10 Science and innovation and EU trade policy: Bridging a conceptual and policy gap

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Scientific and technological innovation represent key assets for potential EU global leadership. On the one hand, technological innovation stands as a main driver of long-term economic growth and represents a key factor to maintain the economic competitiveness of advanced economies *vis-à-vis* emerging ones. On the other hand, science and innovation (S&I) must provide solutions to address global challenges related to a myriad of issues including environment, health, water, food production.

Among the policy tools at the disposal of EU soft power, trade plays an undeniably central role in projecting EU priorities externally. Soft power consists of "the ability to get what you want through attraction rather than coercion or payment" (Nye 2004: 5). In trade, the EU holds an exclusive competence, extensive experience and unique power of attraction as the largest negotiating bloc in the world. Thus, in addition to pursuing purely trade-related objectives, the EU has frequently used trade as a foreign policy tool with political, development or other aims (Keukeleire and Delreux 2014: 197-205). Issues related to climate action, health, food, security, development, human rights and more partly depend on trade dynamics. Capitalising on its power of attraction as a trade actor, the EU has often tried to influence third countries' priorities and reproduce its models and preferences in other regions. This short article shows that this also applies to some aspects of science and innovation priorities and agendas, including in intellectual property rights (IPR), health standards and regulations, climate action and other S&I-sensitive domains. For all these reasons, trade policy should increasingly consider how free trade agreements (FTAs) and other trade agreements influence S&I, and, in turn, how policy choices and their implementation are influenced by scientific expertise.

However, neither EU policy documents concerning trade nor those dealing with S&I seem to properly assess these aspects. The EU generally recognises the importance of expert knowledge in policymaking and has a specific approach in this regard

(European Commission 2002, 2015a). However, the use of scientific evidence does not seem to dominate external policies in general and trade in particular. Also, the EU has progressively taken a broader approach to expert consultation including various sectors of civil society (Potjomkina 2018). In this context, the role of universities and independent research institutes is at best marginal. The lack of strategic thinking at the policymaking level is only partly reflected in academia, which has addressed civil society consultation and use of broader expert knowledge while lacking, however, a more specific focus on narrowly defined1 independent scientific advice.2

This short essay proposes a first conceptual and policy reflection to fill this gap. It re-adapts two categories which were originally applied to relations between science (an innovation) and diplomacy (The Royal Society and AAAS 2010) to relations between S&I and trade policy. These categories are: 'science in diplomacy' (here *science in trade policy*), which concerns the use of scientific advice in support of foreign policy, and 'diplomacy for science' (here *trade policy for S&I*), it is to say the use of foreign policy tools to create the conditions for, or improve, scientific research and scientific cooperation between countries.[3]

A first section refines this conceptualisation and provides examples from recent EU trade policy and trade negotiations. Informed by this reflection, a second section looks at recent EU policy documents to highlight shortcomings in strategic thinking concerning the relationship between S&I and trade. Finally, the contribution reaches some preliminary conclusions and advances recommendations.

Conceptualizing the relation between S&I and FTAs

The relation between S&I and trade should be considered as moving in two directions. On the one hand, from S&I to trade, as scientific evidence informs decision-making for better policies. On the other hand, from trade policy to S&I, as the former has an impact on technological innovation and on the development of scientific solutions to global challenges.

Science in trade policy

The concept of *science in trade policy* helps clarify the relation between scientific expertise and trade, and how the former serves the latter in the case of FTAs negotiations

1 On the topic of narrow and broad conceptions of expertise in EU trade policy see Potjomkina (2018).
2 For exceptions see Vikhlyaev (2002), Pfotenhauer (2013), and Trobbiani (2017).
3 A third type, 'science for diplomacy', which expresses the potential of science in creating better relations between countries, was left out of the analysis because less relevant to the field of trade.

and other policymaking phases. For a purposeful use of trade as a soft power tool in certain S&I domains, the EU needs scientific advice to inform its choices.

First, scientific knowledge supports trade negotiations in designing and justifying technical standards. These standards can concern both the production and exchange of goods and services, and address regulatory, health, environmental, safety and other issues. Technical Barriers to Trade (TBT) including regulations, standards, and conformity assessment procedures can serve legitimate purposes, but they are often used to serve protectionist goals. For this reason, the 1995 WTO Agreement on TBTs clarifies these legitimate objectives, which include 'national security requirements; the prevention of deceptive practices; protection of human health or safety, animal or plant life or health, or the environment'. To assess whether a certain product would constitute a hazard, a risk assessment is needed, and should be based, *inter alia*, on 'available scientific and technical information, related processing technology or intended end-uses of products' (Art 2.2). EU regulatory cooperation with partner countries has explicitly been included in the TBT sections of EU FTAs. For example, the Comprehensive Economic and Trade Agreement (CETA) between the EU and Canada includes in the potential regulatory cooperation activities between the two parties 'conducting cooperative research agendas' also with the aim to improve the quality of data gathering and research and avoid duplication (Art 21.4 (n)). Among the standards requiring scientific expertise to be defined, Sanitary and Phytosanitary (SPS) measures on food and feed safety, animal health and plant health constitute a central example. Here, the role of EU FTAs is to regulate procedural issues, to support the interpretation and application of WTO standards and to establish mutual recognition with third countries (Rudloff and Simons 2004: 2). Scientific expertise is therefore sought by the EU both on the international and European level. An expert group for Sanitary and Phytosanitary relations with third countries supports the negotiation and implementation of relevant agreement with scientific, technical and economic advice.[4]

Second, scientific advice and consultation with S&I stakeholders take place in the drafting of impact assessment and other studies accompanying the negotiation and implementation of trade agreements. Concerning EC impact assessments, 'the collection and analysis of all relevant evidence, including data, scientific advice (…)' represents one of the main steps of the preparation of the work (European Commission 2015b: 18). Directly supporting and steering the negotiation of EU FTAs, deeper Sustainability Impact Assessments (SIAs) are successively prepared by consultancies with a broad array of economic, scientific and technical expertise analysing the economic sectors involved, as well as gauging environmental, social and political implications. These

4 See Register of Commission expert groups and other similar entities: E02704, http://ec.europa.eu/transparency/regexpert/index.cfm?do=groupDetail.groupDetail&groupID=2704.

can also rely on consultation with external stakeholders, including scientific and research actors. Case in point, the SIA for the CETA counted more than 40 academic and research institutions in a stakeholder network giving advice on various issues, notably environmental ones, and additional academic experts giving their input on investment matters (Development Solutions 2011: 33-37 and Annex 5). Additionally, ex-post assessments can be prepared by the European Commission services or external contractors. In the case of the EU-Chile Association Agreement, for instance, this was done by a pool of external academics and researchers. Scientists particularly contributed to inform the environmental impact assessment (ITAQA Sarl 2012). Finally, other EU or EU-commissioned studies on the potential effects of FTAs are often carried out outside of the framework of trade negotiations, both on specific agreements and on transversal issues (e.g. Boulanger et al. 2016).

Scientific and technical advice in bilateral trade relations does not end with the closing of the negotiation and assessment phases. In fact, FTAs and broader agreements often establish technical and scientific committees to monitor specific issues concerning trade relations between the signatories and to update technical provisions. For example, the EU-Chile Association Agreement created a Joint Management Committee on SPS Measures, also providing for the establishment of expert working groups to identify scientific and technical issues arising from the implementation of the agreement. Better specialized scientific groups including third-party experts can then be established on an ad-hoc basis within this framework.[5]

Trade policy for S&I

The notion of *trade policy for S&I* can help frame the role of FTAs and other instruments in boosting marketable innovation and research by liberalizing trade in S&I-intensive sectors, approximating third countries and regions to EU regulations and technical standards, creating shared guarantees for trade and investment and using access to EU market as a reward for the adoption of innovative solutions to societal challenges (e.g. environmental ones). These examples show how trade becomes a tool of soft power in advancing EU S&I priorities in certain domains.

First, in both services and goods sectors, increased competition from other markets pushes enterprises to enhance productivity, notably through investment in technology and innovation. The removal of non-tariff barriers (NTBs) to services holds a strong unrealized potential, as it globally relies on the outdated framework of the General

5 EU-Chile Association Agreement, Art. 16, http://eur-lex.europa.eu/resource.html?uri=cellar:f83a503c-fa20-4b3a-9535-f1074175eaf0.0004.02/DOC_2&format=PDF.

Agreement on Trade in Services (GATS), conceived in a world where information and communication technologies (ICT) played a minor role. In this respect, the participation of the EU in the negotiations for the multilateral Trade in Services Agreement (TiSA), which are currently on hold, provides an opportunity to open trade and competition in a broad variety of ICT-driven services, fostering productivity and investment in innovation. Liberalization in services and data flows can also have a direct effect on innovation, allowing for better digital connections (e.g. online platforms) between companies, research centres and universities (Cory and Ezell 2016: 9). Technological innovation in response to increased competition is at times considered in EU negotiations, but strongly depends on the market size and type of the sectors liberalized. Case in point, the SIA of the EU-Japan Economic Partnership Agreement foresaw a likely, but relatively minor, effect on technological innovation (EC 2016).

Second, EU preferential trade agreements with third countries are increasingly addressing the protection of IPR. In 2014, an updated *Strategy for the protection and enforcement of intellectual property rights in third countries* identified stepping up IPR protection abroad, especially in developing countries, as a major challenge to protect EU innovation and growth (European Commission 2014a). In recognizing the mixed empirical evidence behind IPR protection effects on R&D investment, the CETA SIA foresaw mixed effects on Canada's innovation and, consequentially, on its GDP growth (Development Solutions 2011: 321-323). The potential winners of stronger IPR protection in Canada were identified, inter alia, in the innovative pharmaceutical industry, and a possible increase in R&D spending and foreign direct investment (FDI) inflows was hypothesized (Development Solutions 2011: 319). The protection of IP can also serve goals that go beyond pure economic interest and help address global challenges. As noted in the 2014 strategy 'IPR incentives are crucial to promote investment in green technologies. With regard to climate change, appropriate IPR regimes can play a positive role in stimulating the transfer and dissemination of innovative green technologies, which involves opportunities for right holders as well as for recipients' (European Commission 2014a: 11).

Third, *trade policy for S&I* can encompass cases where trade liberalization is used as a reward for the pursuance of policies favouring innovation in certain sectors (e.g. environment) and science-based solutions to global challenges. The Generalised Scheme of Preferences + (GSP+) are unilateral tariff preferences granted to 'vulnerable developing countries' for various products in return for the ratification and effective implementation of human rights, labour's rights, good governance and, most relevant, environmental measures. Among the eight international conventions on environment that are included in the GSP+ monitoring, most directly and indirectly require, for their implementation, the adoption of innovative technological solutions and support and

coordination with scientific authorities for data collection, research and monitoring. Some GSP+-relevant conventions on good governance also concern scientific research, namely the UN Single Convention on Narcotic Drugs, UN Convention on Psychotropic Substances and UN Convention against Illicit Traffic in Narcotic Drugs and Psychotropic Substances, which aim at allowing these substances for medical and scientific use while taking them out of the illegal market (European Commission 2016b).

S&I and trade in current EU policies: Bridging the gap

A *New EU Trade and Investment Strategy* was presented by the EC in 2015 in the face of emerging global economic, social and political changes. The strategy mentions liberalisation in trade and services and the general opening of the EU market to the world as factors that can boost innovation within EU companies, but gives no elaborated account of these interactions (European Commission 2015c: 7–8). More recent EU communications on trade also fail to detail the role of S&I, even when dealing with sustainable and innovative approaches to trade like the 2017 EC Communication *A Balanced and Progressive Trade Policy to Harness Globalisation* (EC 2017a). Also, EU strategic documents concerning S&I fail to properly address trade. In 2012, the Communication *Enhancing and focusing EU international cooperation in research and innovation: A strategic approach* mentioned trade in a very marginal way, as the document promised coordination with other EU policies in order to support foreign policy goals (EC 2012). Almost two years later, another fundamental Communication, *Research and innovation as sources of renewed growth* did not even mention the word 'trade' (European Commission 2014b). Nor did the word appear in the 2015 publication from Directorate General Research and Innovation (DG RTD) *Open Innovation, Open Science and Open to the World* (EC 2015d).

In practical terms, when it comes to trade negotiations, a specific cooperation between DG Trade and DG RTD is not in place. Of course, the latter participates, whenever needed, in the inter-service cooperation mechanisms, like inter-service groups to steer and help prepare impact assessments of future trade agreements and inter-service consultations carried out on specific issues during the negotiation process by the lead negotiating DG (normally DG Trade) (Novotná 2016: 62-63). Also, broader bilateral treaties like association agreements often include science and technology cooperation agreements that fall under the competence of DG RTD, but that are mostly treated separately from trade negotiations.

Conclusion: Trade policy beyond trade

This short contribution constitutes a case study on how trade is used as a tool of EU soft power in some aspects of S&I, which is often made possible by the involvement of scientific expertise in the definition of trade policy. The categorization attempted in this article can provide a basis for further research on the bi-directional relations between Trade and S&I, which is needed both in terms of academic enquiry and policymaking. Concerning the latter, examples of how the EU has taken into account various aspects of the relations between S&I and trade policy exist. However, these are not part of a strategic policy approach or clear policy reflection.

S&I should have a stronger say in trade policy. The presence of trade-related issues concerning global challenges, the quick evolution and growth of high-tech and innovative sectors like computers, aeronautics, pharmaceuticals, biotechnology, genomics, nanotechnology and more, enlarge the potential impact of trade policy. This broadened scope calls for a stronger role of S&I actors both in driving and advising the negotiation of FTAs. DG Trade has progressively created various mechanisms for stakeholders' consultation and taken a broad approach to the notion of expertise. These fora include a recent 'Group of Experts on EU Trade Agreements' established in 2018. However, most of these groups are not targeted at independent research institutes and academia and in some cases even exclude their access (Potjomkina 2018). Impact Assessments should take scientific, not only industrial actors dealing with Research and Development, into better account. A specific inter-service group of cooperation between DG RTD and DG Trade could be activated with the aim of defining a strategy for structured engagement. Alternatively, this reflection could take place in 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.

Trade has impact on S&I and this should be taken into better account. There has been increasing reflection on the effects of trade agreements beyond trade, and the 2016-2020 Strategic Plan for DG Trade has a specific objective for 'a sustainable approach to trade' (European Commission 2016c). However, there has been no strategic policy reflection on the impact of EU trade policy on innovation and on innovative scientific and technological solutions that can support Sustainable Development Goals, especially Climate Action. Stronger conditionality mechanisms for EU trade preferences should be geared towards innovative scientific solutions to climate, health and other science-based global actions. The environmental component of the GSP+ could be particularly stepped up. Also, the EC should take a leadership role in resuming and bringing forward the Environmental Goods Agreement and the TiSA negotiations.

More generally, trade policy should receive greater consideration in the processes of policy reflection which have been initiated under the Juncker Commission on how to better integrate science into policymaking (European Commission 2015e, 2017b). This becomes fundamental in a global environment where scientific evidence as a basis for policymaking and public support to science and innovation are increasingly under threat.

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