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Strengthening the Relationship between Science and Trade Policy in the European Union

Riccardo Trobbiani

Introduction

The European Union faces evolving environmental, social, health, economic, and political challenges, including attaining the UN Sustainable Development Goals to which the EU has committed, such as clean water and climate action. Trade policy is an important tool for addressing these challenges, as well as a field in which the EU enjoys exclusive competence[1] and extensive experience. Because many of these challenges require innovative scientific and technological solutions, it is vital for the EU to consider how trade policy influences science and innovation (S&I) and vice versa. Unfortunately, EU policy makers frequently neglect this important topic. By reflecting on the interactions between trade and S&I, the EU will be better prepared to develop informed and effective strategies to address global challenges within the rapidly changing technological and trade landscapes.

The risks of ignoring the relationship between trade policy and S&I are significant, including the curtailment of technological change and innovation, which are fundamental sources of economic growth. Inattention to this relationship may also prevent the EU from addressing global challenges directly, such as through the liberalization of commerce in innovative "environmental goods." New

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technologies like 3D printing may be able to address health-related challenges in developing countries, in particular by revolutionizing the manufacture of prosthetics. However, existing trade barriers and legal uncertainties stemming from outdated and limited regulatory frameworks, such as the 1995 General Agreement on Trade in Services, may hinder the use and development of such technologies.[2]

Limited scientific influence on trade policy may also lead to policies and regulations that are based on protectionist or other political concerns rather than on technical merit. This was the case in 2006 when the European Communities lost a dispute within the WTO against the United States, Canada, and Argentina. The complaint stemmed from a ban imposed by some European countries on the import of certain genetically modified organisms. These restrictive measures were taken without producing appropriate science-based risk assessments, as required by the World Trade Organization (WTO) Agreement on the Application of Sanitary and Phytosanitary Measures.[3]

This article argues that S&I should receive more attention within EU trade policy, and vice versa, in order to mitigate these risks and help the EU develop solutions to global challenges. In addition to discussing the current neglect in the EU between S&I and bilateral and multilateral trade policies, it explores three areas that reveal the importance of the trade-S&I relationship: the definition of technical standards; protection of intellectual property (IP); and support for science-based solutions to global challenges. The article concludes with solutions that support and harness the links between trade and S&I to help the EU leverage its trade power and achieve objectives beyond simple economic advantage.

EU Strategies: Neglected Relations between S&I and Trade

In 2015, a new EU trade and investment strategy[4] was presented by the European Commission (EC) to update continental trade policy in the face of emerging global economic, social, and political changes. This strategy underlines the importance of liberalizing trade in services as well as opening the European market to foreign companies and enhanced foreign investment. The strategy is expected to boost innovation within EU companies through increased competition and increased exchanges of people and information. Additionally, the strategy expresses a need to "protect innovation" by enforcing stronger guarantees for intellectual property rights (IPRs) within free trade agreements (FTAs) and in the WTO. However, the strategy only sketches a partial answer to the question "What can trade policy do for S&I?" It does not even attempt to address the inverse proposition, "What can S&I do for trade policy?"

Failure to recognize the relationship between S&I and trade is not limited to trade-related strategies. EU strategic documents concerning S&I also fall short in appropriately addressing trade. A 2012 EC communication, "Enhancing and

Focusing EU International Cooperation in Research and Innovation,"[5] laid down the basis of an EU science diplomacy orientation. This communication mentioned trade in a very marginal way, promising coordination with other EU policies in order to support foreign policy goals, inter alia with trade. Removal of trade barriers in certain (unspecified) sectors was cited briefly as a tool facilitating innovation.[6] In 2014, another fundamental communication, "Research and Innovation as Sources of Renewed Growth," did not even mention the word *trade*.[7] Nor did the term appear in a 2015 publication from the EC Directorate-General for Research and Innovation (DG RTD), *Open Innovation, Open Science, Open to the World*.[9]

One bright spot is the 2017 report of Research, Innovation, and Science Experts (RISE) — an advisory group to the European Commissioner for Research, Science, and Innovation — which cites adequate trade policies as an element that can facilitate innovation and the spread of new technologies. Unfortunately, this document was intended to spur internal debate rather than to actually design strategies, and does not express the official views of the EC. While discussing EU science diplomacy, the report asks, "how to draw together the scientific resources of the EU in support of the EU's various externally facing policies, such as trade or development."[10]

Trade and S&I are mostly treated separately by the relevant services of the EC. Of course, DG RTD can participate in inter-service cooperation mechanisms set up in the EU policy-making process, such as Inter-Service Groups, to steer and help prepare impact assessments of future trade agreements. Additionally, inter-service consultations are carried out on specific issues during the negotiation process by the lead negotiating directorate-general (normally DG Trade).[11] However, a privileged or specific cooperation mechanism between DG Trade and DG RTD does not exist when it comes to trade negotiations. Also, broader bilateral treaties such as EU Association Agreements often include science and technology cooperation deals that fall under the DG RTD but are mostly treated separately from trade negotiations.

The relative silence of EU policy documents on the S&I-trade relationship likely has two explanations. First, conceptual issues do not enter trade negotiations, and are at times taken for granted, such as the impact of IPR protection in FTAs on EU research and innovation carried out by the IP-intensive industries, universities, and research centers. Second, academia has shown little or no interest in conceptualizing this issue at the policy and trade negotiation level.[12] This article seeks to address these points by providing examples of existing links and mutual influences between S&I and trade policy, and making the case for strengthening them.

Example 1: Technical Standards

Technical standards governing the production and exchange of goods and services address an expanding array of regulatory, technological, safety, health, and environmental issues. These standards cannot be defined by trade negotiators alone, often requiring scientific experts to help define them. However, scientific evidence is not always the primary factor determining restrictive measures on trade, with political and economic factors sometimes overtaking these considerations. In certain cases, the independence of science itself can be challenged through the use of scientific evidence to support commercial interests. Such efforts often work against trade liberalization by invoking health and safety concerns as a guise for protectionism.

One long-standing, and still unresolved, example involves a recent application of sanitary and phytosanitary (SPS) measures on food and feed safety, animal health, and plant health.[13] In 1989, the European Communities banned meat from cattle treated with six growth hormones allowed, and commonly used, in the United States. The ban was challenged within the WTO, in what was known as the "beef hormones" case.

During a WTO dispute settlement, the panel overseeing a case will typically consult scientific experts to clarify whether protection measures are justified by solid evidence. The WTO states that SPS measures should be "based on scientific principles and...not maintained without sufficient scientific evidence."[14] When the scientific evidence is judged insufficient, the SPS Agreement Appellate Body tends to rule against such provisions, restating the centrality of this principle.[15] In this case, the scientific experts judged that some of the key studies brought forward by the European Communities were too generic to be applied to the six hormones. They found that the studies referred to "categories" without explaining which kinds of hormones fell within them, and also evaluated carcinogenic potential in general without reference to the use of hormones for growth promotion or when present as residues in food.[16] The panel ruled against the EU provisions.

Following the first EU ban, the United States imposed retaliatory measures and finally requested a WTO dispute settlement. The WTO ruled, in 1997, against the EU, inter alia for not having produced a proper scientific risk assessment. Several scientific studies were commissioned by the EU and were then contested by the United States in a "scientific consensus war" that arguably had little to do with autonomous scientific research. In reality, it was the EU's consumer associations' stark opposition to the import of hormone-treated meat, as well as to the use of most biotechnological alterations in food production, that was clearly behind the EU position. This opposition was heightened by the parallel hysteria over "mad cow disease," as well as other political and economic considerations.[17]

Bringing scientific expertise to the forefront of SPS issues, and ensuring that scientific advisors are free to judge independently from commercial and political

goals, is fundamental to restoring EU credibility as a global commercial player. An expert group for SPS relations with non-EU countries supports increased scientific, technical, and economic advice during the negotiation and implementation of FTAs and other agreements.[18] This is an important mechanism since most EU FTAs currently support the application of SPS measures set by the WTO SPS Agreement,[19] and referenced by the international standard-setting bodies (e.g., Codex Alimentarius Commission, World Organisation for Animal Health, International Plant Protection Convention). These FTAs focus primarily on procedural issues, interpretation of WTO provisions, and development of mutual recognition with third countries.[20] Increased use of independent scientific advice will help reform the FTA process as well as EU strategies and decision-making mechanisms. The core need is to determine "whether the objectives of regulatory measures reflect real health and environmental risks, which are adequately supported by available scientific data."[21]

Example 2: Intellectual Property Rights

While science influences, and should increasingly guide, certain aspects of trade policy, the question remains of what trade policy can do for S&I. One important answer involves the protection of IP. Although the relationship between strong IP protection and a rise in R&D and innovation varies by sector and country,[22] the EU generally places a high value on IPRs in its internal and external policies. Because R&D and innovation are obviously driven by expectations of profit by private firms, guarantees that such innovation will be rewarded and incentives for innovation are perceived as a key factor. For example, provisions protecting patents in EU FTAs are critical for enabling the pharmaceutical sector to create innovative medicines.[23]

The need to strengthen IP protection abroad, especially in developing countries, was identified as a major challenge to safeguard EU innovation and growth by the 2014 "Strategy for the Protection and Enforcement of Intellectual Property Rights in Third Countries."[24] Weak IPR protections in large emerging markets, and the lack of enforcement mechanisms against counterfeiting and piracy, produce significant costs for European enterprises operating in a wide range of sectors. Preferential trade agreements have been identified as one tool to address this situation, and provisions for the protection of IPRs are included in most agreements negotiated by the EC with third countries. Recent EU FTAs have integrated chapters on IPRs with different scopes. Some have promoted regulatory convergence with the EU (e.g., EU neighbors), some have upgraded the Trade-Related Aspects of Intellectual Property Rights (TRIPs) provisions (e.g., Canada, Republic of Korea, Singapore), and some have raised minimum international standards (e.g., Central America, Colombia, Peru).[25]

The need for IP protection applies not only to emerging markets but also to some economies in the Organisation for Economic Co-operation and Development (OECD), such as Canada. The level of IPR protection in Canada is considerably lower than in the EU and was widely perceived by stakeholders as insufficient, particularly regarding IPR enforcement. For this reason, the European pharmaceutical industry defended the EU-Canada Comprehensive Economic and Trade Agreement (CETA) as a chance to "address Canadian measures that are problematic for innovative pharmaceutical and biopharmaceutical products" and reflect "unfair, discriminatory judicial processes and weaker patent and regulatory data protection," a position used in the sustainability impact assessment supporting the negotiations.[26]

Consultation with big players in IP-intensive industries is fundamental in designing trade agreements, but more still must be done to gauge the effects of negotiated IPR provisions on the many stakeholders involved in basic and applied research and innovation. A process open to all stakeholders in IP-sensitive sectors should accompany the whole policy-making process of trade negotiations. This is consistent with EU efforts to improve the transparency of trade talks, which are often contested by civil society and public opinion for their secrecy and content.

The proposed Anti-Counterfeiting Trade Agreement (ACTA) exemplifies how an FTA may fail due to lack of consultation on IPR-specific issues. ACTA, a multilateral treaty aimed at strict enforcement of IPR, was initiated by the United States, the EU and twenty-two of its member states (touching as it did on shared competencies), and eight other partners. The treaty was negotiated quietly and without extensive consultations, while including only big players like the Pharmaceutical Research and Manufacturers of America and major technology companies in Silicon Valley. It was perceived publicly to cover many sensitive topics related to internet and communication privacy, freedom of expression, and access to medicines. After several negotiation documents were leaked, opposition from civil society organizations and the public mounted due to the perceptions of threat to internet and civil liberties and lack of consultation, peaking in a mass protest in early 2012 as the EU and twenty-two member states prepared to sign the treaty. As a consequence of the public outcry, some EU member states decided not to sign ACTA and the European Parliament rejected it. Those opposing the negotiations, including almost a hundred international academics, scientists, and ICT experts, signed a joint statement that declared the treaty a threat to both civil liberties and innovation, particularly on global challenges like green technologies.[27] Considering the failure, the European Commission highlighted a need for "broader dialogue with stakeholders about the role and importance of IP and the impact of IPR infringements" as well as "to ensure that the IP framework remains flexible enough to facilitate, rather than obstruct, the capacity for digital technology to deliver growth while at the same time stimulating innovation."[28]

ACTA failed despite progressive adaptations of the initial draft and mitigation of some of its measures.

The lesson of ACTA is that trade policies need to be designed in consultation with all stakeholders in IP-intensive sectors from the very beginning. This involvement is particularly important for carrying out the studies and assessments needed during FTA negotiations. Up to four types of assessment reports may accompany negotiations, attached to different phases of the policy cycle, starting with an impact assessment and a broader sustainability impact assessment. Industrial actors, the ultimate beneficiaries of EU FTAs, are extensively consulted during trade negotiations. Scientists and researchers traditionally play a minor role, representing a small portion of the stakeholders consulted in the drafting of impact assessment reports. Universities and research centers are often commissioned to draft these reports because of their expertise. Here, however, they engage in technical assessments, and do not represent the views of the higher education or research sectors. Also, EU science and technology cooperation with third countries is treated separately from trade negotiations, with little interaction between the two dimensions. To address these shortcomings, a broader involvement of actors dealing with scientific research and innovation, also outside the industry, should be sought in the design of trade policy.

Example 3: Global Challenges

The need for innovative technological solutions to global challenges (e.g., energy, environment, health, water, and food management) can drive liberalization of trade terms for certain products delivered by EU companies to developed as well as developing countries and vice-versa. For example, liberalization for environmental goods and services is increasingly pursued through EU preferential trade agreements.[29] Most recent EU FTAs address various issues related to sustainable development and support innovative solutions in this regard. Some of these agreements, like those with Singapore and Vietnam, have a specific chapter on non-tariff barriers to trade and investment in renewable energy generation, with the aim of promoting green energy sources.[30] IPRs, it is worth noting, also have a role to play in addressing these challenges. In this respect, stronger IPRs provide incentives that are "crucial to promote investment in green technologies" and provide "opportunities for right holders as well as for recipients."[31]

For trade policy to contribute in this area, scientific and technical advice must be enlisted to guide decision making. An example of disregard for this principle occurred at the 2014 launch of negotiations for an Environmental Goods Agreement (EGA) between the EU and sixteen other WTO members, including Canada, China, Japan, South Korea, and the United States. The agreement was aimed at liberalizing trade and removing tariff barriers to a list of products that protect the environment and fight climate change. These products should help

clean the air and water, manage waste, boost energy efficiency, and generate renewable energy, and could be traded with other WTO members through the "most favored nation" principle. Unfortunately, negotiations for the EGA faltered in 2016, primarily because participants could not agree on the scientific definition of an "environmental good." Instead of working in close cooperation with the S&I community to define indicators for environmental impact and create a list of products on this basis, negotiations became progressively politicized. The selection of environmental goods became a struggle among developed economies to foster the interest of their high-tech sectors, making the EGA an "inherently treacherous puzzle of politics and customs classifications."[32] A better, evidence-informed solution might have entailed creating a permanent scientific advisory body to help list, delist, and revise green items during implementation of the agreement.[33] Such a "living list" could have been adapted to meet the fast scientific and technological change in the field.

Conclusions and Next Steps

The EU is committed to addressing complex global issues faced by the developed and developing world alike, including environmental, social, health, economic, and political challenges. Many of these challenges require innovative scientific and technical solutions. S&I is key to the development and distribution of marketable solutions to these issues, and also drives long-term economic growth. Unfortunately, EU policy makers have not considered the relationship between S&I and trade policy, or else have addressed it in a fragmented way. Part of the problem is that cooperation between DG Trade and DG RTD has so far been organized on an ad hoc basis. A more structured, strategic approach is needed to ensure that S&I and trade are properly linked. Additionally, the recent failure of multilateral trade agreements, signaled by the breakdown of the Doha Round negotiations in 2008, means that any trade-related solutions to these challenges will need to be addressed through preferential trade deals in the near term.

A specific strategy for mutual engagement should be defined by DG Trade and DG RTD that promotes deeper cooperation between their services and includes increased consultation with external S&I stakeholders on trade issues. In 2014, the two DGs began reflecting on how to exploit synergies between trade policy and research in the context of negotiations for the Transatlantic Trade and Investment Partnership (TTIP). This dialogue was put on hold, however, and a strategy for mutual engagement is still missing. A future strategy could be designed in the context of the European Economic Diplomacy Strategy, launched by EU External Action Service and the EC to ensure policy coordination among several DGs, member states, and other actors involved in the EU's external economic relations. Alternatively, a specific Trade-RTD inter-service group could be tasked with defining the strategy.

Involving scientific expertise in trade negotiations will lead to improved policy solutions. It will also allow advisors on future innovative products to provide DG Trade with a long-term view of how certain sectors could develop. Impact assessments, reports on trade negotiations, and stakeholder consultations should include advice from scientific experts in all fields relevant to a given issue, not only, as implied already, from the R&D departments of IP-intensive industries.

Additionally, EU science and technology cooperation with third countries, which is now carried out separately by DG RTD, needs to be better integrated into trade negotiations in two ways. First, the definition of common technical standards in fields like SPS requires cooperation on scientific issues. Second, as suggested by the 2014 strategy for the protection of IPRs in third countries, scientific cooperation with the EU, and access to EU funding programs for S&I, could be used as a negotiation tool to pursue trade policy goals.[34] DG Trade already participates in a number of bilateral dialogues held by DG RTD with third countries to raise trade-related issues, such as IPRs. Still needed, however, are a more structured mechanism for inter-service cooperation and an overall strategy.

Looking beyond the technical aspects of trade policy, S&I is even less a part of strategic approaches and decision-making processes linked to trade. The involvement of scientific advice during the policy-making process has received substantial attention from the Juncker Commission, in office since November 2014, which promoted the establishment of a Scientific Advice Mechanism and the development of public reflections for a reformed relationship between science and policy making.[35] Trade policy was given little attention within this debate, however, which must change in the future. Most important, existing and future mechanisms for scientific and technical consultation must be accompanied by a change in political culture. By acknowledging the value of science over shortsighted economic interests and short-term political concerns, the EU may begin to fully address the global challenges to which it has committed. These reflections should be included in the EU's next trade and investment strategy.

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Endnotes

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