How Large or Small is the Policy Space? WTO Regime and Industrial Policy

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The paper identifies the need for improvements in policy space for developing and least developed countries under the current world trading system by examining the use of WTO dispute settlement system with descriptive statistics and case studies. The paper shows an asymmetry in the utilization of the dispute settlement system and the consequence of using the system between developed and developing countries. For instance, the paper demonstrates that the United States and some other developed countries use WTO rules effectively, resulting in the defeat of developing countries in disputes. These developing countries are forced to abandon their industrial policy measures. By contrast, the United States and the other developed countries continue to use WTO-inconsistent industrial policies in need without being much effectively challenged. Based on our findings, we suggest what should be done within the practices of the current rules, what can be done to change the current global rules, and what developing countries can still try under the current rules.

Keywords: Industrial Policy, WTO Dispute, Policy Space, WTO SCM Agreement, Subsidies

JEL Classification: F13, F53, K33, K41, O25

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I. Introduction

Since the past decade, renewed interest on industrial policy has been observed by both developed and developing economies (OECD 2013), which reflect partly the disappointing economic performance under the Washington Consensus during the 1980s and 1990s and the effect of the 2008 global financial crisis (Lin and Stiglitz 2013; Lee 2013a; Lee and Mathews 2010). Although industrial policy is often a broad concept, it is traditionally defined, according to early works such as that of Johnson (1982), as sector-specific policies that improve the structure of a domestic industry to enhance the international competitiveness of a country. New more recent literature on the subject includes the works of Cimoli, Dosi, and Stiglitz (2009), as well as those of Lin (2012), Lee (2013b), Lee and Mathews (2013), and Wade (2012). Two most recent works are that of Lin and Stiglitz (2013) as well as a new flagship report by the Organization for Economic Cooperation and Development (OECD 2013) that attempts to suggest new and broader uses of industrial policy to include not only sector-specific (or vertical) interventions but also horizontal ones. Thus, the OECD (2013, p.102) defines industrial policy as "targeted government actions aimed at supporting production transformation that increases productivity, fosters the generation of backward and forward linkages, improves domestic capabilities, and creates more and better jobs."

The revived interest in industrial policy seems to reflect an emerging consensus that all the well-known experiences of successful economic development have not emerged spontaneously. Rather, these experiences have been achieved through strong policies that stimulate modern economic activity and creates a virtuous circle of rising productivity, technological upgrading, and social progress in low-income countries that would typically require assistance through a combination of public investment in infrastructure, human capital, and a set of policy incentives broadly labelled as "industrial policy" (Cornia and Vos 2014). In other words, industrial policy is now to be understood not merely as promoting manufacturing industries, but also promoting modern production and service activities in general (Cornia and Vos 2014). Empirical research, such as those by Aghion, Dewatripont, Du, Harrison, and Legros (2012) and Shin and Lee (2012), verify the positive effect of industrial policy in contrast to earlier literature that found its effect to be insignificant, such as in the work of Beason and Weinstein (1996) or Lee (1996).

One reason for the mixed outcome of industrial policy may be the difficulty of verifying the average positive effect of industrial policy because the effects tend to appear only under certain conditions, depending upon specific contexts (Shin and Lee 2012). Thus, the OECD (2013) concludes that the three basic ingredients for successful industrial policies are investment in skills, access to financing, and adequate infrastructure. In the meantime, industrial policy has been increasingly recognized as not having been pursued and implemented consistently enough for long periods because of external conditions and interference, such as the World Trade Organization (WTO) regime, and the related conflicts of interest at internal and international levels. Several observers argue that WTO rules restrict developing country policy space *de jure*, thereby limiting their development policies (Chang 2003; UNCTAD 2006). However, international interference on industrial policy pursued by national governments may be justified because the effect and consequence of the industrial policy flow of one country affects not only its domestic economy but also the foreign domain. Thus, a number of scholars even argue that industrial policy may not result in gains for the world economy as a whole because additional profits are often made at the expense of foreign competitors (Bhagwati 1988; Grossman and Helpman 1994; Spencer and Brander 1983). This argument would be the basis for WTO rules and regulations that prevent "unfairness" and "market-distorting inefficiency" that could arise from the implementation of industrial policies or protectionism.

Despite this theoretical debate, industrial policy has been attempted in diverse forms throughout the world, specifically to promote renewable energy industries. Today, developed countries seem to use industrial policy more than developing countries do. Particularly during the 2008 financial crisis, many developed countries used industrial policies to bail out companies. However, few such cases have been brought to the WTO for arbitration. By contrast, numerous cases have been raised against former attempts at industrial policy by middle-income countries. This situation raises the concern that possible asymmetries exist in the use (or abuse) of industrial policy between developed and developing countries, under the WTO regime in particular.

Girvan and Cortez (2014) noted that issues of asymmetric power related to WTO governance are particularly reflected in the use of the dispute settlement mechanism (DSM), certainly not with respect to the transparency of the process and the independence of its rulings, but rather because of issues related to access and actual use of remedies (retaliatory measures) against faulty parties that are unable or unwilling to act on

a given ruling. In other words, the possibility of imposing retaliatory measures is in practice limited for developing countries, especially those with smaller markets; in addition, more than half of the disputes are settled during consultations and only a few decisions have been reached and led to countermeasures (Busch and Reinhardt 2003; Girvan and Cortez 2014). For example, bananas are major exports of Ecuador. Although the country won three WTO dispute cases related to this product from 1996 to 2008 against the European Union, the only WTO-authorized option for Ecuador was the implementation of retaliatory measures against the European Union (EU). This option was not beneficial for Ecuador because the EU was one of the major markets for the banana exports of the former (Langlois and Langlois 2007).

Under the WTO regime, governmental policies have to be formulated and implemented in a manner that is non-discriminatory to exporters on the border (MFN: most favored nation) and within the domestic market (NT: national treatment). Moreover, the policy instruments for production subsidies should be generic for all producers regardless of whether they are foreign affiliated or domestic instead of industry specific. In practice, the South seems to use the WTO dispute settlement body (WTO DSB) less, whereas the North vigorously engages in disputes. As of July 5, 2012, 440 cases had been brought to the WTO, 188 of which were initiated by the EU and the United States (US); few small and low-income countries have initiated disputes (Girvan and Cortez 2014). The problem is that the costs of using the system are high and require substantial awareness and knowledge of WTO disciplines, which many developing and least-developed countries lack (Horn, Mavroidis, and Nordström 1999).

In general, the WTO regime seems to restrict the pursuit of industrial policy space and flexibility to achieve policy objectives particularly granted to the developing countries under the previous trade regime (Bora, Lloyd, and Pengestu 2000; Dicaprio and Gallaher 2006; UNCTAD 2006; Wade 2003). The literature on the political economy of industrial policy has described how specific industrial policies are often inconsistent with WTO rules, and how the policies that developed countries previously enjoyed have become prohibited under the WTO regime (Chang 2002; Cimoli, Dosi and Stiglitz 2009; Dicaprio and Gallaher 2006; Wade 2003). In the meantime, Mayer (2009) and Shadlen (2005) argue that some regional integrations and bilateral approaches, such as free trade agreements (FTAs) yet enable developing countries to expand their policy space and market access to a certain degree. However, the enlargement and effec-

tiveness of policy space under the FTA framework is in fact ambiguous as this bilateral framework involves much dependency on political will of the developed countries, rather than strict compliance to the mutually specified and agreed rules (Ahn and Shin 2011; Bown 2005).

This study is motivated by the recognition that the current global rules on trade and industrial policy should be improved so that they will not intensify existing asymmetries and more room should be created for policy intervention by latecomers. In Section II, we examine data from WTO dispute cases to reveal who have been mainly using rules against whom. In Section III, we analyze a set of comparable cases to show that the implementation of the WTO dispute settlement system has been asymmetrical between developing and developed countries. Moreover, developing countries eventually become victims of trade disputes over industrial policy. Section IV elaborates the cases in which industrial policy has been actually used in several countries and discusses how the cases have been treated in WTO systems. Section V examines the rules on Subsidies and Countervailing Measures (SCM) in detail to measure the size of policy spaces and seek possible policy measures under the current rules. Finally, in Section VI, we provide a summary of the current state of industrial policy under WTO rules, and then propose changes to global rules as well as determine possibilities under these rules.

II. Who Makes Claims Against Whom: First Asymmetry

This section aims to identify the main users of the dispute settlement devices of the WTO, specifically, the main complainants and respondents. To address this issue, we have investigated all of the WTO dispute cases filed until 2010 using the information available on the WTO website[1] When a dispute arises, the complainant country or countries submit an official "request for consultations" document that identifies the specific WTO agreements allegedly violated by the respondent country. Mostly, more than one agreement is brought under WTO dispute. Thus, the number of cited agreements is almost double that of unique disputes.

Table 1 shows the trend of disputes by the classified agreement categories according to the method proposed by Leitner and Lester (2011).[2] We found that 419 WTO dispute cases were filed from 1995 to 2010,

[1] http://wto.org/english/tratop_e/dispu_e/dispu_status_e.htm

[2] See Appendix Table 1.

TABLE 1

WTO DISPUTE CASES BY THE AGREEMENTS AT ISSUE

YEAR	95	96	97	98	99	00	01	02	03	04	05	06	07	08	09	10	Total
Number of Unique Cases	25	39	50	41	30	34	23	37	26	19	12	20	13	19	14	17	419
By Agreement Categories	50	71	100	79	56	70	55	86	63	39	25	54	27	46	38	41	900
GATT	24	25	33	24	19	23	19	34	23	16	12	20	9	15	14	15	325
AD	1	3	3	6	8	11	6	7	6	8	4	8	1	5	3	5	85
SCM	0	7	10	11	3	7	4	7	6	6	2	9	5	5	1	3	86
Agriculture	4	5	13	5	6	5	2	7	6	2	1	1	2	2	5	0	66
Safeguards	0	0	2	2	5	3	7	11	1	0	2	2	0	0	1	4	40
WTO	0	0	0	2	0	3	5	6	5	2	1	7	0	2	2	3	38
TBT	8	5	4	4	0	1	3	1	4	0	0	0	1	3	3	1	38
SPS	5	3	3	4	0	2	0	5	6	0	0	0	1	2	3	1	35
Licensing	2	1	13	5	4	0	2	4	1	1	1	0	0	0	0	0	34
TRIPS	0	6	5	4	5	3	1	0	1	0	0	0	1	0	0	2	28
TRIMs	0	5	5	3	1	1	1	2	0	0	1	2	2	0	0	1	24
Protocol of Accession	0	0	0	0	0	0	0	0	0	1	0	3	3	5	6	4	22
GATS	1	3	2	3	1	2	1	0	1	1	0	0	1	3	0	1	20
ATC	1	6	2	1	1	4	0	0	1	0	0	0	0	0	0	0	16
Customs	3	1	0	1	1	3	1	0	1	0	0	1	1	2	0	0	15
DSU	1	1	0	1	1	1	1	0	1	2	1	0	0	0	0	1	11
Origin	0	0	2	1	0	0	0	1	0	0	0	1	0	2	0	0	7
GPA	0	0	3	0	1	0	0	0	0	0	0	0	0	0	0	0	4
Enabling	0	0	0	1	0	1	1	1	0	0	0	0	0	0	0	0	4
Others	2	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	4

Note: The classifications of the agreements at issue are based on the work of Leitner and Lester (2011).

Source: Authors' calculation based on WTO dispute settlement data.

which involved 900 cases on various WTO agreements.[3] The number of cases (900) on disputed agreements was larger than the unique number

[3] This paper focuses on cases filed until 2010 because many cases initiated after that year are either pending or yet been concluded.

TABLE 2
CLASSIFICATION OF WTO DISPUTE CASES
(COMPLAINANT VERSUS RESPONDENT COUNTRIES)

Classification		Number of Cases (Consultation request, %)	
Complainant Country	Respondent Country	WTO Cases (All)	SCM Cases
Developed country	Developed country	171(40.81)	43 (50)
Developed country	Middle-income country	93 (22.20)	22 (25.58)
Middle-income country	Developed country	84 (20.05)	15 (17.44)
Middle-income country	Middle-income country	64 (15.27)	4 (4.65)
Low-income country	Middle-income country	1 (0.24)	-
Developed and middle-income countries together	Developed country	6 (1.43)	2 (2.33)
Sum		419 (100)	86 (100)

Note: Classification of developed, middle-income, and low-income countries is based on the definition provided by the World Bank More details are presented in the Appendix.
Source: Authors' calculation based on statistics on WTO dispute settlement

(419) of dispute cases. Thus, in general, complainants tend to involve the policy measures of the respondent by invoking agreements as much as possible to increase the success rate of the cases.[4] Table 1 also shows that the cases involving the General Agreement on Tariffs and Trade (GATT) are most common, followed by anti-dumping (AD) and Subsidies and Countervailing Measures (SCM), which implies that the GATT provisions are invoked before the more specific agreements. The general GATT/WTO principles touch upon cases such as MFN, NT, trade remedies (AD, SCM, and Safeguard), and more outlined types of provisions (*e.g.*, local content requirements).

Table 2 shows the disputes by developed and developing countries and focuses on SCM cases. The table indicates that first, most complainants in WTO dispute cases are developed and middle-income coun-

[4] However, a discrepancy exists between the invocation of the rules and an actual ruling because the WTO DSB has a distinctive judicial system called "judicial economy" to limit unnecessary invocations in a given case on the actual legal process of WTO rulings.

tries, and a low-income country has filed only one case (Bangladesh requested consultations with India concerning AD measures imposed by India in 2004).[5] Developed countries were complainants in 264 cases (62.29%) and middle-income countries were complainants in 148 cases (35.32%). WTO member countries have no litigation requests against low-income countries because the latter have limited industrial foundation that could threaten developed and middle-income economies.[6]

Developed countries were respondents in 261 cases (62.29%) and developing as well as middle-income countries were respondents in 158 cases (37.71%), similar to the distribution of complainant countries. A total of 40% of cases were between developed countries. These data indicate that most WTO disputes occur between developed countries. A total of 22.2% of cases involved developed countries requesting the investigation of middle-income countries, 20% were cases that involved middle-income countries requesting the investigation of developed countries, and 15% were cases between middle-income countries.

Table 2 also reports data on WTO SCM Agreement dispute cases, which are more directly related to industrial policy. Its distribution is similar to the overall cases. Half of the cases were between developed countries. In a quarter of cases, developed countries requested action from the WTO DSB against middle-income countries. However, only 17.44% of cases were brought by middle-income countries requesting action from the WTO DSB against developed countries, and only 4.65% of cases were between middle-income countries. Thus, developed countries are more active in SCM Agreement cases.

Although middle-income countries seem to be involved in numerous WTO dispute cases, such cases are heavily concentrated among a few large countries, such as Brazil, India, Mexico, and Argentina, as shown in Table 3 and Table 4. Table 3 reports the distribution of respondent countries in all of the WTO dispute cases requested by the developed countries against middle-income countries. In 77% of these cases, the respondent countries are five major middle-income countries: India, China, Argentina, Brazil, and Mexico. These countries are struggling to catch up with developed countries and are in fact competing with the developed countries in a number of industries and services. However, Table 4 shows the distribution of complainant countries in WTO dispute

[5] India: Anti-dumping Measure on Batteries from Bangladesh (DS306).

[6] Another possible reason is that various provisions of Special and Differential Treatment may protect them from any WTO dispute (Bown and Hoekman 2008).

TABLE 3
DISTRIBUTION OF RESPONDENT COUNTRIES IN WTO DISPUTE CASES REQUESTED BY DEVELOPED COUNTRIES AGAINST MIDDLE-INCOME COUNTRIES

Respondent Countries	Number of Cases	Ratio (%)	Cumulative Ratio (%)
India	19	20.43	20.43
China	17	18.28	38.71
Argentina	11	11.83	50.54
Brazil	10	10.75	61.29
Mexico	9	9.68	70.97
Philippines	6	6.45	77.42
Chile	4	4.30	81.72
Indonesia	4	4.30	86.02
Turkey	4	4.30	90.32
Pakistan	2	2.15	92.47
Romania	2	2.15	94.62
Thailand	2	2.15	96.77
Egypt	1	1.08	97.85
Malaysia	1	1.08	98.92
Venezuela	1	1.08	100
Sum	93	100	100

Source: Authors' calculation based on statistics on WTO dispute settlement cases.

cases requested by middle-income countries. Seven major middle-income countries (Brazil, India, Mexico, Argentina, Thailand, Chile, and China[7]) were complainants in two thirds of all cases, which suggest that many middle- and low-income countries barely use the WTO dispute settlement system.[8]

In short, the above indicates asymmetrical distribution of the number of the WTO DSB utilization between the North and the South. One may say that this asymmetry is not surprising, given that the developed countries account for almost two thirds (about 61.2%, according to UNCTAD

[7] Although China joined the WTO only in 2004, the country is an active user of the WTO DSB.

[8] Developing (middle-income and low-income) countries have initiated only few disputes and many have never initiated any, regardless of their positions. Among the 107 WTO developing members (consisting of 79 middle-income and 28 low-income countries), only 26 middle-income and 1 low-income countries have an experience to participate in the WTO dispute as plaintiff; 80 countries have filed none. Only 25 developing members have involved in the WTO disputes as respondent.

TABLE 4

DISTRIBUTION OF COMPLAINANT COUNTRIES IN WTO DISPUTE CASES REQUESTED BY MIDDLE-INCOME COUNTRIES

Complainant Countries	Number of Cases	Ratio (%)	Cumulative Ratio (%)
Brazil	24	16.33	16.33
India	17	11.56	27.89
Mexico	17	11.56	39.46
Argentina	14	9.52	48.98
Thailand	10	6.80	55.78
Chile	9	6.12	61.90
China	7	4.76	66.67
Colombia	5	3.40	70.07
Costa Rica	5	3.40	73.47
Guatemala	5	3.40	76.87
Philippines	5	3.40	80.27
Honduras	4	2.72	82.99
Indonesia	4	2.72	85.71
Panama	4	2.72	88.44
Peru	3	2.04	90.48
Ecuador	2	1.36	91.84
Pakistan	2	1.36	93.20
Turkey	2	1.36	94.56
Antigua and Barbuda, El Salvador, Nicaragua, Sri Lanka, Ukraine, Uruguay, Venezuela, Viet Nam	(each) 1	(each) 0.68	100
Sum	147	100	100

Note: Cases requested by two or more countries jointly are not considered.
Source: Authors' calculation based on statistics on WTO dispute settlement cases.

2013) of the world export over the past 20 years. However, many empirical studies commonly point out that this asymmetry is too much. For example, Bown (2004), Bown and Hoekman (2008), Busch, Reinhardt, and Shaffer (2009) found that this asymmetry indeed exists and appears to be more significant even when other economic, institutional, and power-based factors are controlled.

III. Another Asymmetry in Enforcing Compliance with Dispute Rulings

Although a number of observers praise the WTO dispute settlement system as an effective legal institution for inducing compliance, different perceptions exist because, in practice, counteracting violations of WTO rules is one thing and enforcement of WTO rulings by member countries is another. In other words, inducing compliance through dispute rulings on the matter of industrial policies is a challenging issue that the current WTO system has to resolve (Bown and Pauwelyn 2010; Pauwelyn 2000). Although the retaliation system for non-compliance or delayed compliance looks compelling *de jure*, enforcing WTO rulings on others depends on country-specific factors and political motivations *de facto* (Schwartz and Sykes 2002). More importantly, rule enforcement between the South and the North is asymmetrical and depends upon the extent of economic power and resources. In the following sections, we present examples of such asymmetries to demonstrate how two groups of countries (North and South) respond differently to the rulings of the WTO dispute settlement body.

A. The North as a respondent

a) US−Zeroing cases

If policies are challenged by other WTO member countries and found to be inconsistent with WTO rules, the WTO advises the involved country to abandon or adjust the policy according to the ruling of the organization. The policies are established through regulations or national legal systems and require sufficient time for modification. Thus, the WTO DSB provides defeated countries with reasonable time to implement changes according to WTO rulings. However, if the defeated countries decline to abide by the rulings, retaliation is allowed. Interested countries should claim this retaliation individually. During this long process of legal battles (which raises issues about consultation requests, the WTO rulings from the panel and appellate body, and implementation of the rulings), the damages for the complainant countries remain while the respondent country satisfies the policy goals at least to a certain extent.

The United States (US) actively employs the WTO legal system both offensively and defensively. The "US zeroing"[9] cases (listed in Table 5)

[9] In the context of the WTO case, "zeroing" stands for a specific methodology

TABLE 5

"*US — ZEROING*" DISPUTES FILED BY DEVELOPING COUNTRIES

DS No.	Case Title (Complainant)	Consultation Request Date	Remark (Adoption Date)
DS239	US – Anti-dumping Duties on Silicon Metal from (Brazil)	November 2001	No panel proceeding
DS281	US – Anti-dumping Measures on Cement from (Mexico)	January 2003	No panel proceeding
DS282	US – Anti-dumping Measures on Oil Country Tubular Goods from (Mexico)	February 2003	PR/ABR (November 2005)
DS324	US – Provisional Anti-dumping Measures on Shrimp from (Thailand)	December 2004	No panel Proceeding
DS325	US – Anti-dumping Determinations Regarding Stainless Steel from (Mexico)	January 2005	No panel Proceeding
DS335	US – Anti-dumping Measures on Shrimp from (Ecuador)	November 2005	PR (February 2007)
DS343	US – Measures Relating to Shrimp from (Thailand)	April 2006	PR/ABR (August 2008)
DS344	US – Final Anti-dumping Measures on Stainless Steel from (Mexico)	May 2006	PR/ABR (May 2008)
DS345	US – Customs Bond Directive for Merchandise Subject to Anti-Dumping/Countervailing Duties (India)	June 2006	AB (August 2008)
DS346	US – Anti-dumping Administrative Review on Oil Country Tubular Goods from (Argentina)	June 2006	No panel proceeding
DS382	US – Anti-dumping Administrative Reviews and Other Measures Related to Imports of Certain Orange Juice from (Brazil)	November 2008	PR (June 2011)

(Continued Table 5)

of calculating a general dumping margin which is equal to "(normal value — export price) / export price," for a product in question under which negative individual dumping margins are considered as zero (thus, zeroed) before all individual dumping margins are aggregated. Thus, zeroing has the effect of exaggerating dumping margins.

TABLE 5
(CONTINUED)

DS No.	Case Title (Complainant)	Consultation Request Date	Remark (Adoption Date)
DS383	US – Anti-dumping Measures on Polyethylene Retail Carrier Bags from (Thailand)	November 2008	PR (February 2010)
DS404	US – Anti-dumping Measures on Certain Shrimp from (Vietnam)	February 2010	PR
DS422	US – Anti-dumping Measures on Shrimp and Diamond Sawblades from (China)	February 2011	PR
DS429	US – Anti-dumping Measures on Certain Shrimp from (Vietnam)	February 2012	No panel proceeding

Note: PR: Panel Report is adopted. No panel proceeding: the case is terminated, settled, withdrawn or concluded with the mutually agreed solution with (or without) an official notification, prior to the ruling of WTO panel. ABR: Appellate Body Report is issued and adopted accordingly.
Source: extracted from (Ahn and Messerlin 2014) and reorganized by the author.

are typical examples of defensive-and-delaying cases in which the US government continues to implement regulatory measures for industry protection. After a series of WTO Panel and Appellate Body (AB) rulings, the US is supposed to stop "zeroing" in AD investigations and in administrative reviews. However, all existing AD margins given to firms have been unchanged since the US accepted the WTO ruling that prohibited zeroing in future cases.

Table 5 shows that many developing countries have suffered from zeroing by the US in various protected industries and products, including metals, steels, cement, sawblades, bags, oranges, and shrimp. As political interest groups in the US have long been protecting these products and industries, these dispute cases illustrate that the US is still actively using bilateral protectionist measures on imports from developing countries. We can observe that the products involved in these disputes are major exports of developing countries that used to be the major export products of the US. The US used to be the leader in these relevant industries and in the world export market, but has lost its competitiveness.

In fact, the more problematic issue revealed by the US zeroing case is

that developing countries are forced to bring "remedial cases" to the WTO DSB because the US continues to reject the application of WTO rulings on pre-existing cases directly (until its own regulatory system incorporates the WTO rulings) without a specific WTO ruling for the case from individual challenges. In other words, unlike most other WTO members that modify or eliminate "defective" policy measures overall according to the WTO rulings, the US limits the application of WTO rulings to specific cases in which the dispute arises most of the time (Ahn and Messerlin 2014).

b) US−Gambling case[10]

The gambling case presents a prominent example of how small countries such as Antigua and Barbuda cannot effectively resort to WTO rules and feel powerless when retaliating against large economies such as the US, which is almost 1,500 times larger than the economy of Antigua. The WTO DSB system can be problematic if the system fails to induce compliance with the rulings.

As online gambling companies are located and clustered in countries with friendly licensing regulations such as Canada, Curacao, Gibraltar, and Latin American nations, the industry can be a major source of jobs, particularly for smaller countries. In the US, gambling statistics show that live and online gambling has generated as much as $91 billion per year as of 2006. The US is the one of the largest online gaming markets in the world although online gaming accounts for only 8% to 9% of the entire gaming sector.

In the case filed by Antigua and Barbuda to request a consultation with the US on March 21, 2003 and April 2005, the WTO panel ruling in favor of Antigua was circulated in November 2004. The AB issued and adopted this ruling.

This dispute involved the measures applied by the US central, regional, and local authorities to control the cross-border supply of gambling and betting services. Antigua and Barbuda claimed that the US violated the WTO General Agreement on Trade in Services (GATS) since the US committed to full market access and full national treatment of the cross-border supply (mode 1) of "gambling and betting" services. After the technical legal battle over the interpretation and application of the related GATS articles, the WTO Panel and AB confirmed that the US had made

[10] *United States—Measures Affecting the Cross-Border Supply of Gambling and Betting Services*, WT/DS285/AB/R, adopted 20 April 2005.

specific commitments on gambling and betting services, and three federal laws (the Wire Act, the Travel Act, and the Illegal Gambling Business Act) are inconsistent with the WTO GATS rules.

The WTO gave the US the option of either allowing all Internet gambling or repealing the related US law that prevented Internet gambling services from abroad. At the DSB meeting in May 2005, the US stated its intention to implement the DSB recommendations and indicated that it would need a reasonable period of time to do so. In August 2005, the arbitrator circulated an award to the members and determined that the reasonable period for implementation was 11 months and 2 weeks (that is, from April 20, 2005 to April 3, 2006). However, the US continually refused to comply with the recommendations and rulings of the DSB, specifically Articles 21 (implementation of rulings) and 22 (retaliation) of the DSU, which are subject to Article 25 (arbitration awards). On June 8, 2006, Antigua and Barbuda requested consultations. On March 30, 2007, the panel report was circulated to members. The panel concluded that the US had failed to comply with the recommendations and rulings of the DSB. On December 21, 2007, the decision of the arbitrator was circulated to members.

Instead of bringing its laws in accordance with WTO rules, the US announced in May 2007 that it would withdraw gambling from the services it opened up under a 1994 world trade deal. Under WTO rules, the US then had to offer comparable access in other sectors to interested countries.[11] Antigua and Barbuda won compensation from the US on December 21, 2007, but the amount was significantly less than the original amount sought by the small Caribbean nation. A WTO arbitration panel granted the request of Antigua to levy trade sanctions on US intellectual property, such as by lifting copyright on US-made films and music so that Antiguans can sell these products themselves. This request prompted concern in Washington. The WTO panel said that Antigua was entitled to $21 million a year in compensation from the US for being shut out of the US online gambling market. However, the ruling was only partial relief, which enabled Antigua to establish an Internet gambling industry to replace decreasing tourism revenues, only to find itself shut out of the largest gambling market in the world. The award fell far short of what Antigua had demanded ($3.44 billion in "cross-retaliation").

[11] The WTO allows countries to modify the service sectors covered by the agreement, but only if they compensate their trading partners for lost business opportunities when a sector-specific commitment is changed or withdrawn.

Thus, Antigua was allowed to seek damages outside the original services sector. The US government argued that Antigua was entitled to only $500,000 in compensation (The New York Times 2007).

This trade dispute, which is the lingering frustration of the small complainant country, is still ongoing. After nearly a decade of the US continually disagreeing and refusing to comply with the WTO rulings, the DSB meeting on January 28, 2013 granted Antigua and Barbuda the authority to suspend concessions and obligations to the US with respect to intellectual property rights (IPR). However, some observers are concerned that this retaliation on IPR not only damages the tourism sector of Antigua but also its economy, its reputation (because the country would be considered as a "pirate"), and its investment and innovation environments.

B. The South as respondent: cases in the automotive industry

a) Failure of late entry effort by Indonesia due to the opposition from foreign incumbents

After experiencing two oil shocks during the 1970s, the Indonesian government acknowledged the need for economic structural reform. The government planned to develop manufacturing industries by following the successful example of newly industrialized economies under the national development plan (James and Fujita 1989). Indonesia attempted to specialize in a number of specific industries that require a higher technological level than primary resource-based low-degree skills. However, high-technology heavy industries such as shipbuilding and aircraft manufacturing were not considered as strategic policy objectives because these industries were capital intensive. As the country was relatively abundant in labors, the government decided to develop the car, trailer, car assembly, chemical, chemical product, and machinery industries. Thus, the car industry was selected as one of the national strategic industries. In terms of market structure, such attempts at new entries by locals makes economic sense because it promotes competition and reduces market failure associated with imperfect markets. Moreover, Japanese automotive companies almost monopolized the Indonesian market by having control over almost 90% of it. However, the attempt of Indonesia failed because of strong opposition from foreign incumbents, such as Japanese carmakers.

In the Indonesian automotive case, a series of National Car Programs in the country (such as *The 1993 Program* and *The 1996 National Car*

Program) were subject to disputes that started with consultation requests by the European Community (EC, WT/DS54), Japan (WT/DS55 and WT/DS64), and the United States (US, WT/DS59).[12] The National Car Programs were initiated pursuant to Presidential Instruction No. 2 of Indonesia in February 1996, which aimed for the embryonic development of an indigenous automotive industry by reducing dependency on foreign brand owners and increasing local industrial capacity. National automotive companies were required to use an increasing amount of local materials in their automobiles, starting at 20% at the end of the first year, 40% at the second, and 60% at the end of the third year. PT Timor Putra Nasional (TPN) was the first and only company to satisfy the requirements for obtaining the National Car status granted by the Indonesian government. Unfortunately, PT TPN was unable to produce a car using its own capacity. Thus, Presidential Decree No. 42/1996 was issued to allow PT TPN to form a partnership and import automobiles either in completely knocked down (CKD) or completely built up (CBU) form from South Korea while securing more time to develop its own technology. In seeking foreign firms to produce national cars through technical cooperation, the Indonesian government (PT TPN) chose South Korea (Kia Motors), which agreed to incorporate the technology transfer clause in the outcome of business-to-business negotiations over Japan. Japan did not transfer technology even though it had operated in the Indonesian market for over 20 years. The National Car Program provided significant benefits to PT TPN for the Timor car project through duties and taxes that accounted for over 60% of the showroom price of sedans. The joint venture between Kia and PT TPN to produce the Timor brand of national motor vehicles resulted in disputes, particularly complaints by local firms controlled by other foreign (such as Japanese and the United States) companies that were the market incumbents excluded from the government incentives.

The EU, Japan, and the US alleged that the exemption from customs duties and luxury taxes on imports of "national vehicles" and the components thereof as well as related measures violated the obligations of Indonesia under the GATT (MFN and NT), SCM Agreement (specific subsidies), TRIMs (local content requirement), and TRIPs (NT with respect to the use of trademarks).

WTO DSB decided that a single panel would examine the disputes

[12] *Indonesia—Certain Measures Affecting the Automobile Industry*, WT/DS54/R; WT/DS55/R, WT/DS59/R; WT/DS64/R, adopted July 1998.

reported by the three developed countries. The panel found that Indonesia violated the NT and MFN GATT principles regarding sales tax benefits and customs duty exemptions, the local content requirement (Article 2 of the TRIMs Agreement), and significant price undercutting in Articles 5(c) and 6.3(c) of the SCM Agreement articles under the National Car Program.

The panel report was adopted on July 23, 1998, and Indonesia followed the WTO DSB recommendations within a reasonable period of implementation (12 months). Exactly one year later, in June 1999, Indonesia informed the WTO DSB that it had removed the 1996 National Car Program by substituting a new automotive policy (the 1999 Automotive Policy), which effectively implemented the recommendations pursuant to the WTO rulings.

As soon as the National Car Program was removed, the imports from Japan, and now along with the EU, and the US encroached on the Indonesian automobile market. Research and development efforts conducted by the National Agency for Technological Research on automotive products could not be used or remained as prototypes, including the development of machinery and car parts made of eco-friendly materials. The motorcycle industry under PT TPN ceased operating immediately. Thus, the domestic motorcycle manufacturing industry, including PT Kanzen Motor Indonesia, has remained stagnant until today.

b) The case of Indian automobiles with local contents and trade balancing requirements

An automobile dispute in India concerns indigenization (that is, use of local content) and trade balancing requirements imposed by the government on the automotive sector. These requirements were in accordance with long-standing import restrictions on a wide range of products, including passenger cars, car chassis, and car bodies.[13] One

[13] A government policy called License Raj (Permit Raj – import controls) was initiated by the first prime minister of India, Jawaharlal Nehru, to strengthen government control on the manufacturing sectors and ensure policy sovereignty over national economic development. This industrial policy was implemented for approximately 40 years (between 1947 and 1990) until a huge trade deficit of approximately $1.2 billion was incurred during the Sixth Plan (1980 to 1985) and $2.2 billion during the Seventh Plan (1985 to 1990). This turn of events, combined with a shortage of foreign exchange, led to a serious BOP crisis. India requested a $7 billion loan from the International Monetary Fund, which required market liberalization. As a result of liberalization, the industrial licensing policy was abolished in 1991.

aspect of the Indian import licensing regime was that licenses were used as incentives for companies to comply with indigenization and trade balancing requirements.

Public Notice No. 60 was initiated by the Indian Ministry of Commerce on December 12, 1997. The law states that companies that obtain import licenses for CKD or semi-knocked down (SKD) kits must sign a memorandum of understanding with the government, which requires companies to achieve a pre-determined percentage of local content ("indigenization requirements") and ensure that the value of their exports was equal to the value of their imports ("trade balancing requirements"), such that cost, insurance, and freight import values of licensed goods (CKD + SKD kits + components) should be equal to freight-on-board values of exported cars and auto components.

The Indian government argued that such import restrictions were imposed because of the balance of payments (BOP) problem of the country. India referred to GATT Article XVIII B, which stipulated exceptions in import restriction measures by developing countries with BOP problems. However, the EC and the US claimed that the local content and trade balancing requirements violated GATT Article III: 4 (National Treatment). This disagreement was subjected to WTO dispute settlement.[14] A panel was established pursuant to a request by the US on November 18, 1997, and the panel and AB reports in that case were adopted on September 22, 1999. The final outcome was an order that all of the import restrictions by India, including the licensing scheme for cars, chassis, and bodies, were to be eliminated by April 1, 2001. Separately, six other countries and India reached a mutually agreed solution, under which India agreed to phase out these restrictions. As India failed to provide coherent defense with any evidence of its BOP problem, the WTO panel ruled in favor of the EC and the US. In a letter dated November 6, 2002, India informed the DSB that it had issued new Public Notices to withdraw the indigenization and trade balancing requirements stipulated in Public Notice 60.

[14] I*ndia—Quantitative Restrictions on Imports of Agricultural, Textile and Industrial Products*, a complaint filed by the United States (WT/DS90/AB/R, adopted in November 1999).

IV. Industrial Policy Practices under the WTO and a Need for New Rules

As the solar panel industry is a renewable industry with environmental impact, promoting its development may be justified based on environmental factors. However, given its implications for international competitiveness and the possibility of an escalating battle on subsidies among countries, internationally agreed guidelines are necessary to control the situation and prevent issues that would not be optimal from a global perspective. We elaborate on how this battle started and evolved internationally. Numerous cases of bailouts during the financial crisis in developed countries require the establishment of certain guidelines, given that some bailouts may be justified based on the idea that business failure was not caused by the firm itself, but by transitory and global or external factors beyond the control of the company. This section discusses such cases.[15]

A. Case 1: Solar panels—need for a new rule to prevent global inefficiency

Developed countries and a number of large developing countries, such as China, Brazil, and India, have tendency to institute industrial policies in high-tech industries since these countries perceive the industries with potential and expectation on spill-over effects of externalities and economic benefits from related sectors. The industrial policies related to solar panel industry may be a good example.

The global market for solar panels grew rapidly from US$ 2.5 billion in 2000 to US$ 79.7 billion in 2012 (Pernick, Wilder, and Winnie 2013). In order to boost for job creation and green growth in the economy, right after the global financial crisis in 2008 the US government planned to invest in the solar panel industry, in which basically a manufacturing industry of core equipment for solar photovoltaics is involved. In this industry, Solyndra was a private company which received various forms of financial support by the government. For instance, this firm received a US$ 535-million loan guarantee under the Loan Guarantee Program of the Department of Energy in September 2009, which was financed through the Federal Financing Bank.[16] The loan interest rate

[15] See Section V in regards to the WTO rules, especially the WTO SCM rules referred in this section.

was 1.025% per quarter, which was extremely low, accounting for only a third or a fourth of the interest rate for other government-supported projects.[17] Furthermore, the California state government reduced the sales tax of Solyndra through Sales and Use Tax exclusion in 2010, which amounted to US$ 25.1 million. However, in spite of such favorable supports, Solyndra went bankrupt in September 2011. The government is now expected to recover at most US$ 142.8 million of the loan.

Behind of the failure of Solyndra project, China as a newcomer in the industry equipped with price competitiveness, and outperformed the US, Japan, and the EU (especially Germany) in the solar panel market. Due to the competition seemingly driven by Chinese firms, the price of solar panels dropped by a great deal accordingly as the industry grew fast. For example, the price of a Chinese crystalline solar panel decreased from €2.83 per peak watt in the first quarter of 2008 to €0.46 per peak watt in the second quarter of 2013.[18] And China increased its market share from 8% in 2008 to 55% in the last quarter of 2010. Consequently, the US including the Solyndra project had to face the loss of market share decreasing about 20% during the period (Baldwin 2011). In response, the US government (the U.S. Department of Commerce: DOC) counteracted by charging both Anti-dumping (AD) duties and Countervailing Duties (CVD) of 31% to 250% on Chinese solar panels in May 2012. The U.S Department of Commerce claimed that Chinese solar panel manufacturers received the WTO-inconsistent subsidies from the Chinese government and engaged in unfair practices, namely dumping sales. The EU also initiated anti-dumping investigations from September 2012 and imposed provisional anti-dumping tariffs (11.8% to 47.6%) on Chinese solar panels in June 2013.[19] On May 25, 2012, China requested consultation with the US under the WTO DSB to rebut the US' claim and to respond to unilateral measures on Chinese solar panels.[20] In response to the EU's remedial action, China re-

[16] Office of Inspector General (2012), Audit Report: Consultation on Solyndra Loan Guarantee was Rushed, US Department of the Treasury. Retrieved from http://www.treasury.gov/about/organizational-structure/ig/Agency%20Documents/OIG%20Audit%20Report%20%20-%20Consultation%20on%20Solyndra%20Loan%20Guarantee%20Was%20Rushed.pdf.

[17] http://abcnews.go.com/Blotter/solyndra-lowest-interest-rate/story?id=14460246#.Uc1H23_08s8

[18] http://kr.enfsolar.com/cell-panel-prices

[19] http://trade.ec.europa.eu/doclib/press/index.cfm?id=909

[20] *United States—Countervailing Duty Measures on Certain Products from China*, WT/DS437/1, 30 May 2012. In the consultation report, China particularly

quested consultations with the EU member States, in particular but not limited to, Greece and Italy, under the WTO DSB on November 5 2012 to investigate the subsidies subject to domestic content restrictions and feed-in tariff program related to the renewable energy generation sector.[21] In the consultation report, China argued that these types of government measures and industrial policies rather restricted Chinese exports. According to the China's investigation report, it finds that the provided by the Italian and Greek governments discriminative subsidies to the renewable energy generation sector of the EU or European Economic Area, which produces solar panels are inconsistent both "as such" (*de jure*) and as applied under the SCM and TRIMs agreement.[22]

B. Case 2: Bailout during the crisis

a) The case in the North: the US automobile bailout and "Buy American" policy

General Motors (GM), Chrysler, and their financial subsidiaries became fragile and unstable after the global financial crisis in 2008. In December 2008, the US government started to provide support through emergency loans to these companies. The US Department of the Treasury provided these companies loan and equity amounting to almost US$ 81 billion under the Automotive Industry Financing Program. As a result of this assistance, the US automobile industry rebounded since 2009 and US auto jobs increased by 341,000 during the period from June 2009 to July 2013.[23]

The US Treasury provided GM with US$ 51 billion in 2008 and 2009. GM received US$ 6.7 billion as pure loan with only 7% interest rate, which was highly beneficial for the car manufacturer because GM bonds at the time were below junk level. The remaining support was in terms of buying 60.8% of GM equity.[24] The US Treasury recovered US$ 35.4

rebutted the U.S. Department of Commerce's use of the term "public bodies," as well as its application of specificity and facts available, and its calculations of antidumping and countervailing duties.

[21] *European Union and certain Member States - Certain Measures Affecting the Renewable Energy Generation Sector*, WT/DS452/1

[22] http://news.xinhuanet.com/english/business/2012-11/05/c_131952482.htm

[23] TARP Programs; Program Status of Auto Industry, US Department of the Treasury. Available at: www.treasury.gov/initiatives/financial-stability/TARP-Programs/automotive-programs/Pages/purpose.aspx

[24] Forbes (2010). Available at: http://www.forbes.com/2010/04/23/general-motors-economy-bailout-opinions-columnists-shikha-dalmia.html

billion from GM through repayments, sales of stock, dividends, interest, and other incomes, but GM still owed the US government US$ 15.6 billion as of August 31, 2013. The US Department of the Treasury still holds 211 million shares of GM common stock and said that the Treasury would exit its remaining GM investment by early 2014 depending on market conditions. The Treasury also provided Chrysler and Chrysler Financial with US$ 12.4 billion for stabilization. The government recovered US$ 11.1 billion, but lost US$ 1.3 billion. In addition, the government provided Ally Financial, a GM subsidiary, with US$ 17.2 billion, but the government is expected to recover only US$ 12.1 billion until November 30, 2013 (Canis and Webel 2013; Reyes 2013).

These forms of US government support could be considered as financial contribution because the Treasury provided a low-interest loan to GM and revived the auto company. The support could also be considered as specific subsidy because it was granted to specific firms. Furthermore, such financial support could have adverse effects on the exportation of products made by foreign car manufacturers. Without government support, GM and Chrysler would have failed and foreign auto companies could have grown rapidly. However, no country except China raised its voice over these cases. In December 2011, the Chinese government imposed anti-dumping and anti-subsidy duties on imported cars made by GM, Chrysler, and other foreign firms in the US, arguing that US-made vehicles benefited from subsidies and dumping, and that these companies had caused material injury to the Chinese auto industry. On July 5, 2012, the US requested consultations with China with regard to this anti-dumping duty. A panel was established on October 23, 2012 and the dispute settlement process is ongoing.

The Buy American Provision is an attempt of the US government to support its domestic economy. The US government included a Buy American Provision in the American Recovery and Reinvestment Act of 2009 (ARRA). According to this Provision, the US government should use the budget for projects that use only American-made iron, steel, and manufactured goods to construct public buildings and infrastructure. The provision was applied to the projects that use the ARRA budget amounting to US$ 275 billion and ended in September 2011. However, the Obama administration included the Buy American clause to legislate the American Jobs Act in September 2011 (The White House 2011). The law is similar to the Buy American Provision (government procurement) and was applied to the projects that use the government budget worth US$ 80 billion.

The policy discriminates against foreign firms by restricting the bidding for public infrastructure. However, the US government argued that this policy does not violate the WTO regulation on the following grounds. The US federal and 37 state governments joined the WTO Government Procurement Agreement (GPA), but the WTO GPA cannot be applied to the procurement of state governments if the funds are not from the federal government. Thus, when state governments use the budget according to Buy American Provision, this kind of procurement does not violate the WTO GPA under the following conditions: if the state government did not join the WTO GPA, the state government surrendered the funds to municipal governments that did not participate in the WTO GPA, or the funds did not come from the federal government. In the meantime, the Canadian government argued that the Buy American Provision impeded the economic recovery of Canada and, in June 2009, retaliated against the US by restricting imports and bidding of US firms for Canadian city contracts. Thereafter, the two countries compromised and agreed in February 2010 after negotiating over ARRA procurement access, resulting in opening the ARRA contracts tendered from seven federal programs in the 37 states that participate in the AGP for Canadian firms. In return, Canada's provinces and territories have to become signatories to the AGP (Fergusson 2008).

b) The case in the emerging country: Republic of Korea's bailouts for semiconductor industry[25]

Republic of Korea was severely affected by the Asian financial crisis in 1997. To recover from the crisis, the Korean government implemented various industrial policies.[26] During the crisis, the Korean government helped many firms through provisions of financial supports in direct and indirect ways, including several bailout plans. The semiconductor industry is one of its major beneficiaries. Hynix Inc. (originally a branch of Hyundai Electronics), the second largest semiconductor manufacturer of the country and an emerging exporter to the world market at the time, also faced serious financial trouble from 2000 to 2001 even

[25] *United States—Countervailing Duty Investigation on Dynamic Random Access Memory Semiconductors* (DRAMS) from Korea (WT/DS296/AB/R) adopted 20 July 2005; *European Communities—Countervailing Measures on Dynamic Random Access Memory Chips from Korea* (WT/DS299/AB/R) adopted 3 August 2005.

[26] As of today, Korea is recognized as a developed country, however, in the earlier stage of the WTO period 1995 to 1997 the country was a middle-income country based on the income and its self-claim in the WTO.

though its export share was increased especially in the US market during the period.[27]

By the time of the crisis in the Hynix, to add insult injury, the EC and the US imposed countervailing duties on Hynix's semiconductor products at 34.8% and 44.29%, respectively, in August 11 2003. The EC and the US justified their unilateral measures by claiming that unfair subsidies were provided for the Korea's semiconductor industry and specifically to an incompetent firm in the form of financial aid. In response, the Korean government requested consultation on November 2003 with the two countries under the WTO DSB to resolve matters over the EC and the US, protesting that the two countries' counteractions were inconsistently imposed under the WTO SCM rule on November 2003.

In the case of US's CVDs on DRAM from Korea (DS296), the WTO panel ruled that US Department of Commerce (DOC)'s finding of financial contribution and conferred benefit to Hynix through "entrust and direct" by the Korean Government lacks sufficient evidence to be condemned; thus, the DOC's finding of benefit conferred lost the ground for benchmarks for the determination. The Panel also found that the ITC did not properly ensure that injury caused by one known factor other than the allegedly subsidized imports was not attributed to the allegedly subsidized imports. On the other hands, the panel supported the findings of the DOC concerning specificity, to the extent that the Government of Korea's activity ended up focusing on Hynix.

In short, the panel judged that the evidence presented by the US did not have sufficient probative power as the DOC presented evidence in some ways that cannot support generalized findings of its investigations. Therefore, the countervailing duty was found to be inconsistent with the WTO SCM agreement. However, the WTO AB reversed the panel's legal interpretation and judgment by criticizing the panel for considering the evidence in isolation and not in its totality. The AB reviewed the panel's rulings and determined that based on its own legal analysis it could not arrive at a conclusion, based on its own analysis, as to whether the US DOC's subsidy determination was consistent.

Over the EC's CVDs on semiconductor products from Korea (DS299), there are mainly four substantial issues. The first was syndicated loan.

[27] Financial difficulties were caused mainly from three reasons: i) the aftermath of the crisis, ii) a huge debt given while undertaking M&A with LG Semiconductor, and iii) independence from Hyundai Electronics.

To solve the short-term liquidity problem of Hynix in 2000, 10 banks, including Korea Development Bank (KDB), Korea Exchange Bank, and Korea First Bank provided the semiconductor firm with a loan amounting to 800 billion Korean won. In fact, these banks had already reached their lending limits to Hynix, which had been arranged by the Korean government; thus, they could not provide the loan in accordance with the regulation. However, the Financial Supervisory Commission allowed the banks to exceed the ceiling for the sake of "industrial development and stability of national life," such that these three banks could participate in the syndicated loan. The EC argued that the participation of the three banks was "*directed*" by the Korean government and the syndicated loan was a financial contribution of the government. The WTO panel accepted the arguments of the EC.

The second was the guarantee of Hynix documents against acceptance (D/A). The Korean government compelled the Korea Export Insurance Corporation (KEIC) to guarantee Hynix D/A, which a main—transaction bank of Hynix bought until June 30, 2001. The EC argued that this action was a financial contribution under the SCM agreement. The panel accepted this argument because even KEIC questioned the guarantee at that time, and no party argued that other private firms would have provided the guarantee at their commercial logic because of the low credit rating of Hynix at that time.

The third was the debenture program of KDB. The bank formulated the rule in June 2001 under which KDB bought 80% of the debentures of the specific firm if most of them mature at a specific time at once. The EC argued that this program was a financial contribution under the SCM agreement. The panel accepted the argument because without this program, no private financial firm would have bought the debentures of Hynix because of its low credit status.

The last issue was the restructuring program in October 2001. Six related banks (including KDB) provided 650 billion Korean won as a new loan to the company in October 2001. The EC argued that this loan was provided through an indirect order of the Korean government. The panel accepted this argument because KDB was a public institution and the Korean government had significant shares in the three other banks and a close relationship with one other bank. The panel accepted the EC argument that, without the influence of the Korean government, no new loan would have been extended to Hynix because of its low credit status.

V. Policy Space under the WTO Regime: WTO SCM Standard[28]

Member countries of the WTO should comply with the standards set by the organization, which are embodied in the principle that national governments should not have any room to maneuver under the WTO regime. This section examines the WTO SCM standard, focusing on various subsidies including R&D, to determine the size of policy spaces for the latecomers in their effort to achieve industrial development.

Under the WTO system, R&D subsidies by government entities were permitted as a "non-actionable subsidy"; that is, allowable subsidies under the SCM agreement although this provision on the non-actionable subsidies was terminated as of January 2000 based on Article 31 of the SCM agreement. The continuation of the provision reached an impasse because of the absence of the negotiation for its extension.

Figure 1 illustrates how the subsidy is defined and classified in the SCM agreement. Article 1 of the SCM agreement defines subsidy as being (a) a financial contribution by a government or any public body within the territory of a member country and (b) a form of support that confers a benefit.[29] The forms of "financial contribution by a government" include (i) direct or potential direct transfers of funds (such as grants, loans, equity infusion, loan guarantees), (ii) foregone government revenue that is otherwise due, (iii) provision of goods and services, or (iv) any form of income or price support.[30] However, not all financial contributions by a government are subsidies and a benefit should be conferred from the financial contributions to a recipient. To demonstrate a conferred benefit, a government has to prove that the recipient obtained an advantage that could not be obtained in the marketplace. For instance, if a government provides goods and services at market prices, no benefit is conferred; therefore, no subsidy exists (Sykes 2005). In considering market prices, no clear answer exists for the question as to which market should be used as a benchmark.

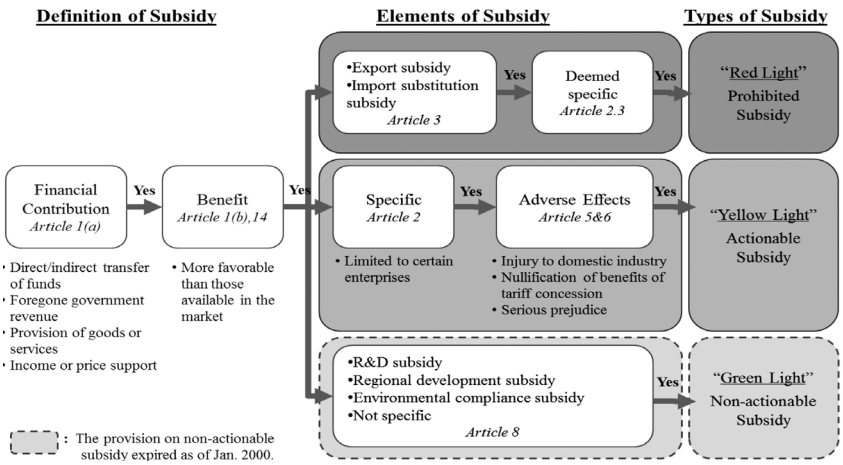
If a program is defined as a subsidy, then the program has to be proven specific to be subject to possible constraints under the WTO.[31] Subsidies are specific when they are limited to "certain enterprises or

[28] This section relies on the work of W. Shin and Lee, 2013.

[29] SCM Agreement Article 1.1.

[30] SCM Agreement Article 1.1(a).

[31] According to Sykes (2005), the concept of specificity originated from US law.



Source: Authors' analysis based on the SCM agreement (W. Shin and Lee 2013).

FIGURE 1

SUBSIDY CLASSIFICATION UNDER THE WTO SCM AGREEMENT

industries."[32] Nevertheless, if a subsidy is available based on "objective criteria or conditions," then the subsidy is not specific.[33] Even if the subsidies appear to be non-specific on legal documents, they can be considered as *de facto* specific, which means that the subsidy is in fact specific and is being used by certain enterprises.[34] Moreover, a subsidy limited to certain enterprises in a particular region within the jurisdiction of the administering authority is defined as specific.[35]

The SCM agreement governs subsidies by classifying them in terms of traffic lights, namely, red, yellow, and green light subsidies. The "red light" subsidies are prohibited subsidies of which two types exist: export

[32] SCM Agreement Article 2.1.

[33] According to Sykes (2005), SCM Agreement Article 2.1(b) stipulates: "Where the granting authority, or the legislation pursuant to which the granting authority *operates, establishes objective criteria or conditions* governing the eligibility for, and the amount of, a subsidy, *specificity shall not exist*, provided that the eligibility is automatic that such criteria and conditions are strictly adhered to" (authors' emphasis).

[34] SCM Agreement Article 2.1(c) stipulates: "If··· there are reasons to believe that the subsidy may *in fact be specific*, other factors may be considered. Such factors are: use of a subsidy program by a limited number of certain enterprise s···" (author's emphasis).

[35] SCM Agreement Article 2.2.

and import substitution subsidies. Export subsidies are those tied to export performance, and import substitution subsidies are those contingent upon the use of domestic over imported goods.[36] These subsidies are considered to be specific regardless of their details.[37] When subsidies are found to be prohibited, the remedy is repayment or removal of the scheme. The "yellow light" subsidies are actionable subsidies that are not prohibited altogether, but can be challenged when they are specific and cause "adverse effects."[38] The SCM agreement lists three types of adverse effects on a member country, such as (a) damage to a domestic industry, (b) nullification or impairment of the benefits of a tariff concession, or (c) serious prejudice to the interest of another member.[39] The "green light" subsidies, also known as "non-actionable" subsidies, are permitted and offer "countries a method for structuring subsidies to avoid attack under countervailing duty laws." Governments may provide subsidies that fall under the aforementioned categories without fear of challenge or countervailing measures. This provision was temporarily in effect for five years[40] and expired in January 2000. The types of subsidies that were provisionally permitted were R&D subsidies, regional development subsidies, and subsidies for complying with environmental requirements.[41] As the provision is no longer in effect, R&D subsidies for other products, except civil aircraft, can be subjected to challenge under the WTO.

When member countries file complaints, the WTO evaluates what constitutes a subsidy and identifies which subsidies are illegal under the rules of the organization. The legality of subsidies is largely assessed by determining whether the subsidies impose illegal conditions or distort trade by causing adverse effects on free trade.

[36] SCM Agreement Article 3.1; Annex I of the SCM Agreement lists prohibited export subsidies.

[37] SCM Agreement Articles 3 and 2.3.

[38] SCM Agreement Article 5.

[39] SCM Agreement Article 5.

[40] SCM Agreement, Article 31. According to SCM Agreement Article 31, the provision can be extended upon review by the WTO members.

[41] SCM Agreement Article 8.2.

VI. What Should be Done

A. Practices of the current rules and size of the policy space

First, the developed countries have been effectively using the WTO rules for their legal and economic interest. This paper has shown that in a total of 419 WTO dispute cases or in a total of 86 SCM dispute cases, more than half have been raised by the developed countries. In the SCM dispute cases, which are closely related to industrial policies, half of the cases were between developed countries, and a quarter of the cases were between developed and middle-income countries. However, only 17.44% of SCM cases were raised by middle-income countries against developed countries, and 4.65% of cases were between middle-income countries. Southern countries use the WTO system minimally because the trade flows of developing countries are usually small; thus, the expected benefit of WTO disputes is also minimal. Southern countries usually have insufficient legal capacities, such as limited availability of international lawyers or specialists in international trade and law, which discourage them from initiating disputes (Horn, Mavroidis, and Nordstrom 1999).

Second, in 419 WTO cases or 86 SCM cases, no single case was against the low-income countries, implying that these countries may not have to worry too much when they use various tools of industrial policies. Unless they are successful and competitive to a level that threatens the interests of the developed countries, low-income nations are not likely to face complaints at the WTO. Relatedly, the Article 27 of the SCM Agreement used to permit the export subsidies by the South, especially those of who have income of less than US $1,000. Although this article has also been expired in 2003, each country may ask for its extension which is now subject to approval by the WTO Ministerial Conference As of 2015, there are more than 15 countries cases for which export subsidies are permitted, such as Barbados, Belize, Costa Rica, Dominica, El Salvador, Fiji, and so on.[42]

Third, the developed countries do use various industrial policies, but only a few cases have been brought to the WTO by the developing countries. Even in such cases, developing countries cannot effectively remedy the situation because they have limited resources and retaliatory

[42] For details, refer to "*Article 27.4 of The Agreement on Subsidies And Countervailing Measures* (WT/L/691)."

power to enforce the remedies. This finding is consistent with the argument that executing retaliatory measures against large countries such as the US is practically impossible or has negligible effect when they are initiated by the developing countries with smaller domestic markets. Furthermore, even if developing countries could win WTO disputes against developed countries, executing the remedies would not be beneficial because the allowed retaliatory action is generally either exemption from the WTO commitment or an import restriction against the developed countries. These remedies are not highly feasible because the developing countries are usually dependent on imports from developed countries, such as capital and consumer goods, or the exports of developing countries often heavily depend on developed markets, as seen from the example of Banana dispute between Ecuador and the EU.

Fourth, large incidence of claims by the developed countries against the middle-income countries indicates that the current WTO rules serve as a cause of the middle-income trap by frustrating industrial development efforts of middle-income countries. Banning export subsidies while allowing R&D subsidies is not easy to justify. A remote reason might be that R&D is more likely to involve market failure. If this is the case, then the market failure caused by monopoly or oligopoly in international markets should also be corrected by encouraging the market entry of subsidized firms from the South. An example is the case (discussed in Section III) of the failed attempt by Indonesia to promote its local automobile industry against foreign carmakers that have almost a monopoly through their approximately 90% market share.

B. What can be done to change the current global rules

First, reducing asymmetries and arbitrariness is imperative with regard to access and actual use of remedies (retaliatory measures) against faulty parties that are not willing to act on a given ruling. One way is to establish a third party that will enforce remedies not only through the resources of the involved parties, but also through resources and penalties at the international level. Otherwise, the WTO may have to consider introducing a rule that can limit a country with a larger market size (representing the size of retaliatory power) to complain against a considerably smaller country when the size difference of the two parties are beyond a certain level. A committee should be established to conduct a pre-review of submitted cases.

Second, the situation of the developing countries that are not receiving

the "promised technology transfer" in return for their concurrence with the stricter IPR protection rules under the TRIPs should be improved.[43] Otherwise, high-income countries that have failed to deliver that promise or their official development assistance commitments (0.7% of GNI) should not be allowed to complain against the developing counties that use R&D or other subsidies to enhance their technological capabilities.

Third, the WTO rules on permitted ("green light") subsidies, such as those for R&D, regional development, and environmental compliance expired in 2000. To extend these rules and/or establish new rules on such subsidies, a broad consideration of the interests of the developing countries is necessary. Although expiration should mean that those subsidies are no longer viable, taking no explicit action after the expiration date could also be interpreted as implicitly retaining the permitted subsidies, unless one party raises a serious objection. If this is the case, then clarifying these rules on subsidies via new agreements is preferred so that these subsidies can be extended for a longer or infinite period.

Fourth, the late entry of emerging countries into product markets that are characterized as near monopoly or oligopoly should be treated in a special manner under the WTO rules because these emerging countries can promote competition and efficiency by correcting market failures and distortions associated with monopoly. In such cases, promoting late entry by subsidies or state-owned enterprises may be justified. Furthermore, a strong international agency (such as a "global fair trade commission") should be established to monitor the market dominance of or distortion caused by a few large players. This agency should also have authority over international mergers and acquisitions, which could have anti-competition implications.

Fifth, establishing international guidelines for subsidies or government assistance is necessary in several areas in which public intervention may be justified. The case of an international dispute over escalating subsidies in the solar panel industry indicates that although subsidies in this case may be justified in terms of environmental factors, internally

[43] TRIPs Article 66.2 requires the developed members to implement technology transfer for the least developed countries by providing incentives to enterprises or institutions. The developed countries' efforts on this provision are supposed to be reported to the WTO in pursuance of their commitments under the Article. However, it seems that few developed countries have followed the rule properly for its goal (see http://wto.org/english/tratop_e/trips_e/techtransfer_e.htm in detail), and thus the technology gap between the North and the South is still huge (Shin, Lee and Park 2014).

agreed guidelines are needed to prevent subsidies from escalating across countries because such situation is not optimal from a global perspective. The bailouts during the financial crisis in the developed countries (as discussed in Section Ⅳ) also require certain guidelines, given that some bailouts may be justified because firm failure is not caused by the firm itself but by transitory and global or external factors beyond the control of the firm.

Sixth, as noted by Girvan and Cortez (2014), despite the formal equality in terms of decision-making rights, decisions in practice are made through consensus building, which has been dominated by a few major industrial countries; thus, most nations that have been excluded from consensus building are dissatisfied. In this regard, better procedures should be established for smaller and issue-based meetings, with authorization from all members, and the meetings should be governed by transparent rules. All meetings, such as Green Room or Mini-Ministerial ones, should be called by all members and should be inclusive and transparent (Khor and Ocampo 2010).

Seventh, measures to enhance the resources and capabilities of the South to understand and use WTO rules and procedures should be implemented, such as training sessions and technical assistance. A pool of international experts and lawyers can be mobilized and should be available to the South when it needs WTO-specific legal services to defend various cases. A promising move in this regard is the establishment of the Advisory Center on WTO Law to provide legal service, support, and training to developing countries. More effort by the governments and industry in learning how to utilize the WTO DSB system would be a crucial stepping points (Davis and Bermeo 2009).

C. What can still be "tried" under the current rules

First, the developing countries, especially low-income ones, are advised not to take the WTO restriction on industrial policies as an excuse for not trying industrial policy because members can deviate from WTO disciplines, provided that no other member initiates legal action (and makes the case) against that measure, which is likely to happen only when industrial policies become significantly successful. As noted, the developed countries have been taking advantage of this feature, and no cases exist in which low-income countries have been the target of a dispute brought to the WTO.

Second, R&D subsidies have not been restricted (or classified as

green light subsidies). Although subsidies on exports are prohibited, those on production are "green light subsidies" or have not been prohibited unless they are deemed as specific and causing adverse effects on other member countries, as noted by UNIDO/UNCTAD (2011). Moreover, the SCM does not prevent governments from subsidizing activities, particularly through regional, technological, and environmental policies, provided that governments have sufficient ingenuity to present such subsidies as WTO compatible (UNCTAD 2006). In general, the developing coun- tries may attempt to take advantage of the fact that many rules in the WTO SCM have loopholes or room for flexible interpretation, as the term "yellow" light for certain types of subsidies are classified, and even if a country is brought into the WTO process, the lengthy process and enforcement are sometimes dubious.

Third, the South may be able to use some "non-specific" subsidies because these subsidies are not prohibited by the WTO. In other words, when subsidies are not limited to "certain enterprises or industries" but are available on the basis of "objective criteria or conditions," they are regarded as not specific. In accordance with this idea, a new "industrial policy" was proposed by Avnimelech and Teubal (2008) based on the concept of evolutionary targeting called "Program Portfolio Profile" for innovators to leverage domestic market forces and local demand, thereby stimulating the development of indigenous technology. The proposed evolutionary targeting is an alternative approach to "firm-specific targeting" and focuses on the specification of the selection mechanisms. Evolutionary targeting involves the design and implementation of targeted "programs" for the emergence of a multi-agent structure.

Finally, as noted by Cornia and Vos (2014), developing countries can use a stable and competitive exchange rate as an effective alternative to tariff. Studies, such as that by Helleiner (2011), found that this strategy has significantly greater protective effects on the import-competing domestic manufacturing sector than tariff rates of 30% or more. Specifically, countries can combine subsidies on production to targeted sectors, which is allowed by the WTO, with general undervaluation of their currencies, which would have the same effect as export subsidies on targeted sectors.

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Appendix

APPENDIX TABLE 1
CLASSIFICATIONS OF WTO AGREEMENTS

WTO Agreement Title	Abbreviations
Agreement on Implementation of Article VI of the GATT 1994	AD
Agreement on Agriculture	Agriculture
Understanding on the Interpretation of Article II:1(b) of the GATT 1994	Article II Understanding
Understanding on the Interpretation of Article XXIV of the GATT 1994	Article XXIV Understanding
Understanding on the Interpretation of Article XXVIII of the GATT 1994	Article XXVIII Understanding
Agreement on Textiles and Clothing	ATC
Agreement on Implementation of Article VII of the GATT 1994	Customs
Understanding on Rules and Procedures Governing the Settlement of Disputes	DSU
Understanding Regarding Notification, Consultation, Dispute Settlement and Surveillance	1979 DSU
Differential and More Favorable Treatment Reciprocity and Fuller Participation of Developing Countries	Enabling
General Agreement on Trade in Services (GATS)	GATS
General Agreement on Tariffs and Trade (GATT)	GATT
Agreement on Government Procurement	GPA
Agreement on Import Licensing Procedures	Licensing
Decision on Notification Procedures	Notification Decision
Agreement on Rules of Origin	Origin
Agreement on Safeguards	Safeguards
Agreement on Subsidies and Countervailing Measures	SCM
Agreement on the Application of Sanitary and Phytosanitary Measures	SPS
Agreement on Technical Barriers to Trade	TBT
Agreement on Trade-Related Investment Measures	TRIMs
Agreement on Trade-Related Aspects of Intellectual Property Rights	TRIPS
Marrakesh Agreement Establishing the World Trade Organization	WTO

Source: www.worldtradelaw.net

APPENDIX TABLE 2

COUNTRY LIST AS COMPLAINANT AND RESPONDENT COUNTRIES OF WTO CASES

Developed Countries	1995		2010	
	GDP Per capita ($)		GDP (Million $)	
Australia	29,476	41,114	529,857	884,590
Belgium[R]	27,828	35,557	282,607	370,624
Canada	28,486	37,104	845,771	1,252,607
Croatia[R]	9,186	14,675	41,308	65,844
Czech Republic	15,079	23,396	155,673	238,679
Denmark[R]	28,939	33,705	151,424	185,902
EU	25,724	28,409	9,621,510	14,252,740
France[R]	26,497	31,299	1,582,214	2,027,204
Greece[R]	17,878	25,216	186,959	271,075
Hong Kong[C]	26,606	38,685	165,632	274,263
Hungary	11,368	16,557	116,871	165,441
Ireland[R]	22,249	34,877	80,406	161,232
Japan	28,970	31,447	3,631,149	3,987,648
S. Korea	15,889	26,609	716,683	1,294,164
Netherlands[R]	29,484	38,191	455,792	640,957
New Zealand[C]	21,524	27,790	78,396	118,169
Norway[C]	38,399	50,488	167,385	236,095
Poland	8,772	16,705	338,616	642,542
Portugal[R]	16,319	19,782	164,256	212,380
Singapore[C]	31,250	55,862	110,713	262,613
Slovak Republic[R]	10,218	19,284	54,783	105,491
Sweden[R]	25,665	36,132	227,853	327,867
Switzerland[C]	33,007	39,978	236,234	304,770
Taiwan[C]	18,542	32,105	394,771	739,214
Trinidad & Tobago[R]	12,081	30,749	15,274	37,781
United Kingdom[R]	24,686	34,268	1,436,417	2,136,557
United States	33,560	41,365	8,936,337	12,832,781

Note: C and R next to a country's name is a country's position as a complainant or a respondent respectively; otherwise, other countries involved in WTO disputes as both complaint and respondent.

Source: WTO dispute settlement data and Penn World Table 7.1 (PPP Converted GDP Per Capita (Chain Series), at 2005 constant prices).

Developing Countries	1995		2010	
	GDP Per capita ($)		GDP (Million $)	
Antigua & Barbuda[C]	12,570	14,486	864	1,257
Argentina	8,323	12,340	293,588	510,189
Armenia[R]	1,916	5,411	5,879	16,054
Bangladesh[C]	817	1,371	99,226	214,040
Brazil	6,646	8,324	1,086,980	1,674,062
Chile	7,971	12,525	113,234	209,746
China	1,931	7,130	2,349,146	9,483,328
Colombia	6,167	7,536	225,280	333,147
Costa Rica[C]	8,076	11,500	27,820	51,937
Dominican Republic[R]	5,604	10,503	43,480	103,179
Ecuador	4,799	6,227	54,058	92,098
Egypt[R]	3,119	4,854	183,851	390,597
El Salvador[C]	4,993	6,169	27,359	37,333
Guatemala	4,970	6,091	49,840	82,539
Honduras[C]	2,956	3,580	16,410	28,599
India	1,611	3,477	1,483,308	4,079,259
Indonesia	2,891	3,966	571,829	963,622
Malaysia[R]	8,487	11,956	172,612	338,054
Mexico	9,123	11,939	847,347	1,342,810
Nicaragua	1,823	2,290	8,025	12,833
Pakistan	1,706	2,297	228,857	423,588
Panama	6,330	10,857	16,700	37,030
Peru	4,553	7,415	108,658	214,648
Philippines	2,362	3,194	171,475	319,071
Romania[R]	5,624	9,378	127,591	205,926
South Africa[R]	5,389	7,513	227,553	368,966
Sri Lanka[C]	2,288	4,063	41,054	85,671
Thailand	6,105	8,065	359,459	534,984
Turkey	7,100	10,438	439,787	812,117
Ukraine[C]	3,781	7,044	193,773	319,924
Uruguay	7,976	11,718	25,124	38,681
Venezuela	8,873	9,071	191,213	246,931
Vietnam[C]	1,188	2,780	87,673	249,012

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