significant because the plaintiffs cited to Article 9 of the Italian Constitution, showing that people are taking the right to a healthy environment seriously.¹¹⁷ Another case decided in 2021 saw the Administrative Court of Paris order the government “to take immediate and concrete actions to comply with its commitments on cutting carbon emissions and repair the damages caused by its inaction.”¹¹⁸ The Court went

¹⁰⁷ Jacques Bouyssou, *Climate Trials: Legal Challenges of a New Era – View from France*, INT’L BAR ASSOC. (Dec. 13, 2022), <https://perma.cc/T7LS-UBLH>.

¹⁰⁸ Art. 9 COSTITUZIONE [COST.] (It.).

¹⁰⁹ Art. 41 COSTITUZIONE [COST.] (It.).

¹¹⁰ Constitution of the Republic of Ecuador Oct. 20, 2008, art. 71. See also Erin Ryan et. al., *Environmental Rights for the 21st Century: A Comprehensive Analysis of the Public Trust Doctrine and Rights of Nature Movement*, 42 CARDOZO L. REV. 2447, 2502 (2021) (describing the rights of nature doctrine, stating that “For many indigenous nations, the advocacy for a healthy environment is deeply intertwined with the protection of traditional, historical, and cultural lifeways and practices . . . [a connection that] has been in place since time immemorial and will continue to be an important and sacred connection well into the future.”).

¹¹¹ Constitution of the Republic of Ecuador Oct. 20, 2008, art. 74.

¹¹² *Id.*, art. 66(27).

¹¹³ *Id.*, Chapter 7.

¹¹⁴ *Id.*, art. 71.

¹¹⁵ Constitución Política de los Estados Unidos Mexicanos, CP, art. 4, Diario Oficial de la Federación [DOF] 05-02-1917 (Mex.), translated in Mexico’s Constitution of 1917 with Amendments Through 2015 9 (constituteproject.org ed. 2023).

¹¹⁶ *A Sud et al. v. Italy*, CLIMATE CHANGE LITIG. DATABASES (2022), <https://perma.cc/ZM4F-ZSTP>.

¹¹⁷ *Id.*

¹¹⁸ *Notre Affaire à Tous and Others v. France*, CLIMATE CHANGE LITIG. DATABASES (2023), <https://perma.cc/FFM2-Z2H2>.

so far as to calculate the reduction in emissions that the government had to meet.¹¹⁹ These cases are not unique; environmental litigation is occurring all over the world.¹²⁰

These cases show that courts around the world are becoming more willing to hear and adjudicate claims on environmental issues – a fact that was not true several years ago.¹²¹ This willingness proves that courts are taking the right to a healthy environment seriously and are holding governments (as was the case in France) and even companies accountable for their environmental impacts.¹²² For environmental migrants, this means that the tides may be turning in their favor as more people are acknowledging the importance of protecting people from serious environmental harm. By adding the right to a healthy environment into their arsenal, migrants could better argue for access to asylum rights.

3. THE EQUATION FOR ENVIRONMENTAL MIGRANTS LAW

By adding the constitutional right to seek asylum to the right to life and the right to a healthy environment, environmental migrants will have a better chance to win asylum claims. This is a viable solution because constitutional rights are meant to be read in tandem, allowing multiple rights to encompass more situations than are possible under international law.¹²³

Combining these rights to advocate for the rights of environmental migrants is not a completely novel idea, but it is in the early stages of development. For example, in 2017, a French court granted asylum to a family from Bangladesh who fled their home because of climate change, marking the first time that a French court granted refugee status on the basis of climate change.¹²⁴ The court found that the family had suffered from environmental degradation caused by climate change, and that their lives were at risk if they returned to Bangladesh.¹²⁵ In 2021, the Italian Supreme Court of Cassation held that when trial judges are deciding whether to grant humanitarian protection, they should consider “situations of social, environmental or climate degradation, and situations in which natural resources are

¹¹⁹ *Id.*

¹²⁰ Federica Versea, *A Landmark Ruling for Environmental Rights in Ecuador*, HUMANIUM (June 22, 2021), <https://perma.cc/5JJ7-6X7D>. See also *Mexican Center for Environmental Law (CEMDA) v. Mexico, (on the Climate Change Fund)* CLIMATE CHANGE LITIG. DATABASES (2023), <https://perma.cc/D9LH-MGXM>; *Duarte Agostinho and Others v. Portugal and 32 Other States*, CLIMATE CHANGE LITIG. DATABASES (2024), <https://perma.cc/B8MC-VZGQ>.

¹²¹ Ben Clapp & Casey J. Snyder, *Climate Change Litigation Trends 2015-2020*, 36 NAT. RES. & ENV'T 1, 1 (2021) (since 1986, the popularity of using the court system to address climate change has skyrocketed).

¹²² HR 20 december 2019, ECLI:NL:HR:2019:2006, 19/00135 m.nt (Urgenda Foundation State of the Netherlands (Neth.)).

¹²³ Erin Daly & James R. May, *Learning from Constitutional Environmental Rights*, in *THE HUMAN RIGHT TO A HEALTHY ENVIRONMENT* 42, 46 (John H. Knox & Ramin Pejan eds., 2018). (“The structure of environmental constitutionalism also distinguishes it from international protection for the environment because constitutions include lists of rights, whether independent or interrelated. Including environmental rights on these lists guarantees that environmental rights will be read in tandem with other rights and values recognized in each constitutional culture. Thus, environmental rights can be advanced in conjunction with rights to health, water, dignity, and life, among others.”).

¹²⁴ CAA Bordeaux, 2^e ch., Dec. 18 2020, 20BX02193 (Fr.).

¹²⁵ *Id.*

subjected to unsustainable exploitation in the country of origin.”¹²⁶ The Court also emphasized that a trial court must grant humanitarian protection when “the situation in the country of origin does not allow for a minimum essential limit of guarantee for the right to life of the individual.”¹²⁷ Importantly, the Court specifically referred to the *Teitiota* case and the importance of protecting the right to life.¹²⁸

By using both the right to life and the right to a healthy environment, an environmental migrant may be able to make a claim for asylum in countries such as France, Italy, Ecuador, or Mexico. Apart from these four nations, the formula is also a viable option in countries that have a right to asylum that is broader than the Refugee Convention, the right to life, and the right to a healthy environment protected in their respective constitutions. With this foundation, this paper will now turn to show how this formula can work (or not work) in real world scenarios.

B. ILLUSTRATIVE EXAMPLE

Admittedly, this is a complex legal issue and there will not be a simple black and white process encompassing all situations. Courts will have to look at each individual case and consider several factors to determine whether the individual meets the threshold for protection. This section will offer potential fact patterns that could help in this determination and predict how certain scenarios would play out.

As this paper discussed through the *Teitiota* case, most of the analysis will center around the imminency of the harm caused by the environmental degradation. In *Teitiota*, the Committee struggled with the length of time before Kiribati could be submerged underwater. The Committee noted that if the harm been more impeding, the *Teitiota* family would have had a stronger claim.¹²⁹

So, if the harm faced by *Teitiota* was too remote, what environmental harms would be considered imminent enough to necessitate constitutional protection? The issue with the *Teitiota* claim was that the harm was at a less advanced stage of environmental degradation. Therefore, environmental migrants leaving homes at advanced stages of environmental degradation would have a better chance of qualifying for asylum. Other examples of advanced stages of environmental degradation would be in regions where rising temperatures have finally reached a tipping point leading to drought and famine.

Another example of environmental migration that would fall under asylum protection would be migrants fleeing natural disasters. Climate change has caused storms such as hurricanes and tsunamis to intensify.¹³⁰ When these mega storms hit, they can render a region completely uninhabitable, forcing migration. When this happens, environmental migrants have a stronger claim for asylum because they are fleeing an imminent and serious harm.

¹²⁶ *I.L. v. Italian Ministry of the Interior and Attorney General at the Court of Appeal of Ancona*, CLIMATE CHANGE LITIG. DATABASES (2021), <https://perma.cc/28Q8-DBU>.

¹²⁷ *Id.*

¹²⁸ *Id.*

¹²⁹ U.N. Human Rights Comm., *Views adopted by the Committee under article 5(4) of the Optional Protocol, concerning communication No. 2728/2016*, ¶ 9.6, U.N. Doc. CCPR/C/127/D/2728/2016 (Oct. 24, 2019).

¹³⁰ *How Can Climate Change Affect Natural Disasters?*, USGS, (last visited May 4, 2023).

Alternatively, environmental migrants may have a stronger claim to asylum when they are migrating due to the consequences of large-scale development and land conservation. As climate change worsens, nations must take steps to preserve their resources. Building dams is one such technique. However, dams change the natural flow of water, which can have negative impacts on communities who rely on that water source. In some cases, migrants are forced to leave their homes entirely. Because the harm is imminent and serious, these environmental migrants would also have a stronger claim to seek asylum.

Though this paper gives a few examples of when environmental migrants have a right to seek asylum, this list is by no means exhaustive. Every migrant's story is unique, and courts will have to address each situation in its own way.

V. ADDRESSING POTENTIAL CONCERNS

As this paper has shown, there is no established legal framework specific to environmental migrants. Some worry that the current asylum framework was not designed to address the unique challenges faced by environmental migrants and that it could take a long time for courts to establish precedent and domestic legislation. For example, that the issue of imminency needs to be flushed. Basically, it is not always apparent just how imminent the harm caused by environmental degradation can be. Courts around the world would have to determine at what point a person's situation falls under refugee protection. However, as this paper describes above, most of the elements that a court would need to consider mirror the already well-established framework of current refugee law. They would only have to flush out one element.

Second, there are a few logistical concerns. The refugee systems of many nations are already overburdened and struggling to aid the millions of people who have fled their homelands due to conflict, persecution, and other reasons.¹³¹ Creating another category of refugees could add strain to an already burdened system. Though this is a valid concern, not all environmental migrants who seek refuge will be accepted. Additionally, the reality is that migration is increasing, regardless of whether countries acknowledge environmental migrants or not, and it is imperative that countries redesign their refugee systems as opposed to merely denying migrants.¹³²

Finally, one barrier to the development of the law surrounding environmental migration is political considerations. One argument is that, if nations begin allowing asylum claims based on environmental issues, then that could open the door to having to allow migration for a plethora of other issues. Even so, this slippery slope argument lacks merit. Adding environmental migrants into the fold of asylum protections is based on the right to life and the right to a healthy environment—rights enshrined in the four constitutions discussed above and thus have a constitutional standing to seek asylum. Another political concern is the

¹³¹ Philip Hunter, *The Refugee Crisis Challenges National Health Care Systems*, 17 EMBO REP. 492-95 (2016).

¹³² *No Refuge: Why the World's Swelling Refugee Population Has Shrinking Options*, COUNCIL ON FOREIGN RELATIONS, <https://perma.cc/27H8-LQAA> (last visited May 4, 2023) (describing the current refugee system and offering that "an expansion of complementary protection, such as temporary protected status . . . in the United States or humanitarian visas offered elsewhere, could give forced migrants legal status and deter them from irregular travel. This could be all the more crucial as climate distress is likely to accelerate in the coming decades.").

growing number of politicians in different countries running on the platform of restricting immigration. Because of this sentiment, it can be difficult to argue for refugee protections extending to environmental migrants.

Even with these concerns, the international community has become more vocal in supporting the rights of migrants. In 2017, Ecuador passed the Human Mobility Law, which broadened the rights of migrants within the state.¹³³ On the environmental side, in 2015, 109 governments endorsed the Nansen Initiative Protection Agenda, which recognizes the need to protect displaced people due to disasters and climate change – in other words, it seeks to protect environmental migrants.¹³⁴ Additionally, in 2022, the United Nations recognized that everyone, everywhere, has the right to live in a clean, healthy, and sustainable environment.¹³⁵ Though there are still some in the political arena who decide to take a strong stance against protecting environmental migrants, the domestic and international tides of change are overwhelmingly in favor of offering more protections.

Though these concerns are valid, they do not mean that the law should not protect or support environmental migrants in at least some way. Instead, these concerns only emphasize that the legal landscape surrounding environmental migration is complex with many legal, logistical, and political considerations to consider in order to determine the best way to respond to this developing issue.

VI. CONCLUSION

The threat of climate change is not going away. In fact, it is looming dangerously closer. The world is heating and changing, and society must be ready to adapt and change with it. The world's governments can adjust by creating pathways for the new influx of migrants fleeing climate change.

Just like any migrant fleeing political persecution and violence, environmental migrants have the right to be free from the harm caused by environmental degradation. The concept of environmental migration is not a new phenomenon. Instead, it is only growing as the threat of climate change creates heightened threats to sustainable life. Because of this, environmental migration will continue to pose new challenges to modern legal frameworks that governments and international bodies alike will have to reckon with.

This paper has offered one potential solution to the challenges posed by environmental migration. By utilizing already well-established constitutional law, environmental migrants can seek out countries that include the right to seek asylum, the right to life, and the right to a healthy environment within their constitution. Though this is not a one-size-fits-all solution, this formula can at least begin the process of recognizing the rights of environmental migrants.

¹³³ *UNHCR Welcomes Ecuador's New Human Mobility Law*, UNHCR THE UN REFUGEE AGENCY (Jan. 13, 2017), <https://perma.cc/BB47-K2R>.

¹³⁴ The Nansen Initiative, 1 *DISASTER DISPLACEMENT AGENDA FOR THE PROTECTION OF CROSS-BORDER DISPLACED PERSONS IN THE CONTEXT OF DISASTERS AND CLIMATE CHANGE* (2015).

¹³⁵ U.N. Res. 76/300 (Aug. 1, 2022) (adopting the human right to a clean, healthy and sustainable environment).



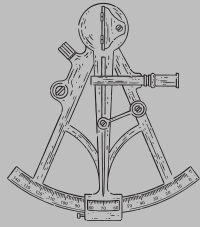
**BORDERING SECRECY: AN EMPIRICAL STUDY ON CROSS-BORDER TRADE SECRET
MISAPPROPRIATION IN THE SEMICONDUCTOR SECTOR**

*Tzu-I Lee**

ABSTRACT

Nation-states take steps to prevent the theft of domestic entities' trade secrets and other intellectual property ("IP"). The United States has issued complaints, passed laws, and implemented initiatives and sanctions targeting China's unfair and illegal economic practices, which include trade-secret theft. Although China has responded by amending its civil, criminal, and administrative trade-secret regime, foreign companies still routinely struggle with thefts connected to China. The semiconductor industry—essential to daily-life, commercial, and military needs—is one of the most brutal battlegrounds of today's IP and tech wars. A leader in the industry is the Taiwanese semiconductor sector, which, along with the Taiwanese government and like-minded democracies, must confront a particularly complex set of economic, security, and geopolitical challenges from China. Currently, poor grasp of cross-border trade secret thefts has greatly weakened sincere efforts to deal with the grave threat posed by China. In this Article, I cross-analyze empirical quantitative and qualitative data regarding U.S. and Taiwanese semiconductor trade-secret litigation to better understand the dynamics of Chinese trade-secret theft. I propose that individuals, companies, governments, and international organizations should respond to trade-secret threats by restoring trust within a geopolitical economic framework, rather than by pursuing purely legalistic IP approaches.

Keywords: intellectual property, trade secret misappropriation, semiconductor, global value chain, trust, democratic chips



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I. INTRODUCTION

While many legal scholars focus on the tech giants expanding protections for trade secrets and other intellectual property (IP),¹ the U.S.–China tech war highlights the geopolitical ‘democracy vs. authoritarianism’ threat to these protections. China, according to FBI Director Christopher Wray, surpasses all other nations in the theft of U.S. information.² U.S.–China tensions, especially in tech and IP trade disputes since 2018, have shifted IP concerns from piracy and counterfeiting in China to systematic theft of high-end tech, involving forced transfers, joint ventures, and trade-secret exchanges.³ Research shows that 80% of businesses’ economic value stems from intangible IP: patents, trademarks, copyrights, trade secrets, and know-how.⁴ Tangibles amount to a mere 16% of overall value.⁵ Innovation and intangible tech assets are vital for global competition, and indeed, they underpin the dominant global position of the United States. The Commission on Theft of American IP estimated that annual losses exceeded \$300 billion USD in 2013 and \$225–600 billion USD in 2017,⁶ though critics question both the quality of the data and the methods used to obtain and interpret it.⁷

* Assistant Professor of Law at the National Taiwan University of Science and Technology (NTUST), with an LLM from the UC Berkeley School of Law, a JD from the UIC Law School, and a PhD in Geography from National Taiwan University. In preparing this paper, I have greatly benefited from the insights of Professor Mark Cohen (the UC Berkeley School of Law); I also received valuable input from Professor Shubha Ghosh (the Syracuse University College of Law) at the 2023 Annual Meeting on Law and Society in San Juan, Puerto Rico, and from Michael Mangelson, Principal Counsel and Director for China Intellectual Property at the U.S. Patent and Trademark Office, for the prior draft. I would like to express special gratitude to the National Science and Technology Council in Taiwan (NSTC 112-2410-H-011-001) and NTUST Institute Research Funds (IRF) for funding the present research project. The views I present in this Article belong to me alone and do not necessarily reflect the viewpoints of any individuals mentioned earlier.

¹ See Amy Kapczynski, *The Public History of Trade Secrets*, 55 U.C. DAVIS L. REV. 1367 (2022) (concerning how changes in trade secret law in an era of information capitalism have set the law on a collision course with democracy); see also Charles Tait Graves & Sonia K. Katyal, *From Trade Secrecy to Seclusion*, 109 GEO. L.J. 1337 (2021) (discussing how the legislative shift from trade secrecy to trade seclusion will ultimately distort the flow of what should be publicly available information).

² *China’s Quest for Economic, Political Domination Threatens America’s Security*, U.S. FED. BUREAU OF INVESTIGATION, <https://www.fbi.gov/news/stories/director-wray-addresses-threats-posed-to-the-us-by-china-020122> (Feb. 1, 2022).

³ Jyh-An Lee, *Shifting IP Battlegrounds in the U.S.–China Trade War*, 43 COLUM. J.L. & ARTS 147, 150 (2020).

⁴ John P. Ogier, *Intellectual Property, Finance and Economic Development*, WIPO MAGAZINE (Feb. 2016), https://www.wipo.int/wipo_magazine/en/2016/01/article_0002.html. See also Kristi L. Stathis, *Ocean Tomo Releases 2015 Annual Study of Intangible Asset Market Value*, OCEAN TOMO (Mar. 5, 2015), <https://www.oceantomo.com/blog/2015/03-05-ocean-tomo-2015-intangible-asset-market-value/>.

⁵ Bruce Berman, *\$21 Trillion in U.S. Intangible Assets Is 84% of S&P 500 Value—IP Rights and Reputation Included*, IP CLOSEUP (June 4, 2019), <https://ipcloseup.com/2019/06/04/21-trillion-in-u-s-intangible-asset-value-is-84-of-sp-500-value-ip-rights-and-reputation-included/>.

⁶ Dennis C. Blair & Jon M. Huntsman Jr., *Report of the Commission on the Theft of American Intellectual Property*, NATIONAL BUREAU OF ASIAN RESEARCH 1, 12 (Feb. 2017), https://www.nbr.org/wp-content/uploads/pdfs/publications/IP_Commission_Report_Update.pdf.

⁷ See, e.g., Mark Cohen, *The 600 Billion Dollar China IP Echo Chamber*, CHINA IPR (May 12, 2019), <https://chinaipr.com/2019/05/12/the-600-billion-dollar-china-ip-echo-chamber/> (also noting that certain types of IP infringement, such as cybercrime and security threats, may not be accurately accounted for in the estimates).

Trade secrets derive much of their value from secrecy which poses significant challenges for post-factum remedies in trade-secret cases, unlike in other IP cases.⁸ A company that develops a product similar to one based on a granted patent points to potential patent infringement, whereas trade-secret infringement necessitates prior theft and replication.⁹ As the line between a company's trade secrets and a nation's state secrets has grown increasingly blurry in both democratic and authoritarian countries, trade-secret thefts are today inevitably intertwined with both national security issues and commercial espionage.¹⁰ Because trade secret thefts can mean a loss or transfer of nation-states' socioeconomic and political-military assets, the collective damages of such theft can far exceed the financial damages incurred by any single company.¹¹

Trade-secret and patent disputes are particularly relevant for dual-use technologies like semiconductors, which are strategically vital in the areas of consumer electronics, industry, and defense.¹² The size of the global semiconductor industry stood at \$452.25 billion USD in 2021 and was projected to reach \$893.10 billion USD by 2029.¹³ Taiwan is a leader in semiconductor research and development ("R&D") and production. Taiwan Semiconductor Manufacturing Co. Ltd. (TSMC), for example, has been spending more than \$25 billion USD on R&D annually, generating valuable IP with more than 90% of the company's know-how and technology protected as trade secrets.¹⁴ Not surprisingly, trade-secret thefts in the semiconductor industry have been steeply on the rise.¹⁵ Therefore, semiconductors, which

⁸ Agreement on Trade-Related Aspects of Intellectual Property Rights art. 39(2)(b), Apr. 15 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1C, 1869 U.N.T.S. 187 [hereinafter TRIPS Agreement].

⁹ Riccardo Vecellio Segate, *Securitizing Innovation to Protect Trade Secrets Between "The East" and "The West": A Neo-Schumpeterian Public Legal Reading*, 37 PACIFIC BASIN L.J. 59, 62 (2020).

¹⁰ *Id.* at 61; Peter K. Yu, *Trade Secret Hacking, Online Data Breaches, and China's Cyberthreats*, CARDOZO L. REV. DE NOVO 130, 133–34 (2015).

¹¹ Segate, *supra* note 9, at 63.

¹² See, e.g., Herbert Lin, *Governance of Information Technology and Cyber Weapons*, in GOVERNANCE OF DUAL-USE TECHNOLOGIES: THEORY AND PRACTICE 112 (Harris et al., eds., 2016); Meia Nouwens & Helena Legarda, *China's Pursuit of Advanced Dual-Use Technologies*, INT'L INST. FOR STRATEGIC STUD. (Dec. 18, 2018), <https://www.iiss.org/blogs/research-paper/2018/12/emerging-technology-dominance>; Asma Khalid, *Biden's Plan to Reduce Shortages of Products That Are Critical for National Security*, NPR (June 8, 2021, 12:01 PM ET), <https://www.npr.org/2021/06/08/1004191828/how-the-biden-white-house-aims-to-address-risks-to-u-s-supply-chains>.

¹³ Global Semiconductor Market Report, *Semiconductor Market Size, Share & Industry Analysis, by Component (Memory Devices, Logic Devices, Analog IC, MPU, Discrete Power Devices, MCU, Sensors, and Others), by Application (Networking & Communications, Data Processing, Industrial, Consumer Electronics, Automotive, and Government), and Regional Forecast, 2022–2029*, FORTUNE BUSINESS INSIGHTS (Apr. 2022), <https://www.fortunebusinessinsights.com/toc/semiconductor-market-102365>.

¹⁴ Yu-Cheng Chen, *90% of the Protections for TSMC's Research-and-Development Results Rely on "It"*, YUANJIAN MAGAZINE (Aug. 23, 2019), <https://www.gvm.com.tw/article/67900/>; Hannah Chang, *Morris Chang: Unstable World Makes TSMC Vitaly Important in Geostategic Terms*, COMMONWEALTH MAGAZINE (Nov. 7, 2019), <https://english.cw.com.tw/article/article.action?id=2589/> (TSMC is one of the world's largest semiconductor foundries and, on October 31, 2019, TSMC's market capitalization reached a value of "NT\$7.8 trillion [US\$243 billion], putting TSMC for the first time in the global top 20 companies by market value, ahead of Coca Cola and Walt Disney."); See also *Advanced Technology Key to Strong Foundry Revenue per Wafer*, IC INSIGHTS (Oct. 12, 2018), <http://www.icinsights.com/news/bulletins/advanced-technology-key-to-strong-foundry-revenue-per-wafer/>.

¹⁵ Trade-secret law has become a hot topic with the U.S. government's passage of the Defend Trade Secrets Act of 2016 (DTSA) and high-profile cases involving large tech companies. According to a recent Lex Machina report, trade secret cases have increased by about 30% between 2015 and 2017 and have remained steady between

are pivotal for commercial and military applications, offer fertile ground for investigations into unfair and illegal cross-border transfers of trade secrets.¹⁶

Trade secrets are misappropriated through a variety of means ranging from deception to outright theft, and often involve employees taking company documents or prototypes.¹⁷ Wrongdoers typically have either direct knowledge of the target or can gain access to it.¹⁸ The consequences of trade-secret theft are also varied. Theft not only damages companies but endangers innovation and sullies a country's reputation if a successful act of theft is traced to a foreign state apparatus, or if a failed act of theft protection is traced to a domestic state apparatus.¹⁹ U.S.–China tensions have arisen precisely from the intersection, of private-sector trade secrets and state protection of these secrets in the US, blurring which of the two is responsible for innovation and which for security.

The U.S. government has repeatedly asserted that China's engagement in IP theft and cyber intrusion for data acquisition is extensive and a threat to the rules-based global order, as exemplified by legal cases brought by the U.S. government against entities like Huawei.²⁰ COVID-19 has only worsened tensions between the two countries, revealing the West's profound supply-chain vulnerabilities due to China's dominant position as the "world's factory."²¹ Many of these vulnerabilities are also due to company-designed supply chains that, despite achieving targeted business goals, fail to adequately protect the supply-chains' resilience.²² A major challenge that companies and governments face when attempting to establish claims about Chinese state-backed theft of trade secrets and outbound acquisition

2017 and 2019. See *Lex Machina Releases 2020 Trade Secret Litigation Report Highlighting Ten Years of Legal Analytics*, LEX MACHINA, (Apr. 21, 2020), <https://lexmachina.com/media/press/lex-machina-releases-2020-trade-secret-litigation-report/>.

¹⁶ Don Clark, *Pentagon, with an Eye on China, Pushes for Help from American Tech*, N.Y. TIMES (Oct. 25, 2019), https://www.nytimes.com/2019/10/25/technology/pentagon-taiwan-tsmc-chipmaker.html?fbclid=IwAR1vnubLYHot6pfdvirl_tNpc5goX_OWjEPVgKEGGAtt5XWkc_wakt2tReY/.

¹⁷ Emily Mossburg et al., *The Hidden Costs of an IP Breach*, 19 DELOITTE REV. 106, 109 (2016).

¹⁸ *Id.*

¹⁹ Segate, *supra* note 9, at 64 ("Regarding this last claim, an international requirement that States adopt domestic laws to mitigate the externalisation of cyber-attacks impacting their companies' trade secrets should be introduced in relevant international treaty law.")

²⁰ OFF. OF THE U.S. TRADE REPRESENTATIVE, FINDINGS OF THE INVESTIGATION INTO CHINA'S ACTS, POLICIES AND PRACTICES RELATED TO TECHNOLOGY TRANSFER, INTELLECTUAL PROPERTY, AND INNOVATION UNDER SECTION 301 OF THE TRADE ACT OF 1974 at 5-6 (2018), <https://ustr.gov/sites/default/files/Section%20301%20FINAL.PDF> [hereinafter USTR, 2018 SECTION 301 REPORT]; see also, , Kate O'Keeffe & Aruna Viswanatha, *U.S. Files Criminal Charges against Chinese Professor Linked to Huawei*, WALL ST. J. (Sep. 9, 2019, 3:33 PM ET), <https://www.wsj.com/articles/u-s-files-criminal-charges-against-chinese-professor-linked-to-huawei-11568048700/>; Karen Freifeld, *Chinese Professor Pleads Guilty to Lying to FBI in Huawei-Related Case*, REUTERS (Dec. 4, 2020, 6:30 PM EST), [https://www.reuters.com/article/idUSKBN28E394/#:~:text=\(Reuters\)%20%2DA%20Chinese%20professor,pursue%20a%20more%20serious%20charge;FBI%20says%20about%201,000%20investigations%20open%20into%20attempted%20tech%20theft%20by%20China](https://www.reuters.com/article/idUSKBN28E394/#:~:text=(Reuters)%20%2DA%20Chinese%20professor,pursue%20a%20more%20serious%20charge;FBI%20says%20about%201,000%20investigations%20open%20into%20attempted%20tech%20theft%20by%20China), REUTERS (Feb. 6, 2020, 10:43 AM EST), <https://www.reuters.com/article/idUSKBN200205/>.

²¹ See Andrew Jacobs et al., *'At War with No Ammo': Doctors Say Shortage of Protective Gear Is Dire*, N.Y. TIMES (Mar. 19, 2020), <https://www.nytimes.com/2020/03/19/health/coronavirus-masks-shortage.html>; Jon Emont & Chuin-Wei Yap, *Companies That Got Out of China Before Coronavirus Are Still Tangled in Its Supply Chains*, WALL ST. J. (Mar. 8, 2020, 1:04 PM ET), <https://www.wsj.com/articles/companies-that-got-out-of-china-before-coronavirus-are-still-tangled-in-its-supply-chains-11583686996>.

²² Drew Calvert, *How to Keep Supply Chains Reliable When the World's Upended*, STAN. BUS. (May 28, 2020), <https://www.gsb.stanford.edu/insights/how-keep-supply-chains-reliable-when-worlds-upended>.

of equity and technologies is that the cases seem to result from actions or transactions undertaken solely by private parties.²³ Proving that the Chinese government has played an intentional role in disputed actions is challenging, and ascertaining the economic or geopolitical motives behind the actions is complex.²⁴

Besides traditional civil remedies and administrative procedures in place to protect IP, the U.S. Department of Justice (“DOJ”) has provided guidelines by which the U.S. judiciary can prosecute stakeholders charged with IP crimes and, in 2018, the Trump administration launched the China Initiative to counter China’s economic and political threats.²⁵ However, critics have questioned this approach, especially the China Initiative, casting doubt on its effectiveness and accusing it of unfairly targeting China.²⁶ An MIT study found that nearly 90% of IP-theft charges brought by the DOJ were against ethnic Chinese individuals, including ethnic Chinese American citizens, citizens of China (i.e., the People’s Republic of China, or the PRC), and ethnic Chinese individuals with other national and geographic roots (e.g., roots in Taiwan or in Southeast Asian Chinese-diaspora communities).²⁷ Because of racial-profiling concerns, the DOJ in 2022 announced its cessation of the program.²⁸ Meanwhile, China, while profiting from its adversaries’ fear of appearing racially or ethnically biased, has portrayed its outbound investments as business-driven and has insisted that the country’s legal reforms are proof of its commitment to fair competition and rules-based innovation.²⁹

²³ Lee, *supra* note 3, at 160. See also, e.g., Jordan Robertson & Michael Riley, *Engineer Who Fled Charges of Stealing Chip Secrets Now Thrives in China (Repeat)*, BLOOMBERG (last updated Feb 16, 2023, 9:57 AM EST), <https://www.bloomberg.com/news/articles/2022-06-06/engineer-who-fled-us-charges-of-stealing-chip-technology-now-thrives-in-china>.

²⁴ Lee, *supra* note 3.

²⁵ See Dep’t of Justice, *Prosecuting Intellectual Property Crimes*, 64 U.S. ATT’YS’ BULL 1 (2016), <https://www.justice.gov/usao/file/813026/download>; see also *Information About the Department of Justice’s China Initiative and a Compilation of China-Related Prosecutions Since 2018*, DEP’T OF JUST. (last updated Nov. 19, 2021), <https://www.justice.gov/archives/nsd/information-about-department-justice-s-china-initiative-and-compilation-china-related>.

²⁶ See Andrew Chongseh Kim, *Prosecuting Chinese “Spies”: An Empirical Analysis of the Economic Espionage Act*, 40 CARDOZO L. REV. 749, 753–63 (2018) (arguing that the DOJ is unfairly disproportionately prosecuting individuals of Asian descent and that Chinese and other Asian defendants are twice as likely to be innocent as those of other national, ethnic, or racial backgrounds); see also Margaret K. Lewis, *Criminalizing China*, 111 J. CRIM. L. & CRIMINOLOGY 145 (2021) (arguing that the DOJ’s China Initiative, designed in 2018 to counter IP theft, created an overinclusive conception of the threat and attached a criminal taint to entities that had, at most, a tangential connection to the Chinese state); *U.S. Fact Sheet: 26th U.S.-China Joint Commission on Commerce and Trade*, OFF. OF THE U.S. TRADE REPRESENTATIVE, <https://ustr.gov/index.php/about-us/policy-offices/press-office/fact-sheets/2015/november/us-fact-sheet-26th-us-china-joint> (last visited Apr. 23, 2024) (proposing that the United States and China could conduct criminal investigations in a prudent and cautious manner).

²⁷ Eileen Guo et al., *The US Crackdown on Chinese Economic Espionage Is a Mess. We Have the Data to Show It.*, MIT TECH. REV. (Dec. 2, 2021), <https://www.technologyreview.com/2021/12/02/1040656/china-initiative-us-justice-department/> [hereinafter, the 2021 MIT Study].

²⁸ Ryan Lucas, *The Justice Department Is Ending Its Controversial China Initiative*, NPR (Feb. 23, 2022, 9:15 PM ET), <https://www.npr.org/2022/02/23/1082593735/justice-department-china-initiative>.

²⁹ See Gu Bin, *Americans Are Wrong to Paint China as an Intellectual Property Thief*, FIN. TIMES (Jan. 14, 2020), <https://www.ft.com/content/26903a94-3617-11ea-ac3c-f68c10993b04>; see also Assafa Endeshaw, *A Critical Assessment of the U.S.-China Conflict on Intellectual Property*, 6 ALB. L.J. SCI. & TECH. 295 (1996) (noting that China established specialized IP enforcement because of continuous pressure from the United States); Peter K. Yu, *From Pirates to Partners: Protecting Intellectual Property in China in the Twenty-First Century*, 50 AM. U. L. REV. 131, 140–51 (2000) (describing how the United States used Section 301 and other trade sanctions to induce

I believe that concerns about racial profiling in efforts to counter IP theft should be acknowledged and investigated. I also believe that so long as people, companies, and governments lack a sufficiently precise understanding of cross-border trade secret issues, both innovation and trust in global networks will suffer. Thus, I propose that we initially frame the issue of trade-secret theft as *intra*-system misappropriations and as *extra*-system misappropriations. With this simple and useful bifurcation, we can tackle the issue from an actor-network perspective, noting the grave impact that international theft can have on national economies and national security. Domestic thefts differ from cross-border ones, insofar as the latter typically pose a greater risk to international economic systems.³⁰

Taiwan faces a uniquely challenging set of risks and benefits in the island-nation's interactions with China. A great deal of Taiwanese talent have been induced to leave their employer and bring their knowledge of technology to China in a phenomenon so common that it has acquired its own expression "Join (China) with Firearms" (*dai qiang tou kao*, 帶槍投靠), which, when roughly translated into English, means "bringing your best game to the team"; that is, these former employees of Taiwanese companies are bringing highly prized resources (including stolen trade secrets) that align very nicely with the goals of the new Chinese employers and, indeed, the Chinese state.³¹

In this Article, I present and analyze quantitative and qualitative empirical clues that shed light on the issue of inter-state trade secret theft, paying particular attention to relations between the United States, Taiwan, and China in the global semiconductor value chain. I focus on litigation patterns, not ethnic or racial patterns, because the latter, though important, are very much dependent on and reflective of empirically provable facts concerning which individuals, entities, and nations do engage in trade secret theft.³²

Herein, the term "China" refers to the geographical territory under the direct jurisdiction of the People's Republic of China ("PRC"). Hence, China does not include Taiwan. As for the term "PRC," it refers to the Chinese government, and the term "Chinese Communist Party" ("CCP") refers to the sole governing party that rules China and controls the PRC. The terms "Chinese government" and "China" are used interchangeably in this Article. Taiwan, also known as the Republic of China ("ROC"), is a separately administered economic and commercial entity, often referred to as a nation (i.e., a country), and recognized by the WTO as a customs territory. In this Article, I refer to Taiwan as a nation. Neither the term "Taiwan" nor the term "ROC" refers in any way to China (i.e., the PRC). Finally, the

China to enhance its IP protection); Mark Cohen, *China's Judiciary Publishes Its Views on Trade Secret Protection*, CHINA IPR (July 5, 2013), <https://chinaipr.com/2013/07/05/chinas-judiciary-publishes-its-views-on-trade-secret-protection/#more-1243> ("Trade secret cases are a small part of intellectual property cases, but a large share of cases under the Law to Counter Unfair Competition. The data suggests they may also constitute a declining proportion of civil IPR cases.").

³⁰ Segate, *supra* note 9.

³¹ Chen, *supra* note 14.

³² *see* Lewis, *supra* note 26 (With regard to how the DOJ's policy is framed and how it is criminalizing China: "Not only does China-ness become imprinted as a shared negative characteristic across cases, but the language used in the Initiative anthropomorphizes China into a form that is ascribed condemnation."); *See also* Mark A. Cohen, *Parallel Play: The Simultaneous Professional Responsibility Campaigns Against Unethical IP Practitioners by the United States and China*, 56 AKRON L. REV. 2 (2023) (illustrating how "China-ness" is being carried over to the ongoing concerns about China's IP practices and "bad faith" handling of trademarks).

term “Chinese” herein generally refers not to people’s ethnicity but to their status as citizens or residents of China.

I have structured the rest of this Article as follows: In Part 2, I lay out a geopolitical economic framework for trade-secret thefts in the global supply chain network and specifically present the legal, political, and social contexts surrounding the trade secret regimes in the United States, Taiwan, and China. In Part 3, I discuss the quantitative and qualitative methods used to conduct this mixed-methods research. In Part 4, I present the empirical quantitative data, consisting chiefly of statistics concerning U.S. and Taiwanese trade secret theft court cases. In Part 5, I present the empirical qualitative data, consisting chiefly of relevant non-statistical aspects of U.S. and Taiwanese trade secret theft court cases (2000–2022).³³ In Part 6, I cross-analyze and discuss the quantitative and qualitative data. In Part 7, I conclude the Article.

My central aim is to empirically affirm concerns about China’s trade practices, including trade secret theft, while also arguing that trade secret law and litigation are not optimal responses to this problem; individuals, companies, governments, and international organizations must form a resilient, trust-based network that can counter threats to a reasonably fair and improvable rules-based order. Geopolitical considerations are rapidly reshaping IP regimes, and the current international reality requires the guardians of critical technology trade secrets in global networks to commit cooperatively and fully to shared values and interests.

II. TRADE SECRET REGIMES IN CONTEXT

A. TRADE SECRETS IN THE GEOPOLITICAL ECONOMIC FRAMEWORK

Innovation competition among states is not novel. Historically, states have intervened in facilitating their own countries’ industrial and technological development. In this way, Taiwan built its semiconductor sector in the 1980s. Technological learning and transfers were the specific engines of economic growth for individual firms, and recruitment of personnel from high-performing companies, including competitors, was important. In this context, trade secrets can be jeopardized.

Definitions of the term “trade secret” vary by jurisdiction, but usually address three factors: a trade secret is information that (1) is not generally known to the public, (2) confers economic benefits on its holder because the information is not publicly known, and (3) is kept secret through efforts of the holder.³⁴ A trade secret can consist of a formula, a drawing, a pattern, an ingredient list, know-how, a customer list, a program, a contract, and a method

³³ Two problems that foreign entities must face when relying on the Chinese judiciary are nationalism and lack of transparency, either of which can severely distort the pursuit of justice; therefore, in the present Article, I focus on cases heard in the United States and Taiwan. *See infra* Parts II-V; *see also* Mark Cohen, *Semiconductor Patent Litigation Part 2: Nationalism, Transparency and Rule of Law*, CHINA IPR (July 4, 2018), <https://chinaipr.com/2018/07/04/semiconductor-patent-litigation-part-2-nationalism-transparency-and-rule-of-law/> (noting that both nationalism and lack of transparency help explain the relatively low level of success that plaintiffs have experienced in semiconductor-patent litigation in China).

³⁴ *See, e.g.*, TRIPS Agreement, *supra* note 8, at art. 39(2).

or standardized process.³⁵ Unlike other forms of IP protection, trade-secret protection primarily involves preventive measures designed to avert disclosure of information.³⁶ Once breached, secrecy is difficult to reinstate. Hence, the preventive nature of trade-secret protection is of critical importance and depends on a range of stakeholders, ranging from the rightsholders to third parties, all of whom must devise ways to reproduce or harness the secret without risking its misappropriation. In the World Trade Organization (WTO), the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS), pursuant to Articles 41 and 61, makes only civil trade secret remedies available to possible victims of trade secret theft; however, free trade agreements (“FTAs”) usually require higher levels of protection than the TRIPS Agreement.³⁷

One battleground of trade secret protection today is the realm of dual-use technologies: that is, technologies used in both civilian and military applications and therefore for both businesses and governments.³⁸ A very important point to note in this regard is that legalistic approaches to trade secret theft must address the intersections between IP rights (“IPRs”), firm-level competitiveness, and state-level geopolitical-economic interests. The present Article rests on the reasonable assumption that, at least regarding U.S.–Taiwan–China relations, the geopolitical-economic perspective can shed considerable light on alleged semiconductor trade secret thefts, especially when they represent a loss or transfer of states’ socioeconomic and political assets.

Trade secrets can protect R&D, marketing, strategic planning, and other types of information that may not be protected by patents, trademarks, or copyrights. The means by which the secrets are protected include IT security, physical infrastructural security, and advanced confidentiality screening of human personnel involved in data handling.³⁹ Most companies that possess a trade secret do so to protect the commercial value of either an unpatentable innovation or a patent that would require full disclosure of the innovation. Downsides of patents thus include loss of privileged access to the information upon public exposure and no defense against “independent development” or “accidental disclosure” of the information.⁴⁰ Nevertheless, innovation competitions serve as a catalyst for utilizing both patents and trade secrets.⁴¹ To “operate” a patent successfully, one must possess some degree of know-how, and the importance of secrecy for a company increases with the number of patents held.

Since the 1990s, trade secrets have fueled multi-level economic growth through networked businesses and supply chain clusters. Information and communication technologies (“ICTs”) in the era of globalization hinge on the concept of the “network

³⁵ See RESTATEMENT OF TORTS § 757 (AM. L. INST. 1934); UNIF. TRADE SECRETS ACT (UNIF. L. COMM’N 1985); C. KERRY FIELDS & HENRY R. CHEESEMAN, CONTEMPORARY EMPLOYMENT LAW 112 (3d ed. 2016); TRIPS Agreement, *supra* note 8.

³⁶ Segate, *supra* note 9, at 62.

³⁷ TRIPS Agreement, *supra* note 8, at arts. 39, 41, 61. See also BRIAN T. YEH, PROTECTION OF TRADE SECRETS: OVERVIEW OF CURRENT LAW AND LEGISLATION 13 (2016), <https://sgp.fas.org/crs/secrecy/R43714.pdf>.

³⁸ See, e.g., Lin, *supra* note 12, at 112; Nouwens & Legarda, *supra* note 12.

³⁹ Segate, *supra* note 9, at 69.

⁴⁰ *Id.*

⁴¹ EUROPEAN INTELLECTUAL PROPERTY OFFICE, PROTECTING INNOVATION THROUGH TRADE SECRETS AND PATENTS: DETERMINANTS FOR EUROPEAN UNION FIRMS 8 (2017), https://euipo.europa.eu/tunnel-web/secure/webdav/guest/document_library/observatory/documents/reports/Trade%20Secrets%20Report_en.pdf.

society.”⁴² This concept manifests itself in the global economy, which has become a broad configuration of ICTs, post-Cold War arrangements (e.g., multilateral agreements), and international divisions of labor. Also characteristic of the global economy are highly developed cross-border practices including industrial relocation, outsourcing, original equipment manufacturing (“OEM”), and original design manufacturing (“ODM”). A good example of the network society with trust can be found in the realm of semiconductors, where a company’s fabless manufacturing of chips depends upon chip-design companies’ licensing transfer of proprietary innovation. Meanwhile, unique technological development has been taking place in emerging economies throughout Asia, where firms adopt innovative investment-driven strategies based on resource-knowledge models.⁴³

However, today U.S.–China tensions have centered semiconductors in states’ technological competitiveness and national security, which can be at risk of costly trade-secret thefts due to internal and external misconduct in the global supply-chain network.⁴⁴ Nationally, external threats like trade-secret misappropriation for foreign gain or resale can harm the economy and innovative capacity of the targeted firm’s state.⁴⁵ Hence, to better understand today’s complex semiconductor global value-chain network, we must integrate geopolitical economic insights with legalistic IP approaches.

B. TRADE SECRETS PROTECTION IN THE UNITED STATES

China contends for America’s leadership position in the global economy. U.S. politicians and economists sang the praises of integrated global free-trade markets beginning in the 1990s,⁴⁶ but by the mid-2010s, experts were singing a new tune: the West should technologically decouple itself from China because of China’s disconcerting economic and

⁴² 1 MANUEL CASTELLS, *The Rise of the Network Society*, in THE INFORMATION AGE: ECONOMY, SOCIETY AND CULTURE (2d. ed., 1996); Martin Hess, *Governance, Value Chains and Networks: An Afterword*, 37 ECON. & SOC’Y 452 (2008).

⁴³ According to economic geography studies, the competitive advantage of many Asian firms rests on technological and marketing capabilities that collectively constitute the firms’ knowledge-resource base. The firms learn by acquiring well-sourced knowledge that enhances their technological capabilities internally and externally. See, e.g., Jinn-Yuh Hsu et al., *External Leveraging and Technological Upgrading Among East Asian Firms in the US*, 16 EUR. PLANNING STUD. 99 (2008); see also, e.g., SEÁN Ó RIAIN, THE POLITICS OF HIGH-TECH GROWTH: DEVELOPMENTAL NETWORK STATES IN THE GLOBAL ECONOMY (2004); Mike Hobday, *East Asian Latecomer Firms: Learning the Technology of Electronics*, 23 WORLD DEV. 1171 (1995).

⁴⁴ Zak Doffman, *Forget Russia, China and Iran, Up to 80% of Cybersecurity Threats Are Closer to Home*, FORBES (Apr. 11, 2019, 06:48 AM EDT), <https://www.forbes.com/sites/zakdoffman/2019/04/11/forget-russia-china-and-iran-up-to-80-of-cybersecuritythreats-are-closer-to-home/#62b573ac7eb3>; Debora Halbert, *Intellectual Property Theft and National Security: Agendas and Assumptions*, 32 THE INFO. SOC’Y 256, 265 (2016). See, e.g., Blair & Huntsman Jr., *supra* note 6, at 1–2 (noting that the American economy’s annual losses due to international IP theft were likely between \$225 and \$600 billion in 2017).

⁴⁵ See, e.g., U.S. Federal Bureau of Investigation, *supra* note 2; Lee, *supra* note 3; Ellen Nakashima, *U.S. Said to Be Target of Massive Cyber-Espionage Campaign*, WASH. POST (Feb. 10, 2013), https://www.washingtonpost.com/world/national-security/us-said-to-be-target-of-massive-cyber-espionage-campaign/2013/02/10/7b4687d8-6fc1-11e2-aa58-243de81040ba_story.html.

⁴⁶ See, e.g., HO-FUNG HUNG, CLASH OF EMPIRES: FROM “CHIMERICA” TO THE “NEW COLD WAR” 5–24 (Cambridge Elements 2022) (examining the U.S. strategies in the 1970s to cope with the country’s economic and hegemonic crisis by building a neoliberal global order; and such success hinged in large part on the integration of China into this order).

diplomatic behavior.⁴⁷ China has become the primary state threat to the United States, and techno-nationalism now appears to rule the day. Technology now appears to be a field for interstate struggle rather than a field for mutually beneficial marketplace activity.⁴⁸ Hence, countering unfair Chinese economic practices, including IP theft, is one U.S. diplomats' most important objectives.

Trade secrets are governed by state laws, and consequently, the definitions and the protections vary. However, the trade secret laws in most states rest on the Uniform Trade Secrets Act (UTSA), which was first proposed in 1979 by the Uniform Law Commission seeking to guide the states in their respective trade secret laws.⁴⁹ At the U.S. federal level, the Economic Espionage Act of 1996 (EEA) focuses on misappropriation of trade secrets for a foreign entity's benefit⁵⁰ and criminalizes two categories of trade secret theft: section 1831 concerns trade-secret theft by foreign governmental actors (i.e., "economic espionage") and section 1832 concerns trade secret theft by domestic actors.⁵¹ A person indicted under the EEA may still be prosecuted under any other trade secret theft statute for the same set of facts.⁵²

The EEA allows the U.S. government to criminally prosecute individuals or organizations (1) who steal, or without authorization of the rightsholder, obtain, destroy, or convey information; (2) who knew the information was proprietary and in fact was proprietary; and (3) who knew the offense would benefit or was intended to benefit a foreign entity.⁵³ An individual who is found guilty under the EEA is subject to a fine of up to \$5 million USD and imprisonment for up to 15 years.⁵⁴ An organization that violates the EEA may be fined up to \$10 million USD or three times the value of the stolen trade secret to the organization, including "expenses for research and design and other costs of reproducing the trade secret that the organization has thereby avoided."⁵⁵ To secure a successful prosecution, the U.S. government must present evidence that the defendants intended to give the trade secret to or use the trade secret on behalf or for the benefit of an agent or instrumentality of a foreign country.⁵⁶ In particular, unlike civil cases, the corresponding federal cases under

⁴⁷ JON BATEMAN, U.S.–CHINA TECHNOLOGICAL "DECOUPLING": A STRATEGY AND POLICY FRAMEWORK 2 (Carnegie Endowment 2022).

⁴⁸ *Id.*; Richard P. Suttmeier, *A New Technonationalism?: China and the Development of Technical Standards*, 48 COMM'N OF THE ACM 35 (2005) (discussing China's efforts to achieve technological leadership and independence through the development of indigenous standards and intellectual property rights).

⁴⁹ See 18 U.S.C. § 1905 (2016) (recommending it for enactment in all the states). According to the UTSA, trade-secret theft covers (1) acquisition of a trade secret through improper means and (2) disclosure or use of a trade secret of another without express or implied consent of the trade-secret owner. See also Julie Piper, *I Have a Secret? Applying the Uniform Trade Secrets Act to Confidential Information That Does Not Rise to the Level of Trade Secret Status*, 12 MARQ. INTELL. PROP. L. REV. 359 (2008).

⁵⁰ 18 U.S.C. §§ 1831–1832 (2006). See 142 CONG. REC. S12207–12, S12216 (daily ed. Oct. 2, 1996).

⁵¹ 18 U.S.C. §§ 1831–1832.

⁵² *Id.* § 1838 ("[T]his chapter shall not be construed to preempt or displace any other remedies, whether civil or criminal, provided by United States Federal, State, commonwealth, possession, or territory law for the misappropriation of a trade secret...").

⁵³ *Id.*

⁵⁴ *Id.*

⁵⁵ *Id.*

⁵⁶ See CHARLES DOYLE, CONG. RSCH. SERV., R42681, STEALING TRADE SECRETS AND ECONOMIC ESPIONAGE: AN OVERVIEW OF THE ECONOMIC ESPIONAGE ACT (2016).

the EEA need not involve an actual trade secret.⁵⁷ However, enforcement of the EEA has proven difficult in cases regarding China because the Chinese state, which is so often and deeply involved—sometimes through proxies—in trade secret thefts, hides its tracks well.⁵⁸ Evidence that defendants solely intended to benefit themselves in a foreign country or benefit a private corporation in the foreign country is insufficient for the charge of economic espionage.⁵⁹

The U.S. federal government took significant steps in 2016 toward protecting trade secrets. The most important step was the passage of the Defend Trade Secrets Act (DTSA), which amended the EEA to improve the ability of businesses to address trade secret theft with a federal civil action and expand the scope of available remedies.⁶⁰ The DTSA (1) preserves pre-existing state laws, (2) safeguards employees and whistleblowers, and (3) requires that employers must either notify employees of their rights or surrender the opportunity to pursue exemplary damages.⁶¹ Justifications of the DTSA have asserted that a federal civil remedy for trade secret theft is necessary, that federal criminal prosecutors are already overburdened, and that, on the whole, the federal government's current configuration cannot adequately protect U.S. trade secrets from domestic and foreign threats.⁶²

Section 337 of the U.S. Tariff Act of 1930 reflects another attempt to prevent cross-border trade secret theft.⁶³ The U.S. government can block the importation of goods in an *in rem* action if the misappropriation causes domestic injury, even when the misappropriation occurred outside of the United States and no U.S. entity is practicing the trade secrets at issue.⁶⁴ Section 337 offered another option to trade secret rightsholders who would otherwise

⁵⁷ *United States v. Hsu*, 155 F.3d 189, 203–04 (3d Cir. 1998); *United States v. Yang*, 281 F.3d 534, 544 (6th Cir. 2002).

⁵⁸ See Curtis J. Milhaupt, *The State as Owner—China's Experience* (Stan. L. Sch. Working Paper No. 543, 2020), <https://deliverypdf.ssrn.com/delivery.php?ID=062021004021120117110001124127018091102008050058026054101089105024087012024115001095018061040055106006002003069107120117002118106016000058010118016119112088084022118067034057118112084002003121125015112010015087025084093099084072008025080024065071110090&EXT=pdf&INDEX=TRUE> (examining the enduring phenomenon of China's state involvement in businesses, particularly with respect to monopolies, the provision of public goods, and outright ownership of equity, and showing how China's experiences in these regards support the idea that the natures of business vary according to their political environment).

⁵⁹ See *United States v. Lee*, No. CR 06-0424 JW, 2010 U.S. Dist. LEXIS 144642, at *20 n.16 (N.D. Cal. May 21, 2010).

⁶⁰ Randy Kahnke et al., *Key Trade Secret Developments of 2016: Part 1*, LAW360 (Dec. 14, 2016, 4:56 PM EST), https://www.faegrebd.com/files/125589_Key_Trade_Secret_Developments_Of_2016_Part_1.pdf.

⁶¹ *Id.* See also Defend Trade Secrets Act of 2016, Pub. L. No. 114–153, § 3(a)(1), 130 Stat. 376 (codified as amended at 18 U.S.C. §§ 1831–1832).

⁶² See YEH, *supra* note 37 (“[B]ecause the U.S. Department of Justice and its Federal Bureau of Investigation have limited investigative and prosecutorial resources, as well as competing enforcement priorities, some observers assert that the federal government cannot adequately protect U.S. trade secrets from domestic and foreign threats.”); see also Adam M. Gershowitz & Laura R. Killinger, *The State (Never) Rests: How Excessive Prosecutorial Caseloads Harm Criminal Defendants*, 105 NW. U.L. REV. 261 (2011); Daniel C. Richman & William J. Stuntz, *Al Capone's Revenge: An Essay on the Political Economy of Pretextual Prosecution*, 105 COLUM. L. REV. 583, 613 (2005).

⁶³ U.S. Tariff Act of 1930, 19 U.S.C. § 1337.

⁶⁴ See Elizabeth A. Brown, *Reducing the Risk of Cross-Border Trade Secret Misappropriation*, in *MANAGING THE LEGAL NEXUS BETWEEN INTELLECTUAL PROPERTY AND EMPLOYEES* 196–197 (Lynda J. Oswald & Marisa Anne Pagnattaro eds. 2015); Ron Vogel, *The Great Brain Robbery: Tianrui and the Treatment of Extraterritorial*

have faced potentially insurmountable hurdles when attempting to bring alleged foreign trade-secret misappropriators to justice. However, some legal scholars question the efficacy of Section 337 in protecting U.S. trade secrets from exploitation overseas.⁶⁵

In 2018, the White House Office of Trade and Manufacturing Policy issued a report on “How China’s Economic Aggression Threatens the Technologies and Intellectual Property of the United States and the World.” The report criticized the “major strategies and various acts, policies, and practices Chinese industrial policy uses to acquire the intellectual property and technologies of the world and to capture the emerging high-technology industries that will drive future economic growth.”⁶⁶ In addition to identifying and prosecuting those engaged in trade secret theft, hacking, and economic espionage, the DOJ is increasing efforts to protect critical infrastructure against external threats, including foreign direct investment, supply chain threats, and foreign agents seeking to influence the American public and policymakers without proper registration.⁶⁷

Unfair Trade Acts, 22 FED. CIR. BAR J. 641, 659, 663 (2013) (arguing that Section 337 empowers the International Trade Commission’s investigations and that the government should quickly prohibit the importation of misappropriation-tainted goods into the United States, as well as improve its IPR protection of U.S. entities in China) (“[Judge Bryson] noted that there was greater leeway for the Commission’s extraterritorial reach in nonstatutory IPR cases than in statutory cases, where the federal government’s reach ‘under our law is confined to the United States and its Territories.’”).

⁶⁵ See, e.g., Steven E. Feldman & Sherry L. Rollo, *Extraterritorial Protection of Trade Secret Rights in China: Do Section 337 Actions at the ITC Really Prevent Trade Secret Misappropriation Abroad?*, 11 J. MARSHALL REV. INTELL. PROP. L. 523, 541–42, and 545 (2012) (arguing that Section 337 is a tool for preventing a misappropriator not from using a misappropriated trade secret but from benefiting from the misappropriation) (“while the ITC [International Trade Commission] is not enjoining foreign entities from continuing to use misappropriated trade secrets abroad, the ITC is prohibiting those entities from importing the goods utilizing the misappropriated trade secrets into the United States and competing with the U.S. entity within the United States”). See also, Mark Cohen, *Sino Legend Saga Ends at US Supreme Court*, CHINA IPR (Jan. 17, 2017), <https://chinaipr.com/2017/01/17/sino-legend-saga-ends-at-us-supreme-court/> (mentioning arguments presented in a U.S. Supreme Court amicus brief: “The displeasure of [MofCOM] with what has unfolded in this, and other, recent ITC cases involving alleged trade secret violations should not go unnoticed. In this matter, there is no dispute that the alleged actions occurred entirely within China, by Chinese citizens, while working at Chinese companies. The alleged acts of misappropriation were first raised by Complainant’s Chinese subsidiary in China. Both criminal and civil proceedings were instituted in China for these alleged misdeeds. The alleged conduct and actors in question were ultimately vindicated. However, Complainant, unhappy with the failure of proof in China, sought institution of a Section 337 proceeding in the United States based on the same conduct already adjudicated in China. The ITC conducted an investigation, ignored the rulings in China to the contrary, and determined that not only could the ITC bar products based on this conduct, but also that some of Complainant’s [allegations] justify a limited exclusion order of Petitioner’s product.”).

⁶⁶ *Information about the Department of Justice’s Attorney General China Initiative, AAG Demers Bio and a Compilation of China Related Criminal Cases Since Jan. 2018*, U.S. DEP’T. OF JUSTICE, (July 2, 2019), <https://china.usc.edu/sites/default/files/article/attachments/us-doj-2019-china-initiative-cases.pdf>. The DOJ’s China Initiative was established in November 2018 to counter threats to U.S. national security stemming from China. The China Initiative’s goals include identifying and prosecuting those engaged in trade secret theft, hacking, and economic espionage; protecting U.S. critical infrastructure against external threats, including foreign direct investment and supply chain threats; and prosecuting foreign agents seeking to influence the U.S. public and policymakers without proper registration. See U.S. DEP’T. OF JUSTICE, ATTORNEY GENERAL JEFF SESSION’S CHINA INITIATIVE FACT SHEET (Nov. 1, 2018), <https://www.justice.gov/opa/speech/file/1107256/download>.

⁶⁷ ATTORNEY GENERAL JEFF SESSION’S CHINA INITIATIVE FACT SHEET, *supra* note 66.

In March 2020, the DOJ released an information sheet with 39 examples of “China-related” cases dating back to April 2018.⁶⁸ The FBI stated in February 2020 that there were “about 1,000 investigations involving China’s attempted theft of U.S.-based technology, in all 56 of our field offices, spanning almost every industry and sector.”⁶⁹ Studies have also presented evidence that persons who have connections to the governing party-state structure of the Chinese government have engaged in trade secret theft and other activities that are illegal under U.S. law.⁷⁰ Despite the clear evidence that the Chinese government is incentivizing and recruiting people at home and abroad to acquire IP in contravention of U.S. laws, we must be cautious to avoid engaging in the selective prosecution of Chinese people.⁷¹

Other U.S. legislative and executive solutions on trade secret misappropriations include the Computer Fraud and Abuse Act (1984), the Summary of the Major U.S. Export Enforcement, Economic Espionage, Trade Secret and Embargo-Related Criminal Cases (2012), and the Obama Administration Report on Trade Secrets (2013). These solutions align with administrative and international measures like Section 301 Reports of the Office of the United States Trade Representative (USTR) and relevant trade agreement dispute settlement proceedings.⁷² The Office of the USTR has claimed that the Chinese government has conducted and supported cyber theft and other intrusions into the commercial networks of U.S. companies.⁷³ Researchers have cautioned, however, that it is difficult to locate the origin of cyber intrusions and it is particularly difficult to establish whether a state is behind a cyberattack.⁷⁴

C. TRADE SECRETS PROTECTION IN TAIWAN

Since the 1960s, Asian firms from Taiwan, South Korea, and Singapore have driven their U.S. investments through innovation strategies based on the resource-based model of knowledge.⁷⁵ Asian firms’ learning capacities are attributed to two major sources: (1) forward integration with sophisticated U.S. and European markets and (2) technology- and resource-based leveraging for OEM and ODM.⁷⁶ This learning process is well-documented and enhances both internal and external technological capabilities.⁷⁷ The process also expands beyond conventional know-how, encompassing the entire production chain from manufacturing technologies to marketing and distribution expertise.⁷⁸

⁶⁸ *Information about the Department of Justice’s China Initiative and a Compilation of China-Related Prosecutions since 2018*, U.S. DEP’T OF JUSTICE (last updated Feb. 23, 2022), <https://www.justice.gov/archives/nsd/information-about-department-justice-s-china-initiative-and-compilation-china-related>

⁶⁹ Christopher Wray, *Responding Effectively to the Chinese Economic Espionage Threat*, Opening Remarks at the Dept. of Justice China Initiative Conference at the Center for Strategic and Int’l Studies (Feb. 6, 2020), <https://www.fbi.gov/news/speeches/responding-effectively-to-the-chinese-economic-espionage-threat>.

⁷⁰ Lewis, *supra* note 26, at 147.

⁷¹ See Kim, *supra* note 26; Lewis, *supra* note 26.

⁷² See Section 301 of the Trade Act of 1974, Pub. L. 93-618 (codified as amended at 19 U.S.C. §§ 2411-2420).

⁷³ Lee, *supra* note 3, at 163.

⁷⁴ *Id.*

⁷⁵ Hsu et al., *supra* note 43, at 99.

⁷⁶ *Id.* at 100.

⁷⁷ *Id.*

⁷⁸ *Id.*

The journey of TSMC reflects Taiwan's dominance over semiconductor manufacturing.⁷⁹ Its contract-manufacturer approach aligns with the U.S. "fabless model," shifting chip production to TSMC and diminishing American capacity.⁸⁰ The semiconductor supply chain involves many diverse steps and procedures that are all needed to keep it functioning and efficient. Thus, TSMC's contract-manufacturer model has led to the formation of a networked semiconductor supply chain in Taiwan. TSMC now controls over 90% of advanced chip production.⁸¹ Because China aims to build a world-class chipmaking industry, Chinese firms have not surprisingly targeted Taiwan's deep pool of semiconductor expertise and local talent.⁸² As a critical supply-chain node, Taiwan has found itself in an increasingly interdependent relationship with two superpowers: the United States and China.

In 2010, the Taiwan-China ECFA marked the start of cross-strait economic cooperation and the implementation of China's strategy to facilitate economics for reunification and political influence.⁸³ This agreement raised concerns about Taiwan's economic dependence on China and the potential for Beijing to wield economic leverage for political ends.⁸⁴ However, Beijing's collaborative efforts in Taiwan face limitations due to resilient civil society's actions, including the 2014 Sunflower Movement, responding to China's influence on a free and open society to achieve its political objectives.⁸⁵

As a member of the WTO, Taiwan first promulgated Taiwan's Trade Secrets Act in 1996, subsequently amending it in 2013 and 2020.⁸⁶ Prior to the 2013 amendment, entities found guilty of trade secret theft faced only civil liability because the legislative consensus in Taiwan was that its Fair Trade Law (公平交易法), by covering criminal charges such as larceny, embezzlement, and fraudulent breaches of trust, also covered trade-secret theft.⁸⁷ However, this view changed as China systematically raided Taiwan's chipmaking secrets.⁸⁸

⁷⁹ See, e.g., Gregory Arcuri & Samantha Lu, *Taiwan's Semiconductor Dominance: Implications for Cross-Strait Relations and the Prospect of Forceful Unification*, CTR. STRATEGIC & INT'L STUD. (Mar. 22, 2022), <https://www.csis.org/blogs/perspectives-innovation/taiwans-semiconductor-dominance-implications-cross-strait-relations>.

⁸⁰ *Id.* (noting that American semiconductor manufacturing capacity fell from roughly 40% of the global market share in 1990 to around 12% in 2020).

⁸¹ Yimou Lee, et al., *Taiwan Chip Industry Emerges as Battlefield in US-China Showdown*, REUTERS (Dec. 27, 2021, 12:00 PM GMT), <https://www.reuters.com/investigates/special-report/taiwan-china-chips/>.

⁸² Ting-Fang Cheng, *China Hires Over 100 TSMC Engineers in Push for Chip Leadership*, NIKKEI (Aug. 12, 2020, 12:00 PM JST), <https://asia.nikkei.com/Business/China-tech/China-hires-over-100-TSMC-engineers-in-push-for-chip-leadership>.

⁸³ Jieh-min Wu, *Taiwan after the Colonial Century: Bringing China into Foreground*, in *COMPARATIZING TAIWAN* 285-286, (Shu-Mei Shih and Ping-Hui Liao eds., 2015).

⁸⁴ *Id.*

⁸⁵ BRIAN C. H. FONG, ET AL., *CHINA'S INFLUENCE AND THE CENTER-PERIPHERY TUG OF WAR IN HONG KONG, TAIWAN AND INDO-PACIFIC* 42 (2020).

⁸⁶ See Carol Chih-Chieh Lin (林志潔), *Reviewing the U.S. Economic Espionage Act—With the Extending Comments on the 2013 Amendment of Taiwan's Trade Secrets Act (美國聯邦經濟間諜法之回顧與展望—兼論我國營業秘密法之刑罰化)*, 13 *TECH. L. REV.* 1, 33 (2016); the latest version of Taiwan's Trade Secrets Act was promulgated on January 15, 2020, and went into effect on January 17, 2020; See Trade Secrets Act 2020 (Taiwan), <https://law.moj.gov.tw/ENG/LawClass/LawHistory.aspx?pcode=J0080028>.

⁸⁷ Lin, *supra* note 86, at 33.

⁸⁸ *Id.* See also Chuin-Wei Yap, *Taiwan's Technology Secrets Come Under Assault from China*, WALL STREET JOURNAL (July 1, 2018, 2:07 PM ET), <https://www.wsj.com/articles/taiwans-technology-secrets-come-under-assault-from-china-1530468440>.

For example, the 2013 amendment to the Taiwan Trade Secrets Law introduced stricter penalties for trade secret theft, with parties found guilty of cross-border infringement being sentenced to up to 10 years in prison and monetary fines of up to either \$1.56 million USD or ten times the value of the unjust gains. The amendment also bolstered law enforcement with measures like the “state witness” provision and enhanced wiretapping procedures.⁸⁹

Taiwan’s low win rate in trade secret theft cases is due to the high burden of proof that plaintiffs must meet in civil and criminal cases—a burden made all the more challenging because most of the critical evidence is in the hands not of plaintiffs but defendants. From 2014 to June 2021, the average conviction rate under Taiwan’s Trade Secrets Act was 63.5%, well below the average conviction rate of 96% for cases handled by prosecutors.⁹⁰ Still, this rate was better than the act’s pre-2013 amendment rate at trial courts: 26.8% (24.8% civil, 30.8% criminal).⁹¹ Before 2017, Taiwanese courts issued protective orders during trials, but no protective orders were available during the prosecutorial investigation stage, and thus, Taiwanese companies alleging some form of trade secret theft were reluctant to litigate the matter.⁹²

In 2017, a ruling by Taiwan’s Supreme Court shifted the burden of proof away from plaintiffs after they establish a *prima facie* case. The 2020 Amendment enacted an “Investigation Confidentiality Protective Order” (偵查保密令) during the criminal investigation, which derived from “the Confidentiality Preservation Order” (秘密保持令) system in order to promote the discovery of truth and trade secret protection.⁹³ In addition, the 2020 Amendment expands the protection for any foreign entity’s trade secrets if its nation

⁸⁹ See Witness Protection Act, arts. 1, 2, 14 (Taiwan), <https://law.moj.gov.tw/ENG/LawClass/LawAll.aspx?pcode=A0030161>; Trade Secrets Act, arts. 1, 13-1, 13-2 (Taiwan), <https://law.moj.gov.tw/ENG/LawClass/LawAll.aspx?pcode=J0080028>.

⁹⁰ MINISTRY OF JUSTICE INVESTIGATION BUREAU (TAIWAN), THE PREVENTION AND INVESTIGATION OF ECONOMIC CRIME ANNUAL REPORT 2021, https://www.mjib.gov.tw/eBooks/eBooks_Detail?CID=55&BookID=2099.

⁹¹ Jyh-An Lee & Jerry G. Fong (李治安&馮震宇), *An Empirical Study of Trade Secret Litigation in Taiwan* (臺灣營業秘密侵害訴訟之實證研究), 216 TAIWAN L. REV. 151, 154 (2013); Before 2013, corporate plaintiffs in trade secret misappropriation cases had a win rate of 11% under the Fair Trade Act; See Chao-ju Kung (龔昭如), *Trade Secret and Fair Competition: Focusing on Corporate Liability* (營業秘密與公平競爭—以法人之究責為中心) (Aug. 2018) (unpublished ML diss., National Chiao Tung University) (on file with National Central Library).

⁹² Yulan Kuo, *Trade Secrets Act to Be Revised*, IAM (Oct. 24, 2018), <https://www.iam-media.com/trade-secrets-act-be-revised> (stating that trade secret infringement cases with technical complexities require protection of the confidentiality of the victim’s information to streamline investigations and bolster secrecy protection).

⁹³ Unlike the United States, Taiwan and most civil law countries lack evidence discovery procedures in litigation. The primary purpose of the court-issued protective order in trade secret cases is to prevent parties from using the information for external purposes. The system aims to broaden the opportunity for opposite parties (potentially defendants or victims) to access the evidence in question. On the other hand, in Taiwan’s “confidentiality order for investigation system,” which was introduced in 2020, a prosecutor may, if necessary, issue a confidentiality order during an investigation without a court order. A person subject to a confidentiality order shall neither use the investigation information for purposes other than the investigation itself nor disclose the information to any person not subject to a confidentiality order. A person or organization found to have violated a confidentiality order is liable to either a prison sentence of up to three years or a fine of up to NT\$1 million (approximately \$33,333 USD). See Intell. Prop. Office (Taiwan), *The Legislative Yuan Passes the Trade Secrets Act That Introduces a Confidentiality Order for the Investigation System*, TIPO E-PAPER (Jan. 23, 2020), <https://www.tipo.gov.tw/en/dl-264068-96696698a2a44602b0a60cac31fa3095.html>; Trade Secrets Act 2020, art. 14-4 (Taiwan); James G. Apple & Robert P. Deyling, *A Primer on the Civil-Law System*, FED. JUD. CR 27 (1995).

state has an international treaty for protection of trade secrets with Taiwan, or an agreement for reciprocal protection of trade secrets owned by Taiwan.⁹⁴

The *Micron* case illustrates cross-border trade secret protection in the U.S.–Taiwan–China context. Taiwan’s United Microelectronics Corporation (“UMC”), China’s chip company, and three individuals faced charges of economic espionage in 2017 for jointly plotting to pilfer trade secrets from Micron Technology.⁹⁵ Specifically, the case highlights Taiwan’s tech role amid U.S.–China tensions and the need to address talent poaching and theft. In early 2020, after a two-year dispute over the scope of confidentiality, a trial court in Taiwan issued a protective order to the UMC’s motion for non-public trial and litigation documents.⁹⁶ The fact that the Taiwanese court system required over two years to issue a protective order shows how politically sensitive the case was, and how civil and common law countries treat fact-finding differently.⁹⁷

For many years, Taiwan treated trade-secret cases as commercial disputes, hesitating to jail infringers. The *Micron* case, which I discuss in further detail in Part 5, highlights the nodes that Taiwan and Taiwanese companies occupy in the semiconductor global supply-chain.⁹⁸ In response to high-profile trade-secret cases, Taiwan amended the Taiwan National Security Act (國家安全法)⁹⁹ along with the Act Governing Relations Between the People of

⁹⁴ Under Taiwan’s pre-amended provisions and court practices, a foreign entity that had not obtained a certificate of recognition from the Taiwanese government was not entitled to file a civil lawsuit for trade secret misappropriation. The absence of state protections for unrecognized foreign entities in such cases discouraged international investments in and foreign trade with Taiwan. Therefore, the 2020 Amendment provides that an unrecognized foreign-national entity can file a complaint or bring a civil action in Taiwan’s courts against trade secret infringements; See Grace Shao & Nancy Huang, *Draft Amendment on Taiwan Trade Secrets Act*, LEXOLOGY (May 19, 2017), <https://www.lexology.com/library/detail.aspx?g=ce36be36-d5a4-47cf-bfa3-75537db3f1d7>; Trade Secrets Act 2020, arts. 13-5, 15 (Taiwan).

⁹⁵ See *infra* Part V and the Appendix. See also Debby Wu, *Engineers Found Guilty of Stealing Micron Secrets for China*, BLOOMBERG (last updated June 12, 2020, 10:08 AM EDT), <https://www.bloomberg.com/news/articles/2020-06-12/chip-engineers-found-guilty-of-stealing-micron-secrets-for-china>; Dean Seal, *US Accuses State-Owned Chinese Co. of Stealing Micron’s IP*, LAW360 (Nov. 1, 2018, 7:57 PM EDT), <https://www.law360.com/articles/1098105/us-accuses-state-owned-chinese-co-of-stealing-micron-s-ip>; *UMC Fined NT\$20m for Trade Theft*, TAIPEI TIMES (Jan. 28, 2022), <https://www.taipeitimes.com/News/biz/archives/2022/01/28/2003772193> [hereinafter, *Micron-TW*].

⁹⁶ Rui-Zhen Zhang (張瑞楨), *Yanfang Zhenchazhong Erdu Xiemi Zhuanjia Yuejuan Zhineng Kan Bu zhun Zhao* (嚴防偵查中二度洩密 專家閱卷只能看不准照) [Vigilantly Guard against Second Leak during Investigation; Experts Can Only Read Files, No Copying Allowed], LIBERTY TIMES NET (June 13, 2020), <https://ec.ltn.com.tw/article/paper/1379469>.

⁹⁷ In common law countries like the United States, attorneys play a central role in discovery, while in civil law countries like Taiwan, judges take a more active investigatory role. In common law countries, attorneys play a crucial role in discovering facts, while judges focus on legal issues after parties engage in discovery. In contrast, civil law countries involve more active judge participation in the discovery process, which aims to instruct judges on how cases should proceed. See Apple & Deyling, *supra* note 93; *Meiquang Yuangong Tiaocao Liandian Xiemi An 3 Beigao Pan Youzui, Liandian Fajin IYiyuan* (美光員工跳槽聯電洩密案 3被告判有罪、聯電罰金1億元) [Three Former Micron Employees Found Guilty for Stealing Secret; UMC Fined NT\$100 Million], GLOBAL VIEWS MONTHLY (June 12, 2020), <https://www.gvm.com.tw/article/73192>.

⁹⁸ See *infra* Part V and the Appendix. See also United States v. United Microelectronics Corp. et al., No. 5:18-cv-06643 (N.D. Cal. Nov. 1, 2018) (civil); United States v. United Microelectronics Corp. et al., No. 3:18-cr-00465 (N.D. Cal. Sep. 27, 2018) (criminal).

⁹⁹ See National Security Act 2022 (Taiwan), <https://law.moj.gov.tw/eng/LawClass/LawAll.aspx?pcode=A0030028>. See also Aaron Chen et al., *Formal*

the Taiwan Area and the Mainland Area (臺灣地區與大陸地區人民關係條例) in 2022,¹⁰⁰ and the Intellectual Property Case Adjudication Act (智慧財產案件審理法) in 2023.¹⁰¹ The aim of these amendments was to strengthen Taiwan's legal framework for protecting trade secrets and other property rights, especially those associated with "national core key technology."¹⁰² In practice, businesses commonly enhance the protection of their trade secrets by relying on employment contracts like non-compete agreements, although employers in Taiwan must provide reasonable compensation, including for compliance-related losses and post-termination non-compete agreements.¹⁰³ Non-compete agreements for highly skilled technical employees can play a critical role in how companies overseas affiliate transfer, control, and manage proprietary technology.¹⁰⁴

D. TRADE SECRETS PROTECTION IN CHINA

China has established laws for trade-secret protection, but the United States has complained about the low win rate,¹⁰⁵ the lack of transparency (limited case publication),

Implementation of the Legal Regime for National Core Key Technologies (Taiwan), LEE, TSAI & PARTNERS (June 2023), <https://www.letsai.com/trade-secret/formal-implementation-of-the-legal-regime-for-national-core-key-technologies-taiwan>.

¹⁰⁰ See Act Governing Relations between the People of the Taiwan Area and the Mainland Area 2022, (Taiwan), <https://law.moj.gov.tw/ENG/LawClass/LawAll.aspx?pcode=Q0010001>. See also Li-hua Chung and Tzu-hsuan Liu, *Law to Combat Espionage Takes Effect*, TAIPEI TIMES (Nov. 19, 2022), <https://www.taipetimes.com/News/front/archives/2022/11/19/2003789214>.

¹⁰¹ See Intellectual Property Case Adjudication Act 2007, (Taiwan), <https://legal.judicial.gov.tw/LAWENG//FLAW/dat02.aspx?lsid=FL042720> (effective from July 1, 2008 and amended on August 30, 2023); Winona Chen & Tsung-Yuan Shen, *Legislative Yuan Passes Amendment to Intellectual Property Case Adjudication Act*, LEXOLOGY (Mar. 27, 2023), <https://www.lexology.com/commentary/intellectual-property/taiwan/lee-and-li-attorneys-at-law/legislative-yuan-passes-amendment-to-intellectual-property-case-adjudication-act>.

¹⁰² Han-Wei Lin, *Draft Regulations Will Give Teeth to National Security Trade Secret Protection*, IAM (Apr. 5, 2023), <https://www.iam-media.com/trade-secrets/article/draft-regulations-will-give-teeth-national-security-trade-secret-protection>.

¹⁰³ Under the Taiwanese Labor Standards Act (勞動基準法), the statutory minimum compensation for a non-compete agreement is "50% of the average monthly wage of the employee at the time of separation," below which an agreement is void. Courts review other criteria to determine the reasonableness of compensation. Lawrence Yu & Eugene Chung, *Reasonable Range of Non-Compete Compensation Under Taiwan Law*, LEE AND LI ATTORNEYS-AT-LAW (Mar. 3, 2023), <https://www.leeandli.com/EN/NewslettersDetail/7022.htm>.

¹⁰⁴ See, e.g., Mark Cohen, University of California, Berkeley Law School, Statement: Engaging and Anticipating China on IP and Innovation, Hearing on Foreign Competitive Threats to American Innovation and Economic Leadership Before the Senate Committee on the Judiciary, Subcomm. on Intellectual Property (Apr. 18, 2023).

¹⁰⁵ Trade secret litigation in China has the lowest win rate of any IP civil litigation area in the country, coming in at 54 percent compared to 77 percent for patents of all types and 85 percent for copyright cases. *Id.*, at 18, n. 42. See also Mark Cohen, *The Changing Legislative Landscape of Trade Secret Protection in China*, CHINA IPR (Apr. 27, 2019), <https://chinaipr.com/2019/04/27/the-changing-legislative-landscape-of-trade-secret-protection-in-china/> (suggesting that the low publication rates for trade secret cases in China make it difficult to judge the country's IP-enforcement regime and that a rigorous discovery system would help to reduce cross-border trade secret infringements in China); J. Benjamin Bai & Guoping Da, *Strategies for Trade Secrets Protection in China*, 9 NW. J. TECH. & INTELL. PROP. 351, 351 (2011) (evidentiary burden for a plaintiff to bring a trade secret misappropriation case in Chinese courts is relatively high).

and the total absence of a discovery system.¹⁰⁶ Moreover, Chinese courts often favor local firms,¹⁰⁷ and plaintiffs face steep challenges proving misappropriation.¹⁰⁸ The 2019 amendment to the China Anti-Unfair Competition Law introduced the “reversed burden of proof” principle, which increased the likelihood of plaintiff success.¹⁰⁹ As for Chinese entities that possess a trade secret, they must meet secrecy, commerciality, and confidentiality criteria.¹¹⁰ Nevertheless, what is particularly troubling is that many “companies” in China are fully or partially owned or controlled by the Chinese central or local government, including local people’s congresses. When the government participates in the trade secrets theft, it undermines confidence in the integrity of the law¹¹¹ and violates the TRIPS agreement.¹¹² One way to protect trade secrets is to restrict former employees from divulging them and to mandate non-compete and confidentiality agreements for staff with access to confidential data.¹¹³ Employers in China often rely on non-compete agreements to protect trade secrets in China because they are easier to access and enforce than trade secret law.¹¹⁴ While non-compete agreements are generally illegal in some U.S. jurisdictions like California, U.S. employers have occasionally found that they lack an effective remedy when their employees leave their U.S. jobs for positions offered by Chinese competitors.¹¹⁵ Enforcement of non-compete agreements is difficult because of the differing perceptions about IP rights and because of China’s lack of an effective judicial system; moreover, remedies in China put plaintiffs at risk of suffering secondary disclosure.¹¹⁶

¹⁰⁶ Cohen, *supra* note 104. However, lack of a US-style discovery system is not unique to China. Indeed, most civil-law system countries lack a formal civil-law counterpart to discovery. *See* Apple & Deyling, *supra* note 93.

¹⁰⁷ Dan Prud’homme & Taolue Zhang, *Conclusions, in* CHINA’S INTELLECTUAL PROPERTY REGIME FOR INNOVATION: RISKS TO BUSINESS AND NATIONAL DEVELOPMENT 229 (2019) (“there is empirical evidence that local plaintiffs have a better chance of winning IP disputes in China than ones originally registered in different areas . . . protectionism can favor domestic firms over foreign firms, or one local domestic Chinese firm over another . . . unfair court rulings intent on protecting local firms undermine the sense of fairness in China’s IP judicial system which can ultimately restrain innovation investments”).

¹⁰⁸ CHRIS BAILEY ET AL., TRADE SECRET LITIGATION IN CHINA 15 (2022), <https://rouse.com/media/n5uadjtn/ciela-trade-secret-litigation-in-china.pdf> (“trade secret litigation in China has historically been rare and somewhat challenging for plaintiffs, with only a minority of cases where the plaintiff achieved a notably strong result.”) *See also* Bai & Da, *supra* note 105, at 351, 354.

¹⁰⁹ The reversed burden of proof (RBP) principle influenced win rates. In twelve explicit cases, plaintiffs won every time. The principle is especially helpful in technical-information cases where proving infringement is challenging. Without RBP, the win rate for these cases would almost certainly be lower. BAILEY ET AL., *supra* note 108, at 2, 7, and 10.

¹¹⁰ *See* Zhonghua Renmin Gongheguo Fan Buzhengdang Jingzheng Fa (中华人民共和国反不正当竞争法) [Anti-Unfair Competition Law] (promulgated by the Standing Comm. of the Nat’l People’s Cong., Apr. 23, 2019, effective Apr. 23, 2019), art. 9., (China) [hereinafter, Anti-Unfair Competition Law].

¹¹¹ Marisa Anne Pagnattaro, *Protecting Trade Secrets in China: Update on Employee Disclosures and the Limitations of the Law*, 45 AM. BUS. L.J., 399, 401 (2008).

¹¹² TRIPS Agreement., *supra* note 8 (obligating members to ensure protection of undisclosed information through systems developed through appropriate legislation).

¹¹³ Pagnattaro, *supra* note 111.

¹¹⁴ Benjamin Bai & Steve Adkins, *Protecting Trade Secrets in China: Tips and Lessons Learned*, ALLEN & OVERY (Apr. 2013), <https://www.uschina.org/sites/default/files/tradesecrets.pdf>.

¹¹⁵ *US Responses to China’s Changing IP Regime: Testimony before the US–China Economic and Security Commission* (Apr. 14, 2022) (statement of Mark Cohen, Distinguished Senior Fellow at Berkeley Law School, University of California), https://www.uscc.gov/sites/default/files/2022-04/Mark_Cohen_Testimony.pdf.

¹¹⁶ Pagnattaro, *supra* note 111, at 402.

The 2019 amendment to the China Anti-Unfair Competition Law introduced both a plaintiff-friendly shift in the burden of proof and punitive damages in IP-theft cases.¹¹⁷ A rightsholder has the burden of establishing (1) the existence of a reasonably protected trade secret and (2) the occurrence of misappropriation.¹¹⁸ The plaintiff's burden is lowered to establish the *prima facie* evidence, after which the burden shifts to the defendant to disprove the elements.¹¹⁹ Also, the amendment expands the definitional scope of "trade secret" from "technical and operational information" to "technical, operational or other commercial information," and a requirement remains that the law only governs business operations.¹²⁰ The amendment addresses malicious infringement and increases the cap on statutory civil liability from 3 million yuan to 5 million yuan (approx. from \$418,888 USD to \$698,167 USD).¹²¹

The contemporary history of China suggests that the amended provisions did not have their expected impact. In particular, insufficient transparency—the Chinese judiciary's previously discussed low level of publication regarding trade-secret cases—makes it very difficult for outsiders to know how Chinese courts handle cases, including those that have been subject to this burden-of-proof reversal.¹²² Article 9 of the Anti-Unfair Competition Law stipulates that trade-secret infringement may occur because of "electronic intrusion."¹²³ However, the trade secret infringers as defined under the 2019 amendment must be private parties; therefore, the law does not actually respond to U.S. criticism regarding the Chinese government's aggressive role in facilitating cyber intrusion into U.S. commercial networks.¹²⁴

These Chinese laws and recent legal reforms aside, China is eager to bridge the technology gaps that separate it from the United States, and to this end, the Chinese government has instituted industrial policies that have significant national security as well as commercial implications.¹²⁵ As the world's largest importer of semiconductors, China has recently attempted to reduce its reliance on foreign semiconductor suppliers.¹²⁶ Initiatives like the "Thousand Talents Plan" and China's State Council goals aim for Chinese

¹¹⁷ Cohen, *The Changing Legislative Landscape of Trade Secret Protection in China*, *supra* note 105, at 5.

¹¹⁸ *Id.*; see also Ruixue Ran et al., *Trade Secret Protection Is Getting Stronger in China*, LAW360 (May 23, 2019, 10:50 AM EDT), <https://www.law360.com/articles/1162103/trade-secret-protection-is-getting-stronger-in-china>.

¹¹⁹ Ran et al., *supra* note 118, at 2.

¹²⁰ See Zhonghua Renmin Gongheguo Fan Buzhengdang Jingzheng Fa (中华人民共和国反不正当竞争法 (2019修正)) [Anti-Unfair Competition Law (2019 Amendment)] (promulgated by the Standing Comm. Nat'l People's Congr., Apr. 23, 2019, effective Apr. 23, 2019) art. 9, 2019 STANDING COMM. NAT'L PEOPLE'S CONG. GAZ. 13 (China).

¹²¹ *Id.* art. 17.

¹²² Cohen, *supra* note 105, at 6.

¹²³ See Anti-Unfair Competition Law (2019 Amendment) (China), *supra* note 120, art. 9.

¹²⁴ OFF. OF THE U. S. TRADE REP., *supra* note 20, at 155–57.

¹²⁵ Mario Mancuso et al., *3 Policy Developments to Watch As US-China Divide Grows*, LAW360 (Oct. 9, 2019), <https://www.law360.com/articles/1208004/3-policy-developments-to-watch-as-us-china-divide-grows>.

¹²⁶ ALEX CAPRI, SEMICONDUCTORS AT THE HEART OF THE US-CHINA TECH WAR: HOW A NEW ERA OF TECHNO-NATIONALISM IS SHAKING UP SEMICONDUCTOR VALUE CHAINS 7–8 (Jan. 2020) (arguing that China has implemented ambitious strategies to acquire and develop semiconductor technology to reduce the country's dependence on foreign producers).

semiconductor leadership by 2030.¹²⁷ The industrial policy is set to quickly spread to other sectors of China’s industrial economy, and this expansion includes foreign locations participating in the Belt and Road Initiative.¹²⁸ The Chinese state financially backs local firms by systematically investing in them,¹²⁹ and the means to this end include state-owned enterprises, state-backed funds, policy banks, and private companies given strategic nudges by the government. This multi-faceted approach aligns with the “Made in China 2025” plan, a 2015 roadmap for the nation’s manufacturing future.¹³⁰ China’s semiconductor sector receives considerable government support via strategic industry plans, tax incentives, and a national direct investment fund. Table 1 presents China’s recent key policies for enhancing the country’s semiconductor industry.

TABLE 1. THE CHINESE STATE COUNCIL’S KEY PLANS AND POLICIES FOR THE CHINESE SEMICONDUCTOR INDUSTRY

YEAR	SEMICONDUCTOR PLANS
2000	No. 18 “Several Policies on Encouraging the Development of the Software and Integrated-Circuit Industries” ¹³¹
2011	No. 4 “Several Policies on Further Encouraging the Development of the Software and Integrated-Circuit Industries” ¹³²
2012	No. 28 “12th Five-Year Plan (2011–2015) for National Strategic Emerging Industries” ¹³³

¹²⁷ Kathrin Hille, *US Fears Attempts by Chinese Chipmakers to Grab Top Talent*, FIN. TIMES (Nov. 2, 2018), <https://www.ft.com/content/eb145d60-dda7-11e8-9f04-38d397e6661c>; JAMES A. LEWIS, LEARNING THE SUPERIOR TECHNIQUES OF THE BARBARIANS: CHINA’S PURSUIT OF SEMICONDUCTOR INDEPENDENCE 15 (2019), https://csis-website-prod.s3.amazonaws.com/s3fs-public/publication/190115_Lewis_Semiconductor_v6.pdf.

¹²⁸ LEI ZOU, THE POLITICAL ECONOMY OF CHINA’S BELT AND ROAD INITIATIVE 171 (2018).

¹²⁹ OFF. OF THE U. S. TRADE REP., *supra* note 20, at 65.

¹³⁰ Jason Fang & Michael Walsh, *Made in China 2025: Beijing’s Manufacturing Blueprint and Why the World Is Concerned*, ABC NEWS (last updated Apr. 28, 2018, 9:08 PM), <https://www.abc.net.au/news/2018-04-29/why-is-made-in-china-2025-making-people-angry/9702374>.

¹³¹ Chinese State Council, No. 18 [2000], Guli Ruanjian Chanye He Jicheng Dianlu Chanye Fazhan Ruogan Zhengce (国发〔2000〕18号鼓励软件产业和集成电路产业发展若干政策) [No. 18 [2000] Several Policies on Encouraging the Development of the Software and Integrated-Circuit Industries] (June 24, 2000), https://www.gov.cn/gongbao/content/2000/content_60310.htm.

¹³² Chinese State Council, No. 4 [2011], Jinyibu Guli Ruanjian Chanye He Jicheng Dianlu Chanye Fazhan De Ruogan Zhengce (国发〔2011〕4号进一步鼓励软件产业和集成电路产业发展的若干政策) [No. 4 [2011] Several Policies on Further Encouraging the Development of the Software and Integrated-Circuit Industries] (Jan. 28, 2011), https://www.gov.cn/zwggk/2011-02/09/content_1800432.htm.

¹³³ Chinese State Council, No. 28 [2012] Shi Er Wu Guojia Zhanlüexing Xinxing Chanye Fazhan Guihua (国发〔2012〕28号“十二五”国家战略性新兴产业发展规划) [No. 28 [2012] 12th Five-Year Plan (2011–2015) for National Strategic Emerging Industries] (July 29, 2012), https://www.gov.cn/zwggk/2012-07/20/content_2187770.htm.

2014	“Guidelines to Promote National Integrated-Circuit Industry Development” ¹³⁴
2014	“National Integrated-Circuit Industry Investment Fund Co.” (Big Fund Phase I) ¹³⁵
2016	No. 67 “13th Five-Year Plan (2016–2020) for National Strategic Emerging Industries” ¹³⁶
2019	“National Integrated Circuit Industry Investment Fund Co.” (Big Fund Phase II) ¹³⁷
2020	No. 8 “New Era to Promote the Integrated-Circuit Industry” ¹³⁸
2021	“Outline of the 14th Five-Year Plan (2021–2025) for National Economic and Social Development and Vision 2035” ¹³⁹

The aim of “Made in China 2025” is to elevate industries and shift China from its role as the “world’s factory” to an advanced economy.¹⁴⁰ The accompanying “Key Technology Roadmap” sets production goals, including those for semiconductors.¹⁴¹ China has committed \$118 billion USD over five years to the Made in China 2025 initiative, including \$60 billion USD from local governments.¹⁴² Despite significant investment, challenges

¹³⁴ China’s State Council, Guowuyuan Yinfa Guojia Jicheng Dianlu Chanye Fazhan Tuijin Gangyao (国务院印发《国家集成电路产业发展推进纲要》) [State Council’s Notice on the Guidelines for the Promotion of the Development of the National Integrated-Circuit Industry] (June 24, 2014), https://www.gov.cn/xinwen/2014-06/24/content_2707281.htm.

¹³⁵ Li Tao, *How China’s ‘Big Fund’ Is Helping the Country Catch Up in the Global Semiconductor Race*, SOUTH CHINA MORNING POST (May 10, 2018), <https://www.scmp.com/tech/enterprises/article/2145422/how-chinas-big-fund-helping-country-catch-global-semiconductor-race>.

¹³⁶ CHINESE STATE COUNCIL, NO. 67 [2016] Shi San Wu Guojia Zhanlüexing Xinxing Chanye Fazhan Guihua (国发〔2016〕67号“十三五”国家战略性新兴产业发展规划) [No. 67 [2016] 13TH FIVE-YEAR PLAN (2016–2020) FOR NATIONAL STRATEGIC EMERGING INDUSTRIES] (Nov. 29, 2016), https://www.gov.cn/zhengce/content/2016-12/19/content_5150090.htm.

¹³⁷ Sarah Dai, *China Said to Complete Second Round of US\$29 Billion Fund That Will Invest in Home-Grown Chip Industry*, SOUTH CHINA MORNING POST (July 26, 2019), <https://www.scmp.com/tech/science-research/article/3020172/china-said-complete-second-round-us29-billion-fund-will>.

¹³⁸ CHINESE STATE COUNCIL, NO. 8 [2020] Xin Shiqi Cujin Jicheng Dianlu Chanye He Ruanjian Chanye Gao Zhiliang Fazhan De Ruogan Zhengce (国发〔2020〕8号新时期促进集成电路产业和软件产业高质量发展的若干政策) [No. 8 [2020] NEW ERA TO PROMOTE THE INTEGRATED CIRCUIT INDUSTRY] (July 27, 2020), https://www.gov.cn/zhengce/content/2020-08/04/content_5532370.htm.

¹³⁹ Chinese State Council, Guomin Jingji He Shehui Fazhan Di Shi Si Ge Wu Nian Guihua He 2035 Nian Yuanjing Mubiao Gangyao (国民经济和社会发展第十四个五年规划和2035年远景目标纲要) [Guidelines for the 14th Five-Year Plan (2021–2025) for National Economic and Social Development and Vision 2035], THE STATE COUNCIL OF THE PEOPLE’S REPUBLIC OF CHINA (Mar. 13, 2021), https://www.gov.cn/xinwen/2021-03/13/content_5592681.htm.

¹⁴⁰ EUROPEAN UNION CHAMBER OF COMMERCE IN CHINA, CHINA MANUFACTURING 2025: PUTTING INDUSTRIAL POLICY AHEAD OF MARKET FORCES 13 (2017), <https://www.europeanchamber.com.cn/en/china-manufacturing-2025>.

¹⁴¹ 《中国制造2025》重点领域技术路线图 [Made in China 2025 Key Area Technology Roadmap] (promulgated by the National Manufacturing Strategy Advisory Committee, Oct. 2015), <https://perma.cc/FVC4-SMWR>.

¹⁴² LEWIS, *supra* note 127, at 2.

persist owing to chip complexities and China's lack of expertise.¹⁴³ In addition, aggressive foreign investment strategies include funding these projects via Tsinghua Holdings—the tech investment fund of one of China's top state-led universities—and offering local level benefits such as subsidized loans, free land, tax savings, and other incentives to foreign firms so that they relocate their R&D to China.¹⁴⁴

China's new Cybersecurity Laws, among other measures, have

indirectly turned an overall fragmented and weak trade secrets protection system into the most secure (on paper, at least) in the world . . . trade secrets (or at least the digital ones) are now protected, paradoxically, by means of a law which has *prima facie* nothing to do with the protection of intellectual property.¹⁴⁵

Though their central purpose has been more about surveillance than the protection of trade secrets, these laws ended up protecting state secrets, as well.¹⁴⁶

Notably, Taiwanese individuals and companies play a significant role in U.S.–China tensions over technology access and economic espionage. The U.S. Congress restricts China's technology targeting,¹⁴⁷ yet China seeks semiconductor independence from or through Taiwan.¹⁴⁸ In 2018, the Chinese state introduced incentives (“31 Measures,” later “26 Measures”) granting Taiwanese entities a form of treatment equal to the treatment bestowed by the Chinese state on Chinese firms.¹⁴⁹ Investment opportunities span tech, 5G, aviation, and more. Taiwanese citizens can enjoy the advantage of investing in Chinese state-owned enterprises, participating in public biddings and innovative industrial policies (like the “Made in China 2025”), and tax deductions, just as China's citizens have been able to do.¹⁵⁰ Research has shown that Taiwanese entrepreneurs (*Tai shang*, 臺商) have been a crucial factor in the emerging economy of China.¹⁵¹ Indeed, Taiwanese entrepreneurs are

¹⁴³ *Id.*

¹⁴⁴ See CAPRI, *supra* note 126, at 32–37.

¹⁴⁵ Segate, *supra* note 9, at 106 (internal citations omitted).

¹⁴⁶ *Id.*

¹⁴⁷ See Mancuso et al., *supra* note 125.

¹⁴⁸ See *infra* Parts IV & V.

¹⁴⁹ See China's Taiwan Affairs Office of the State Council, Guanyu Cujin Liangan Jingji Wenhua Jiaoliu Hezuo de Ruogan Cuoshi (关于促进两岸经济文化交流合作的若干措施) [Measures for Promoting Economic and Cultural Exchanges and Cooperation Across the Taiwan Strait] (Feb. 28, 2018), <https://perma.cc/Q2DA-4CMG> [hereinafter 31 Measures]; China's Taiwan Affairs Office of the State Council, Guanyu Jinyibu Cujin Liangan Jingji Wenhua Jiaoliu Hezuo de Ruogan Cuoshi (关于进一步促进两岸经济文化交流合作的若干措施) [Measures to Further Promote Cross-Strait Economic and Cultural Exchange and Cooperation] (Nov. 4, 2019), [hereinafter 26 Measures]. See also Sarah Zheng, *Beijing Extends Sweeteners for Taiwanese Weeks Before Taipei Election*, SOUTH CHINA MORNING POST (Nov. 4, 2019, 1:18 PM), <https://perma.cc/54XB-YXZZ>; Gunter Schubert, *China's 31 Preference Policies for Taiwan: An Opportunity, No Threat*, TAIWAN INSIGHT (Mar. 21, 2018), <https://perma.cc/P9G9-JARX>.

¹⁵⁰ See 26 Measures, *supra* note 149; Zheng, *supra* note 149; Schubert, *supra* note 149.

¹⁵¹ E.g., JIEH-MIN WU, RIVAL PARTNERS: HOW TAIWANESE ENTREPRENEURS AND GUANGDONG OFFICIALS FORGED THE CHINA DEVELOPMENT MODEL (Stacy Mosher trans., 2022); Shu Keng & Gunter Schubert, *Agents of*

integrated into local Chinese sectors and are deeply familiar with Chinese governmental and transactional norms. Given that Taiwanese companies are highly esteemed in global semiconductor supply chains, it is worth exploring the matter of trade secret theft from the perspective of the U.S.–Taiwan–China triad.¹⁵²

III. DATA AND METHODS

My central aim in this Article is to present an empirical, long-term, and comprehensive depiction of U.S. and Taiwanese cross-border trade secret theft cases in the semiconductor industry. To this end, I conducted a mixed-methods empirical approach; that is, a mix of quantitative and qualitative data-retrieval and data-analysis methods.

Many empirical studies analyzing EEA-related prosecutions use the Public Access to Court Electronic Records (PACER) database, which is suitable for known cases with case names, parties, or docket numbers.¹⁵³ Those studies either identify EEA cases from the DOJ's press releases with cross-analysis involving docket reports on PACER¹⁵⁴ or limit their analysis to a random sampling of cases by coding searches for the defendants' names and racial-ethnic-national traits in conjunction with DOJ press releases, thus permitting a racial-ethnic-national analysis.¹⁵⁵ Alternatively, legal researchers reliant on PACER might deploy natural-language processing algorithms over millions of PACER documents across various codes to identify terms related to trade secret issues. For the present study, however, I neither targeted known cases nor searched for cases on the basis of racial-ethnic-national keywords. Thus, I did not search dockets or deploy systematic coding on PACER.

For both the quantitative and the qualitative portions of the study, I retrieved case information from two major sources: for U.S. cases, the LexisNexis database, which covers cases dating from January 1, 1970, through December 31, 2022; and for Taiwanese cases, the Taiwan Law and Regulations Retrieving System (司法院法學資料檢索系統), which covers cases dating from January 1, 2000 through December 31, 2022.¹⁵⁶

Because both databases post published and public unpublished opinions, it is reasonable to assume that the cases found in such databases represent a sample of almost all available semiconductor trade secret decisions in U.S. and Taiwanese courts.¹⁵⁷ However, trade secret

Taiwan–China Unification? The Political Roles of Taiwanese Business People in the Process of Cross-Strait Integration, 50 ASIAN SURVEY 287 (2010); Qun-Jian Tian, "Like Fish in Water": Taiwanese Investors in a Rent-Seeking Society, 35 ISSUES & STUD. 61 (1999).

¹⁵² CASTELLS, *supra* note 42, at 470–476 (that is, industrial markets, companies, the media, and political, cultural, and other institutions are bound to the logic of networking).

¹⁵³ See, e.g., Kim, *supra* note 26; the 2021 MIT Study, *supra* note 27; Gavin C. Reid et al., *What's It Worth to Keep a Secret?*, 13 DUKE L. & TECH. REV. 116, 140–47 (2015) (reporting significant differences in valuations of trade secrets depending on the valuation model used).

¹⁵⁴ Reid et al., *supra* note 153, at 135.

¹⁵⁵ Kim, *supra* note 26, at 779–81.

¹⁵⁶ The Taiwan Law and Regulations Retrieving System collects judgments data starting from the year 2000.

¹⁵⁷ One variable to be considered is the existence of sealed cases. If a docket sheet is sealed after having been available on PACER for some time, what was public before the sealing of the docket sheet can linger on the Internet. In particular, CourtLink, which is now owned by Lexis, makes available some docket information for many sealed cases. See *Sealed Cases in Federal Courts*, FED. JUD. CTR. 29 (Oct. 23, 2009), <https://perma.cc/Y85L-FGFA>. See also *Expand Your Business Intelligence with Court Docket Searches*, LEXISNEXIS, <https://perma.cc/E2P8-MEXP> (last visited May 20, 2020); Bob Ambrogio, *LexisNexis Reengineers CourtLink, Its Docket Research Product*,

cases may be sealed and thus unavailable in a database for several reasons: a trial is pending, plea negotiations are pending, or the trade secrets at issue must be protected. Thus, my reliance on the LexisNexis database and the Taiwan Law and Regulations Retrieving System database resulted in a statistical reduction in recorded instances of trade secret theft cases. Accordingly, I supplemented my initial quantitative analyses with subsequent qualitative analyses so that the statistical reduction did not compromise the objectives of this study. For both the quantitative and the qualitative portions of this study, I have supplemented the above database information with various primary and secondary sources with news media dating from 1970 through 2022. These sources include newspaper and journal articles, and administrative agencies press releases.

In neither the quantitative nor the qualitative data-retrieval steps did I in any way focus on—or use keyword searches for—ethnicity, race, or national origins. Rather, I focused my data-retrieval on the nature of the alleged misappropriations. Thus, I used a combination of keyword searches related to semiconductor trade-secret theft (e.g., “trade secret,” “misappropriation,” “semiconductor,” “IC”). After having collected the information, however, I broke it down according to national origin, establishing two main categories:

- (1) “*defendant origin*” refers to the country where the accused infringer was based (e.g., the country where an accused person was a citizen or the country where an accused company had its principal place of business); and
- (2) “*beneficiary origin*” refers to the country where the main recipient of the allegedly stolen trade secret was based (e.g., the country where an accused person was a citizen or the country where an accused person or company intended to exploit the stolen secrets).

We should bear in mind that a defendant’s national origin need not be the same as a beneficiary’s; after all, a *defendant* U.S. citizen accused of stealing a trade secret from a U.S. company might have done so not on behalf of him- or herself or another U.S. company but on behalf of a foreign *beneficiary*—a foreign individual, a foreign company, or even a foreign state.

Information related to *defendant origin* and, particularly, *beneficiary origin* was not always available in the data. Nevertheless, I was able to divide these origins, when identifiable, into seven categories: (1) U.S. origin; (2) Chinese origin; (3) Taiwanese origin; (4) Major Other-Country origin (i.e., South Korea, Japan, Singapore, Malaysia, Israel, India, and other “major” semiconductor-manufacturing countries not including the United States,

LAWSTATES (Aug. 12, 2019), <https://perma.cc/VMN4-85MX>. Under the Taiwan Court Organization Act, all of Taiwan’s court rulings are regularly published—with exceptions—provided by the Classified National Security Information Protection Act and other relevant laws. Cases involving trade secrets, personal data, and privacy concerns may be redacted pursuant to regulations. See Court Organization Act of 2019 (Taiwan), available at: <https://perma.cc/U4R8-T5X6>.

Taiwan, or China);¹⁵⁸ (5) Non-Major Other-Country origin (i.e., the United Kingdom, France, the Philippines, Canada, Belgium, Germany, Cayman Island, and other “non-major” semiconductor-manufacturing countries); and (6) Unidentified origin (i.e., no national origin was identifiable with respect to the defendant, the beneficiary, or both in the court decisions).

There is one last point worth noting regarding methodology in the present study. Following my keyword searches, I manually excluded irrelevant cases.¹⁵⁹ I analyzed court decisions and merged them into one case if they shared the same procedural history. Additionally, because some individual cases had multiple defendants, both the total count of *defendant origin* and *beneficiary origin* exceed the case count for both the U.S. sample and the Taiwanese sample. For example, I collected a pool of 124 U.S. federal cases for the present study, but those cases involved 419 defendants, a number that is clearly greater than 124.

Most of the examined cases in the quantitative and qualitative samples are civil. Consequently, there is little overlap with the 2021 MIT Study on Chinese initiative.¹⁶⁰ Only two criminal cases in Part 4 and 5 of the present study overlap with the 2021 MIT Study. For more details, see the cross-referencing table (Table 2) in the Appendix. Hence, the sample used in this Article mitigates potential selection biases resulting from DOJ’s self-reported data.¹⁶¹

IV. QUANTITATIVE RESULTS

A. QUANTITATIVE RESULTS IN THE U.S. FEDERAL COURTS

Owing to the small sample size of the cases in the state courts, I analyzed only the federal case data.¹⁶² Figure 1 and Figure 2 below present an overall breakdown in the sample of 124 cases that were presented in the U.S. federal litigation database.

¹⁵⁸ The major players in the global semiconductor industry are the United States, Taiwan, South Korea, Japan, China, Singapore, Malaysia, Israel, and India. See SEMICONDUCTOR INDUSTRY ASSOCIATION, BEYOND BORDERS: THE GLOBAL SEMICONDUCTOR VALUE CHAIN 10–13 (May 2016), <https://perma.cc/UJ36-ENLS>.

¹⁵⁹ For example, in many cases searched from the database, the word “semiconductor” is shown simply because of citations to irrelevant case laws. Such cases are excluded for the purpose of this study.

¹⁶⁰ Most of the sample surveyed in the 2021 MIT Study were criminal cases. Guo et al., *supra* note 27.

¹⁶¹ See *infra* Part I regarding the 2021 MIT study and the criticism to DOJ’s China Initiative.

¹⁶² From 1970 to 2022, there were only 33 state cases recorded in the database: (1) 5 cases in 1970-2000; (2) 16 cases in 2001-2010; (3) 14 cases in 2011-2020; and (4) 1 case in 2021-2022. Due to the length limit, I left the state cases here and analyzed only the federal-case data in this Article.

FIGURE 1. CASE BREAKDOWN: SEMICONDUCTOR TRADE SECRET CASES IN U.S. FEDERAL COURTS (TOTAL: 124 CASES)

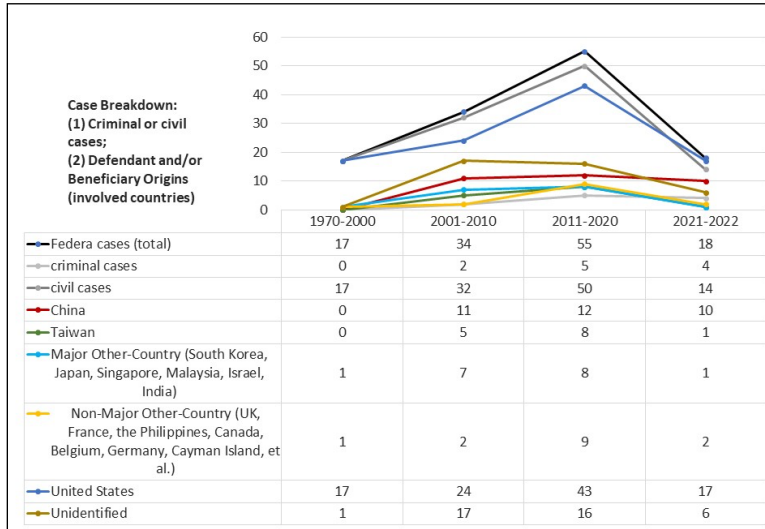
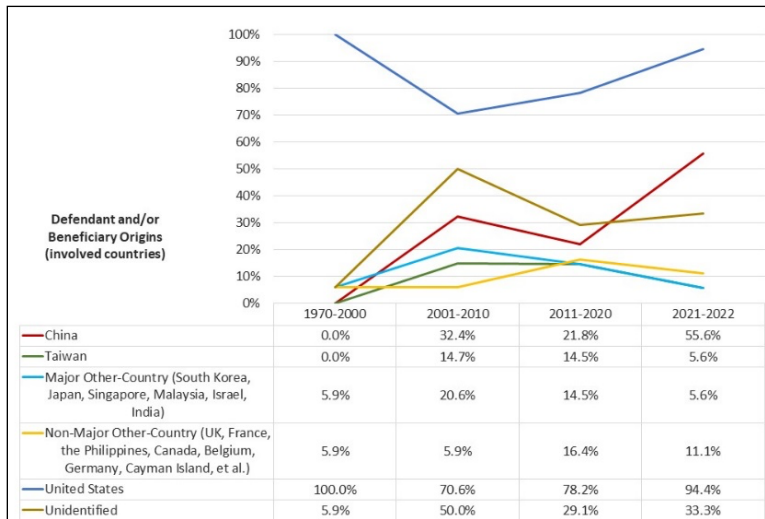


FIGURE 2. PERCENTAGE OF DEFENDANT AND/OR BENEFICIARY ORIGINS



As shown in Figures 1 and 2 above, during 1970 and 2022, the sample cases consist of 11 criminal cases and 113 civil cases.¹⁶³ U.S. defendants and/or beneficiaries account for 101 cases (81.45%), Chinese defendants and/or beneficiaries for 33 cases (26.61%), and Taiwanese for 14 cases (11.29%). Seventeen cases involved Major Other-Country (13.71%).¹⁶⁴ And 14 cases involved Non-Major Other-Country defendants.¹⁶⁵ Forty cases involved defendants with “unidentified” origins (32.26%). The data reveals a significant difference in the number of Chinese and Taiwanese defendants and/or beneficiaries involved from other foreign players in the semiconductor sector.¹⁶⁶ Multiple defendants and/or beneficiaries within a case push the total origin count beyond 124 federal cases.

Figures 1 and 2 show the trend of semiconductor trade secret theft by every decade. First, it reflects that the international division of semiconductor manufacturing moves to Asian emerging economies tracked back to the 1990s and 2000s, which may lead to the rise of trade secret theft involving major semiconductor manufacturing players such as China and Taiwan. Second, for the entire period studied (1970-2022), the total number of criminal cases is only 11. One possible explanation is that criminal cases are mostly sealed and pled. Another explanation may be that semiconductor trade secret theft is not enforced alone, or at least not as the major weapon of the U.S. government to combat foreign espionage and influences in the technology sector, but rather as a supplement enforced with other spy-related statutes or when the latter is not available. This theft is also not enforced at the manufacturing stage but when semiconductors are societally integrated and applied. Additionally, both the cases involving Chinese and Taiwanese origins soar (as well as unidentified origin) during 2000 and 2010, which is consistent with the implementation of China’s industrial policies on semiconductors since 2000.¹⁶⁷

Furthermore, Figure 3 below shows the country origins of all 419 defendants in the sample of 124 federal cases: 210 defendants were of U.S. origin (50.12%), 56 of Chinese origin (13.37%), 46 of Taiwanese origin (10.98%), 29 of Major Other-Country origin (6.92%), 19 of Non-Major Other-Country origin (4.52%), and 63 of unidentified origin (15.04%). Excluding the domestic defendants and unidentified origin, Chinese and Taiwanese together made more than two-third of the 146 foreign defendants, while Chinese defendants (38.36%) shared only 6.85% more than Taiwanese defendants (31.51%).

To investigate the characteristics of cross-border cases, I added a variable on the “attribution” (i.e., beneficiary origin) of the wrongful conduct, which may be reflected in the

¹⁶³ The purpose of this Article is to obtain a long-term comprehensive observation and depiction of cross-border trade secret cases in the semiconductor industry through empirical data. Criminal cases may be sealed from the database due to pending trials and plea negotiations, or, like civil cases, to protect trade secrets, resulting in fewer recorded instances in the statistical results. The situation will be supplemented with subsequent qualitative analysis and does not affect the objective of this Article.

¹⁶⁴ The Major Other-Country indicates major player countries in the global semiconductor industry besides the United States, China, and Taiwan. This category presents 17 cases involving defendants and/or beneficiaries from: Japan (5 cases), South Korea (4 cases), Singapore (4 cases), and Israel (2 cases).

¹⁶⁵ The category Non-Major Other-Country indicates countries other than the major players in the semiconductor industry, including defendants and/or beneficiaries from the United Kingdom (2), Germany (2), France (1), Philippines (2), Canada (3), Belgium (1), Cayman Island (2), and Nevis (1).

¹⁶⁶ The major players in the global semiconductor industry are the United States, Taiwan, South Korea, Japan, China, Singapore, Malaysia, Israel, and India. See SEMICONDUCTOR INDUSTRY ASSOCIATION, *supra* note 158.

¹⁶⁷ See Table 1, *supra* Part II.

court documents. Figure 4 shows that 159 of 255 beneficiaries were U.S. origin (62.35%), 35 were Chinese (13.73%), 17 were Taiwanese (6.67%), 15 were of Major-other country origin (5.88%), 11 were of Non-Major Other-Country origin (4.31%), and 18 were unidentified (7.06%). China presented the most beneficiary origin other than the United States and counted twice of any other category among foreign beneficiaries.

In this study, beneficiaries are the defendants if no other attribution is indicated. The breakdown is based on the citizenships or business principles of defendants and/or beneficiaries as shown in public records. Many of the corporate defendants, though the founders were originally born in or coming from another country, established companies in the United States during the time relevant to their cases.

FIGURE 3. DEFENDANT ORIGIN (TOTAL: 419 DEFENDANTS)

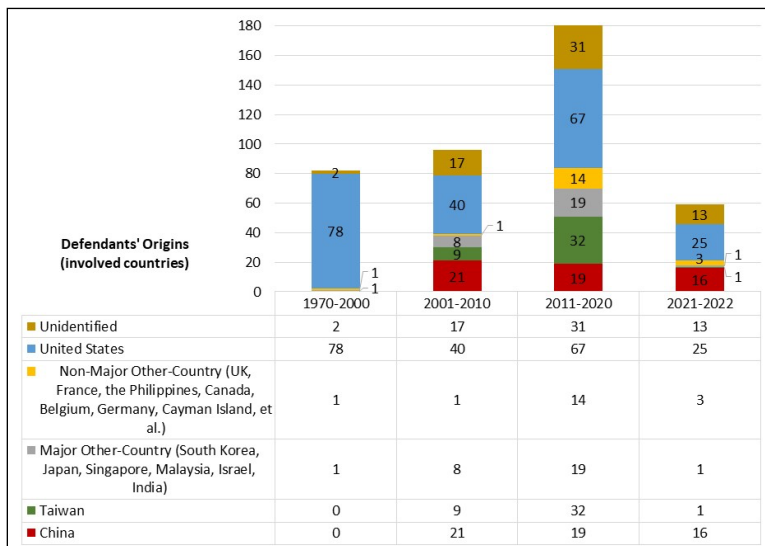
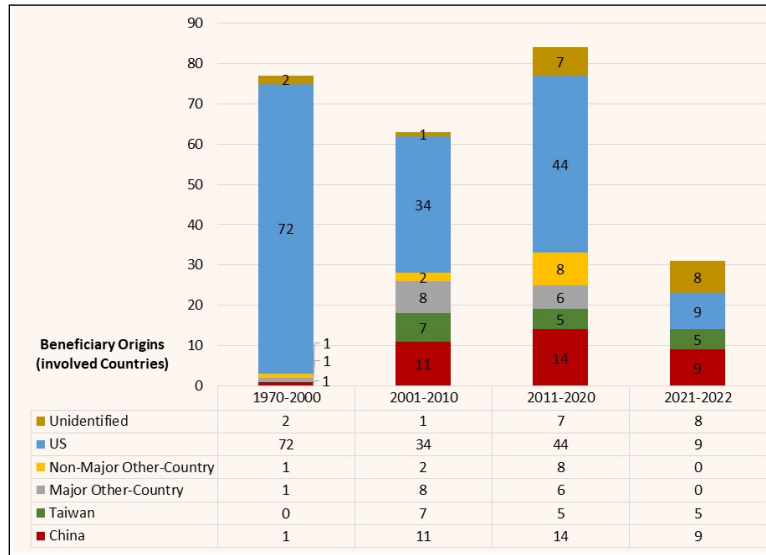


FIGURE 4. BENEFICIARY ORIGIN (TOTAL: 255 BENEFICIARIES)

Interestingly, when investigating deeper on the defendant-beneficiary relationship of the trio in the chip war, both Taiwanese and U.S. defendants demonstrated a significant attribution to Chinese beneficiaries over other beneficiary origins. Surprisingly, Figure 5 shows that 50% of 14 Taiwanese-defendant cases involved Chinese beneficiaries, even more than the Taiwanese own beneficiary origin (42.86%). Figure 6 illustrates 77.89% of 95 U.S.-defendant cases with U.S. beneficiary, and 20% attributed to Chinese beneficiaries, which were four times more than any other foreign origins in the sample cases. Interestingly, in Figure 7, it shows that the majority (96%) of 25 Chinese-defendant cases were attributed to a Chinese beneficiary.

FIGURE 5. TAIWANESE-DEFENDANT CASES: BREAKDOWN OF BENEFICIARY ORIGINS (1970-2022)

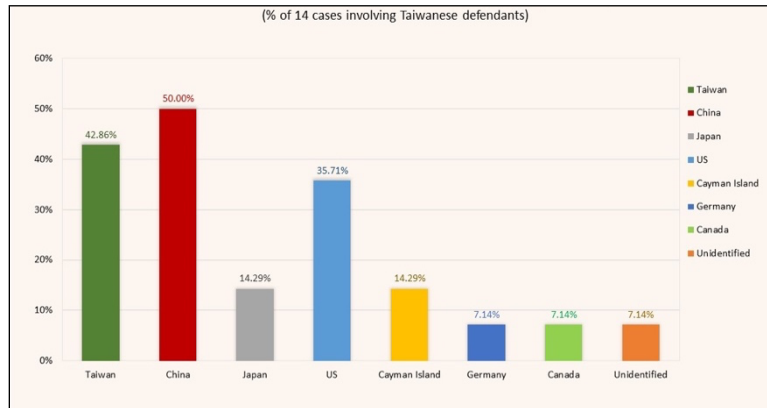


FIGURE 6. U.S.-DEFENDANT CASES: BREAKDOWN OF BENEFICIARY ORIGINS (1970-2022)

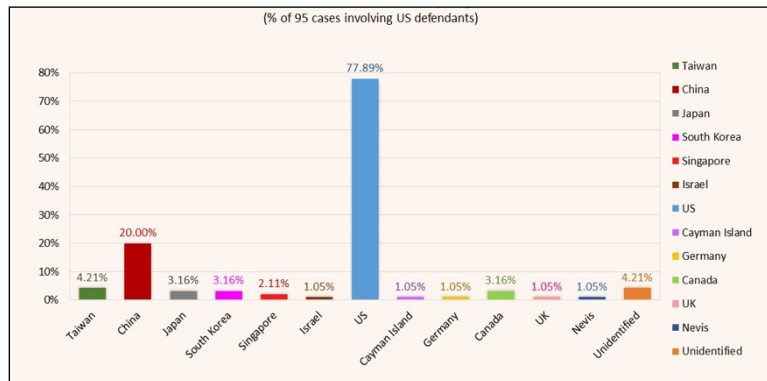


FIGURE 7. CHINESE-DEFENDANT CASES: BREAKDOWN OF BENEFICIARY ORIGINS (1970-2022)

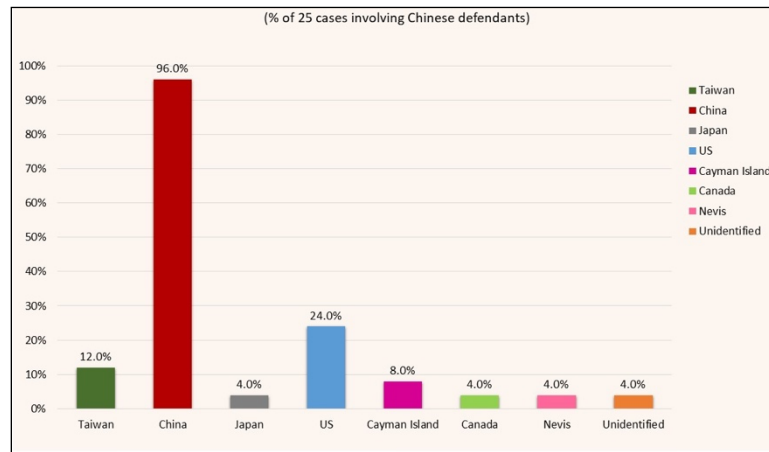
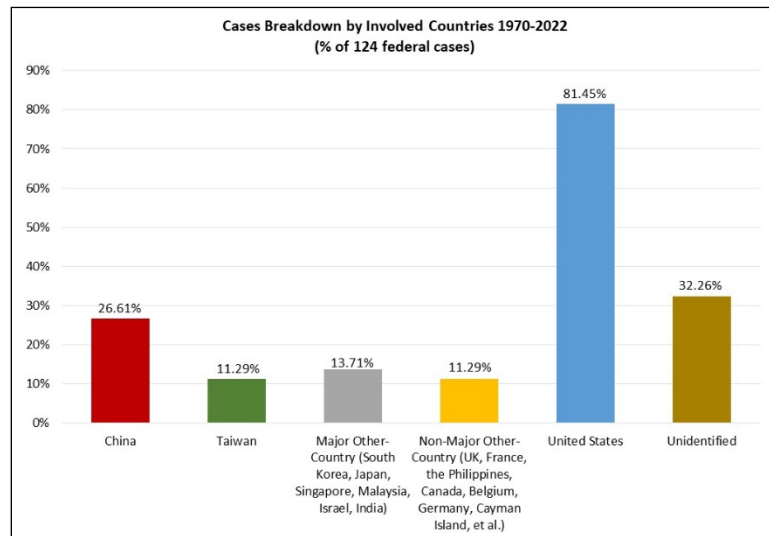


FIGURE 8. CASES ORIGIN INVOLVING COUNTRIES (1970-2022)



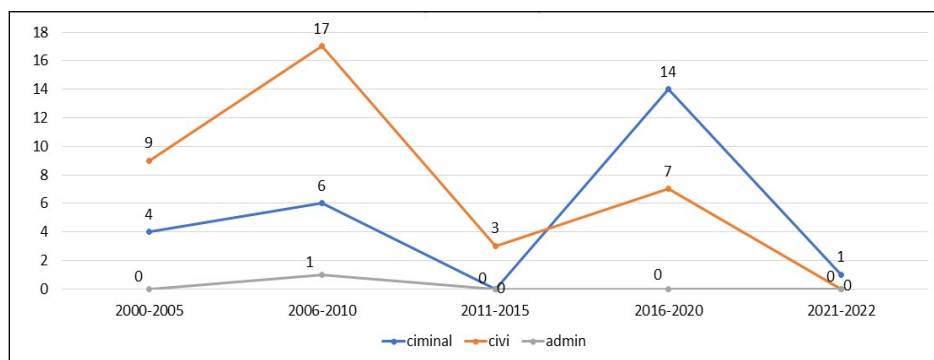
As shown in Figure 8, for the combination of defendant and beneficiary origin in cases counted during 1970 and 2022, the U.S. origin occupied 81.45% of the 124 federal-cases sample, China counted for 26.61%, Major-other country 13.71%, Taiwan 11.29%, Non-

Major Other-Country 11.29%, and 32.26% of cases were unidentified origin. Chinese and Taiwanese individuals/entities together contributed to 37.9% of the semiconductor trade secret cases in the U.S. federal courts, which were more than twice that of Major-other country players in the industry. It is also noteworthy that 50% of Taiwanese-defendant cases (7 out of 14) and 20% of U.S.-defendant cases were attributed to Chinese beneficiaries in the federal courts, which reflects the significant influence of China in the semiconductor trade secret misappropriations.

B. QUANTITATIVE RESULTS IN TAIWAN COURTS

Between 2000 and 2022, the Taiwan Law and Regulations Retrieving System retrieved a total of 62 trade secret misappropriation cases.¹⁶⁸ These cases were distributed as follows: 36 were of a civil nature, 25 were criminal cases, and 1 was an administrative case. As illustrated in Figure 9, criminal litigation emerged as the predominant approach for addressing trade secret misappropriation in the semiconductor industry after 2016. This shift mirrored the impact of the 2013 amendment to the Taiwan Trade Secrets Law, which introduced stricter criminal penalties and facilitated the issuance of protective orders during the prosecutorial investigation phase, thereby instilling greater confidence in rightsowners in protecting their trade secrets.

FIGURE 9. SEMICONDUCTOR TRADE SECRET CASES IN TAIWAN COURTS DURING 2000-2022 (TOTAL: 62 CASES)



¹⁶⁸ The Taiwan Law and Regulations Retrieving System began compiling court records in the year 2000.

FIGURE 10. CASE BREAKDOWN BY DEFENDANT ORIGINS (TOTAL: 62 CASES IN TAIWAN COURTS)

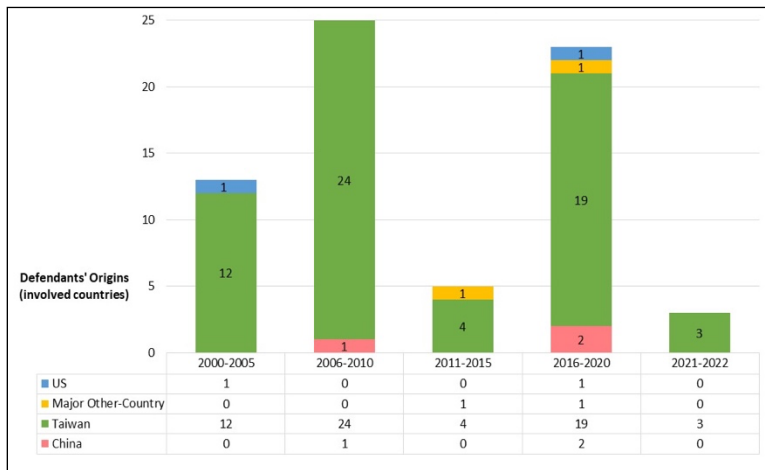


FIGURE 11. CASE BREAKDOWN BY BENEFICIARY ORIGINS (TOTAL: 62 CASES IN TAIWAN COURTS)

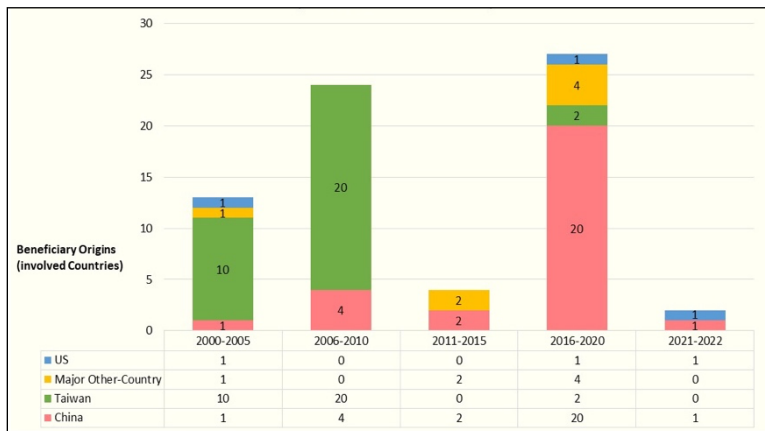


Figure 10 illustrates that the majority of cases in Taiwan courts involved Taiwanese defendants (98.39%, 61 out of 62 cases). However, there was a notable shift in the landscape of beneficiary origin. In Figure 11, cases involving beneficiaries from China counted for a mere 13.51% before 2010 (5 out of 37 cases). Contrastingly, during the period from 2011 to 2022, China counted for a substantial 92% of cases (23 out of 25). This outcome highlighted

that over the past decade, China had emerged as the primary source of attribution in semiconductor trade secret theft cases in Taiwan, often involving Taiwanese individuals or entities.

FIGURE 12. BREAKDOWN OF DEFENDANTS (TOTAL: 142 DEFENDANTS IN TAIWAN COURTS)

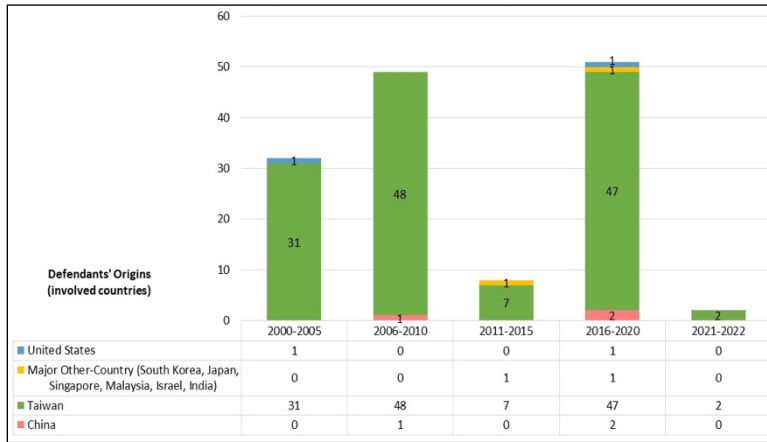
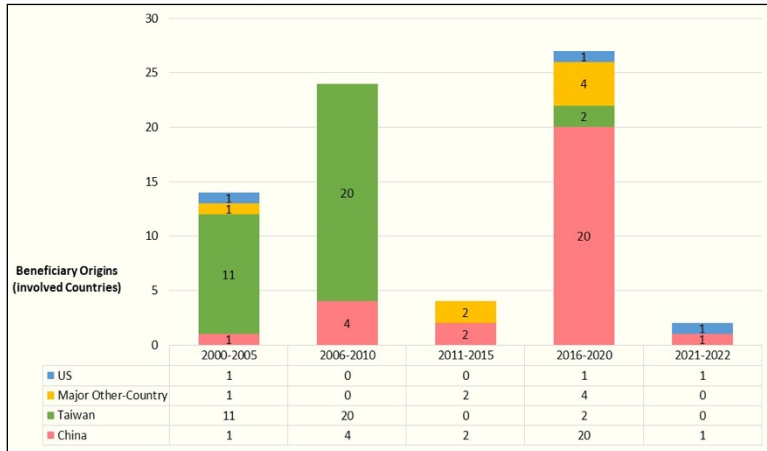


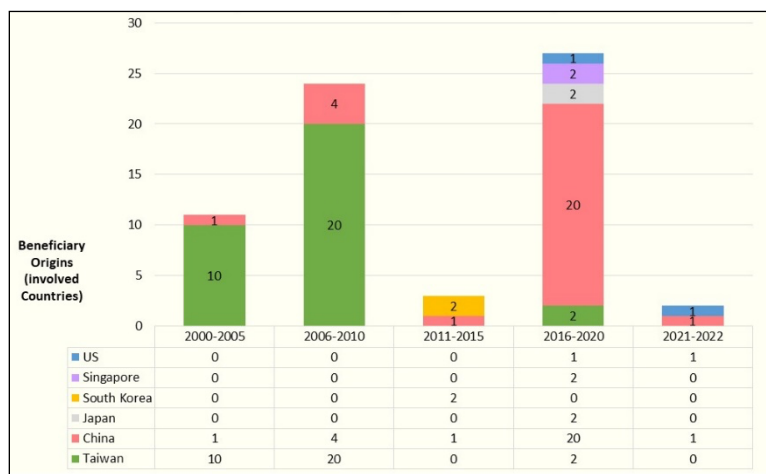
FIGURE 13. BREAKDOWN OF BENEFICIARIES (TOTAL: 71 BENEFICIARIES IN TAIWAN COURTS)



A similar and consistent representation emerged when examining the statistical breakdown of defendants and beneficiaries. In the sample data, Figure 12 reveals that 95.07% of the defendants were Taiwanese (135 out of 140 defendants). Additionally, Figure 13

complements the shifting beneficiary landscape of Chinese beneficiaries between 2000-2010 and 2011-2022 depicted in Figure 11—from 13.16% (5 out of 38 beneficiaries) to 69.7% (23 out of 33 beneficiaries). Again, each case may involve multiple defendants. Unlike the defendant counts, the difference between beneficiary counts (71) and the number of cases (62) is small. This is primarily due to the fact that the majority of cases involve a single beneficiary.

FIGURE 14. TAIWANESE-DEFENDANT CASES: BREAKDOWN OF BENEFICIARY ORIGINS (2000-2022) (TOTAL: 61 CASES INVOLVING TAIWANESE DEFENDANTS)



Finally, when delving into the beneficiary origin of the 61 cases where Taiwanese defendants were implicated, as depicted in Figure 14, a noteworthy transformation has occurred in the beneficiary landscape. Prior to 2010, just 13.89% of cases (5 out of 36 cases) were linked to China, but this figure skyrocketed to 92% after 2011 (23 out of 25 cases). The result underscored China as the most significant beneficiary origin involved in semiconductor trade secret theft cases in Taiwan courts over the past decade.

V. QUALITATIVE ANALYSIS

As mentioned above, trade secret cases may be sealed because of a pending trial, ongoing plea negotiations, or the long-term protection of the trade secrets at issue. Thus, my sample database aimed to initially explore the descriptive statistics of allegations and litigations, and accordingly resulted in a statistical reduction. Subsequently, I supplemented with qualitative analyses, so that the statistical reduction did not compromise the objectives of this study.

In this Section, I characterized and reframed the cross-border semiconductor trade secret theft through the qualitative analysis of the present study under the U.S.-Taiwan-China trilateral relationship. Specifically, I reviewed cases involving China and Taiwan. Taiwan

boasts a globally recognized semiconductor industry.¹⁶⁹ At the same time and more generally, China has made no secret of its desire to influence Taiwan for political, military, and economic gains.¹⁷⁰ Despite the political and military threats issued by China against Taiwan, and despite their markedly different political systems and human-rights records, there are many governmental, economic, academic, and general exchanges between the two countries—exchanges that benefit from the two countries’ similar linguistic and cultural traditions. Nevertheless, Taiwan, a key player in high-tech and especially semiconductor manufacturing, has become the central battleground in the intense struggle between the United States and China for political and economic dominance globally. These tensions make sense insofar as technology is a clear means to the realization of national strategic objectives and even a criterion for determining national sovereignty and international alliances.¹⁷¹

The U.S.–China tech wars, coined the “new Cold War” by some pundits, have been heating up in recent years.¹⁷² The decision by the U.S. government to impose more tariffs and export controls on China has resulted in higher commercial risks for the global supply chain network. In 2022, the U.S. Congress’ enactment of the CHIPS and Science Act (CHIPS Act) and the Inflation Reduction Act was part of a larger strategy to incentivize—through tax reductions and other benefits—a return of U.S. manufacturing and investment to the United States.¹⁷³ The CHIPS Act also allocated about \$53 billion USD in subsidies to the U.S. semiconductor industry, with the condition that the subsidized companies refrain from establishing technologically advanced factories in China for a period of ten years.¹⁷⁴

According to the DOJ, China was involved in 90% of all economic-espionage cases in all industries and sectors handled by the DOJ from 2011 to 2018.¹⁷⁵ However, the DOJ has not always been able to link trade secret theft directly to the Chinese government, even though the thefts almost always benefit China’s official economic goals.¹⁷⁶ To this end, I have conducted a qualitative cross-analysis of 23 U.S. federal cases and Taiwanese cases involving China–Taiwan defendants: 10 cases came from the LexisNexis database and the remaining 13 cases came from the Taiwan Law and Regulations Retrieving System (see Table 2 in the Appendix).

A. MOBILITY OF EXPERTISE: EFFECTIVE TECHNOLOGICAL LEARNING AND TRANSFER STRATEGY

¹⁶⁹ See CAPRI, *supra* note 126, at 74; see also Demetri Sevastopulo & Kathrin Hille, *Taiwanese Group to Build \$12bn Chipmaking Plant in US*, FIN. TIMES (May 15, 2020), <https://perma.cc/7AW5-EU46>.

¹⁷⁰ See *supra* Part II, China’s industrial policy.

¹⁷¹ Suttmeier, *supra* note 48, 35–37; CAPRI, *supra* note 126, at 7.

¹⁷² See, e.g., Niall Ferguson, *The New Cold War? It’s With China, and It Has Already Begun*, N.Y. TIMES (Dec. 2, 2019), <https://perma.cc/Y32P-Z7E9>; Elliott Abrams, *The New Cold War*, NAT’L REV. (Mar. 3, 2022, 11:07 AM), <https://perma.cc/RA7N-ZZPX>; Anna Diamantopoulou, *The three challenges for the West in the New Cold War*, EUR. COUNCIL ON FOREIGN REL. (Sep. 20, 2022), <https://perma.cc/L2EG-CJWN>.

¹⁷³ *Fact Sheet: CHIPS and Science Act Will Lower Costs, Create Jobs, Strengthen Supply Chains, and Counter China*, THE WHITE HOUSE (Aug. 9, 2022), <https://perma.cc/HJM8-SD2K>.

¹⁷⁴ *Id.*

¹⁷⁵ *China’s Non-Traditional Espionage Against the United States: The Threat and Potential Policy Responses: Hearing Before the S. Comm. on the Judiciary*, 115th Cong. 5 (2018) (statement of John C. Demers, Assistant Att’y Gen., Nat’l Security Div., U.S. Department of Justice).

¹⁷⁶ *Id.*

1. TALENT POACHING

Studies show that technological learning drives economic growth for firms in emerging economies, as is the case with firms using nearby R&D labs to track developments in key product lines and to transfer and adapt knowledge.¹⁷⁷ Taiwanese tech companies use various knowledge-transfer methods: material transfer (e.g., reverse engineering, industrial certification), design transfer (e.g., trade shows), and capacity transfer (e.g., local customer relationships, alliances).¹⁷⁸ Mobility of expertise is vital for capacity transfer, linking local adaptable technology to foreign prototypes, primarily through personal contact and association.¹⁷⁹ Direct recruitment from competitors is crucial for tapping into external expertise.¹⁸⁰ Two major strategies for technological upgrading are patent licensing and strategic alliances. Firms from Taiwan, South Korea, and Singapore leveraged these strategies for successful industrialization from the 1960s to the 2000s.¹⁸¹

China seeks foreign tech expertise, especially from Taiwan, through recruitment programs. More than 90% of trade secret violations against Taiwan originate from China,¹⁸² where offending companies hire Taiwanese talent at high salaries, establish offices or subsidiaries in Taiwan, and merge with or acquire Taiwanese companies, all to access trade secrets from Taiwanese talent.

The civil case *TSMC v. SMIC* (2004) marked the first Taiwanese trade secret lawsuit in a U.S. court.¹⁸³ Plaintiff TSMC collectively comprised TSMC, TSMC-North America, and WaferTech, LLC—a Delaware semiconductor wafer foundry using TSMC’s proprietary technology. Semiconductor Manufacturing International Company, Ltd. (SMIC), based in Shanghai, China, was a rival of TSMC and had been founded by the China-born Taiwanese electrical engineer and entrepreneur Richard Chang, known as the “father of the Chinese semiconductor.”¹⁸⁴ Chang, a former Texas Instruments fab specialist, had originally

¹⁷⁷ See, e.g., Hsu et al., *supra* note 43, at 108.

¹⁷⁸ *Id.* at 106.

¹⁷⁹ *Id.* at 109.

¹⁸⁰ See Bruce Kogut & Udo Zander, *Knowledge of the Firm and the Evolutionary Theory of the Multinational Corporation*, 24 J. INT’L BUS. STUD. 625, (1993). See also Stefan Koruna, *Leveraging Knowledge Assets: Combinative Capabilities—Theory and Practice*, 34 R&D MGMT. 505, 506 (2004).

¹⁸¹ Hsu et al., *supra* note 43.

¹⁸² See Si-Yi Liu (劉世怡), *Jingwai Shili Qiemi Wajiao Xiankuang Dalu Diqu Wei Da Zong* (境外勢力竊密挖角現況 大陸地區95.8%為大宗) [Current Situation of Overseas Forces Illegally Obtaining Secrets and Poaching Personnel: 95.8% of Mainland China], CNA (Aug. 2, 2023), <https://perma.cc/T5R3-68SJ>. See also Li-Wei Huang et al. (黃立偉&陳柏諭), *Zhongguo Qie Tai Keji Jimi Jin 5 Nian Qiemi An BaoZeng* (中國竊台科技機密 近5年竊密案暴增) [Chinese High-Tech Trade Secret Misappropriations Surged in Last 5 Years], TAIWAN PUB. TELEVISION SERV. FOUND. (July 3, 2018), <https://perma.cc/7JL9-EECN>.

¹⁸³ *Taiwan Semiconductor Mfg. Co. v. Semiconductor Mfg. Int’l Corp.*, No. C-03-5761 MMC, 2004 U.S. Dist. LEXIS 29717 (N.D. Cal. Apr. 21, 2004) [hereinafter *TSMC v. SMIC*] (one of the challenges in this case involved litigation in five highly distinct jurisdictions: China, Taiwan, the federal U.S. system, the U.S. state (California) system, and the ITC. *TSMC v. SMIC* first took shape as a filing in the U.S. federal courts.). See also Ryan Davis, *SMIC Stole Taiwan Semiconductor Trade Secrets: Jury*, LAW360 (Nov. 4, 2009, 3:43 PM EST), <https://perma.cc/8CEN-F3BD>; Kathrin Hille & Robin Kwong, *TSMC Wins Trade Secrets Court Case*, FIN. TIMES (Nov. 5, 2009), <https://perma.cc/G83W-SJCC>.

¹⁸⁴ *TSMC v. SMIC*, No. C-03-5761 MMC, 2004 U.S. Dist. LEXIS 29717, at *3, 4.

established his own foundry—Worldwide Semiconductor Manufacturing Corp. (WSMC)—in Taiwan, but saw it acquired by TSMC against his wishes.¹⁸⁵ He founded SMIC in Shanghai with funding from China’s government in 2000 as a domestic Chinese rival to TSMC, aiming to bolster China’s chip industry.¹⁸⁶ Chang believes collaboration between Taiwan and mainland China will benefit both countries.¹⁸⁷ Today, almost 20% of SMIC’s 3,100 employees—including many top engineers—are from Taiwan.¹⁸⁸ TSMC had first sued SMIC in 2003, accusing it of stealing its manufacturing technology through recruiting over 140 TSMC employees for their knowledge of proprietary processes and trade secrets.¹⁸⁹ In 2005, the companies settled the case with SMIC agreeing to pay \$175 million and stop using TSMC’s technology and information.¹⁹⁰ A year later, TSMC sued SMIC again because SMIC had violated the settlement agreement. In 2009, a California jury ruled that SMIC had used 65 of TSMC’s chip-making trade secrets and breached the 2005 agreement.¹⁹¹ This case illustrates how Chinese entities successfully lure Taiwanese employees to China, where they work for newly formed Chinese companies that compete with the previous Taiwanese employers.

Similarly in the Taiwan courts, in *TSMC v. HLMC* (2017), Defendant Hsu was employed by TSMC as a senior engineer since 2010 and later worked in TSMC’s 5-nm development department in 2016.¹⁹² Hsu signed an employment contract that required him to protect TSMC’s confidential information and received regular training on TSMC’s proprietary information protection policy and information security control methods. In early 2016, Hsu posted job-seeking information on the recruitment platform and was interviewed by Shanghai Huali Microelectronics Corp. (HLMC)—a joint venture majority-owned by the Shanghai government, China—for a senior engineer position in 28-nm process integration. With the intent to assure his employment at HLMC, he accessed TSMC’s confidential information without authorization. Hsu also copied and printed documents marked as TSMC trade secrets, taking them off TSMC premises and storing them at his residence. The Taiwan IP Court found a breach of fiduciary duty and misappropriation of trade secrets and sentenced Hsu to four years’ probation, even though he hadn’t yet used the information at HLMC when TSMC discovered his activities.

Before the onset of the U.S.-China tech war, Taiwan law enforcement-initiated investigations into Chinese infiltration issues concerning semiconductor manufacturers. In the *HTC* case (2013), a Taiwanese court sentenced a former top designer at Taiwanese

¹⁸⁵ Craig Addison, *Are Taiwan’s Job-Hopping Chip Engineers Traitors or Patriots?*, SOUTH CHINA MORNING POST (Apr. 28, 2021, 6:00 AM), <https://perma.cc/YCN8-3FA4>.

¹⁸⁶ Bruce Einhorn, *Richard Chang: Taiwan’s Silicon Invasion*, BLOOMBERG (Dec. 8, 2002), <https://perma.cc/V2K4-72GF>.

¹⁸⁷ *Id.*

¹⁸⁸ See also Frank Fang, *How China Infiltrates Taiwan’s Tech Sector to Advance Its Own Industries*, EPOCH TIMES (July 10, 2019), <https://perma.cc/3FAP-HSKV>.

¹⁸⁹ *TSMC v. SMIC*, No. C-03-5761 MMC, 2004 U.S. Dist. LEXIS 29717, at *3–4.

¹⁹⁰ See Davis, *supra* note 183. See also Hille & Kwong, *supra* note 183.

¹⁹¹ *TSMC v. SMIC*, No. C-03-5761 MMC, 2004 U.S. Dist. LEXIS 29717, at *3, 4. In 2009, a California jury handed TSMC a victory in its long-running trade secret and contract dispute with SMIC, potentially leaving SMIC on the hook for more than \$2 billion USD in damages.

¹⁹² Zhijui Caichan Fayuan (智慧財產法院) [IP Court], Xingshi (刑事) [Criminal Division], 107 Xing Zhi Shang Su Zi No. 5 (107刑智上訴字第 5 號刑事判決) (2018) (Taiwan) [hereinafter *TSMC v. HLMC*].

smartphone maker HTC to 7 years and 10 months of prison time for having stolen trade secrets on behalf of the Chengdu City Government—a Chinese province-level government—and for having teamed up with a Chinese state-owned firm to start a new company in China with the intention of engaging in more trade secret theft.¹⁹³

In January 2018, the Taiwan Investigation Bureau received a report from Novatek Microelectronics Corp. (Novatek), alleging that a senior executive, Mr. Tseng, had been continuously downloading confidential R&D files from Novatek since 2016., including OLED display driver chips and virtual reality technology.¹⁹⁴ Tseng had done so in various small quantities and used these files to exchange for a tripled salary and a position as the general manager from the person in charge at Shanghai Viewtrix Technology Co., Ltd. in China. Tseng also operated a shell company in the Taiwan Hsinchu Taiyuan Science Park in the name of his spouse to poach employees from Novatek.¹⁹⁵ In 2019, Taiwanese prosecutors charged four former employees of Novatek, including Tseng, for having violated the Taiwan Trade Secrets Act.¹⁹⁶ Similarly, in February 2018, the Taiwanese DRAM manufacturer Nanya Tech. Corp. (Nanya) reported to the law enforcement agencies that two of their employees had stolen 20-nanometer DRAM manufacturing technology data a year prior and then resigned to work for competing Chinese companies.¹⁹⁷ In June 2018, a prosecutor also filed charges against another former Nanya engineer who was suspected of hacking the company's mainframe firewall and accessing internal data files before jumping ship to Innotron Memory in China. During his employment in China, the engineer maintained continuous contact with Nanya Technology colleagues to acquire more relevant technical files.¹⁹⁸

¹⁹³ Taipei Difang Fayuan (臺北地方法院) [Taipei District Court], Xingshi (刑事) [Criminal Division], 101 Zin Su Zi No. 37 (102 金訴字第 37 號刑事判決) (2013) (Taiwan) [hereinafter the HTC case].

¹⁹⁴ Taiwan Investigation Bureau, Qiangli Daji Jingwai Shili Feifa Qiequ Gao Keji Chanye Jishu (強力打擊境外勢力非法竊取高科技產業技術) [Strongly Combat the Illegal Theft of High-Tech Industry Technology from Foreign Forces] (Jan. 14, 2019), <https://perma.cc/HA9M-Y5BN>. See also Xinzhu Difang Fayuan (新竹地方法院) [Xinzhu District Court], Xingshi (刑事) [Criminal Division], 108 Zhi Su Zi No. 3 (108 年智訴字第 3 號刑事裁定) (2019) (Taiwan) [hereinafter, *Novatek-TW (criminal)*] (the case is currently sealed, see the “Search Result Page” from Taiwan Law and Regulations Retrieving System; The press release from FN194 Taiwan Investigation Bureau, Qiangli Daji Jingwai Shili Feifa Qiequ Gao Keji Chanye Jishu (強力打擊境外勢力非法竊取高科技產業技術) [Strongly Combat the Illegal Theft of High-Tech Industry Technology from Foreign Forces] (Jan. 14, 2019), <https://perma.cc/D2VG-GXB7>; Zhihui Caichan Fayuan (智慧財產法院) [IP Court], Minshi (民事) [Civil Division], 107 Min Ying Su Zi No. 4 (107 年度民營訴字第 4 號民事判決) (2019) (Taiwan) [hereinafter, *Novatek-TW (civil)*].

¹⁹⁵ *Id.*

¹⁹⁶ *Novatek-TW (criminal)*, 108 Zhi Su Zi No. 3.

¹⁹⁷ New Taipei District Prosecutors Office Press Release, Xinbei Dijianshu Zhenban Liuyu Dengren Weifan Yingye Mimi Fa An (新北地檢署偵辦劉○宇等人違反營業秘密法案) [New Taipei District Prosecutors Office Is Investigating the Case of Liu Yu and Others for Violating the Trade Secrets Act] (Feb. 13, 2018), <https://perma.cc/5JXY-ETB8>.

¹⁹⁸ Junzhi Chen (陳俊智), Nanya Keji 38 Yi Yuan Shangye Jiandie An Tiaocao Gongchengshi Wuzui (南亞科技38億元商業間諜案 跳槽工程師無罪) [Former Engineer Acquitted in Nanya \$38-billion Trade-Secret Case] UDN (聯合報) (Feb. 19, 2020), <https://perma.cc/D5LW-6E63> (no sufficient evidence surfaced proving that the former engineer had misappropriated the trade secrets in question) [hereinafter, *Nanya v. Innotron*].

Unlike general businesses, the semiconductor industry runs largely according to a closed-system method, where manufacturing equipment, software, personnel, and operations are strictly controlled and gated within the boundaries of manufacturing plants. Therefore, for China, as an emerging economy that wishes to catch up with foreign countries' world-class semiconductor sectors, inducing the mobility of expertise and transferring it to China constitutes a reasonable, if legally problematic, strategy.

2. MERGERS, THIRD-PARTY INVESTMENTS, OVERSEAS SUBSIDIARIES, AND LICENSING

China might obtain advanced technology by investing and transferring rights through third-party investments, mostly backed by Chinese government-owned financing sources, leading to the acquisition of Taiwanese technology and the transfer of technologies to Chinese companies, with entire research and development teams relocating to China.¹⁹⁹ This resembles China's government-sponsored acquisition of Taiwanese semiconductor technology.

During mergers and acquisitions ("M&A") deals, Taiwanese staff may depart from a Taiwanese employer, establish new businesses in China, and immediately begin recruiting talent.²⁰⁰ In another scenario, Chinese entities have been accused of inducing these locally employed Chinese workers to steal trade secrets from their Taiwan-invested, China-based employers.²⁰¹ Such trade secret breaches can also occur through third-party investment. For example, Chinese entities have allegedly acquired Taiwanese high-tech secrets through third-party investments in Taiwan.²⁰² In some cases, Chinese citizens or businesses have posed as investors from Hong Kong or Singapore and used fake accountant certificates to avoid scrutiny from the Taiwanese government.²⁰³

According to Taiwanese government regulations, Chinese investment may account for 30% of third-party investment in Taiwan.²⁰⁴ For example, Huawei backed Xunwei Technologies (訊崴技術) as Huawei's general distributor for Taiwan via a Singaporean

¹⁹⁹ Hong-Da Lin (林宏達), Liangan Disandai Bandaoti Kaizhan! Cong Qiemi Wajiao Dao Zhijie Mai Gongsi (兩岸第三代半導體開戰！從竊密、挖角到直接買公司...) [Third-Generation Semiconductor Battle Across the Strait! From Espionage, Poaching, to Outright Acquisitions], WEALTH MAG. (Mar. 17, 2021), <https://perma.cc/C8V7-6AQK>.

²⁰⁰ *TSMC v. SMIC*, No. C-03-5761 MMC, 2004 U.S. Dist. LEXIS 29717 (see discussion in Part V(A)).

²⁰¹ See Doris Li, *Commercial Espionage Between Foxconn and BYD*, CHINA INTELL. PROP. MAG. (Nov. 22, 2012), <https://perma.cc/F3Y3-VAVV> [hereinafter *Foxconn v. BYD*].

²⁰² Zhihui Caichan Fayuan (智慧財產法院) [IP Court], Minshi (民事) [Civil Division], 104 Ming Zan Kang Zi No. 4 (104民暫抗字第4號民事裁定) (2015) (Taiwan) [hereinafter *MediaTek 2014*]. See also Zhong-Qiang Lai et al. (賴中強等), UNMASKING THE INFILTRATION OF TAIWAN BY CHINESE CAPITAL (揭開中資滲透台灣的假面—經民連與泛中國團的搏鬥), TAIWAN ECONOMIC DEMOCRACY UNION 229–240 (2023).

²⁰³ Zhong-Qiang Lai et al. (賴中強等), UNMASKING THE INFILTRATION OF TAIWAN BY CHINESE CAPITAL (揭開中資滲透台灣的假面—經民連與泛中國團的搏鬥), TAIWAN ECONOMIC DEMOCRACY UNION 229–240 (2023).

²⁰⁴ MAINLAND AFFAIRS COUNCIL REPUBLIC OF CHINA (TAIWAN), Di Er Jie Duan Kaifang Luzi Lai Tai Tou Zi Yebie Xiangmu Xinwengao (第二階段開放陸資來臺投資業別項目新聞稿) [List and Catalogue Opened for China Investment Phase II Press Release] (Mar. 2, 2011), <https://perma.cc/FMD9-RCK9>. See also Lai et al., *supra* note 202.

company.²⁰⁵ Xunwei Technologies recruited talent, conducted R&D in Taiwan, and then transferred its technology back to China.²⁰⁶ More than twenty engineers working on the design for a mobile phone chip for MStar, a Taiwanese chip design company, took up jobs at Xunwei Technologies.²⁰⁷ These workers' simultaneous decision to quit their MStar jobs and to work for Xunwei Technologies came while MStar was being acquired by another Taiwanese chip-design company, MediaTek, in 2012.

In *MediaTek 2014* (2014), Taiwan courts considered an incident involving the Taiwanese company MediaTek and the Taiwanese branch of Hong Kong-based chip-design company Digital Infrastructure (DIHK). DIHK is alleged likely to serve as a key base for MediaTek's main Chinese competitor, Spreadtrum Communications.²⁰⁸ DIHK attracted former MediaTek engineers, who reportedly began sharing MediaTek's mobile chip technology with DIHK.²⁰⁹ A Taiwanese court granted MediaTek injunctive relief, barring the engineers from working for DIHK owing to evidence of illegal trade-secret disclosure.²¹⁰ Beyond this case, DIHK has gained industry attention for purportedly poaching IC design talent and misappropriating technology for Chinese IC design houses.²¹¹

B. STATE INTERVENTION: CRIMINAL AND ADMINISTRATIVE PROSECUTIONS

Due to the high thresholds of and concerns regarding States' intervention with economic activities, criminal and administrative prosecutions may be ineffective against unethical behavior and bad faith actions, particularly in cases of extra-system theft. Enforcement challenges make this form of deterrence less effective for external breaches, and criminalization might worsen the situation by adding more enforcement costs than it saves.²¹² A result that is presented in Part 4 is that trade secret theft was not the primary tool that the U.S. government uses to combat foreign espionage and influence in the technology sector. It was often enforced in conjunction with other espionage-related laws and applied after semiconductors integrated into society. Similarly, criminal and administrative procedures were not useful approaches in Taiwan courts until 2016, reflecting the impact of the 2013 Taiwan Trade Secrets Law amendment. However, with a few powerful geopolitical nations concealing their state apparatus within market actors, and using free trade to extend global

²⁰⁵ See Elaine Huang, *Poaching Taiwanese Talent from the Inside*, COMMONWEALTH MAG. (June 7, 2013), <https://perma.cc/L48A-ZRJD>.

²⁰⁶ *Id.*

²⁰⁷ *Id.*

²⁰⁸ *MediaTek 2014*, 104 Ming Zan Kang Zi No. 4.

²⁰⁹ *Id.*

²¹⁰ *Id.* However, one of the defendants, Mr. Hsu, filed a countersuit against MediaTek for damages related to unfair noncompete agreements, and the Taiwan High Court found in favor of Hsu. The court decision is sealed. See Guo-Wen Yang (楊國文), *MediaTek Xianzhi Lizhi Gongchengshi Tiaocao Gaoyuan Pan Jingye Jinzhi Tiaokuan "Wu Xiao"* (聯發科限制離職工程師跳槽 高院判競業禁止條款「無效」) [MediaTek's Restriction on Departing Engineers Switching Jobs - High Court Rules Non-Compete Clause "invalid"], LIBERTY TIMES (June 30, 2021), <https://perma.cc/7AMD-4BSJ>.

²¹¹ Kuo-chen Lu et al., *The Insidious Spread of Red Wealth*, COMMONWEALTH MAG. (Apr. 3, 2016), <https://perma.cc/QRQ3-FRJX>.

²¹² Robert G. Bone, *A New Look at Trade Secret Law: Doctrine in Search of Justification*, 86 CAL. L. REV. 241, 275-76 (1998).

influence, the presumption of neutrality cross-border economic activities under neoliberalism is eroding.

1. THE *HEJIAN* CASE

It is worthy to note the business model of rightsholders themselves transferring technologies via investments in China. Since the 1990s, the founder of Taiwan-based chip maker UMC, Robert Tsao, had envisioned expanding chip making in China. With a sharp decrease in demand for downstream products, global IC market sales volume significantly declined after 2000.²¹³ With high potential in the Chinese market, multinational semiconductor companies established subsidiaries and factories in China.

Under Taiwan's regulations restricting business activities between Taiwanese companies and China, UMC and Best Elite International Limited (BE), an investment company, invested in a semiconductor manufacturing foundry—Hejian Technology in Suzhou, China—through two third-party companies without the permission of the Taiwanese government, involving technology exports.²¹⁴ This would allow UMC to enjoy Chinese government incentives, enter the Chinese domestic market, gain geographical advantages, and further suppress the development of Chinese IC manufacturers and their ability to eventually take control of Hejian.²¹⁵ The Taiwan prosecutors filed charges on the grounds of breach of trust and violation of the Securities and Exchange Act in 2005 and later, the Taiwan Department of Investment Review fined UMC on violation of the Act Governing Relations Between the People of the Taiwan Area and the Mainland Area.²¹⁶ This led to years of administrative litigation, in which Robert Tsao and his co-defendant were acquitted in 2011.²¹⁷ In 2013, Hejian Technology legally merged with UMC after the Ma administration of Taiwan government allowed 8-inch wafer fabs to land in China.²¹⁸ In 2014, UMC collaborated with the Chinese government to establish Xiamen United Semiconductor (XUS) and set up a 12-inch fab in Xiamen to produce 40 and 28-nm chips. In 2019, UMC was

²¹³ *IC Market CAGR Rebounds but Growth Remains Below 30-Year Average*, IC INSIGHTS (Jan. 21, 2015), <https://perma.cc/8MUU-KP28>.

²¹⁴ See Kathrin Hille, *The Taiwanese Chip Billionaire Squaring Up to China*, FIN. TIMES (Sep. 20, 2022), <https://perma.cc/D4LK-HDPK>. See also Hong-Da Lin (林宏達), Cao Xingcheng Juan 30 Yi Guofangjijin! 21 Nian Qian UMC Xiezhu Hejian Rang Ta Hui Bu Dang Chu (曹興誠捐30億國防基金！21年前聯電協助和艦讓牠「悔不當初」) [Cao Xingcheng donates 3 billion to the National Defense Fund! UMC's Support to Hejian 21 years ago Made Him "Regret:" Would Not Have Gone to China if He Could Do It Again], WEALTH MAG. (Aug. 5, 2022), <https://perma.cc/D3MT-J3B8>.

²¹⁵ Zuigao Xingzheng Fayuan (最高行政法院) [Supreme Administrative Court], 100 Pan Zi No. 32207 (100 判字第 2207 號判決) (2011) (Taiwan) [hereinafter the *Suzhou Hejian case*].

²¹⁶ *Id.*

²¹⁷ *Id.* (Tsao resigned from UMC in 2005 and later renounced his Taiwan citizenship, migrating to Singapore in 2011. Interestingly, Tsao once aided China's semiconductor industry but has now donated \$100 million USD to Taiwan's defense and pledged to safeguard its sovereignty, vowing to prevent Taiwan from becoming like Hong Kong. His dramatic shift from honored guest in China to an unwelcome presence in Beijing highlights the growing tensions between Taiwan and China in the strategically important semiconductor industry as Taiwan builds closer ties with the United States.). See Che Pan, *How This Leading Taiwanese Chip Guru Made An Astonishing U-Turn from Avid Mainland Investor to China Basher*, SOUTH CHINA MORNING POST (Sep. 5, 2022: 9:00 PM), <https://perma.cc/MUR8-PT2J>.

²¹⁸ Lin (林宏達), *supra* note 214.

planning to list Hejian and XUS on the Shanghai Stock Exchange but withdrew the application due to Shanghai control-related concerns.²¹⁹

Years later, UMC's collaboration with Fujian Jinhua has entangled the company in another case. Although UMC did not invest in Fujian Jinhua, this arrangement led to a legal dispute related to trade secret alleged misappropriation from Micron (see section below).

2. *UNITED STATES V. LIEW*

While economic espionage investigations are a priority for the FBI and DOJ, convictions under Section 1831 of the EEA are rare across sectors.²²⁰ Most cases fall under Section 1832, addressing general (domestic) trade secret theft.²²¹ Courts' narrow interpretation of the Section 1831 elements makes Economic Espionage convictions difficult, primarily due to insufficient evidence of intent to benefit a foreign government.²²² The semiconductor case *United States v. Liew* was the first federal jury conviction achieved under the EEA.²²³ The Ninth Circuit upheld the 2014 convictions of Defendants Liew and USA Performance Technology, Inc. (USAPTI), finding that they had stolen trade secrets from E.I. du Pont de Nemours & Company (DuPont) and sold them to Chinese state-owned companies, aiding China in developing semiconductor material capabilities.²²⁴ By forming a team at USAPTI made up of former DuPont employees, Liew, a U.S. citizen, had specifically helped China produce TiO₂, a type of semiconductor material.²²⁵ Then, Liew's team at USAPTI collaborated with Chinese entities, using illegally obtained DuPont technology for chloride-route TiO₂ projects.²²⁶

By upholding the EEA jury conviction, the Ninth Circuit promoted more assertive trade secret enforcement.²²⁷ The jury was informed that widely known information did not qualify as trade secrets,²²⁸ but dismissed Liew's argument that his team had simply engaged in reverse engineering based on general knowledge.²²⁹ The court stated that DuPont only had

²¹⁹ *Id.*

²²⁰ Robin L. Kuntz, *How Not to Catch A Thief: Why the Economic Espionage Act Fails to Protect American Trade Secrets*, 28 BERKELEY TECH. L.J. 901, 907 (2013) ("Between 1996 and 2009, well over a hundred trade secret prosecutions were initiated in the United States, but only six of them were under § 1831 of the EEA.").

²²¹ *Id.*

²²² *Id.* at 914–22, 926.

²²³ *United States v. Liew*, 856 F.3d 585 (9th Cir. 2017).

²²⁴ *Id.* at 589.

²²⁵ *Id.* at 590–91; *Two Individuals and Company Found Guilty of Conspiracy to Sell Trade Secrets to Chinese Companies*, U.S. DEP'T OF JUST. (Mar. 5, 2014), <https://perma.cc/GSK2-M6FK>.

²²⁶ *S. Comm. on the Judiciary, supra* note 175. The latest development of this case: Liew has asked for early home release, saying he contracted COVID-19 in prison and is on a ventilator. See Dave Simpson, *Hospitalized DuPont IP Thief Seeks Release Over COVID-19*, LAW360 (June 1, 2020), <https://perma.cc/R9JV-VZA5>.

²²⁷ *Liew*, 856 F.3d at 585 (affirming in part, reversing and vacating in part, and remanding the case for resentencing and in-camera review of potential *Brady* material. More specifically, the panel reversed defendants' convictions for conspiracy to obstruct justice and Liew's conviction for witness tampering and held that the district court should have required the prosecution to disclose the FBI's interviews with a dead co-conspirator, where the co-conspirator's attorney submitted a declaration suggesting that the FBI form a 302-report summarizing the interviews (the "302 report") containing *Brady/Giglio* material).

²²⁸ *Id.* at 598.

²²⁹ *Id.* at 599.

to show that it had taken reasonable measures to guard the TiO₂ information, and DuPont had.²³⁰ Even accepting that some information relating to the TiO₂ technology was publicly available, “the minute details and data” of the technology were not “readily ascertainable by or generally known to the public” and thus constituted a “trade secret” under the EEA.²³¹ The court’s broad definition of ‘trade secret’ in the Liew case contrasts with prior narrow interpretations.

3. THE MICRON CASE

Enhanced trade secret protection might not significantly deter government and corporate actors who benefit from trade secret misappropriation.²³² Cross-border cases, however, could see some deterrent effect through penalties and State interventions. In the *Micron* case, Taiwanese prosecutors charged the Taiwan-based UMC, China’s state-owned Fujian Jinhua, and three UMC engineers with both conspiracy to commit and the actual commission of trade secret theft from Micron in 2017.²³³ The defendants were also sued in the United States and China. UMC and Fujian Jinhua counter-sued Micron in China in 2018.²³⁴ The DOJ and a federal grand jury indicted the defendants on charges of economic espionage, among other crimes, in November 2018.²³⁵

Defendant Chen was once the chairman of the company acquired by Micron in 2013 before becoming the president of Micron Taiwan.²³⁶ Chen resigned from Micron in July 2015 and quickly joined UMC, where he allegedly helped Taiwan’s UMC and China’s Fujian Jinhua arrange an agreement in which the Chinese-backed company would fund and mass produce DRAM technology procured by UMC.²³⁷ Chen later became Fujian Jinhua’s president and was in charge of its DRAM facility.²³⁸ Owing to the complexity of Chen’s position, his case was separated from the litigations of UMC and the three engineers.²³⁹

²³⁰ *Id.* at 602–03.

²³¹ *Id.* at 603.

²³² *See, e.g.*, Foreign and Economic Espionage Penalty Enhancement Act of 2012, Pub. L. No. 112-269, 126 Stat. 2442 (2013) (At the time, an individual responsible for economic espionage faced a maximum fine of \$500,000, and organizations faced a maximum fine of \$10 million. Congress passed legislation boosting the maximum fine applicable to individuals to \$5 million, and organizations responsible for committing economic espionage now face penalties of up to \$10 million or up to three times the value of the stolen trade secrets). *See also* Brown, *supra* note 64, at 196.

²³³ *Micron-TW, supra* note 95.

²³⁴ Wu, *supra* note 95.

²³⁵ *PRC State-Owned Company, Taiwan Company, and Three Individuals Charged with Economic Espionage*, U.S. DEP’T JUST. (Nov. 1, 2018), <https://perma.cc/A7X8-H5QE>; *United States v. United Microelectronics Corp.*, No. 3:18-cr-00465 (N.D. Cal. Sep 27, 2018); *United States v. United Microelectronics Corp. et al.*, No. 5:18-cv-06643 (N.D. Cal. Nov. 1, 2018) (the U.S. civil suit seeking an injunction).

²³⁶ Seal, *supra* note 95.

²³⁷ U.S. DEP’T JUST., *supra* note 235. *See also* Seal, *supra* note 95.

²³⁸ U.S. DEP’T JUST., *supra* note 235.

²³⁹ *See* Atkinson, Liandian Beikong Zhu Fujian Jinhua Qiequ Meiguang Jishu, 3 Yuangong Pan Zui zhong 6 Nianban Tuxing, Liandian Fa Kuan 1 Yi Yuan (聯電被控助福建晉華竊取美光技術, 3員工判最重6年半徒刑, 聯電罰款1億元) [UMC Accused of Complicity in Tech Theft Involving Fujian Jinhua, Three Employees Jailed 6.5 Years, UMC Fined NT\$100 Million], TECH NEWS (June 12, 2020) <https://perma.cc/NSJ4-ET67>.

Three Taiwanese engineers employed at UMC—also former Micron Taiwan employees—took up the lucrative offer from China's Fujian Jinhua.²⁴⁰ Defendants Wang and Ho replicated Micron's DRAM data and used the material for their new job at UMC, which had a joint tech project with China's Fujian Jinhua.²⁴¹ Ho, a former Micron engineer, failed to delete trade secret documents belonging to Micron and instead took the documents to his UMC workplace, an act that breached nondisclosure employment agreements with Micron and violated the Taiwan Trade Secret Law.²⁴² Wang possessed Micron's technologies for shortening the DRAM development process, and the third engineer, Defendant Rong, instructed Wang to incorporate these technologies into UMC's own technologies without authorization from Micron.²⁴³ Rong instructed Ho and Wang to wipe all Micron data from their computers before Taiwanese prosecutors raided the engineers' workstations.²⁴⁴

Not until the beginning of 2020—after a two-year dispute regarding the scope of the confidentiality—did the Taiwanese trial court issue a protective order covering the litigation documents.²⁴⁵ On June 12, 2020, a Taiwanese court found the three Taiwanese engineers guilty of stealing trade secrets from Micron on behalf of China and handed down prison terms ranging from 4.5 to 6.5 years and fines ranging from NT \$4 million to 6 million (approximately \$133,333–200,000 USD).²⁴⁶ UMC appealed the ruling after UMC was fined \$3.4 million USD for violating the Taiwan Trade Secret Law by offering insufficient protections for the IP rights of its customer, Micron.²⁴⁷ The accused Chinese company, Fujian Jinhua, faced not only placement on the U.S. Entity List in 2018 but also criminal and civil prosecutions in the United States.²⁴⁸

UMC faced investigations in the United States and Taiwan,²⁴⁹ but then pleaded guilty, agreeing to pay a \$60 million USD fine and cooperate in the investigation and prosecution of its co-defendant, China's Fujian Jinhua.²⁵⁰ A global settlement was reached between Micron and UMC in November 2021, excluding individual defendants.²⁵¹

²⁴⁰ *Id.* [The Taiwanese court found that Ho had received NT\$5 million (approx. \$166,666 USD) from both UMC and Fujian Jinhua, and that Wang had gained NT\$1.5 million (approx. \$50,000 USD) and Rong NT\$1.6 million (approx. \$53,333 USD).] from UMC). See Wu, *supra* note 95.

²⁴¹ Wu, *supra* note 95. See also Bai (白錫鏗), *supra* note 97.

²⁴² Bai (白錫鏗), *supra* note 97.

²⁴³ *Id.*; Wu, *supra* note 95.

²⁴⁴ Bai (白錫鏗), *supra* note 97; Wu, *supra* note 95.

²⁴⁵ Bai (白錫鏗), *supra* note 97.

²⁴⁶ Wu, *supra* note 95. Chen's case is still pending owing to its significant complexities. See Atkinson, *supra* note 239.

²⁴⁷ Wu, *supra* note 95.

²⁴⁸ *Addition of Fujian Jinhua Integrated Circuit Company, Ltd. (Jinhua) to the Entity List*, U.S. DEP'T OF COM. (Oct. 29, 2018), <https://2017-2021.commerce.gov/news/press-releases/2018/10/addition-fujian-jinhua-integrated-circuit-company-ltd-jinhua-entity-list.html>; *United States v. United Microelectronics Corp. et al.*, No. 5:18-cv-06643; *United States v. United Microelectronics Corp. et al.*, No. 3:18-cr-00465 [hereinafter *the Micron case*].

²⁴⁹ *The Micron case.*, No. 3:18-cr-00465.

²⁵⁰ Joel Rosenblatt & Debby Wu, *Taiwan's UMC to Aid U.S. Pursuit of Chinese Firm for Theft*, BLOOMBERG L. (Oct. 28, 2020, 11:15 PM EDT), <https://perma.cc/QE82-SA4K>.

²⁵¹ *United States v. United Microelectronics Corp. et al.*, No. 5:18-cv-06643; Debby Wu, *Taiwan's UMC Pays to Settle Tech Theft Litigation with Micron*, BLOOMBERG (Nov. 25, 2021, 6:34 PM EST), <https://perma.cc/J3CE-F3LK>.

In December 2021, Micron expanded its business ties with UMC.²⁵² Across the Pacific, UMC's guilty plea in Taiwan followed a 2021 court conviction and fines. The distinct difference between the UMC's legal approaches in the United States and those in Taiwan stem partly from the absence of both corporate criminal liability and plea bargaining in the Taiwanese system: their absence reduces the opportunities for problematic negotiations during sentencing.²⁵³

VI. BORDERING SECRECY: A GEOPOLITICAL ECONOMIC FRAMEWORK

A. THE GLOBAL SUPPLY CHAIN NETWORK PERSPECTIVE

Legally, trade secret protection is centered on secrecy. Both the U.S. and Taiwanese governments have stated that “reasonable measures” must be taken by the rightful possessors of trade secrets to preserve the secrecy of this presumably valuable knowledge.²⁵⁴ However, the notion of “reasonableness” is complex, and is defined by fluid boundaries reflective of technological knowledge, technological materials (e.g., paper files, digital files, physical prototypes), individuals, corporations, nation-states, and legal systems. The boundaries of secrecy are set and often reset by and through (1) the actors who produce, use, and keep secrets; (2) the parties who try to poach secrets; (3) the parties who access secrets with or without authorization; (4) the rightsholders who litigate or settle alleged thefts of secrets or who simply end up sharing the secrets; (5) those who use techniques for monitoring; (6) states; and (7) litigators and courts. Cross-border semiconductor cases highlight the evolving secrecy landscape amid these semiconductor trade secret disputes.

1. BORDERING SECRECY THROUGH INDUSTRIAL INTERESTS RELATED TO NATION-STATES

Taiwan's chip-manufacturing sector supports the country's, and the entire globe's, semiconductor needs, including the needs of high-tech U.S. firms, and span a host of stages, ranging from chip design to fabrication.²⁵⁵ Taiwanese entities (whether individuals, firms, or the government) are often involved in the U.S.'s cross-border semiconductor trade secret cases in two basic forms: (1) a Taiwan-based company operating in the United States is the victim of trade secret theft allegedly perpetrated by the company's own employees or by

²⁵² *Micron and UMC Expand Relationship to Strengthen Customer Supply Chains*, MICRON TECH., INC. (Dec. 1, 2021), <https://perma.cc/PA49-BQGL>.

²⁵³ In Taiwan, corporations are liable for crimes committed by employees owing to the principle of fiduciary duty rather than the principle of corporate criminal liability. See Huang-Yu Wang (王皇玉), *Corporate Criminal Liability and Plea Negotiation (Part 2) (法人犯罪與認罪協商(下))*, 2050(3) JUD. WKLY., available at <https://perma.cc/LA2Y-99BS>.

²⁵⁴ Seth J. Welner & John Michael Marra, *Defend Trade Secrets Act vs. Uniform Trade Secrets Act: Reasonable Security Measures as Objective or Subjective?*, HOLLAND & KNIGHT TRADE SECRETS BLOG (Aug. 6, 2018), <https://perma.cc/4DZK-2L69>.

²⁵⁵ For example, TSMC (Taiwan Semiconductor Manufacturing Co.) is one of the world's top chip makers. See CAPRI, *supra* note 126, at 74; Sevastopulo & Hille, *supra* note 169.

some other party to benefit Chinese entities; or (2) an individual tied to Taiwan allegedly steals trade secrets from a U.S. company to benefit Chinese entities.

The record of successful prosecutions by the DOJ's EEA regarding cases of economic espionage remains disappointingly limited. In *United States v. Lan Lee*, the DOJ set out to prosecute two NetLogic Microsystems engineers, Lan Lee and Yuefei Ge. These two individuals were in possession of unauthorized copies of technical documents, including TSMC data, and it was surmised that the individuals were aiming to create a rival product in China.²⁵⁶ The U.S. court (1) clarified that a company was not a "foreign instrumentality" just because it operated or was based in a foreign country and (2) found that the government had failed to prove possession of stolen trade secrets.²⁵⁷

The recent U.S. federal court case *United States v. Shih et al.* involves Chinese trade secret theft involving Taiwanese entities.²⁵⁸ Shih, a Taiwanese-born U.S. ex-electrical engineering professor, was convicted of exporting high-power semiconductor chips to China without a license.²⁵⁹ These chips, created by a U.S. semiconductor company, were sent to China's Chengdu GaStone Technology Co. (later renamed HiWafer) where Shih had been CEO.²⁶⁰ While not charged with trade secret theft, Shih was accused of defrauding the victim company so that he could establish a semiconductor factory in China.²⁶¹ In 2021, following a guilty verdict, Shih received a prison sentence greater than five years,²⁶² and with respect to this sentencing, the U.S. Attorney's Office emphasized its commitment to protecting intellectual property against foreign adversaries.²⁶³

GaStone was also linked to an earlier case, *WIN-TW* (2015), in Taiwan. WIN Semiconductors (WIN), a leader in 6-inch GaAs and GaN wafer production, had technology applied in smartphones, wireless telecom, and military radar.²⁶⁴ A Taiwanese engineer Yang from GaStone recruited seven WIN engineers and offered them significant salary hikes in exchange for trade secrets stolen from WIN.²⁶⁵ Charges against the seven WIN employees

²⁵⁶ *United States v. Lan Lee*, No. CR 06-0424 JW, 2010 U.S. Dist. LEXIS 144642, at *2 (N.D. Cal. May 21, 2010).

²⁵⁷ *Id.* at *18–20 ("The Court does not construe benefitting a 'foreign government, instrumentalities or agent' to be synonymous with benefitting a 'foreign country' or benefitting a 'foreign corporation'.")

²⁵⁸ *Electrical Engineer Convicted of Conspiring to Illegally Export to China Semiconductor Chips with Missile Guidance Applications*, U.S. DEPT. OF JUSTICE (July 2, 2019), <https://www.justice.gov/opa/pr/electrical-engineer-convicted-conspiring-illegally-export-china-semiconductor-chips-missile>.

²⁵⁹ *Id.*; Chris Gillis, *Two Men Charged with Illegal China Export Scheme*, AM. SHIPPER (Jan. 25, 2018), <https://perma.cc/D3CB-P8RW>.

²⁶⁰ U.S. DEPT. OF JUST., *supra* note 258; Gillis, *supra* note 259.

²⁶¹ U.S. DEPT. OF JUST., *supra* note 258; Gillis, *supra* note 259.

²⁶² *United States v. Shih*, No. 2:18-cr-00050D. Cal. (Jan. 16, 2018); Hannah Albarazi, *Scientist Gets 5 Years for Exporting Semiconductors to China*, LAW360 (July 22, 2021, 10:03 PM), <https://perma.cc/J6FT-MEKY>.

²⁶³ Albarazi, *supra* note 262 ("Today's sentence sends a strong message that our office—and the entire Justice Department—will vigorously enforce laws designed to protect our nation's intellectual property from being used for the benefit of our foreign adversaries.")

²⁶⁴ Lisa Wang, *Alleged Theft of Trade Secrets Probed*, TAIPEI TIMES (Nov. 7, 2015), <https://perma.cc/9WLF-6CE8>; Hongda Lin and Yuanqing Lin (林宏達&林苑卿), Taiwan Kejiye Hongse Fengbao Laixi (台灣科技業紅色風暴來襲 [A Red Storm Hits Taiwan's Technology Industry]), WEALTH MAG. (財訊雜誌) (Nov. 15, 2018), <https://perma.cc/5VKL-MJZX>.

²⁶⁵ Wang, *supra* note 264. *See also* Guo-Qiang Zheng (鄭國強), Zhongguo Huitai 31 Xiang Xiang Gaokeji Rencai Zhaoshou Dan Tongshi Qiequ Mei Tai Jingpian Jishu Bing Zao Qisu (中國惠台31項向高科技人才招手但

included trade secret theft and breach of trust, but the main defendant, Yang, as of November 2023, remains wanted after fleeing.

2. BORDERING SECRECY THROUGH EMPLOYEE-EMPLOYER-CORPORATE RELATIONS

As mentioned in Part 4, TSMC sued its Chinese rival SMIC twice for trade secret theft after SMIC recruited over 140 former TSMC employees, including TSMC's ex-president, Richard Chang, who founded SMIC, and was found to be using TSMC's proprietary manufacturing technology.²⁶⁶ In 2005, the companies settled with SMIC agreeing to pay \$175 million USD, but, a year later, TSMC sued again because SMIC violated the settlement by continuing to rely on the expertise of former TSMC employees, and, later in 2009, a jury ruled SMIC used 65 of TSMC's trade secrets.²⁶⁷ This illustrates how Chinese companies and the Chinese market successfully entice talent away from Taiwanese employers, gaining their knowledge to improperly compete against their previous employers.

Other key cases highlight the important role played by noncompete agreements in Taiwan's high-tech sector. In *TSMC vs. Liang*, TSMC won a lawsuit against its former R&D employee, Mong-song Liang, who had leaked confidential information, including 28-nm process technology, to Samsung. The Taiwan Supreme Court affirmed the Taiwan Appellate Court's ruling in favor of TSMC, ordering Liang to cease working for Samsung until the end of 2015.²⁶⁸ Applying "Inevitable Disclosure Theory" to the case, the Appellate Court reasoned that Samsung was a strong competitor of TSMC.²⁶⁹ The court noted that Liang, after leaving TSMC, had taught at South Korea's Sungkyunkwan University, where Samsung employees were students.²⁷⁰ Thus, Samsung's subsequent rapid technological progress made it likely that Liang had disclosed at least some of TSMC's secrets to Samsung.²⁷¹ The court ruled for the plaintiff, TSMC. The Taiwan Supreme Court extended the noncompete agreement beyond its original term to protect vital technologies, and the extension prevented Liang from joining a competitor like SMIC.

According to the findings of *TSMC v. Xue* (2021), Xue worked as a procurement handler at TSMC in 2004 and became the company's procurement manager in 2011.²⁷² He left TSMC

同時竊取美台晶片技術並遭起訴) [China's 31 Preference Policy Lures High-Tech Talent but also Leads to Charges of Theft from US and Taiwanese Technology Sectors], CMMEDIA (信傳媒) (Mar. 3, 2018), <https://perma.cc/FK5W-BXST> [hereinafter WIN-TW].

²⁶⁶ See *TSMC v. SMIC*, No. C-03-5761 MMC, 2004 U.S. Dist. LEXIS 29717.

²⁶⁷ See Davis, *supra* note 183.

²⁶⁸ See Editorial: *Taming the Trade of Trade Secrets*, TAIPEI TIMES (Aug. 31, 2015), <https://perma.cc/GXZ7-QL8E>; Taiwan Semiconductor Mfg. Co., Ltd. v. Liang, Zuigao Fayuan Minshi Caipanshu Huibian (Sup. Ct. Civil Judgments Collection), 104 Tai Shang Zi No. 1589 (Aug. 21, 2015) [hereinafter *TSMC vs. Liang*].

²⁶⁹ TAIPEI TIMES, *supra* note 268.

²⁷⁰ *Id.* See also Yuan, *TSMC Wins Case Against Former Employee Who Disclosed Classified Information to Samsung*, TNL (Aug. 25, 2015), <https://perma.cc/Z4ED-V8LC>; Yang Jie, *A 70-Year-Old Taiwanese Chip Wizard Is Driving China's Tech Ambitions*, WALL ST. J. (Aug. 8, 2022, 7:00 AM ET), <https://perma.cc/PS42-9EX3>.

²⁷¹ TAIPEI TIMES, *supra* note 268.

²⁷² Taiwan Semiconductor Mfg. Co., LTD. v. Xue, Taoyuan Difang Fayuan, Minshi (Taoyuan D. Ct. Civil Division), 107 Zhong Lao Su Zi No. 6 (Dec. 27, 2018) [hereinafter *TSMC v. Xue*]; Bo-Wen Xiao (蕭博文), *Taijidian Qian Jingli Tiaozao Zhongguo Tongye Weixieyi Panpei 250 Wan Queding* (台積電前經理跳槽中國同業違協議

in 2016 and joined a competitor—China’s Wuhan Xinxin Semiconductor Manufacturing Co., Ltd. The Taiwan High Court upheld a lower court’s ruling, ordering Xue to pay NT \$2.5 million (approximately \$80,645 USD) for violating a noncompete agreement with TSMC (he had joined a competitor within 5 months of leaving TSMC, breaching the 18-month agreement).²⁷³ Similarly, noncompete agreements are particularly useful in China for obtaining preliminary injunctions in order to avert additional injury by a defendant’s release of confidential information to a new employer.²⁷⁴

Nevertheless, the Taiwan courts used a balancing test to approach the employment issue cautiously. In *MediaTek 2014* (2014), a Taiwanese lower court ruled that engineers leaving MediaTek faced a provisional injunction to prevent technology leakage. One of the defendants, Hsu, filed a countersuit against MediaTek for damages related to unfair noncompete agreements, and the Taiwan High Court found MediaTek’s noncompete clauses invalid because MediaTek overly restricted departing employees’ labor rights without compensation.²⁷⁵

3. BORDERING SECRECY THROUGH CORPORATIONS, JUDICIAL MECHANISMS, AND NATION-STATES

In the *Micron* case, Taiwan’s UMC was accused of IP theft and leakage to Chinese partner Fujian Jinhua. UMC pleaded guilty, paying a \$60 million USD fine and cooperating in the investigation of Fujian Jinhua.²⁷⁶ Notably, during this global litigation, a Chinese court favored UMC by issuing an injunction against the sale of Micron chips in China.²⁷⁷ In January 2018, Micron was counter-sued by UMC and Fujian Jinhua in the Fujian Province of China for patent infringement, where the provincial government was also an investor in Fujian Jinhua.²⁷⁸ The Chinese court—Fuzhou Intermediate People’s Court of the PRC—issued a preliminary injunction on July 3, 2018, stopping Micron from selling 26 products, including DRAM and NAND flash memory-related products.²⁷⁹

A similar legalistic pattern surfaced in another semiconductor IP case heard by the aforementioned Chinese court. In *AMEC v. Veeco* (2017), a former employee of a U.S.-based semiconductor-equipment company, Veeco, left for a Chinese competitor, AMEC, which then filed an IP-infringement lawsuit against Veeco in China. The suit alleged that Veeco had committed “utility-model patent” infringements and requested a preliminary injunction, all in order to undercut the U.S. company’s business.²⁸⁰ The Chinese court did not offer a

判賠250萬確定) [*Former TSMC Manager Jumping Ship to Chinese Competitor Ruled to Be in Violation of Non-Compete Agreement, Ordered to Pay NT \$2.5 million*], CNA (July 8, 2022), <https://perma.cc/9HA2-KYSL>.

²⁷³ Bo-Wen Xiao, *supra* note 272.

²⁷⁴ Benjamin Bai & Steve Adkins, *supra* note 114.

²⁷⁵ *MediaTek 2014*, 104 Ming Zan Kang Zi No. 4.

²⁷⁶ See the *Micron* case discussion, *supra* Part V(C).

²⁷⁷ Debby Wu & Ian King, *Micron Chip Sales Banned in China in Patent Case, Rival UMC Says*, SEATTLE TIMES (July 3, 2018, 7:09 PM), <https://perma.cc/46M8-3RDA>.

²⁷⁸ Paul Mozur, *Inside a Heist of American Chip Designs, as China Bids for Tech Power*, N.Y. TIMES (June 22, 2018), <https://perma.cc/2TZQ-6Q5R>.

²⁷⁹ Wu & King, *supra* note 277.

²⁸⁰ See Jacob Schindler, *Settlement Ends Global Litigation After Chinese Injunction Hurts US Semiconductor Equipment Imports*, IAM (Feb. 12, 2018), <https://perma.cc/FA86-JLT5>.

reason for issuing the Veeco injunction, but the order promoted a settlement between AMEC and Veeco by offering them cross-licenses.²⁸¹ Concerns about the Chinese legal system's lack of transparency have led to speculation about whether Chinese entities such as AMEC are using Chinese legal tools to engage in frivolous yet harmful acts of retaliation against U.S. companies that pose an economic or legal threat to the Chinese entities and even to the Chinese state itself.²⁸²

In October 2018, Fujian Jinhua was placed on the U.S. Entity List.²⁸³ According to the indictment of the DOJ in November 2018, China's Fujian Jinhua and Taiwan's UMC had sought Micron's DRAM technology, a type of technology that the Chinese government had previously identified as a "national economic priority."²⁸⁴ In addition, because the United States had a mutual-assistance agreement with Taiwan, the DOJ could obtain evidentiary information from Taiwan investigators.²⁸⁵ UMC pleaded guilty on October 28, 2020, to criminal trade secret theft, accepted a fine of \$60 million USD, and promised to cooperate in the investigation and prosecution of its co-defendant, the Chinese state-owned Fujian Jinhua.²⁸⁶ However, in a tit-for-tat fashion, China imposed a ban on Micron's memory chips in 2023, thus escalating the tech war with the United States.²⁸⁷

B. EXPANDING AND RESHAPING THE BORDERS OF SECRECY

2. DYNAMICS BEYOND LITIGATION

For cross-border semiconductor trade secret misappropriations in the U.S. federal cases examined quantitatively in this Article, there were more defendants from Taiwan than from any other country. Moreover, a substantial number of these Taiwanese defendants were tied to China.²⁸⁸ These results suggest that Taiwan has emerged as a weak link in the U.S. effort to prevent semiconductor trade secret theft. If it hopes to prevent China from stealing American semiconductor trade secrets, the U.S. government, will have to do a better job of formulating legal and policy measures that significantly reduce China's apparent reliance on Taiwanese entities' involvement in the theft. Amidst rising U.S.-China tensions, this Article advocates the interests of "democratic chips" within a geopolitical economic context,

²⁸¹ *Id.*; Li Yan, *Shanghai Seizes US-Made Microchip Equipment Over IPR*, GLOB. TIMES (Apr. 28, 2018, 8:12 AM), <https://perma.cc/JQ92-XLAE>.

²⁸² See Mark Cohen, *Semiconductor Patent Litigation Part 2: Nationalism, Transparency and Rule of Law*, CHINA IPR (July 04, 2018), <https://perma.cc/58JU-PH6A>.

²⁸³ U.S. DEP'T. OF COM., *supra* note 248.

²⁸⁴ *Id.* See U.S. DEPT. OF JUST., *supra* note 235.

²⁸⁵ See AIT-TECRO Mutual Legal Assistance Agreement, U.S. Department of State, March 26, 2002, <https://perma.cc/DZ6J-BGHT>; see also Zhi-qing Yang (楊芝青), *Cong Meiguang Jinhua An Tan Kuajing Sifa Diaocha (從美光晉華案談跨境司法調查) [Micron Case: Cross-border Juridical Investigations]*, COMMERCIAL TIMES (Nov. 22, 2018), <https://view.ctee.com.tw/legal/8154.html>.

²⁸⁶ See *Taiwan Company Pleads Guilty to Trade Secret Theft in Criminal Case Involving PRC State-Owned Company*, U.S. DEPT. OF JUSTICE (Oct. 28, 2020), <https://perma.cc/Z3U8-7HT6>. See also Dorothy Atkins, *United Micro Pleads Guilty, Fined \$60M for Micron IP Theft*, LAW360 (Oct. 28, 2020), <https://perma.cc/X3EE-35NM>.

²⁸⁷ Paul Mozur & John Liu, *With Ban on Micron, China Escalates Microchip Clash With U.S.*, N.Y. TIMES (May 22, 2023), <https://perma.cc/YL8V-XSM8>.

²⁸⁸ See SEMICONDUCTOR INDUSTRY ASSOCIATION, *supra* note 158.

countering China's influence on global democratic systems via technology control through loopholes of international trade mechanism.

In the United States, criminal prosecutions are ineffective against trade secret theft. Most cases fall under Section 1832, which addresses general (domestic) trade secret theft.²⁸⁹ While investigations into economic espionage are a priority for the FBI and DOJ, convictions under Section 1831 of the EEA are rare due to courts' narrow interpretation of the section and insufficient evidence.²⁹⁰ After 2016, the U.S. courts embraced the extraterritorial application of the DTSA insofar as the legislation applies to misappropriation that occurs outside the United States if (1) the infringer is a U.S. entity (including citizens) or (2) "an act in furtherance of" the misappropriation occurred domestically.²⁹¹ Some DTSA-driven cases illustrate that a wide range of conduct can qualify as an "act in furtherance of" misappropriation. For instance, in Micron's U.S. civil litigation, the district court determined that an "act in furtherance of" misappropriation occurred when the defendants sent a delegation of executives to California to attend a job fair and meet with vendors for the purpose of hiring engineers and ordering equipment.²⁹² The court's decision in *Micron* and the liberal scope of the DTSA may simplify a trade secret rightsholder's ability to sue an overseas infringer.

However, the main frustrations for trade secret rightsholders in U.S. courts and Taiwanese courts are jurisdiction disputes,²⁹³ insufficient admissible evidence,²⁹⁴ and the threshold of intent as it relates to alleged trade secret misappropriators' intention to benefit the Chinese government (i.e., the intention to engage in economic espionage).²⁹⁵ Even though Taiwan faces the daily threat of economic espionage, Taiwan did not enact legislation devoted exclusively or primarily to economic espionage regarding China's influence until recently. A no less challenging frustration centers on concerns about inadequate trade secret

²⁸⁹ Kuntz, *supra* note 220, at 907 ("Between 1996 and 2009, well over a hundred trade secret prosecutions were initiated in the United States, but only six of them were under § 1831 of the EEA.")

²⁹⁰ *Id.* at 914-22, 926.

²⁹¹ *Motorola Sol., Inc. v. Hytera Comm'n Corp. Ltd.*, No. 1:17-cv-01973, 2021 WL 6690279 at *17 (N.D. Ill. Mar. 5, 2020). See also Tara Clancy, et al., *Misappropriators Beware: Motorola Court Embraces Extraterritorial Application of the Defend Trade Secrets Act*, JDSUPRA (Mar. 11, 2020), <https://perma.cc/C336-884P>.

²⁹² *United States v. United Microelectronics Corp. et al.*, No. 3:18-cr-00465 (N.D. Cal. Sep. 27, 2018).

²⁹³ *Richtek Tech. Corp. v. UPI Semiconductor Corp.*, No. C 09-05659 WHA, 2011 WL 13152737 (N.D. Cal. Jan. 3, 2011) (dismissing the case for lack of personal jurisdiction). See *TSMC v. SMIC*, No. C-03-5761 MMC, 2004 U.S. Dist. LEXIS 29717.

²⁹⁴ *Nanya v. Innotron*, *supra* note 198; Jia-wen Xie (謝佳雯), Gao Yuandiwen Xingshi Bu Qi su Lianfake Zao Duishou Dawajiao (告袁帝文刑事不起訴聯發科遭對手大挖角) [Yuan Not to Be Prosecuted], UDN (June 18, 2014), <https://perma.cc/DP8S-7ZQ6> (reporting that the prosecutor did not file charges owing to a lack of sufficient admissible evidence) [hereinafter *MediaTek 2013*]. See also Chen LiangRong (陳良榕), Shoudu Kaiting: Yiwei Gongchengshi Jiang Wenjian Chuandao Yunduan, Jingrang Meiguo Kuaguo Gao Liandian (首度開庭：一位工程師將文件傳到雲端，竟讓美國跨國告聯電?) [First Trial: How Did a UMC Engineer Uploading a Doc to the Cloud End up in US Litigation?], COMMONWEALTH (天下雜誌) (Nov. 19, 2018), <https://perma.cc/LP6P-9FMN> (defendants who turn state's evidence are key to the prosecution of many Taiwanese cases; the Micron case demonstrates that, in trade-secret cases, the "state-witness" rule in the Taiwan Trade Secret Law of 2016 has effectively placed the most difficult burden on plaintiffs).

²⁹⁵ *United States v. Lan Lee*, No. CR 06-0424 JW, 2010 U.S. Dist. LEXIS 144642, at *20. See also Kim, *supra* note 26, at 753, 763; Kuntz, *supra* note 220, at 915-22.

protection during the investigation and litigation stages of a trade secret case.²⁹⁶ Litigations may be ineffective measures for trade secret cases and development of trust would have more long-term potential as a solution.

According to the 23 cases examined in Part 5 of the present Article, misappropriation took five major forms: (1) unauthorized copying or conveying of physical documents;²⁹⁷ (2) unauthorized copying or conveying of digital information;²⁹⁸ (3) violation of employment contracts, including confidentiality²⁹⁹ and noncompete agreements therein;³⁰⁰ (4) unlawful accessing and conveying of physical chips;³⁰¹ and (5) violation of third-party agreements (e.g., sales-agency agreements).³⁰² The recent statistics compiled by Lex Machina for its report on 2010–2019 U.S. cases reveal similar challenges: When claims in other practice areas are pled, contracts are at the top, showing up in about 82% of cases, given most employees with access to trade secrets are subject to non-disclosure and other restrictive covenant agreements.³⁰³

As mentioned above, enforcing non-compete agreements is much more straightforward than enforcing trade secret theft laws. In Taiwan, employers in noncompete agreements must offer a departing employee fair compensation of around 50% of the average monthly wage at separation.³⁰⁴ In China, noncompete agreement compensation is typically 30% of the previous 12 months' average salary or the local minimum wage (whichever is higher).³⁰⁵ Noncompete agreements provide an alternative enforcement mechanism when other IP

²⁹⁶ See Part II.

²⁹⁷ Eva Fu, *Taiwan Charges 5 BASF Employees for Selling Trade Secrets to China*, EPOCH TIMES (July 27, 2019), <https://perma.cc/7HAP-YFJW> [hereinafter BASF-TW].

²⁹⁸ Novatek-TW case, *supra* note 194; Taoyuan Difang Fayuan (桃園地方法院) [Taoyuan District Court], Xingshi (刑事) [Criminal Division], 108 Nian Zhi Zhong Fu Min Zi No. 1 Xingshi Panjue (108 年智重附民字第 1 號刑事判決) (2019) (Taiwan) [hereinafter Nanya v. Tsinghua]; United States v. United Microelectronics Corp. et al., No. 3:18-cr-00465 (N.D. Cal. Sep. 27, 2018); Micron-TW, *supra* note 96; Zhihui Caichan Fayuan (智慧財產法院) [IP Court], Xingshi (刑事) [Criminal Division], 107 Xing Zhi Shang Su Zi No. 5 Xingshi Panjue (107 刑智上訴字第 5 號刑事判決) (2018) (Taiwan) 92; *Lan Lee*, No. CR 06-0424 JW, 2010 U.S. Dist. LEXIS 144642, at *2; *O2 Micro Int'l Ltd. v. Monolithic Power Sys., Inc.*, 399 F. Supp. 2d 1064, 1085 (N.D. Cal. 2005); *Liew*, 856 F.3d 585, at 592–93; WIN-TW case, *supra* note 265; HTC case, *supra* note 193; Foxconn v. BYD, *supra* note 201; *O2 Micro Int'l*, 420 F. Supp. 2d at 1085; Taiwan Semiconductor, 2004 U.S. Dist. LEXIS 29717.

²⁹⁹ Lisa Wang, *Ex-TSMC Engineer Indicted for Theft*, TAIPEI TIMES (Apr. 19, 2018), <https://perma.cc/2JAX-YBZ4> [hereinafter TSMC v. CSMC]; WIN-TW case, *supra* note 265; HTC case, *supra* note 193; Richtek Tech., 2011 U.S. Dist. LEXIS 58354 *4; Foxconn v. BYD, *supra* note 201; Taiwan Semiconductor Mfg.Co. v. Semiconductor, 2004 U.S. Dist. LEXIS 29717.

³⁰⁰ See, e.g., Zhihui Caichan Fayuan (智慧財產法院) [IP Court], Minshi (民事) [Civil Division], 104 Min Zan Kang Zi No. 4 Minshi Caiding (104 民暫抗字第 4 號民事裁定) (2015) (Taiwan).

³⁰¹ Criminal Complaint, United States v. Shih et al., No. 2:18-mj-00097-DUTY (C.D. Cal. Jan. 16, 2018).

³⁰² Ultratech, Inc. v. Ensure Nanotech (Beijing), Inc., 108 F. Supp. 3d 816, 820 (N.D. Cal. 2015).

³⁰³ Joshua M. Rychlinski, *Lex Machina Releases New Trade Secret Litigation Report*, CROWELL (Apr. 23, 2020), <https://perma.cc/W6TX-J82S>.

³⁰⁴ Yu & Chung, *supra* note 103.

³⁰⁵ Joyce Wen & Teresa Huang, *Non-competition Practice Series (1) - Issues Related to the Determination of the Validity of Non-competition Agreements (Mainland China)*, LEE, TSAI & PARTNERS (May 2023), <https://perma.cc/ZUZ5-GCQP>.

protections, like patents or trade secret laws, are weaker overseas. Compensating employees during noncompetes could mitigate impact while still allowing key protections.³⁰⁶

3. SHAPING CONSENSUS AMONG THE ACTORS THROUGH VARIOUS MEASURES

The *Micron* case illustrates the point at which trade secrets overlap with nation-states' interests. Many of these trade secrets are far more than innovative private-sector assets; they are assets critical to national security. Thus, entities that illegally export the trade secrets of one country (e.g., the United States) to a hostile rival (e.g., China) pose a clear and present national-security threat. Hence, we see mutual legal assistance between national judicial systems (e.g., the U.S. and Taiwanese systems) designed to prosecute trade secret theft cases swiftly and successfully. In November 2021, UMC promised to make a one-time payment to Micron, and both companies promised to cease engaging each other in legal battles whether domestically or abroad.³⁰⁷ Furthermore, Micron announced that it would be expanding its business relationship with UMC to secure supplies for current and future customers.³⁰⁸ This case illustrates how trade secret disputes can start with the perceived theft of a trade secret but can end, not with a punitive court order, but with collaboration and negotiation between alleged victims, alleged perpetrators, their respective governments, and even third-party nations in order to redefine how these entities can coexist competitively—even aggressively competitively—but in a rules-based, rules-abiding political-economic landscape. The threat of legal action somehow becomes a critical component in creating a more trusting environment.

Studies reveal that suspects in a U.S. economic-espionage case are more likely to flee if they anticipate guilt and a lengthy sentence, possess weak ties to the prosecuting country, or can easily start anew in a foreign country that has no extradition treaty with the United States.³⁰⁹ Establishing a new and reasonably comfortable life in such a country is an appealing alternative to sitting in a U.S. prison cell.³¹⁰ For instance, a Taiwanese defendant might engage in trade secret misappropriation benefiting a Chinese entity, flee to China, whose cultural and linguistic backdrop is highly proximate to that of Taiwan, and thus enjoy an almost seamless and *protected* transition.

China financially backs domestic firms through its “systematic investment” in them. This investment takes the form of state-owned enterprises, state-backed funds, government-policy banks, and private entities with sometimes opaque yet strong ties to the government.³¹¹ In *United States v. Lan Lee*, a challenge lies in proving that financial support from these sources constitutes government or public body action.³¹² Also in the aforementioned case, the plaintiff must demonstrate that such support gives Chinese companies an advantage in

³⁰⁶ Mark A. Cohen et al., *The FTC's War Against US Technology Competition with China*, IAM MEDIA (Jan. 28, 2023), <https://perma.cc/SPL8-65EX>.

³⁰⁷ Wu, *supra* note 251.

³⁰⁸ Micron Tech., Inc., *supra* note 252.

³⁰⁹ Kim, *supra* note 26, at 801.

³¹⁰ *Id.* at 803–04.

³¹¹ *See supra* Part II.

³¹² *Lan Lee*, No. CR 06-0424 JW, 2010 U.S. Dist. LEXIS 144642 at*2, *20.

their attempts to execute trade secret theft.³¹³ Complexity here is a key obstacle to proving these allegations: China may extend preferential treatment through the CCP, state-owned enterprises, the private sector, or many other obscure and difficult-to-trace arrangements.³¹⁴

Enforcing trade secrets after misappropriation has occurred is difficult and costly in China owing to its judiciary's high and defendant-friendly evidentiary requirements. Pre-theft preventive measures are therefore essential and probably far more effective than post-theft litigation. Thus, companies possessing trade secrets should develop and refine written acknowledgement steps supporting the companies' confidentiality policies and should then obtain this acknowledgement from all relevant employees, consultants, subcontractors, and even distant third parties.³¹⁵ This will go far in minimizing the risks of misappropriation and enhancing the trade secret rightsholder's chances of enforcing its rights, even in unfriendly environments like China.³¹⁶ Because the digital world has made theft easier, a trade secret rightsholder—especially well-equipped companies—should conduct an enterprise-wide assessment to develop a more reliable risk-management strategy that includes intensive and constantly updated “cybersecurity” and anti-“IP theft” measures.³¹⁷ Prevention of theft obviates the need for costly, risky, and all-too-frequently unsuccessful litigation.

To safeguard U.S. technology trade secrets, particularly in the area of superconductors, U.S. companies and the U.S. government should continue to develop and refine diverse policy and legislative measures. This is precisely what we have seen in recent years: the Computer Fraud and Abuse Act of 1986 (CFAA),³¹⁸ the Electronic Communications Privacy Act of 1986,³¹⁹ the Federal Information Security Modernization Act of 2014 (FISMA),³²⁰ the National Cybersecurity Protection Act of 2014,³²¹ and the Cybersecurity Act of 2015.³²² Government oversight of foreign investment is managed by and through bodies like the Committee on Foreign Investment in the United States (CFIUS) and legislation like the Foreign Investment and National Security Act of 2007 (FISNA)³²³ and the Foreign Investment Risk Review Modernization Act of 2017 (FIRRMA).³²⁴ Export controls are enforced via the Export Administration Regulations of 1979 (EAR)³²⁵ and the Export Control

³¹³ *Id.*

³¹⁴ Lee, *supra* note 3, at 193.

³¹⁵ *Id.*

³¹⁶ Bai & Da, *supra* note 105, at 365–66.

³¹⁷ Mossburg et al., *supra* note 17, at 111–12.

³¹⁸ Computer Fraud and Abuse Act of 1986, Pub. L. No. 99-474 (1986) (codified at 18 U.S.C. § 1030).

³¹⁹ Electronic Communications Privacy Act of 1986, Pub. L. 99-508 (1986) (codified at 18 U.S.C. § 2510-22).

³²⁰ Federal Information Security Modernization Act of 2014 (FISMA), Pub. L. No. 113-283 (2014) (codified at 44 U.S.C. § 3551).

³²¹ National Cybersecurity Protection Act of 2014, Pub. L. No. 113-282 (2014) (codified at 6 U.S.C. § 148).

³²² Cybersecurity Act of 2015, Pub. L. No. 114-113 (2015) (codified at 66 U.S.C. § 1501).

³²³ Foreign Investment and National Security Act of 2007 (FISNA), Pub. L. No. 110-49 (2007) (codified at 50 U.S.C. app. § 2061).

³²⁴ Foreign Investment Risk Review Modernization Act of 2018 (FIRRMA), Pub. L. No. 115-232, (2018) (codified at 50 U.S.C. § 4565).

³²⁵ Export Administration Act of 1979, Pub. L. No. 96-72, 93 Stat. 503 (1979) (to be codified at 50 U.S.C. app. § 4601).

Reform Act of 2018 (ECRA),³²⁶ the latter of which was spurred by the US–China tech and trade conflict.

Because China's joint-venture policy and IP sharing have led to IP theft and national security concerns over critical technology, the United States and its allies impose tough penalties on firms like Huawei and ZTE that could enable Chinese government to spy or access critical infrastructures.³²⁷ The U.S. Bureau of Industry and Security (BIS) under the ECRA reviews emerging and foundational tech via the Commerce Control List (CCL) and requires that companies with U.S. technology obtain export licenses.³²⁸ The U.S. Department of the Treasury enforces FIRRMA, the function of which is to enhance the U.S. government's scrutiny of foreign investments, especially Chinese acquisitions of U.S. tech firms.³²⁹ BIS's October 7 rules in 2022 changed the EAR's provisions regarding technology linked to specific integrated circuits and supercomputers previously destined for export to China—the aim being to reduce China's ongoing efforts to modernize its military and to fuse it to the country's civil and economic well-being.³³⁰

However, non-tariff measures like export controls could significantly affect global supply chains more than tariffs.³³¹ Specifically, non-tariff measures introduce uncertainty, sometimes to such an extent that reliable suppliers become unreliable.³³² The *Micron* case illustrates this highly undesirable outcome, as a Chinese court's injunction led the United States to place Fujian Jinhua on the restrictive Entity List.³³³ And, to comply with government restrictions, a company must incur costs, delays, and other risks. In the case of semiconductor companies, they must invest considerable resources into management tools that help the companies avoid export losses, prosecution, costly fines, and other penalties.³³⁴ Government restrictions and outright denials, when applied to a targeted company, constitute a powerful tool for safeguarding global semiconductor supply chains. With this tool, governments bar domestic companies from interacting with untrustworthy actors in the global network.

In the case of the United States, the government considers U.S. entities' exchange of controlled tech with non-U.S. entities to be the act of exporting,³³⁵ and some of these U.S.

³²⁶ Export Control Reform Act of 2018, Pub. L. No. 115-232, 132 Stat. 2208 (to be codified at 50 U.S.C. § 4801).

³²⁷ Jim McGregor, *The TSMC and Huawei Announcements Are Not as Linked as You May Think*, EE TIMES (May 22, 2020), <https://perma.cc/R6J6-3GSD>. See also Ana Swanson et al., *U.S. Is Using Taiwan as a Pressure Point in Tech Fight with China*, N.Y. TIMES (May 19, 2020), <https://perma.cc/22CG-4456>; Annabelle Liang, *Canada to Ban China's Huawei and ZTE from its 5G networks*, BBC (May 20, 2022), <https://perma.cc/9FDQ-DXHC>.

³²⁸ CAPRI, *supra* note 126, at 9.

³²⁹ *Id.*

³³⁰ Press Release, Bureau of Industry and Security, U.S. Department of Commerce, Commerce Implements New Export Controls Imposed on Advanced Computing and Semiconductor Manufacturing Items to the People's Republic of China (PRC) (Oct. 7, 2022).

³³¹ See CAPRI, *supra* note 126, at 9 (the non-tariff measures include sanctions, export controls, licensing requirements, restricted entity lists, and blocked acquisitions and investments).

³³² *Id.* at 10.

³³³ See Part (V)(B)(3).

³³⁴ CAPRI, *supra* note 126, at 42–43.

³³⁵ Stuart Anderson, *Has The U.S. Gone Too Far in Restricting Chinese Scientists and Engineers?*, FORBES (June 17, 2019, 12:05 AM EDT), <https://perma.cc/B9RN-PUML>.

companies, when they employ individuals whose country of origin is not on the U.S. government's license-exceptions list, may need an export license.³³⁶ The Operating Committee for Export Control has its critics, however, who bemoan its stultifying limits on the contributions that foreign nationals can make to U.S. work on semiconductors.³³⁷ Criticism can also be leveled at the committee for its stultifying effects on U.S. companies' profits. For example, on May 30, 2019, the U.S. government placed Huawei and its affiliates on a list of restricted entities, thereby effectively barring U.S. tech sales to these entities.³³⁸ Such restrictions harm the profit-making capacity of U.S. tech firms and their business partners, including any company globally that uses American technology.³³⁹ For instance, Dutch firm ASML, a major supplier of advanced semiconductor lithography machines, faces U.S. export bans on its most advanced extreme ultraviolet (EUV) lithography systems due to their incorporation of American technology.³⁴⁰ In addition, a slew of associated global academic, research, manufacturing, transport, and financial institutions may also be indirectly subject to restrictions and thus to reduced progress and profits.

Just as the United States does, Taiwan relies heavily on punitive regulations to combat China's trade secret thefts; however, in Taiwan more than in the United States, sensitive technology still lacks defined legal norms. Established in 2013, criminal penalties in Taiwan target trade secret misuse abroad, corporate crimes, and competition intervention.³⁴¹ Criminal and civil actions aim to deter economic espionage and talent poaching, protecting Taiwan's trade secrets. Some examples include Taiwan's export control-related regulations such as the National Security Law,³⁴² the Trade Law, the Act Governing Relations between the People of the Taiwan Area and the Mainland Area,³⁴³ the National Classified Information Protection Act (國家機密保護法),³⁴⁴ and technology-oriented R&D regulations. And with the rise of "critical," "core key" and "sensitive" technologies, the scope of export controls in Taiwan has expanded, blurring military, law enforcement, and civilian boundaries. Because trade secret theft is very much an international phenomenon, Taiwan has sometimes worked closely with the United States to enhance legal reforms, resource integration, intelligence exchange, and other tools in the war against state-sponsored trade secret theft.

Taiwan's semiconductor multinationals are expected to adjust to these measures, and there is clear evidence that TSMC, UMC, and other Taiwanese firms have struggled to

³³⁶ See 15 C.F.R. Pt. 740, App. Supp. 1 (2022) (the Bureau of Industry and Security in the U.S. Department of Commerce is tasked with granting deemed export licenses but does so with input from the Defense Department, Energy Department, and State Department. The Operating Committee for Export Control meets and approves licenses and performs other tasks); Anderson, *supra* note 335.

³³⁷ Anderson, *supra* note 335.

³³⁸ Raymond Zhong, *Trump's Latest Move Takes Straight Shot at Huawei's Business*, N.Y. TIMES (May 16, 2019), <https://perma.cc/NMZ3-NYKV>.

³³⁹ See e.g., Jenny Leonard et al., *US, Europe Growing Alarmed by China's Rush Into Legacy Chips*, BLOOMBERG (July 31, 2023, 7:14 AM), <https://perma.cc/6TAB-6PDR>.

³⁴⁰ *Id.*

³⁴¹ See Trade Secrets Act, 2020, arts. 131-1 to 13-4 (Taiwan), <https://perma.cc/4V5M-DTC>.

³⁴² National Security Act, 2022 (Taiwan), *supra* note 99.

³⁴³ Act Governing Relations between the People of the Taiwan Area and the Mainland Area, 2022 (Taiwan), *supra* note 100.

³⁴⁴ The Classified National Security Information Protection Act (Taiwan), <https://perma.cc/68DB-5Z2F>.

navigate U.S.–China and Taiwan–China tensions.³⁴⁵ However, as with the United States and Taiwan’s restrictive and punitive tech-oriented measures, which include tariffs and blacklists, concerns for the overall health of global supply chains and the national and global economies are raised. Long-term U.S.–China and Taiwan–China “decoupling” may harm more than help U.S. and Taiwanese semiconductor and similar high-tech industries. This very real risk begs the question: shouldn’t naturally adversarial stakeholders in the United States, Taiwan, and China acknowledge existing problems and differences and then establish a global rules-based economy reliant on common standards, accessible markets, and trust? Skeptics would reply “easier said than done,” but realists and idealists alike can recognize that economic growth shared by as many stakeholder nations as possible is an irresistible outcome.

C. DEMOCRATIC CHIPS: RESTORING TRUST IN THE GLOBAL SUPPLY CHAIN NETWORK

The COVID-19 pandemic intensified semiconductor supply-chain issues, exposing vulnerabilities and national security risks associated with China’s influence. Supply chains that were originally designed for narrowly targeted goals often neglect broader economic resilience, leading to fragilities that threaten national security.³⁴⁶ Western governments are increasingly cognizant that they must ensure vital supply chains can endure national and global emergencies.³⁴⁷ The maintenance of trust is crucial for preserving strong partnerships among supply-chain network actors.³⁴⁸ As shown in this Article, China’s contentious practices related to intellectual property, driven by its authoritarian economic system, present a range of concerns that undermine trust. These concerns include inadequate trade secret protection, enforced technology transfers, foreign investments, and cyber-surveillance measures.³⁴⁹ Consequently, this has given rise to apprehensions and intellectual property disputes for other nations. China’s heavy dependence on imported semiconductors has further fueled related industrial strategies like “Made in China 2025,” leading to an aggressive acquisition of foreign high-tech companies and talent.

As a global major chip manufacturer, TSMC has established its ethical business practices and the Trade Secret Registration and Management System to record and monitor trade secrets vital for the company’s technology leadership, manufacturing excellence, and customer trust.³⁵⁰ Chip designers rely on manufacturers like TSMC, but a global semiconductor shortage pushes countries, including the United States, to expand chip facilities.³⁵¹ In 2022, TSMC began building a 5nm fab facility in Arizona, with U.S. support,

³⁴⁵ See CAPRI, *supra* note 126, at 74–76 (illustrating that the current U.S. export controls on Taiwan under a license exception benefits TSMC, but there could be negative consequences if the U.S. policy changes).

³⁴⁶ Calvert, *supra* note 22.

³⁴⁷ See Jacobs et al., *supra* note 21; Emont & Yap, *supra* note 21.

³⁴⁸ This, however, also raises trade secret concerns, see, e.g., Shin-young Park, *US Pressures Samsung, Chipmakers to Disclose Key Internal Data*, THE KOREAN ECONOMIC DAILY (Sep. 26, 2021, 09:00 GMT), <https://perma.cc/PDS9-UNGY>.

³⁴⁹ Lee, *supra* note 3, at 184.

³⁵⁰ Yu-Chieh Wu, *TSMC Continues to Use Artificial Intelligence (AI) for Trade Secret Management to Sustain Innovation and Strengthen Competitiveness*, TSMC ESG (Jan. 21, 2021), <https://perma.cc/E2DV-J7K9>.

³⁵¹ Jeanne Whalen, *Taiwan Official Calls for Approval of U.S. Computer Chip Subsidies*, WASHINGTON POST (June 28, 2022, 5:52 PM EDT), <https://perma.cc/ZF7X-AHKA>.

aiming to change supply chains to better protect the United States from foreign threats.³⁵² At the same time, the U.S. government announced new restrictions on TSMC's second-largest customer, HiSilicon of China, a subsidiary fully owned by Huawei.³⁵³ Japan and Germany are also aiming for semiconductor self-sufficiency and hope to achieve this aim with TSMC's assistance.³⁵⁴ This is simultaneously a sign of positive trust and geopolitical concerns that TSMC remains a reliable partner for other countries but also risky due to China's influence.

Amid the challenges associated with trade secret cases, Taiwan faces the special challenge of distinguishing genuine partners from external "spies." For example, the self-proclaimed Chinese spy Wang Liqiang provided intelligence on China's interference operations, particularly in Taiwan and Hong Kong.³⁵⁵ Wang alleged he helped Chinese intelligence infiltrate Taiwan's democracy and monitored pro-democracy activists in Hong Kong.³⁵⁶ China's acquisition of high-tech secrets from Taiwanese companies through initially innocuous economic activities like investment and recruitment carried out by a third-party country is a political achievement for China and a threat to Taiwanese national security.³⁵⁷

Mainstream legal discourse in the United States posits that the U.S.'s anti-China tech war, centered around the now-defunct China Initiative, had chilling effects on economic growth, led to needless racial antagonism, and hindered talent exchanges.³⁵⁸ While this perspective is compelling, it frequently blurs distinctions between the PRC, the Chinese people, and ethnic Chinese. Such simplification is not unique to the United States; the CCP's nationalist external propaganda (i.e., foreign publicity, *duiwai xuanchuan*, 对外宣传) likewise assumes a singular "Chinese Ethnicity," which serves China's ambitious political-economic goals by toking Chinese nationalism.³⁵⁹ The bottom line is that China poses a serious threat to the integrity of democracy and international trade around the world. In fact, China's global exercise of "sharp power" is raising concerns around diplomat and political-economic field. For example, Confucius Institutes, once seen as a symbol of soft power, are now viewed as a manifestation of sharp power, transforming benign cultural exchanges into cultural infiltration with malicious intent.³⁶⁰ Recent revelations in Australia and New

³⁵² Swanson et al., *supra* note 327.

³⁵³ *Id.*

³⁵⁴ Ko Fujioka, *Japan Seeks to Produce Cutting-Edge 2-nm Chips as Soon as 2025*, NIKKEI ASIA (June 15, 2022, 01:24 JST), <https://perma.cc/KC2G-LM95>; *Taiwan's TSMC to Build Semiconductor Factory in Germany*, DEUTSCHE WELLE (Aug. 8, 2023), <https://perma.cc/HPU9-P6M4>.

³⁵⁵ Sarah Martin, *Claim of Chinese Spy Plot in Australia 'Deeply Disturbing'*, *Scott Morrison Says*, THE GUARDIAN (Nov. 24, 2019, 22:51 EST), <https://perma.cc/4RDB-C7NN>.

³⁵⁶ *Id.*

³⁵⁷ *Id.* See also Nick McKenzie & Alex Joske, *Recant or Die: Alleged Threat to Self-Confessed Chinese Spy Wang Liqiang*, THE AGE (Jan. 8, 2020, 11:30 PM), <https://perma.cc/BRZ4-DMU8>.

³⁵⁸ See, e.g., MIT Study, *supra* note 27.

³⁵⁹ See, e.g., John M. Friend & Bradley A. Thayer, *The Rise of Han-Centrism and What It Means for International Politics*, 17 *STUD. IN ETHNICITY & NATIONALISM* 91 (2017). See also YAN SUN, *FROM EMPIRE TO NATION STATE: ETHNIC POLITICS IN CHINA* (2020); Wen-Hsuan Tsai, *Enabling China's Voice to Be Heard by the World: Ideas and Operations of the Chinese Communist Party's External Propaganda System*, 64 *PROBS. OF POST-COMMUNISM* 203 (2017).

³⁶⁰ See Naja Bentzen, *The Sharp Power of Knowledge: Foreign Authoritarian Meddling in Academia*, EUR. PARLIAMENTARY RSCH. SERV. (Dec. 2019), <https://perma.cc/J93Z-GKA2>.

Zealand exposed Beijing's use of "local collaborators" for political fundraising and media manipulation.³⁶¹ Academic research over the past decade also highlights China's export of authoritarianism.³⁶² This signifies a shift in how Western countries perceive China, reflecting a heightened awareness of its global impact and a growing wariness of its quest for hegemony, prompting calls for new policies to shield or contain China.

Political scholars Ho-fung Hung and Jieh-min Wu have harnessed Marxism, rent-seeking theory, and global value chain perspectives to analyze China's unique economic development path. Hung argues that China has progressed toward imperialism, mirroring the historical trajectory of capitalist powers.³⁶³ China's capital-exporting rise aligns with the country's efforts to extend its political and military influence in a bid to protect these foreign economic interests. This Article's empirical analysis of trade secret theft involving the three primary stakeholders of Taiwan, the United States, and China echoes Wu's argument that China, as a rent-seeking developing nation, is determined to tap into global supply chains and gain an economic surplus from foreign investments.³⁶⁴ A great deal of rent-seeking occurs when firms seek to accumulate wealth through the inefficient exploitation of government-controlled resources.³⁶⁵ Some Taiwanese entrepreneurs (*Tai shang*, 臺商) engage in rent-seeking behaviors by linking themselves to non-market arrangements in China.³⁶⁶ In essence, the Chinese state weakens Taiwan and gains power over it by exploiting the Taiwanese entrepreneurs' pursuit of unproductive distributions of existing wealth.³⁶⁷ As cross-strait tensions have escalated in recent years, China has adopted initiatives like the "31 Measures" to entice Taiwan back into China's economic orbit.³⁶⁸

Some Taiwanese scholars and civil groups have advocated their government's enactment of technology-export controls and similar regulations like the Sensitive Technology Protection Act (*Mingan Keji Baohu Fa*, 敏感科技保護法). Presently, Taiwan's National Security Act penalizes trade secret theft, but not Taiwanese "business owners" who illegally export crucial state technologies to a hostile "capital-military complex" like China. Taiwan could consider a Foreign Agent Registration Act or a Foreign Influence Transparency Scheme Act, which would enable the Taiwanese government to bring charges

³⁶¹ WU JIEH-MIN, *supra* note 151, at 432.

³⁶² See, e.g., AUTHORITARIANISM GOES GLOBAL: THE CHALLENGE TO DEMOCRACY (Larry Diamond et al., eds., 2016); BRIAN C.H. FONG ET AL., *supra* note 85.

³⁶³ HO-FUNG HUNG, *supra* note 46, at 61 ("China's rise as a capital exporter follows in the footsteps of other capitalist powers in history, which went abroad for economic reasons before finding the necessity to project their political and military power beyond their own sovereign space to protect overseas economic interests.").

³⁶⁴ See Parts IV and V; WU JIEH-MIN, *supra* note 151, at 11, 238–39 (noting that China gains economically by creating systematic rent-seeking structures in global value chains).

³⁶⁵ Sihai Li et al., *Rent-seeking and Firm Value: Chinese Evidence*, 20 BUS. & POL. 239 (2018).

³⁶⁶ See Part V; WU JIEH-MIN, *supra* note 151, at 12; Lee, *supra* note 3, at 185 ("China...uses numerous formal and informal pathways—so-called 'institutional bridging'—to link various public and private entities with one another. With such institutional arrangements pooling gigantic resources to fulfill the country's political and economic objectives, China has threatened the United States' IP-based technological advantage").

³⁶⁷ See "26 Measures", *supra* Part II; Tseng Yen-Fen & Jieh-Min Wu, *Reconfiguring Citizenship and Nationality: Dual Citizenship of Taiwanese Migrants in China*, 15 CITIZENSHIP STUD. 265, 267 (2011); Wu Jieh-min, *State Policy and Guanxi Network Adaptation in China: Local Bureaucratic Rent-Seeking*, 37 ISSUES & STUD. 20 (2001) (arguing that rent-seeking behavior has generated and reinforced personal networks, a significant factor in business success in Chinese societies).

³⁶⁸ See Parts II, IV and V; WU JIEH-MIN, *supra* note 151, at 14–15; Zheng, *supra* note 149.

of economic espionage against Taiwanese entrepreneurs who break export laws.³⁶⁹ Enforcement of Taiwanese laws and policies would require that Taiwanese enterprises fully and transparently disclose their activities with foreign influence which could deter wrongdoing, thus not only restoring network trust but reducing trade secret litigation, as well.

Amid deteriorating US–China ties and Taiwan’s growing role in global supply chains, the landscape of semiconductor trade secret protection is shifting and this development necessitates that the U.S., Taiwanese, and other democratic governments domestically and internationally integrate trade secret protections in order to preserve and strengthen resilient supply chains.³⁷⁰ Private-sector entities, as well, must move beyond post-theft legalistic IP approaches and devise new and improved risk-management strategies that prevent trade secret theft in the first place. A joint report from the Hoover Institution and the Asia Society Center suggests that the United States, Taiwan, and other democratic countries can counter China’s potentially malevolent influence on the global semiconductor supply chain by adopting multilateral export controls, reducing dependence on Chinese tech, and improving the agility of trade rules.³⁷¹ Collaboration with reliable partners guided by sound policies is crucial for US semiconductor leadership.³⁷² C.Y.C. Chu, a law and economics scholar, and his co-authors proposed that the WTO should develop truly “fair” economic guidelines by which companies and governments can successfully cope with the “unfair competition” that has been at the heart of China’s distinctive political economy.³⁷³ In particular, the scholars advocate a “democratic network” for the world’s digital economy and a new E-WTO to deal with cyberspace interventions.³⁷⁴ The path forward is clear, and it cannot rely exclusively on litigations: international trust among established and developing democracies is vital if they are to protect their shared interests and values from the real threat posed by China.

VII. CONCLUSION

China’s ambitious industrial upgrading plans, such as “Made in China 2025,” aim to achieve technological independence and global leadership. However, China’s aggressive state policies have raised IP theft concerns internationally. This Article has presented quantitative and qualitative empirical data shedding light on the increasingly frayed relations between the United States, China, and Taiwan with respect to trade secret theft in the global semiconductor trade network. Examining perspectives from the United States, Taiwan, and

³⁶⁹ Taiwan currently has no legislation like the U.S. Economic Espionage Act, but the island nation does have a general espionage law. Taiwan is also considering draft legislation similar to the U.S. Foreign Agent Registration Act and the Australian Foreign Influence Transparency Scheme.

³⁷⁰ See Kurt Tong, *Now Is the Right Time for a Trade Agreement with Taiwan*, CSIS (May 27, 2020), <https://perma.cc/KX3Z-GF4L> (for example, a bipartisan group of 161 members of Congress sent a letter on Dec. 19, 2020, to the US Trade Representative (USTR) stating that USTR should “work toward beginning negotiations for a bilateral trade agreement with Taiwan.”).

³⁷¹ HOOVER INSTITUTION AND THE ASIA SOCIETY CENTER ON U.S.-CHINA RELATIONS, *SILICON TRIANGLE: THE UNITED STATES, TAIWAN, CHINA, AND GLOBAL SEMICONDUCTOR SECURITY* (Larry Diamond, et al. eds., 2023).

³⁷² *Id.*

³⁷³ C.Y.C. CHU ET AL., *ULTIMATE ECONOMIC CONFLICT BETWEEN CHINA AND DEMOCRATIC COUNTRIES: AN INSTITUTIONAL ANALYSIS* 79 (2022).

³⁷⁴ *Id.* at 180–83.

China reveals nuanced considerations. The U.S. standpoint recognizes the imperative of judicious enforcement measures to prevent unwarranted profiling of Asian researchers and entrepreneurs with Chinese heritage. A delicate equilibrium must be struck to safeguard national security interests effectively. In Taiwan, emphasis is placed on the pivotal role played by various actors in the semiconductor network in fostering global technological collaborations and establishing industrial trust and standards. China has processed legislative reforms on trade secret adjudication, yet concerns remain about enforcement consistency. However, both the United States and Taiwan have relied heavily on post-theft litigation that targets China, a country whose threat lies not so much in other countries' reliance on the Chinese economy as in the authoritarian political-economic system that controls it. The findings point to the inefficiency of the litigation path to protect high-tech industry and the integrity of trade. Thus, democracies around the world should consider strategies beyond litigation to prevent trade secret theft, particularly in the semiconductor sector.

As the empirical findings align with current studies analyzed in the article, China's semiconductor push relies heavily on foreign acquisitions and talent recruitment to rapidly obtain advanced manufacturing capabilities.³⁷⁵ While previous market-driven policies promoted integration into global value chains, China now mandates building self-sufficient supply chains. The forced technology transfers and unfair trading practices associated with this strategy have antagonized Western governments. Fears of China challenging the global order and democratic values have also mounted due to its sharp power influence and human rights issues. Consequently, the United States has targeted Chinese tech companies over national security risks and launched a technology war through export bans and tariffs. As analyzed in the article, extensive litigation and policy measures try to counter Chinese theft but overemphasize post-misappropriation remedies over preventive strategies. While continued vigilance is warranted, solely framing China as a threat obscures the complex commercial realities. Nuanced policy balancing deterrence with international engagement can better uphold trade secret protections.

This Article's proposed geopolitical framework thus becomes even more salient. Multilateral norms guiding technology transfers and recruitment offer a rules-based approach instead of unilateral bans or penalties. Fostering collaboration among rightsholders regionally can make supply chains more resilient to state-backed misappropriation. Ultimately, the degree of alarm over China should align with demonstrable infringements rather than fears of diminished Western influence. Constructive cooperation alongside diligent IP safeguards can sustain trust in global networks against potential disruptors.

³⁷⁵ See WU JIEH-MIN, *supra* note 151 (for example, Wu Jieh-min examines how China was transitioning from a localized governance model of industrial alliances to centralized state control over strategic sectors.); Lee, *supra* note 3; HO-FUNG HUNG, *supra* note 46.

APPENDIX

TABLE 2: CRIMINAL SEMICONDUCTOR CASES CROSS-REFERENCED WITH DATA FROM THE 2021 MIT STUDY ON THE CHINA INITIATIVE.³⁷⁶

YEAR	CASE NAME (DEFENDANT'S NAME)	INCLUDED IN THE 2021 MIT STUDY ON THE CHINA INITIATIVE	INCLUDED IN THE QUANTITATIVE SECTION (PART IV) OF THE PRESENT STUDY	INCLUDED IN THE QUALITATIVE SECTION (PART IV) OF THE PRESENT STUDY
2021	<i>U.S. v. Winsman NG</i> (D: Chi Lung Winsman Ng)	Yes	No. No results were found in the LexisNexis database.	No. Neither the Taiwanese court database nor Taiwanese media yielded any results; and no connection could be established between this case and a Taiwanese defendant.
2018	<i>U.S. v. United Microelectronics Corp. et al.</i> (D: UMC et al.)	Yes	No. No results were found in the LexisNexis database.	Yes. The case was identified through both the Taiwanese court database and Taiwanese media.
2018	<i>U.S. v. Shih et al.</i> (D: Yi-Chi Shih et al.)	Yes	No. This case was not included herein because it did not match any related keywords or caselaw descriptions.	Yes. The case was identified through both the Taiwanese court database and Taiwanese media.
2015	<i>U.S. v. Pang et al.</i> (D: Hao Zhang et al.)	Yes	No. This case was not included herein because it did not match any related keywords or caselaw descriptions.	No. Neither the Taiwanese court database nor Taiwanese media yielded any results; and no connection could be established between this case and a Taiwanese defendant.

³⁷⁶ 2021 MIT Study, *supra* note 27.

TABLE 3: SEMICONDUCTOR TRADE SECRET CASES THAT INVOLVED TAIWAN, CHINA, AND THE U.S.³⁷⁷

Filing	Jurisdiction	Case Name (Criminal or Civil)	Plaintiff (Victim)	Competitors	Status of Litigation
2019-2021	Taiwan District Court & Taiwan High Court	<i>TSMC v. Xue</i> (civil)	<i>TSMC</i>	Wuhan Xinxin Semiconductor Manufacturing Co. (XMC) (China)	Xue was found to have violated a noncompete agreement and was ordered to pay NT \$2.5 million in damages. Xue appealed, but the Taiwan High Court dismissed the appeal and upheld the initial verdict. The case is open for further appeal. ³⁷⁸
2019	U.S. Central District of California	<i>U.S. v. Shih et al.</i> (criminal) *	USA (Cree)	HiWafer (Chengdu GaStone Tech. Co., Ltd.) (China)	Defendants were found guilty of participating in a scheme to illegally export integrated circuits with military applications to China, defrauding a U.S. chipmaker out of its proprietary technology, and lying to U.S.

³⁷⁷ Cases with * are not included in the quantitative research in Part III (“Statistics”) for certain reason but they are noted through the cross-analysis with the cases from Taiwan courts and media.

³⁷⁸ *TSMC v. Xue*, 107 Zhong Lao Su Zi No. 6.

					government officials. ³⁷⁹
2019	Taiwan District Court	<i>BASF-TW</i> (criminal)	BASF TW (German)	Jiangyin Jianghua Micro-electronic Materials Co., Ltd. (China)	Ongoing: 6 BASF employees were charged with trade secret misappropriation and breach of trust. ³⁸⁰
201	Taiwan District Court	<i>Novatek-TW</i> (civil)	Novatek (Taiwan)	Shanghai Viewtrix Technology Co., Ltd. (China)	Ongoing: the court granted injunctive relief against three (out of five) employees and Shanghai Viewtrix regarding improper disclosure of Novatek's trade secrets. ³⁸¹
		<i>Novatek-TW</i> (criminal)	Novatek (Taiwan)	Shanghai Viewtrix Technology Co., Ltd. (China)	Ongoing: the case is currently sealed. ³⁸²
2018	U.S. Northern District of California	<i>United States v. UMC et al.</i> (civil)*	Micron (U.S.)	(1) United Micro-electronics Corp. (UMC) (Taiwan) (2) Fujian Jinhua Integrated Circuit (Fujian)	Micron and UMC, on November 26, 2021, reached a global settlement agreement with a one-time payment made by UMC to Micron, and the

³⁷⁹ United States v. Shih, No. 2:18-cr-00050; Albarazi, *supra* note 262.

³⁸⁰ BASF-TW, *supra* note 297.

³⁸¹ Zhihui Caichan Fayuan (智慧財產法院) [IP Court], Minshi (民事) [Civil Division], 104 Min Ying Su Zi No. 4 Minshi Panjue (107 年度民營訴字第 4 號民事判決) (2019) (Taiwan); Steven Grimes & Gino Cheng, *Taiwanese Prosecutors Indict Four Former Employees Over Suspected Theft of Valuable Virtual Reality Research for Competing PRC Micro-Electronics Manufacturer* (Jan. 21, 2019), <https://perma.cc/3E93-WH5W>.

³⁸² Novatek-TW (criminal), *supra* note 194.

				Jinhua) (China, state-owned)	companies agreed to cease litigating each other. ³⁸³
		<i>United States v. UMC et al.</i> (criminal) *	USA & Micron (U.S.)		UMC pleaded guilty, accepted a fine of \$60 million USD, and agreed to cooperate in the investigation and prosecution of its co-defendant, Fujian Jinhua. ³⁸⁴
2018	Taiwan District Court	<i>TSMC v. CSMC</i> (criminal)	TSMC (Taiwan)	CSMC Technologies Fab2 Co., Ltd. (CSMC) (China)	Ongoing: The engineer was convicted on the charge of criminal trade secret misappropriation and breach of trust. ³⁸⁵
2018	Taiwan District Court	<i>Nanya v. Innotron</i> (criminal)	Nanya Tech. Corp. (Taiwan)	Innotron Memory (China)	An engineer formerly employed at Nanya was acquitted of the criminal charge of trade secret misappropriation owing to insufficient evidence. (Nanya owns technology transferred from Micron.) ³⁸⁶

³⁸³ United States v. United Microelectronics Corp. et al., No. 5:18-cv-06643 (N.D. Cal. Nov. 1, 2018); Wu, *supra* note 95.

³⁸⁴ United States v. United Microelectronics Corp. et al., No. 3:18-cr-00465 (N.D. Cal. July 23, 2021). See U.S. DEP'T OF JUST., *supra* note 235; U.S. DEP'T OF JUST., *supra* note 286; see also Atkins, *supra* note 286.

³⁸⁵ TSMC v. CSMC, *supra* note 299; Xinzhu Difang Fayuan (新竹地方法院) [Xinzhu District Court], Xingshi (刑事) [Criminal Division], 107 Niandu Zhi Su Zi No. 1 Xingshi Panjue (107 年度智訴字第 1 號刑事判決) (2019) (Taiwan).

³⁸⁶ Nanya v. Innotron, *supra* note 198.

2018	Taiwan District Court	<i>Nanya v. Tsinghua</i> (criminal)	Nanya Tech. Corp. (Taiwan)	Tsinghua Unigroup (China, state-owned)	The defendant was convicted and sentenced to a prison term of 1 year 10 months for trade secret theft. The court awarded Nanya NT \$15 billion. The defendant appealed. (Nanya owns technology transferred from Micron.) ³⁸⁷
2017	US Northern District of California	<i>Micron v. UMC</i> (civil)	Micron (U.S.)	(1) UMC (Taiwan) (2) Fujian Jinhua (China, state-owned)	Micron and UMC reached a global settlement agreement, wherein UMC would make a one-time payment to Mircon, and the companies would cease engaging each other in legal battles. ³⁸⁸
2017	Taiwan District Court	<i>Micron-TW</i> (criminal)	Micron (U.S.)	Fujian Jinhua (China, state-owned)	After appealing an initial ruling, UMC was fined NT \$20m (\$719,269 USD), with a two-year probation. ³⁸⁹
2017	Taiwan IP Court	<i>TSMC v. HLMC</i> (criminal)	TSMC (Taiwan)	Shanghai Huali Micro-electronics Corp. (HLMC) (China)	The former employee was convicted and sentenced to a prison term of 1

³⁸⁷ Taoyuan Difang Fayuan (桃園地方法院) [Taoyuan District Court], Xingshi (刑事) [Criminal Division], 108 Nian Zhi Zhong Fu Min Zi No. 1 Xingshi Panjue (108 年智重附民字第 1 號刑事判決) (2019) (Taiwan).

³⁸⁸ Micron Tech., Inc. v. United Microelectronics Corp., No. 3:17-cv-06932 (N.D. Cal. May 2, 2019); Wu, *supra* note 95.

³⁸⁹ Micron-TW, *supra* note 95.

					year and six months, with a four-year probation. ³⁹⁰
2015	Taiwan prosecution	<i>WIN-TW</i> (criminal)	WIN (Taiwan)	Chengdu GaStone Technology Co., Ltd. (China)	Seven employees were charged with trade secret theft and breach of trust; the main defendant fled (wanted). ³⁹¹
2015	US Northern District of California	<i>Ultratech, Inc. v. Ensure NanoTech</i> (Beijing) (civil)	Cambridge NanoTech (US & Taiwan)	Ensure NanoTech (China)	Case settled. ³⁹²
2014	Taiwan IP Court	<i>MediaTek 2014</i> (civil)	MediaTek Inc. (Taiwan)	Digital Infrastructure Ltd. (HongKong)	The court granted a preliminary injunction to stop three former employees from working for the competitor for one year. ³⁹³
2014	US Court of Appeals for the Ninth Circuit	<i>United States v. Liew</i> (criminal)	USA & DuPont (US)	Liew and his company USAPTI (US, acting on behalf of Chinese entities)	The court upheld the 2014 convictions of the defendant on charges that he had violated the Economic Espionage Act relating to theft of trade secrets and their subsequent sale

³⁹⁰ Zhihui Caichan Fayuan (智慧財產法院) [IP Court], Xingshi (刑事) [Criminal Division], 107 Xing Zhi Shang Su Zi No. 5 Xingshi Panjue(107刑智上訴字第 5 號刑事判決) (2018) (Taiwan).

³⁹¹ WIN-TW case, *supra* note 265.

³⁹² *Ultratech, Inc. v. Ensure Nanotech* (Beijing), 3:14-cv-05361 (N.D. Cal. June 5, 2015).

³⁹³ Zhihui Caichan Fayuan (智慧財產法院) [IP Court], Minshi (民事) [Civil Division], 104 Ming Zan Kang Zi No. 4 Minshi Caiding(104民暫抗字第 4 號民事裁定) (2015) (Taiwan).

					to state-owned companies in China. ³⁹⁴
2013	Taiwan District Court	<i>HTC-TW</i> (criminal)	HTC (Taiwan)	Chengdu City Government (China)	The engineer was convicted and sentenced to a prison term of 7 years and 10 months. ³⁹⁵
2013	Taiwan prosecutor	<i>MediaTek 2013</i> (criminal)	MediaTek Inc. (Taiwan)	Spreadtrum Communications, Inc. (China)	Prosecutor did not file charges owing to a lack of sufficient admissible evidence. ³⁹⁶
2011	U.S. Northern District of California	<i>Richtek Tech. Corp. v. uPI Semiconductor Corp.</i> (civil)	Richtek (Taiwan) and Richtek USA (U.S.)	uPI in Taiwan & China	The state Court of Appeals affirmed that a mandatory forum selection clause in an employment agreement is binding on both the employee and the employer. ³⁹⁷
2011	Taiwan Supreme Admin. Court	<i>Suzhou Hejian case</i> (admin.)	Taiwan	Hejian Technology in Suzhou (China)	Taiwan prosecutors indicted UMC's founder Robert Tsao and his deputy John Hsuan on charges of breach of trust and violations of accounting laws, and later were

³⁹⁴ United States v. Liew, 856 F.3d 585 (9th Cir. 2017).

³⁹⁵ Taibei Difang Fayuan (臺北地方法院) [Taipei District Court], Xingshi (刑事) [Criminal Division], 101 Jin Su Zi No. 37 Xingshi Panjue(102 金訴字第 37 號刑事判決) (2013) (Taiwan).

³⁹⁶ MediaTek 2013, *supra* note 294.

³⁹⁷ Richtek USA, Inc. v. UPI Semiconductor Corp., 242 Cal.App.4th 651 (2015).

					acquitted in 2011. ³⁹⁸
2009	U.S. Northern District of California	<i>United States v. Lan Lee</i> (criminal)	USA & NetLogic (U.S.) & TSMC (Taiwan)	Defendants were using victims' information to develop a competing product in China.	(1) The jury rendered a not-guilty verdict on the charges of economic espionage (re. TSMC) and trade secret theft (re. TSMC). (2) Prosecutors did not go to trial on charges of either economic espionage or trade secret theft (re. NetLogic). ³⁹⁹
2006	U.S. Northern District of California	<i>O2 Micro Int'l Ltd. v. Monolithic Power Sys.</i> (civil)	O2 Micro Int'l Ltd. (Taiwan)	Monolithic Power Systems, (U.S. & China), Advanced Semiconductor Mfg. Corp. Ltd. (China) et al.	MPS argued that O2 Micro's transformer was not a trade secret, but the jury found otherwise. The court granted a post-trial motion to vacate the jury's award of \$12 million in unjust enrichment damages for trade-secret misappropriation. ⁴⁰⁰

³⁹⁸ Zuigao Xingzheng Fayuan (最高行政法院) [Supreme Administrative Court], 100 Pan Zi No. 32207 Panjue(100 判字第 2207 號判決) (2011) (Taiwan).

³⁹⁹ *United States v. Lan Lee*, No. 06-0424, 2010 U.S. Dist. LEXIS 144642 (N.D. Cal. May 21, 2010).

⁴⁰⁰ *O2 Micro Int'l Ltd. v. Monolithic Power Sys., Inc.*, 399 F. Supp. 2d 1064 (N.D. Cal. 2005) (granting a judgment as a matter of law under the California UTSA, whereby the jury concluded that Monolithic Power Sys. had not used all of the trade secrets and that there was no reasonable basis to determine the amount of unjust enrichment related to the misappropriation of "Trade Secret 1" because the expert had calculated damages on the basis only of a set of secrets, not individual secrets).

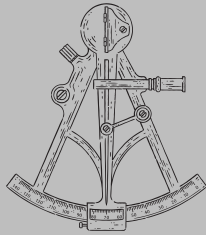
2004	Superior Court of California	TSMC v. SMIC (civil)	TSMC (Taiwan)	SMIC (China)	SMIC entered into a settlement agreement with TSMC. ⁴⁰¹
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⁴⁰¹ Taiwan Semiconductor Mfg.Co. v. Semiconductor Mfg.Int'l Corp., No. C-03-5761 MMC, 2004 U.S. Dist. LEXIS 29717 (N.D. Cal. Apr. 21, 2004).



LIABILITY IN MEDICAL TRAVEL FOR ORGAN DONATION EUTHANASIA

Sukriti Thomas



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“Every human being of adult years and sound mind has a right to determine what shall be done with his own body” - Justice Benjamin Cardozo.”

I. INTRODUCTION

Data from the U.S. Census, Center for Disease Control, the federal court system, and the Commonwealth Fund, a private foundation that promotes access, quality and efficiency in the health-care system, estimated that the inability to pay medical bills will lead 1.7 million American households to declare bankruptcy by the end of 2013.¹ With the rise in hospital costs and the significant impact of COVID-19, the number of Americans who have fallen into debt due to medical bills has since jumped to 137 million.² Medical tourism has allowed patients to benefit from access to cheaper treatments abroad and those that may not be offered in the tourist’s home country.³ Medical tourism has also had a positive effect on the economy of many developing nations, which earn millions by offering cheaper procedures. Many patients travel to other countries to receive treatment that is illegal in their country of residence, including abortions, organ and tissue transplantation, and fertility treatments.⁴ In recent years, there has been an increase in travel for euthanasia and physician-assisted suicide as an organ donor.⁵ In organ donation euthanasia (ODE), rather than from administered euthanasia drugs, patients die after receiving anesthesia and removal of their organs, such as their heart, lungs, or kidneys.⁶

With the increase in medical tourism, there will likely be great debate as to where liability falls when patients travel out of their home country to receive medical treatment.⁷ Although some countries have considered the possibility of criminalizing medical tourism,⁸

* Sukriti Thomas graduated with a Bachelor of Science in Applied Psychology and Global Public Health and a minor in Policy Economics from NYU. With her background, she pursued a J.D. in the hopes of making a positive change in healthcare policies around the country and the globe. Introductory quote is cited at: Charles C. Dunham IV, “Body Property”: *Challenging the Ethical Barriers in Organ Transplantation to Protect Individual Autonomy*, 17 ANNALS HEALTH L. 39, 39 (2008).

¹ Dan Mangan, *Medical Bills Are the Biggest Cause of US Bankruptcies: Study*, CNBC (last updated July 24, 2013, 12:28 PM ET), <https://perma.cc/T3MR-V8MV>.

² Lorie Konish, *137 Million Americans are Struggling with Medical Debt. Here’s What to Know if You Need Some Relief*, CNBC, (last updated Nov. 12, 2019, 10:53 AM EST), <https://perma.cc/GD7X-QVAN>.

³ *Medical Tourism: Travel to Another Country for Medical Care*, CTR. DISEASE CONTROL & PREVENTION (June 1, 2023), <https://perma.cc/N8PR-QDPB>.

⁴ See Glenn Cohen, *Circumvention Medical Tourism and Cutting Edge Medicine: The Case of Mitochondrial Replacement Therapy*, 25 IND. J. GLOB. LEGAL STUD. 439, 439 (2018) (“‘Circumvention Tourism’ is a sub-type of such travel where the motivation is circumventing a domestic prohibition on accessing a medical service.”).

⁵ GLOB. RTS. COMPLIANCE, DO NO HARM: MITIGATING HUMAN RIGHTS RISKS WHEN INTERACTING WITH INTERNATIONAL MEDICAL INSTITUTIONS & PROFESSIONALS IN TRANSPLANTATION MEDICINE 10 (2022).

⁶ Jan Bollen et al., *Organ Donation Euthanasia (ODE): Performing Euthanasia Through Living Organ Donation*, 104 TRANSPLANTATION S298 (2020).

⁷ I. Glenn Cohen, *Medical Tourism for Services Illegal in Patients’ Home Country*, in HANDBOOK ON MEDICAL TOURISM AND PATIENT MOBILITY 350 (Neil Lunt, et al. eds., 2015).

⁸ Richard F. Storrow, *Assisted Reproduction on Treacherous Terrain: The Legal Hazards of Cross-Border Reproductive Travel*, 23 REPROD. BIOMED. ONLINE 538 (2011).

there is no current data to show that the United States is prosecuting patients for doing so. However, questions have arisen about whether liability should be placed on the patient's physician.⁹ Under current U.S. law, most torts cases must be filed where the injury occurs. For medical tourism, patients are therefore required to file a complaint in the destination country after they have returned to their home country.¹⁰ However, patients may be unable to sue international physicians due to difficulty in establishing jurisdiction.¹¹ Even when jurisdiction is met, a court may still dismiss the claim for lack of convenient forum.¹² Moreover, some international countries require patients to sign medical waivers prior to receiving treatment that restrict where any subsequent case will be held, the law that will cover the litigation, and further liability limitation or exclusion clauses thus preventing the patients from any recovery.¹³ Regardless of the outcome of the performing doctor, there remain questions as to whether and to what extent the doctor from the home country should be held liable for knowingly allowing his patient to receive an illegal procedure.

This paper focuses specifically on the potential liability for individuals that choose to travel abroad for organ donation euthanasia. I argue that because organ donation is legal in all fifty U.S. states, patients should be allowed to travel to other countries and consent to be euthanized to preserve their organs for the purpose of donations. Further, doctors from the home country should not be held criminally liable if they are cognizant of their patient's actions.

II. HISTORY AND LEGAL IMPLICATIONS

A. MEDICAL TRAVEL AND LIABILITY

Medical tourism occurs when patients travel to different countries to obtain procedures that are expensive, not offered, or considered illegal in their home country.¹⁴ Many foreign countries have opened private hospitals staffed by Western-trained doctors to cater specifically to these patients for a fraction of the cost they would incur in the United States.¹⁵ Although medical tourism seems like a simple solution to the rising costs of healthcare and the inaccessibility of medical procedures, there is much legal uncertainty surrounding this practice, especially around the choice of law to be applied.

When conflicts of law issues emerge, courts typically follow either the *lex loci delicti* approach—the law of the place of injury, the most “significant relationship test,” or a state

⁹ Scott Schweikart, *Plastic Surgery Overseas: How Much Should a Physician Risk in the Pursuit of Higher-Quality Continuity of Care?*, 20 AMA J. ETHICS 357, 360 (2018). See generally Kerrie S. Howze, *Medical Tourism: Symptom or Cure?*, 41 GA. L. REV. 1013 (2007).

¹⁰ Howze, *supra* note 10, at 1031–32.

¹¹ Rebecca Bennie, *Medical Tourism: A Look at How Medical Outsourcing Can Reshape Health Care*, 49 TEX. INT'L L.J. 583, 592–93 (2014).

¹² Howze, *supra* note 10, at 1032–33.

¹³ Cary D. Steklof, *Medical Tourism and the Legal Impediments to Recovery in Cases of Medical Malpractice*, 9 WASH. U. GLOBAL STUD. L. REV. 721, 728 (2010).

¹⁴ CENTER FOR DISEASE CONTROL AND PREVENTION, *supra* note 4.

¹⁵ Philip Mirrer-Singer, *Medical Malpractice Overseas: The Legal Uncertainty Surrounding Medical Tourism*, 70 L. & CONTEMP. PROBS. 211 (2007).

interest analysis¹⁶—examining which state has the greatest interest in the application of its laws.¹⁷ Professor Glenn Cohen, one of the world's leading experts on the intersection of bioethics and the law, examines in depth the legal implications of medical travel and where liability should fall in such cases.¹⁸ He “argues that whether extraterritorial criminalization is justified . . . depends on the home country’s justification for the domestic prohibition.”¹⁹ Although focusing on the issue of fertility, Cohen states that if the justification is to minimize harm, then home countries should criminalize tourism, as they are not typically motivated to discriminate between harm done domestically or abroad when the harm affects their citizens.²⁰ While there may be many justifications, there is no definite rule or process to determine where liability falls.

B. ORGAN DONATION

In the United States, donating an organ may be accomplished by either execution of a will or signing a form on the back of a driver's license.²¹ While organs can be donated from living persons, the majority are obtained from recently deceased people whose families agreed to donate.²² In 2022, 42,887 organ transplants were performed in the United States, a 3.7% increase from the previous year.²³ However, even with this increase in transplants, there are still many deaths that occur due to the significant lack of organs that are donated each year.²⁴ More specifically, greater than 10,000 individuals die while waiting for an organ, and of those thousands, one-third are typically waiting for a liver or a heart.²⁵

The lack of available organs was a significant issue in the early 1980s, as concern arose over the sale of organs, especially on the black market.²⁶ In 1984, Congress rendered it unlawful to pay organ donors.²⁷ Prohibiting the sale of human organs for transplantation produced a shortage as it took away any potential profit and provided insufficient motivation

¹⁶ The modern choice of law approach was the “territorial” approach, the law of the place of injury. Using this approach, courts apply the law of the state where the injury or where the event between the parties occurs. Luke Meier, *Simplifying Choice of Law Interest Analysis*, 74 OKLA. L. REV. 337, 338 (2023). When doing an interest analysis, however, courts consider the states’ interests in applying their law to a horizontal choice-of-law dispute. *Id.* at 339. Finally, the most significant relationship test balances the following factors: (a) the place where the injury occurred, (b) the place where the conduct causing the injury occurred, (c) the residence of the parties, and (d) the place where the relationship of the parties is centered. RESTATEMENT (SECOND) OF CONFLICT OF L. § 145 (AM. L. INST. 1969).

¹⁷ Mirrer-Singer, *supra* note 16, at 226.

¹⁸ Douglas Mackay, Book Review, 26 KENNEDY INST. ETHICS J. E-1 (2016).

¹⁹ *Id.*

²⁰ *Id.*

²¹ Lisa E. Douglass, *Organ Donation, Procurement and Transplantation: The Process, the Problems, the Law*, 65 UMKC L. REV. 201, 212 (1996).

²² *Id.* at 203.

²³ *2022 Organ Transplants Again Set Annual Records; Organ Donation from Deceased Donors Continues 12-Year Record-Setting Trend*, UNOS NEWS BUREAU (Jan. 10, 2023), <https://perma.cc/C576-AKRR>.

²⁴ *Organ Donation Statistics*, HEALTH RES. & SERVICES ADMIN., <https://perma.cc/WN3H-CVKV> (last visited Apr. 26, 2024).

²⁵ Douglass, *supra* note 22, at 202.

²⁶ Dunham, *supra* note 1, at 43.

²⁷ National Organ Transplant Act, Pub. L. No. 98-507, 98 Stat. 2346 (1984) (codified at 42 U.S.C. § 247(e)).

for organ donation.²⁸ The organ shortage can also be attributed to the lack of property rights in deceased humans.²⁹ Some states have amended rules to prioritize a deceased's expressed wishes regarding organ donations and post-mortem instructions over the wishes of living individuals who have vested rights to the decedent's remains.³⁰ However, there is no statutory punishment for failure to fulfill the deceased's wishes.³¹

C. EUTHANASIA

Euthanasia is legal in Australia, Belgium, Canada, Colombia, Luxembourg, The Netherlands, Spain, Switzerland, and New Zealand.³² In this section, the laws in the United States are compared to New Zealand, exclusively.

1. UNITED STATES

In 1997, the U.S. Supreme Court unanimously ruled that there is no Constitutional right to physician-assisted suicide, and that the states, therefore, have the right to prohibit it.³³ States have typically classified euthanasia and physician-assisted suicide as murder and as morally unethical.³⁴ There has been a rise in public policy concerns that ODE will begin with those with terminal illnesses who wish to die due to severe suffering but then will eventually extend to other individuals as well.³⁵ However, some argue that patients should be able to make their own decisions and that it is more humane to allow a person with a terminal illness to choose to end their suffering.³⁶

There has also been debate as to whether there is a right to euthanasia. Under the social contract theory, the state has no right to interfere with one's decision to end their life if they are elderly and do not owe the state any duty.³⁷ Additionally, there has been debate as to whether euthanasia should be limited to only those who are suffering from terminal illnesses, since non-terminal patients suffering from massive injuries or those inflicted with a wasting disease can be in a more damaging position than those with a terminal illness.³⁸ When determining the extent of one's suffering, one should look at more than just the physical pain; the emotional, existential, and psychological aspects should be considered as well.³⁹ Although these factors may leave the court with a "mixed standard" to apply, the deprivation

²⁸ Dunham, *supra* note 1, at 46.

²⁹ *Id.* at 56.

³⁰ Meredith M. Havekost, *The Waiting Game: How States Can Solve the Organ-Donation Crisis*, 72 VAND. L. REV. 691, 707 (2019).

³¹ *Id.*

³² Yvette Brazier, *What Are Euthanasia and Assisted Suicide?*, MEDICALNEWTODAY (last updated Feb. 15, 2023), <https://perma.cc/NF6T-D6ZC>.

³³ See *Washington v. Glucksberg*, 521 U.S. 702, 735 (1997). See also *Vacco v. Quill*, 521 U.S. 793, 797 (1997).

³⁴ Brazier, *supra* note 33.

³⁵ *Id.*

³⁶ *Id.*

³⁷ John B. Mitchell, *My Father, John Locke, and Assisted Suicide: The Real Constitutional Right*, 3 IND. HEALTH L. REV. 45, 82 (2006).

³⁸ *Id.* at 61.

³⁹ *Id.* at 61–62.

of rights for these patients is so significant that it should outweigh the concerns that courts may have.

In recent years, eight states—Oregon, Hawaii, Washington, Maine, Colorado, New Jersey, California, and Vermont—and Washington D.C. have legalized voluntary euthanasia.⁴⁰ Although the number of Americans who travel abroad for euthanasia procedures continues to remain low (only twenty-one patients from the United States in total), there has been an increase in tourism for patients to end their lives, even for those with nonfatal diseases.⁴¹ The median age for this tourism is 69 years old and nearly 60% of tourists are women.⁴²

2. NEW ZEALAND

Euthanasia and assisted dying (EAD) are controversial and complicated social, ethical, and medical issues, but the procedures have been legal in a few jurisdictions since 2002.⁴³ In New Zealand, a study found that an average of 68.3% of general practitioners support EAD and around 41% think EAD is reasonable for patients with terminal illnesses and intractable pain.⁴⁴ Additionally, there is strong support for patients who make clear and repeated requests to be approved for the procedure.⁴⁵

Many citizens of New Zealand argue that it is a person's right to choose when and how they die.⁴⁶ Euthanasia avoids prolonged and painful deaths, giving patients back the control that their illness has taken away from them and, further, allowing patients to die with dignity.⁴⁷ Conversely, some citizens argue that euthanasia poses a threat to the well-being of society by contradicting and undermining suicide prevention efforts.⁴⁸ Furthermore, those who oppose EAD have a strong belief that pressure is being placed on those with disabilities and mental health issues to obtain this procedure for fear of being a financial, emotional, or care burden to others.⁴⁹ Nevertheless, the New Zealand legislature has enacted an Act that legalizes EAD.⁵⁰

In 2021, the New Zealand government passed the End of Life Choice Act which was seen as “a victory for compassion and kindness.”⁵¹ Through this Act, New Zealand allowed citizens 18 and older with a diagnosis of a six-month or less to live to have medication

⁴⁰ Brazier, *supra* note 33.

⁴¹ Penny Sarchet, *Tourism to Switzerland for Assisted Suicide Is Growing, Often for Nonfatal Diseases*, WASH. POST (September 22, 2014, 6:13 PM EDT), <https://perma.cc/HT6Q-F624>.

⁴² *Id.*

⁴³ Rosemary Frey & Deborah Balmer, *The Views of Aotearoa/New Zealand Adults over 60 Years Regarding the End of Life Choice Act 2019*, 61 J. RELIGION & HEALTH 1605 (2022).

⁴⁴ Jessica Young et al., *The Euthanasia Debate: Synthesising the Evidence on New Zealander's Attitudes*, 14 KŌTUITUI: N.Z. J. SOC. SCIENCES 1, 8, 10 (2018).

⁴⁵ *Id.*

⁴⁶ Hannah Martin, *End of Life Choice Referendum: The Arguments for and Against Legalising Euthanasia*, STUFF (July 27, 2020, 6:38 PM), <https://perma.cc/855E-GARR>.

⁴⁷ *Id.*

⁴⁸ Preeti Jha, *New Zealand Euthanasia: Assisted Dying to Be Legal for Terminally Ill People*, BBC NEWS (Oct. 30, 2020), <https://perma.cc/Q8TD-WJQ2>.

⁴⁹ Martin, *supra* note 47.

⁵⁰ End of Life Choice Act 2019 (N.Z.).

⁵¹ Jha, *supra* note 49.

administered by a medical practitioner to “relieve the person’s suffering by hastening death.”⁵² To obtain this procedure, specific steps and safeguards are in place to ensure people are eligible and making the decision for themselves, without pressure from a third party.⁵³ Patients must also undergo medical assessments to ensure that they fit the criteria to be euthanized.⁵⁴ This Act does not allow patients to be eligible for euthanasia simply on the foundation of old age, mental illness, or disability.⁵⁵

III. ALLOWING EUTHANASIA FOR ORGAN DONATIONS

To address the lack of organ donations around the world, a few countries are turning to using organ donation as a means of euthanizing patients.⁵⁶ Through ODE, a patient would receive anesthesia before any organs are taken out, subsequently causing their death.⁵⁷ ODE allows death to occur in a controlled environment that provides doctors with the chance to preserve organs for other patients.⁵⁸ In the United Kingdom, approximately 5,000 patients per year die in intensive care following decisions to withdraw or withhold life-sustaining treatment.⁵⁹ Many of these patients could donate organs for transplantation.

Although ODE is a possible solution, there are some limitations to this procedure. When blood and oxygen supply is compromised, solid organs quickly develop an injury; thus, if patients experience an extended period of low blood pressure or low oxygen levels before death, or if organ retrieval is not possible promptly after death, there is a significant decline in the fitness of organs for transplantation.⁶⁰ Furthermore, as a patient with a terminal illness prolongs their death, there is a greater opportunity for organs to stop working altogether and, again, be unusable for transplantation. Regardless, ODE may still be the best solution because, without the procedure, there is a greater opportunity for patients to have a long period of low blood pressure or low oxygen levels that would render the organs unusable.⁶¹ Additionally, preservation has developed greatly over the years, improving the viability and, consequently, the number of organs for transplantation.⁶²

Along with maximizing the number of transplants, ODE also allows for non-maleficence and patient autonomy. ODE respects patient autonomy since patients’ wishes of becoming an organ donor are fulfilled without the worry that their organs may not be useable if their organs decline at the same rate or faster than their health declines, or that their organs may

⁵² Frey & Balmer, *supra* note 44, at 1606.

⁵³ *Assisted Dying Service*, MANATŪ HAUORA: MINISTRY OF HEALTH (last updated Apr. 22, 2024), <https://perma.cc/47CR-L4KH>.

⁵⁴ *Id.*

⁵⁵ Jha, *supra* note 49.

⁵⁶ Craig McCulloch, *Canada Leads World in Organ Donations from Euthanasia*, VOA NEWS (Jan. 22, 2023, 3:29 AM), <https://perma.cc/4UUF-42MB>.

⁵⁷ Bollen et al., *supra* note 7.

⁵⁸ Dominic Wilkinson & Julian Savulescu, *Should We Allow Organ Donation Euthanasia? Alternatives for Maximizing the Number and Quality of Organs for Transplantation*, 26 *BIOETHICS* 32, 32 (2012).

⁵⁹ *Id.* at 34.

⁶⁰ *Id.* at 35.

⁶¹ *Id.*

⁶² *Id.* at 35–36.

not be taken out on time post-death.⁶³ More importantly, these actions align with the obligation of physicians not to inflict harm on others because those who undergo ODE are patients to whom it is acceptable to withdraw life-support, and, thus, one may presume that death is not harmful to them.⁶⁴ This process also reduces suffering for the patients compared to the death following the withdrawal of life-saving treatment.⁶⁵

Although there are many positive aspects of ODE, there are still ethical and legal issues with the procedure. ODE may be seen as going against the dead donor rule—which holds that vital organs should be taken only from deceased persons because death only occurs after the organs are removed.⁶⁶ ODE, however, removes vital organs while patients are placed under anesthesia. Issues of informed consent by the donee may also arise, since receiving organs from an ODE may go against some patients' moral or ethical ideals. Some donees, for instance, may view the practice as an offense to human dignity and a loss of respect for human life.⁶⁷ Moreover, negative publicity and public fear of the process could cause many people to refuse to become organ donors, reducing donation rates in the short term.⁶⁸

Regardless of the ethical and legal challenges presented, ODE is becoming a more common practice, as it has a greater positive impact than other procedures. In many countries, the Coronavirus pandemic has also been a key player in the rise of this procedure.⁶⁹ However, since the United States prohibits euthanasia, many patients resort to traveling to other countries to perform this procedure, unaware of any legal liability and implications that may arise through their actions.

IV. LIABILITY AND IMPLICATIONS IN MEDICAL TRAVEL FOR ORGAN DONATION EUTHANASIA

The United States legislature will not sit back and watch their citizens evade a restriction simply by visiting another jurisdiction. Further, the federal government has the authority to criminalize international ODE.⁷⁰ Under international law, “‘jurisdiction over extraterritorial acts committed by a State's own citizen’ is a ‘well-recognized [base] of criminal jurisdiction’” unless the law violates due process.⁷¹ Although the federal government may have jurisdiction over acts that occur overseas, they would likely be unable to ban travel to those countries, even if it satisfies Constitutional requirements, due to political relations⁷²

⁶³ *Id.* at 37.

⁶⁴ *Id.*

⁶⁵ *Id.* at 41.

⁶⁶ Margaret Somerville, *Does It Matter How We Die? Ethical and Legal Issues Raised by Combining Euthanasia and Organ Transplantation*, 86 LINACRE Q. 359, 360–61 (2019).

⁶⁷ *Id.* at 362–63.

⁶⁸ Jan A.M. Bollen et al., *Euthanasia Through Living Organ Donation: Ethical, Legal, and Medical Challenges*, 38 J. HEART & LUNG TRANSPLANTATION 111, 111 (2019).

⁶⁹ See generally Sabrina Tremblay-Huet et al., *The Impact of the COVID-19 Pandemic on Medical Assistance in Dying in Canada and the Relationship of Public Health Laws to Private Understandings of the Legal Order*, 7 J.L. & BIOSCIENCES 1 (2020). See also *Covid-19: Assisted Dying Travel Allowed During Lockdown, Says Hancock*, BBC (Nov. 5, 2020), <https://perma.cc/U4J7-B6BV>.

⁷⁰ Rohith Srinivas, *Exploring the Potential for American Death Tourism*, 13 MICH. ST. U.J. MED. & L. 91, 113–115 (2009); see generally *United States v. Thomas*, 893 F.2d 1066 (9th Cir. 1990).

⁷¹ Srinivas, *supra* note 71, at 116.

⁷² *Id.* at 120.

(i.e. New Zealand being a strong, steadfast partner and friend of the United States and New Zealand being a major non-NATO ally of the United States).⁷³ Thus, there remains a focus on the actions taken by citizens and those who aid and abet them, such as family members, physicians, or friends in foreign countries.

For procedures performed abroad, domestic physicians who participate in the medical tourism process by offering referrals or advice before surgery abroad, or by offering postoperative follow-up care, are increasingly at risk of being liable for surgical malpractice that occurs overseas.⁷⁴ However, the question of whether domestic physicians will be held liable for aiding and abetting their patients in obtaining procedures that are illegal in the home country remains.⁷⁵ This issue has been discussed in the context of abortions performed after intrastate travel and medical tourism, and worry has flooded the medical field.⁷⁶ However, since ODE is a newer topic, there have been minimal conversations about the criminalization of domestic physicians.

Although doctors of the home state or country in the abortion context may be held criminally liable for assisting their patients in receiving the procedure,⁷⁷ domestic physicians should not be held liable for ODE as there is a greater public policy benefit associated with allowance of the procedure. While both abortion and ODE can be seen as “murder” or a promotion that “life is disposable,”⁷⁸ criminalizing the aiding and abetting of abortions helps to create a new generation which will have a positive impact to the United States and its economy as new individuals contribute their skills and resources.⁷⁹ On the other hand, criminalizing the aiding and abetting of ODE has an overall negative effect because there remains a high level of inefficient usage of life-saving treatment and resources for those who have little to no chance of survival. Additionally, the criminalization of ODE prevents the global advancement of organ transplants and causes more lives to be lost each year.

V. CONCLUSION

Although the United States is far from allowing euthanasia and, more specifically, from legalizing ODE, the legislature should not hold domestic physicians liable for their patients traveling to other countries to receive this treatment. ODE allows a patient to die with dignity and live out their life with the least amount of pain. ODE also benefits others, both nationally and internationally, as it provides more organs to be saved promptly and used during organ donation shortages. Overall, ODE has more benefits to the medical community than it has

⁷³ 22 U.S.C. § 2321k (1961).

⁷⁴ Schweikart, *supra* note 10, at 360.

⁷⁵ G. Bosshard et al., *A Role for Doctors in Assisted Dying? An Analysis of Legal Regulations and Medical Professional Positions in Six European Countries*, 34 J. MED. ETHICS 28 (2006).

⁷⁶ Glenn Cohen, et al., *The New Threat to Medical Travel for Abortion*, 0 AM. J. MED. 1 (Dec. 18, 2023).

⁷⁷ *Id.* (describing a Texas ordinance making it a civil offense to knowingly transport anyone within a town or county or provide money to defray the costs of travel).

⁷⁸ *Should Abortion Be Legal?*, PROCON.ORG (last updated June 24, 2022), <https://perma.cc/48LT-93GT>.

⁷⁹ J. Savulescu, Editorial, *Abortion, Embryo Destruction and the Future of Value Argument*, 28 J. MED. ETHICS 133 (2002).

negative impacts, and physicians should not be held liable for simply trying to save more lives.