Creative Industries
Policy and
Evidence Centre

Led by Newcastle University Business School with RSA

Discussion paper

Regional Trade Agreements, Cultural Provisions and Trade in Cultural Goods

Muharrem Cevik
Giorgio Fazio
Sara Maioli

July 2025

doi: 10.5281/zenodo.15737339

Creative PEC is funded by: UKRI Arts and Humanities Research Council

About the Authors

Muharrem Cevik (Author for correspondence), Bilecik Şeyh Edebali University.

muharrem.cevik@bilecik.edu.tr

Giorgio Fazio and Sara Maioli, Newcastle University and Creative PEC.

giorgio.fazio@newcastle.ac.uk and sara.maioli@newcastle.ac.uk

About the Creative Industries Policy and Evidence Centre

The Creative Industries Policy and Evidence Centre (Creative PEC) supports growth of the UK's creative industries through providing independent and authoritative evidence and policy advice.

Led by Newcastle University, with the Royal Society of Arts (RSA) and funded by the UKRI via Arts and Humanities Research Council, Creative PEC comprises a core consortium of Newcastle University, Work Advance, the University of Sussex and the University of Sheffield.

Acknowledgements

The authors would like to thank, without implicating, Bruce Tether, Jun Du, Eliza Easton, Oleksandr Shepotylo, for helpful comments on the paper. Giorgio Fazio and Sara Maioli would like to acknowledge financial support by the Art and Humanities Council under grants AH/S001298/1 and AH/Y000544/1. Muharrem Cevik would like to acknowledge financial support by the Turkish Ministry of National Education.

Disclaimer

This discussion paper is published by the Creative Industries' Policy and Evidence Centre. The views and interpretations expressed in this paper lie solely with the authors and may not be shared by Creative PEC, Newcastle University, the RSA and the AHRC. Readers who wish to challenge the evidence and/or interpretations provided are encouraged to do so by directly contacting the lead author and/or by writing to Prof Giorgio Fazio at giorgio.fazio@pec.ac.uk

Citation

If the information in this report is used in any subsequent research and/or publications, please cite as follows: Cevik, M., Fazio, G. and Maioli, S. (2025) Regional Trade Agreements, Cultural Provisions and Trade in Cultural Goods. Creative PEC Discussion Papers Series. No. 2025/1. doi: 10.5281/zenodo.15737339.

Contents

Abstract

This study uses gravity models to analyse the impact of Regional Trade Agreements (RTAs) and their depth on the bilateral trade of cultural goods from 1999 to 2019. Our findings indicate that the formation of an RTA increases overall bilateral cultural trade by 27% among member states, with the most significant impacts observed in cultural heritage and visual arts sub-groups. RTAs also exhibit phasing-in effects, leading to significant trade increases in cultural heritage, visual arts, and printed matter sub-categories twelve years after an RTA formation.

We also explore whether RTAs containing culture-specific provisions—such as Intellectual Property Rights (IPRs), Audio-Visual (AV) content, and Cultural Cooperation (CC)—increase trade more than RTAs that do not. Our analysis shows that the impact of these culture-specific provisions is contingent upon their legal enforceability. Specifically, RTAs with legally enforceable IPR provisions significantly boost overall bilateral cultural trade, particularly benefiting the trade in cultural heritage, music & performing arts, and audio & audio-visual media goods. Similarly, RTAs with legally enforceable AV and CC provisions have a substantially positive impact on overall cultural trade and on trade in specific goods within the audio & audio-visual media sub-group, such as films and video games. Overall, this study underscores the importance of RTAs for cultural trade. When considering the inclusion of culture-specific provisions in trade negotiations, however, our findings suggest that their effectiveness depends on being underpinned by legally enforceable clauses.

1. Introduction

The value of global exports in goods has risen from $10.5 trillion to approximately $19 trillion from 2005 to 2019. During the same period, international trade in cultural goods has also seen significant growth, mirroring the expansion of cultural industries. According to UNESCO (2022), the export value of cultural goods increased from $132.3 billion in 2005 to $271.7 billion in 2019. Emerging nations have particularly benefitted, with their cultural goods export value growing from $40.5 billion to $144.5 billion during the same period (UNESCO, 2022).

This remarkable growth in cultural trade not only highlights the sector's dynamism but also has significant repercussions for the global economy. Research by Scavia *et al*. (2021) shows that cultural imports positively influence a nation's Gross Domestic Product (GDP) in the long run, while cultural exports drive short-term economic growth. Cultural and creative sectors now account for 6.2% of global employment, generating nearly 50 million jobs and contributing approximately 3.1% to global GDP (UNESCO, 2022). In recognition of their importance, many governments have highlighted the pivotal role of these sectors for national growth.

The cultural sector is also a matter of controversy when it comes to negotiating (or excluding it from) trade agreements (see, Fazio, 2021, for a discussion). Policymakers face the complex challenge of balancing the needs of cultural industries with broader economic objectives. On one hand, there are concerns that trade liberalisation could threaten national culture and the diversity of cultural expressions (Guèvremont and Bernier, 2019). On the other hand, cultural cooperation is regarded as a crucial element of economic integration agreements (Guèvremont and Otašević, 2017). This dual perspective underscores the necessity of a nuanced understanding of how trade agreements impact cultural sectors, which is unfortunately missing. This study aims to fill this gap in the evidence base on the impact of trade agreements on cultural trade. Furthermore, it digs into the role of the depth of trade agreements when it comes to the cultural sector and, specifically, the role of the inclusion of culture-related chapters in trade agreements.

Indeed, IPR infringement could undermine the cultural sector. According to UNESCO, for instance, the film and audiovisual industry in Africa suffers greatly due to the illegal exploitation of intellectual property, resulting in significant revenue losses across the

sector and affecting all parties from international distributors to local creators (UNESCO, 2021). Trade agreements can play an important role in addressing some of these challenges by setting IPR provisions that protect cultural works and promote international trade between the parties of the agreement. Additionally, trade agreements offer a platform for formalising audio-visual co-productions and cultural cooperation agreements, facilitating market access, encouraging cinema and television co-productions, supporting joint cultural initiatives, and enhancing the mobility of artists and cultural professionals (KEA European Affairs, 2011; UNESCO, 2015).

In this context, this study exploits recent advances in gravity modelling of trade, allowing us to obtain robust empirical estimates. First, we investigate the impact of RTAs on bilateral cultural trade for the period from 1999 to 2019. Then, it examines whether RTAs with culture-specific provisions—such as those related to IPRs, AV co-productions, and CCs—produce effects beyond those of generic RTAs. Importantly, the focus is on the legal enforceability of these provisions. Due to data availability, the focus is here on cultural trade in goods, and, in particular, on core and related cultural goods, as defined by UNESCO (2000, 2005). We acknowledge that in the more recent part of the considered sample, some of the sectors in this study may have replaced trade in goods with trade in services (e.g. via digital platforms). We hope that better data coverage in the future, can support a similar study of trade in services, e.g. digital services.

Given the diversity within cultural goods—reflected in variations in production, consumption, and trade barriers—the influence of RTAs may vary across different cultural sub-groups. For example, AV-related provisions might significantly impact the audio-visual sector, while the effectiveness of IPR protection may differ among various cultural goods. Therefore, we also examine how RTAs and culture-specific provisions affect different sub-groups of cultural goods (cultural heritage, printed matter, music and performing arts, visual arts, and audio and audiovisual media). Finally, we re-examine the impact of RTAs on non-cultural trade to assess the differences between cultural and non-cultural trade when it comes to RTAs.

Our findings indicate that, on average across all cultural goods, the formation of an RTA leads to a 27% increase in overall bilateral cultural trade among partners. However, this impact varies across different sub-groups of cultural goods. We also find that the effectiveness of RTAs in enhancing bilateral cultural trade is closely linked to the presence and legal enforceability of culture-specific provisions. Specifically, RTAs that include IPR

chapters have effects that exceed those of generic RTAs, provided that the IPR provisions are included as legally enforceable. Similarly, RTAs with AV and CC provisions have impacts that extend beyond those of generic RTAs, particularly for the cultural heritage category and specific goods within the audio & audio-visual media category, such as cinematographic films and video games, as long as these provisions are legally enforceable.

The remainder of this paper is organised as follows: Section 2 describes the data and variables used in the study. Section 3 outlines the methods employed to estimate the effect of RTAs and culture-specific provisions. Section 4 presents and discusses the results. Finally, Section 5 concludes and draws some policy implications.

2. Data sources and variable descriptions

2.1 Cultural trade and standard gravity variables

A first challenge is the identification of cultural goods in international trade statistics. UNESCO (2005) divides cultural goods into "core" and "related" cultural goods. Core cultural goods include items directly related to cultural content, such as music, books, paintings, and video games. In contrast, related cultural goods, which do not necessarily have any cultural content, encompass tools and equipment used in the creation, production, and distribution of core cultural goods, such as musical instruments, photographic apparatus, and video monitors (UNESCO, 2000; 2005). Table A1 in Appendix A illustrates this distinction and presents a detailed listing of core and related cultural goods.

The dataset employed in this study includes primarily core cultural goods and, to a lesser extent, related cultural goods (see Table B3 in Appendix B). UNESCO (2005) further classifies cultural goods into five sub-groups: cultural heritage, printed matter, music & performing arts, visual arts, and audio & audio-visual media.[1] We use the Harmonised System (HS),[2] version 1996, to obtain bilateral cultural trade information from the *Centre d'Etudes Prospectives et d'Informations Internationales* (CEPII),[3,4,5] resulting in a dataset that includes disaggregated annual bilateral cultural trade data across 221 countries from 1999 to 2019.[6,7]

[1] At the time of UNESCO's 2005 report, trade data for crafts was excluded due to the lack of detailed internationally comparable data. Although international trade data for crafts is now available, the HS does not distinguish between handmade and mass-produced goods. Various industries produce both handmade crafts that can be considered cultural goods—such as art crafts, carpets, paperware, wickerware, yarn, and toys—and mass-produced items that are not considered cultural goods (UNCTAD, 2024). Since our study focuses specifically on cultural goods that convey cultural content, we exclude the trade of crafts from our analysis in line with UNESCO's (2005) classification.

[2] This is a tariff and trade classification maintained by the World Customs Organisation (WCO).

[3] CEPII reconciles annual bilateral trade flows by integrating information from both exporting and importing countries, as reported to the UN Statistics Division. This reconciliation process ensures consistency by deriving a single value for each bilateral trade flow. The dataset only experiences missing trade values if neither trading partner reports to the UN, thereby minimising the number of missing observations. For further details on the reconciliation methodology, see Gaulier and Zignago (2010).

[4] The data is reported in thousands of USD (US dollars), excluding trade flows below USD 1,000.

[5] Due to technical constraints, CEPII does not include zero trade flows, nor does it provide estimates for missing data. However, it provides a zero-trade flow dummy variable (ztf2) to differentiate between genuine missing values and true zero trade flows. If the dummy takes a value of one for a given *tij*, it means that CEPII records all products *k* exported from country *i* to country *j* in year *t*, for which it lacks specific information, as zero trade flows. Conversely, a value of zero for ztf2 suggests that a missing entry in the CEPII database does not necessarily signify a zero-trade flow but rather a lack of available information on that particular trade flow. Using this indicator variable, we distinguish if a missing value is a true zero or if we are in the absence of information.

[6] Each country-pair is represented twice as they are listed going in both directions (i.e., Italy-Türkiye exists, as does Türkiye-Italy). We do not present the full list of countries used in the empirical analysis here, but it is available upon request.

[7] According to Trefler (2004), trade flows exhibit slow adjustments to changes in trade costs, prompting

The adopted specification includes standard gravity variables referring to pairs of trading partners. From the CEPII gravity database, we source dummies for the adoption of a common language ($COMLANG_{ij}$) and the existence of common colonial ties ($COL45_{ij}$), an index between 0 and 1 denoting religious proximity ($COMRELIG_{ij}$),[8] the physical distance between the two countries in km (transformed in logarithm, $lnDIST_{ij}$). The dummy of a common border or contiguity ($CONTIG_{ij}$) is taken from the Dynamic Gravity Dataset (DGD) constructed by the US International Trade Commission (USITC).

2.2 Regional trade agreements and culture-specific provisions

The RTA dummy is obtained from CEPII's gravity dataset. The WTO distinguishes four types of RTAs: Free Trade Agreements (FTAs), Partial Scope Agreements (PSAs), Customs Unions (CUs), and Economic Integration Agreements (EIAs).[9] The $RTA_{ij,t}$ variable reflects each of these four types and is assigned a value of one when country pairs *i* and *j* are participants in at least one RTA during the specified year, and zero otherwise. It is created based on the date of entry into force of the RTAs and reflects changes in agreements between member states over time. For instance, if a country exits an RTA, the variable changes from one to zero for that specific case.[10]

While trade agreements in the 1990s primarily focused on tariff reductions, modern agreements cover a broader range of policy domains. These contemporary agreements address both border-related aspects, such as tariffs and export taxes, under the current mandate of the WTO and already subject to some form of commitment in WTO agreements, known as "WTO+" or "WTO plus", and behind-the-border policy domains, like competition policy and data protection, which are outside the current mandate of the WTO and referred to as "WTO-X" or "WTO extra" (Horn *et al*., 2010, Hofmann *et al*., 2019; Mattoo *et al*., 2022).

criticism against the use of consecutive annual data. Additionally, Cheng and Wall (2005) argue that both explanatory and dependent variables cannot fully adapt within a single year, particularly in the context of fixed-effects estimations. Subsequent studies such as Yotov and Anderson (2011) and Olivero and Yotov (2012), advocating for trade data intervals of four and five years, respectively, have echoed these concerns. Echoing Trefler's insights and Cheng and Wall's reservations, we follow Olivero and Yotov's (2012) approach by opting for a five-year interval analysis. This interval spans the years 1999, 2004, 2009, 2014, and 2019, allowing for a more robust examination of trade dynamics while mitigating the limitations associated with consecutive-year estimations in fixed effects models. Using 5-year intervals also rules out anticipation effects associated with the entry into force of RTAs.

[8] The index is derived by adding the proportions of the shares of Catholics, Protestants, and Muslims in both the exporting and importing countries. For further details, we refer the reader to La Porta *et al*. (1999), Disdier and Mayer (2008), and Conte *et al.* (2023).

[9] FTAs involve the removal of import tariffs across most sectors, while members maintain their own independent trade policies. PSAs usually focus on removing import tariffs in only a few sectors. CUs build upon FTAs by requiring member countries to align their external trade policies and implement a common external tariff. EIAs typically involve the liberalisation of trade in services. These agreements can be combined; for example, two countries may simultaneously participate in both a CU and an FTA (Conte *et al*., 2023).

[10] We do not provide a full list of RTAs here, but it is available upon request.

Among the WTO-X provisions, there are three that are culture-specific: IPRs, AV, and CC. IPR provisions require parties to adhere to an intellectual property agreement that goes beyond the scope of the WTO's Trade-Related Aspects of Intellectual Property Rights (TRIPS) agreement, introduced in the 1994–1996 Uruguay Round.[11] AV provisions encourage audio-visual co-productions between the involved parties, and CC provisions facilitate joint initiatives and support local cultural activities, such as museums collaborating on curations and exhibitions, or the promotion of activities through national cultural institutes. These provisions are sourced from the World Bank Deep Trade Agreements (DTA) dataset (Version 2). However, the simple inclusion of provisions does not necessarily mean that it will be followed up by the two parties. Its legal "enforceability" is what matters.

The clarity and mandatory nature of a provision determines its legal enforceability, as captured by its text. For example, as noted by Hofmann *et al*. (2017), the following statement from the trade agreement between the EU and Central America is considered legally enforceable: "*Panama shall adhere to* the Patent Cooperation Treaty (Washington 1970, last modified in 2001) within a period no longer than two years, beginning on the date of entry into force of this Agreement." In contrast, the following statement from the trade agreement between Canada and the Republic of Korea is not classified as legally enforceable: "Each Party *should encourage* enterprises operating within its territory or subject to its jurisdiction *to voluntarily incorporate* internationally recognised standards of corporate social responsibility in their practices and their internal policies, including statements of principle[s] (...) such as (...) anti-corruption." (Hofmann *et al*., 2017, p. 8).

Furthermore, the evaluation of a provision's legal enforceability also considers the availability of dispute settlement mechanisms in trade agreements. Horn *et al*. (2010) classify provisions as legally enforceable if the language is sufficiently clear and does not explicitly exclude dispute settlement. However, in some cases, the specificity of the language can create a perception of enforceability even when it explicitly excludes dispute resolution. Some trade agreements might include comprehensive dispute settlement chapters, while others address disputes more generally. Therefore, the wide

[11] The TRIPS agreement of the WTO sets minimum standards for IPR protection across eight key areas: copyright and related rights (i.e., the rights of performers, producers of sound recordings and broadcasting organisations), trademarks, geographical indications, industrial designs, patents, layout design of integrated circuits, protection of undisclosed information (trade secrets), and the control of anti-competitive practices in contractual licenses. Introduced by the GATT in 1994, TRIPS mandates that member countries develop their domestic IPR legislation in alignment with its provisions, aiming to standardise national laws according to common international IPR rules.

variation in the structure and precision of agreements leads to significant differences in the enforcement of dispute resolution processes (Horn et al., 2010). The DTA dataset provides a classification of trade agreements based on these various scenarios, facilitating an analysis of their legal enforceability and operational implications. Based on the information provided in the DTA dataset, we code the three culture-specific provisions as follows:

- One: If the specified provision is mentioned in the agreement but the provision is not legally enforceable,
- Two: If the specified provision is mentioned in the agreement and is legally enforceable but explicitly excluded by dispute settlement provisions,
- Three: If the specified provision is mentioned in the agreement and is both legally enforceable and included in dispute settlement provisions.

Each of the above is then coded to three zero/one dummies, one for each category against a zero for no provision and tested over and beyond the effects of trade agreements that do not incorporate the provision. Lastly, the variable $WTO\_MEM_{ij,t}$ indicates whether country pairs *i* and *j* are WTO members at time *t*. We obtain this variable from the DGD, which aids in controlling the existence of TRIPS agreements. Descriptive statistics are presented in Table A2 in Appendix A.

3. Methodology and empirical specifications

3.1 Regional trade agreements

To analyse the effect of RTAs on bilateral cultural trade in goods among 221 countries from 1999 to 2019, we employ the structural gravity model in a panel setting. We detail each specification through a series of estimating equations, highlighting the key factors that should be considered when evaluating the impact of trade agreements. We base our initial model on the framework introduced by Disdier *et al.* (2010) to investigate cultural trade in goods and enhance it by integrating our key variable of interest,

$$RTA_{ij,t}: \ln(X_{ij,t}+1) = \beta_0 + \beta_1 \ln(DIST_{ij}) + \beta_2(CONTIG_{ij}) + \beta_3(COMLANG_{ij}) + \beta_4(COL45_{ij}) + \beta_5(COMRELIG_{ij}) + \beta_6(WTO\_MEM_{ij,t}) + \beta_7(RTA_{ij,t}) + \pi_{i,t} + \chi_{j,t} + \varepsilon_{ij,t}, \quad (1)$$

where $X_{ij,t}$ denotes bilateral cultural trade between country pairs i and j at time t. Due to variability in trade relationships, trade flows between countries can be non-existent or sporadic, particularly when trade data is sectorally disaggregated. Before applying the logarithmic transformation, we add a value of one to $X_{ij,t}$, resulting in $\ln(X_{ij,t}+1)$, to prevent the log-transformation process from eliminating zero trade flows.[12, 13] We refer the reader to Section 2 for more information about the explanatory variables.

In line with what is now conventional in gravity models, we enhance the gravity equation in specification (1) by incorporating Multilateral Resistance Terms (MRTs) in the form of exporter-time and importer-time fixed effects, denoted as $\pi_{i,t}$ and $\chi_{j,t}$, respectively (see Hummels (2001), Rose and van Wincoop (2001), Anderson and van Wincoop (2003), Feenstra (2004), Redding and Venables (2004)). The exporter-time fixed effects account for outward multilateral resistances and control for both observable and unobservable exporter-specific factors. The importer-time fixed effects, on the other hand, include inward multilateral resistances and absorb all observable and unobservable factors that could affect bilateral trade due to importer-specific factors (Fally, 2015; Yotov *et al.*, 2016).[14] The term $\varepsilon_{ij,t}$ represents the idiosyncratic error term. Column 1 of Table 1 reports

[12] The absence of data for two countries with zero trade flows can lead to the loss of potentially valuable information and introduce sample selection bias, as there is often a systematic reason for the lack of trade between these countries (Head & Mayer, 2014).

[13] This log-linearised OLS specification is included solely for comparative purposes, as it has commonly appeared in earlier studies on cultural trade (e.g., Disdier et al., 2010). However, we do not rely on it for inference. As explained below, our preferred specification employs the Poisson Pseudo-Maximum-Likelihood (PPML) estimator, which more appropriately handles zero trade flows and heteroskedasticity in trade data.

[14] These fixed effects are country-specific and are perfectly correlated with factors that are specific to exporters and/or importers, such as population and GDP. Therefore, we cannot include them in the equation.

the Ordinary Least Squares (OLS) estimates obtained from equation (1).

While the specification proposed in equation (1) retains zero-trade flows, Santos-Silva and Tenreyro (2006) show that the OLS estimates can be biased and inconsistent due to heteroskedasticity, even when the existence of zero trade flows is accounted for.[15] The authors advocate for the PPML estimator to address this issue, as Monte Carlo simulations have demonstrated its effective handling of zero trade flows and its ability to provide consistent and unbiased estimates.[16] Based on this approach, we re-estimate the model in equation (1) using the PPML estimator applied directly to the trade flows, X_{ij}, as follows:

$$X_{ij,t} = \exp\left[\beta_0 + \beta_1 \ln(DIST_{ij}) + \beta_2(CONTIG_{ij}) + \beta_3(COMLANG_{ij}) + \beta_4(COL45_{ij}) + \beta_5(COMRELIG_{ij}) + \beta_6(WTO\_MEM_{ij,t}) + \beta_7(RTA_{ij,t}) + \pi_{i,t} + \chi_{j,t}\right] + \varepsilon_{ij,t}, \quad (2)$$

Column 2 of Table 1 reports the PPML estimates obtained from equation (2). We also apply this methodology to analyse bilateral trade for cultural sub-groups and non-cultural trade, with results reported in columns 3 to 8 of Table 1.

Thus far, we have addressed the MRTs, which are important components of the gravity equation. However, it is also essential to consider the potential endogeneity of trade agreements. Countries select their RTA partners based on various factors, and there may be cases where substantial trade already exists among the parties and there is a mutual interest in enhancing these trade relationships. To mitigate potential endogeneity concerns of trade agreements, we augment the gravity equation with country-pair fixed effects, as advocated by Baier and Bergstrand (2007). The updated model is specified in equation (3):

$$X_{ij,t} = \exp\left[\gamma_0 + \gamma_1 (WTO\_MEM_{ij,t}) + \gamma_2 RTA_{ij,t} + \pi_{i,t} + \chi_{j,t} + \mu_{ij}\right] + \varepsilon_{ij,t}, \quad (3)$$

where μ_{ij} represents country-pair fixed effects. These fixed effects absorb all observable and unobservable time-invariant bilateral determinants of bilateral trade costs, as well as most linkages between trade policy variables and the remainder error term, $\varepsilon_{ij,t}$. As a result, equation (3) excludes all time-invariant bilateral-specific factors, such as common language, common religion, and physical distance. The estimates derived from equation

However, trade policy and standard gravity variables are bilateral-specific and are not perfectly correlated with directional time-varying fixed effects.

[15] They note that "… even controlling for fixed effects, the presence of heteroskedasticity can generate strikingly different estimates when the gravity equation is log-linearised, rather than estimated in levels" (Santos-Silva & Tenreyro, 2006, p. 641).

[16] For additional simulation evidence on the performance of the PPML estimator, we refer the reader to Santos-Silva and Tenreyro (2011).

(3) are reported in the odd-numbered columns of Table 2, covering overall cultural trade, cultural sub-groups trade, and non-cultural trade, respectively.[17]

Furthermore, we examine the potential impacts of RTAs over an extended period, namely the lagged effects of RTAs.[18] After the implementation of an RTA, trade volumes may not exhibit an immediate reaction but instead undergo a progressive expansion over a certain period of time. This gradual increase in trade volumes can be seen as a "phasing-in" process that occurs after an initial adjustment period. This is testable by adding time lags of the RTA variable, as in specification (4):

$$X_{ij,t} = \exp\left[\gamma_0 + \gamma_1 (WTO\_MEM_{ij,t}) + \gamma_2 RTA_{ij,t} + \gamma_3 RTA_{ij,t-y} + \pi_{i,t} + \chi_{j,t} + \mu_{ij}\right] + \varepsilon_{ij,t}, \quad (4)$$

where the indicator $RTA_{ij,t-y}$ is introduced to capture four-, eight-, and twelve-year lags of the RTA variable. The PPML estimates derived from equation (4) are reported in the odd-numbered columns of Table 2 for overall cultural trade, cultural sub-groups trade, and non-cultural trade, respectively. The bottom panel of the table reports the Cumulative Average Treatment Effects (CATEs) of RTAs.[19]

3.2 Culture-specific provisions

Having assessed the impact of RTAs on bilateral cultural trade, we now examine whether the presence of culture-specific provisions, namely IPRs, AV co-productions, or CC, and their legal enforceability affect bilateral cultural trade beyond the general impact of an RTA. Given the moderate correlation among these culture-specific provisions (see Table A3 in Appendix A), we include each provision separately in equation (5) to avoid potential multicollinearity issues.

$$X_{ij,t} = \exp\left[\delta_0 + \delta_1 WTO\_MEM_{ij,t} + \delta_2 RTA_{ij,t} + \delta_3 RTA_{k,ij,t} + \pi_{i,t} + \chi_{j,t} + \mu_{ij}\right] + \varepsilon_{ij,t}, \; k=\{IPR, CC, AV\}, \quad (5)$$

where, as previously described, the variables IPR_{ij}, AV_{ij}, and CC_{ij} are coded as follows: zero if the RTAs do not include the specified provision, one if the provision is mentioned but

[17] To see if there is "reverse causality" between RTAs and cultural trade, we test the "strict exogeneity" of RTAs by adding future lead terms, like $RTA_{ij,t+4}$, to our model, as suggested by Wooldridge (2010). The coefficient estimates for these lead terms are statistically insignificant, indicating that reverse causality is not present in our sample. For brevity, these estimates are not included here but are available upon request.

[18] Many trade agreements are often implemented gradually over approximately ten years. For instance, Baier and Bergstrand (2007) cite examples such as the European Economic Community (EEC) agreement and the North American Free Trade Agreement (NAFTA), both of which adopted a phased implementation approach spanning a decade.

[19] The CATEs and related standard errors are calculated using the delta technique in Stata, specifically through the *lincom* command.

not legally enforceable, two if the provision is mentioned and legally enforceable but explicitly excluded from dispute settlement provisions, and three if it is both legally enforceable and included in dispute settlement provisions. Each of these is then coded to a zero/one dummy. Tables 3–5 report the estimates obtained from equation (5) for IPRs, AV, and CC provisions, respectively.

4. Results

4.1 Total cultural trade vs. total non-cultural trade

Table 1 presents the baseline results from equations (1) and (2). Columns 1 and 2 show comparisons between the OLS and PPML estimates for overall cultural trade, while columns 3 and onwards present the PPML results for cultural sub-groups trade and non-cultural trade.[20]

In column 1, all coefficient estimates are statistically significant and align with our expectations. The coefficient estimate on physical distance shows that, holding all other factors constant, a 10% increase in the physical distance between two countries leads to an average decrease in their bilateral cultural trade of 6.3%.[21,22] Additionally, sharing a common border, language, religion, and post-1945 colonial links all have significantly positive impacts on bilateral cultural trade. Specifically, countries with a common border trade 227% more than those without a common border; countries that share a primary or official language trade 66% more compared to those with no language similarity; and countries with post-1945 colonial relationships trade 190% more compared to those with no colonial ties. Additionally, a 0.01-point increase in the religious proximity index corresponds to a 0.35% increase in bilateral cultural trade.[23]

With respect to our main variable of interest, we obtain a significantly positive estimate of the effect of the RTA indicator. In terms of the trade volume effect, the coefficient estimate suggests that, holding all other factors constant, the existence of an RTA leads to a 64% increase in cultural trade among partners. Similarly, country pairs that are joint

[20] We perform the Ramsey Regression Specification Error Test (RESET) to detect possible model specification errors, such as omitted variables. Among the models evaluated, only the PPML estimator with a full set of exporter-time and importer-time fixed effects successfully passes the misspecification test. This result aligns with the findings of Santos-Silva and Tenreyro (2006), who concluded that the PPML estimator, especially when combined with exporter-time and importer-time fixed effects, provides superior performance compared to the OLS estimator in gravity models. Therefore, we mainly adhere to the PPML estimates. To maintain conciseness, we have not included the model specification tests and OLS results here, but they are available upon request.

[21] Equivalently, a 1% increase in physical distance would lead to a -0.63% reduction in bilateral cultural trade. Overman *et al.* (2003) show that the negative effect of physical distance on bilateral trade typically falls between -0.9 and -1.5. In our case, the estimated elasticity of trade to distance is -0.6, which deviates significantly from the conventional range observed in empirical studies. This finding shows that the average negative effect of physical distance on cultural trade is considerably lower compared to its average adverse effects on other industries.

[22] The method for calculating the trade volume effect depends on whether the variable is continuous or binary. For continuous variables, such as physical distance and common religion, a 1% trade volume effect is computed using the formulas _b [lnDIST]% and _b [COMRELIG]%, respectively. On the other hand, for binary variables, such as $RTA_{ij,t}$ and $WTO\_MEM_{ij,t}$, the formula is $(e^{\hat{\beta}} - 1) \times 100\%$, where $\hat{\beta}$ denotes the estimated coefficient of the binary variable.

[23] Equivalently, if the religious proximity index goes from 0 to 1, the expected cultural trade goes up by 35%.

members of the WTO trade 40% more in cultural goods compared to those with no joint WTO membership.

Column 2 presents estimates obtained with our preferred choice of estimator, the PPML with directional time-varying fixed effects. All standard gravity variables remain statistically significant at the 1% significance level, though their magnitudes differ notably from the OLS results. For instance, the estimate on physical distance increases to -0.448, suggesting that a 10% increase in physical distance leads to a 4.5% decrease in bilateral cultural trade. Furthermore, the coefficient estimate for contiguity is significantly smaller (94%), while the coefficient estimates for common language (142%) and common religion (1%) are notably higher, and the coefficient estimate for colonial links remains broadly unchanged (160%). The associated percentage effects are provided in parentheses for comparison with the previously discussed results. Regarding the RTA indicator, the coefficient estimate becomes statistically insignificant, suggesting no clear evidence of RTA effects on overall cultural trade. However, the estimate of the joint WTO membership indicator remains significantly positive and gains magnitude.[24]

These findings, however, can be compared with the results in the final column, which applies the same specification to total bilateral non-cultural trade. For non-cultural trade, only physical distance, contiguity, and colonial relationships have a significant impact. Additionally, RTAs and joint WTO membership significantly boost bilateral non-cultural trade among member states. While these results provide insights into the impact of standard gravity variables, the specifications in Table 2 do not address potential endogeneity between bilateral trade and RTAs. In Section 4.3, we will explore methods to obtain consistent and unbiased estimates of RTA effects.

4.2 Trade in cultural goods: Disaggregated flows

In columns 3 through 7 of Table 1, we re-estimate equation (2) for each of the five cultural sub-groups—cultural heritage, printed matter, music & performing arts, visual arts, and audio & audio-visual media—to explore whether the effects of RTAs vary across these categories. This set of results can be read in comparison with the estimates for total cultural trade reported in column 2.

[24] These findings confirm Santos-Silva and Tenreyro's (2006) results that the log-linear estimates exacerbate the coefficient estimates of the impact of trade policy variables.

Before discussing RTA effects, we briefly review the estimates for standard gravity variables. The coefficient estimates for physical distance range between -0.22 and -0.60 across sub-groups, consistently significant at the 1% level, except for cultural heritage (e.g., a coefficient of –0.22 implies that a 10% increase in distance is associated with a 2.2% decrease in cultural trade). The contiguity significantly boosts trade in cultural heritage, visual arts, and printed matter, but the coefficient estimates are statistically insignificant for audio & audio-visual media and music & performing arts. The common language indicator shows significantly positive estimates across all sub-groups except audio & audio-visual media,[25] with the printed matter category particularly affected. Colonial ties have a positive impact on all sub-groups except music & performing arts, with a notable effect on audio & audio-visual media. Estimates for the religious proximity index are positive and statistically significant across all categories except audio & audio-visual media, with the visual arts category showing the greatest sensitivity. In terms of standard gravity variables, these findings highlight industry-specific characteristics within sub-groupings of cultural goods.

Regarding RTAs, our findings indicate a positive coefficient estimate for the music & performing arts, printed matter, and audio & audio-visual media sub-groups. In contrast, the coefficient estimate for the cultural heritage category, e.g. goods like collections, collectors' pieces and antiques) is statistically insignificant, while the estimate for visual arts is significantly negative. As previously noted, equation (2) does not address the potential endogeneity of RTAs. Therefore, we will examine the main RTA findings in Section 4.3, where we address endogeneity issues.

4.3 Endogeneity and phasing-in

In Table 2, we present the PPML results obtained from specifications (3) and (4), where we include country-pair fixed effects to account for the potential endogeneity of RTAs (controlling for all observed and unobserved pair-specific heterogeneity). Additionally, we incorporate lags of the RTA variable to account for possible "phasing-in" effects, as the benefits of RTAs might accrue over time.

[25] Upon disaggregating the analysis by specific cultural goods within the audio & audio-visual media category, notable differences in coefficient estimates emerge. For instance, country pairs that share the same primary or official language trade 357% more in cinematographic films compared to those without a common language. In contrast, the common language indicator does not show a statistically significant impact on video games. Hence, the lack of significance in the coefficient estimate of common language for the audio & audio-visual media category can be attributed to the specific nature of video games as a product. These findings suggest heterogeneity and good-specific characteristics even within the same sub-grouping of cultural goods. We do not present the findings of specific cultural products within these five sub-groups here, but they are available upon request.

After incorporating country-pair fixed effects, the coefficient estimate on RTA ($\hat{\gamma}_2$ = 0.239, std. err. 0.077) attains both statistical and economic significance. In terms of the trade volume effect, this implies that, all else being equal, the formation of an RTA results in an average increase of about 27%, ($e^{0.239}$ – 1) x 100, in overall bilateral cultural trade between member states. However, the CATE of RTAs documented in the lower panel of the table is statistically insignificant, suggesting no evidence of the phasing-in effects of RTAs on overall cultural trade.[26]

The gravity model enables researchers and policymakers to convert the effects of concluding any trade policy variable into a tariff equivalent effect, i.e., the ad-valorem tariff (a percentage of the value of the trade) whose removal would have generated the same impact as the trade policy in question. In our case, the average ad-valorem tariff-equivalent decline resulting from RTAs would be approximately 5%.[27]

The results for the cultural sub-groups reveal some heterogeneity. The estimates of the effects of RTAs are positive and statistically significant for cultural heritage and visual arts (albeit at the 10% level) and statistically insignificant for music & performing arts, printed matter, and audio & audio-visual media. More specifically, the formation of an RTA leads to an average increase of 59% in bilateral cultural heritage trade, ($e^{0.465}$ – 1) x 100, and an increase of 25% in bilateral visual arts trade, ($e^{0.225}$ – 1) x 100 among member states. Regarding CATEs, there is evidence of phasing-in effects for certain sub-groups. The CATEs of RTAs for the cultural heritage, visual arts, and printed matter sub-groups with four, eight, and twelve-year lags are 0.528, 0.455, and 0.189, respectively. In terms of the trade volume effect, this implies that, after a twelve-year period, the formation of an RTA leads to a 69%, 58%, and 21% increase in bilateral trade in cultural heritage, visual arts, and printed matter categories. These findings suggest that the effects of RTAs on these specific categories tend to emerge over time.

[26] In addition to core cultural goods, we apply the same specification to related cultural goods, with results presented in Table B3 in Appendix B. The findings indicate that RTAs do not have an immediate impact on bilateral trade in related cultural goods but exhibit significant phasing effects. Specifically, twelve years after the formation of an RTA, bilateral trade in related cultural goods increases by approximately 32%.

[27] The tariff-equivalent effect is calculated using the formula ($e^{\hat{\beta}/-\sigma}$ – 1) x 100%, where σ denotes the trade elasticity of substitution. If estimates of σ are available from external studies, there is no need to collect tariff data for computing the tariff-equivalent effect (Yotov *et al.*, 2016). Therefore, following Anderson and van Wincoop (2004), Bergstrand *et al.* (2013), and Yotov *et al.* (2016), we use a trade elasticity of substitution value of 5. As a result, the formula for calculating the tariff-equivalent effect becomes ($e^{\hat{\beta}/-5}$ – 1) x 100%. This formula can also be applied to coefficient estimates from standard gravity variables and other trade policy variables.

Finally, we find a significantly positive coefficient estimate for RTAs in non-cultural trade ($\hat{\gamma}_2$ = 0.136, std. err. 0.024), suggesting that, all else being equal, the formation of an RTA leads to an average increase of about 15% in bilateral non-cultural trade between member states. It should be noted, however, that the overall level of non-cultural trade is larger than that of cultural trade, so a smaller effect is somewhat expected. Similar to the results for overall cultural trade, the CATEs for RTAs on non-cultural trade show no evidence of phasing-in effects.

4.4 The effect of culture-specific provisions in RTAs

In Tables 3–5, we examine the impact of RTAs that explicitly address three key areas potentially influential in promoting bilateral cultural trade: Intellectual Property Rights (IPR), Cultural Cooperation (CC), and AudioVisual (AV) provisions. Our analysis has two main objectives:

- Assessing the Differential Impact: We evaluate whether RTAs incorporating culture-specific provisions have a different effect on bilateral cultural trade compared to generic RTAs.
- Evaluating Legal Enforceability: We evaluate whether including wording in the agreement that aims at ensuring the legal enforceability of culture-specific provisions leads to a different level of impact on bilateral cultural trade.

To accomplish these objectives, we introduce four distinct dummy variables for each culture-specific provision (as detailed in Section 2.2) and interact them with the RTA indicator.

4.4.1 RTA-IPR effects

The findings regarding IPR provisions (so-called TRIPS-plus) are reported in Table 3. Our analysis reveals the following key insights:

RTAs without IPRs: These RTAs have a significant positive impact on overall cultural trade, trade in the visual arts sub-group, and overall non-cultural trade. This suggests that RTAs lacking IPR provisions can still enhance bilateral trade in these categories, but their effects are not uniformly distributed across cultural sub-groups.
RTAs with legally unenforceable IPRs: These RTAs positively influence bilateral audio & audio-visual media trade, indicating that the presence of IPR provisions, even if not legally binding, can still have a beneficial effect on trade within this category.

RTAs with legally enforceable IPRs, where IPRs are excluded from dispute settlement mechanisms: These RTAs demonstrate significant trade-enhancing effects beyond generic RTAs across most categories, including overall cultural and non-cultural trade. This suggests that the legal enforceability of IPR provisions, even without dispute resolution mechanisms, can significantly boost bilateral trade in most categories.

RTAs with legally enforceable IPRs, where IPRs are included in dispute settlement mechanisms: These RTAs show a significant positive effect beyond generic RTAs on overall cultural trade, non-cultural trade, and trade in the cultural heritage sub-grouping.

4.4.2 RTA-AV effects

The results concerning AV provisions, detailed in Table 4, reveal the following key insights:

RTAs with no AV provisions: These RTAs have a significant positive impact on overall cultural trade, non-cultural trade, and trade in the cultural heritage and visual arts sub-groups.

RTAs with legally unenforceable AV provisions: These RTAs demonstrate a significant positive effect beyond generic RTAs specifically for the cultural heritage sub-group. RTAs with legally enforceable AV provisions, where AV provisions are excluded from dispute settlement mechanisms: These RTAs significantly enhance overall cultural trade, showing impacts beyond those of generic RTAs. However, while we expect AV provisions to be more relevant for the audio & audio-visual media sub-group, our findings reveal significantly negative estimates for the effects of these RTAs on this specific category. To further examine this specific sub-group, we examine each good within the audio & audio-visual media sub-group, as detailed in Table B1 in Appendix B. Our empirical findings show that the inclusion of legally enforceable AV provisions in RTAs has an effect that extends beyond generic RTAs for cinematographic films and video games, but has significant negative impacts on photographic films. This indicates that the overall negative impact on the audio & audio-visual media sub-group can be attributed to the reduction in trade of photographic films. Further investigation beyond the scope of this paper is needed to fully understand the origins of this specific effect. Nonetheless, the result, once again, emphasises heterogeneity even within the same sub-groups (see footnote 29).

RTAs with legally enforceable AV provisions, where AV provisions are included in dispute settlement mechanisms: These agreements show significant positive effects beyond generic RTAs for only bilateral trade in cultural heritage and non-cultural goods.

4.4.3 RTA-CC effects

The results regarding CC provisions, detailed in Table 5, reveal the following key insights:

RTAs with no CC provisions: These RTAs have notable effects beyond those of generic RTAs on overall cultural trade, non-cultural trade, and specific sub-groups such as cultural heritage, printed matter, and visual arts.

RTAs with legally unenforceable CC provisions: These RTAs do not demonstrate statistically significant impacts beyond the effects of generic RTAs.

RTAs with legally enforceable CC provisions, where CC provisions are excluded from dispute settlement mechanisms: These RTAs show a significant positive impact on overall cultural trade. However, they also present significant negative effects on the audio & audio-visual media sub-group. This unexpected finding prompted a deeper investigation of the specific goods within this category. As detailed in Table B2 of Appendix B, while these RTAs have a significant positive impact on cinematographic films and video games, they negatively affect photographic films. Therefore, similar to the findings for AV provisions, the overall negative impact is primarily due to photographic films.

RTAs with legally enforceable CC provisions, where CC provisions are included in dispute settlement mechanisms: These agreements significantly enhance trade in the cultural heritage category and also have a notable positive impact on non-cultural trade, though the latter is significant only at the 10% level.

5. Conclusions

In this paper, we assess the impact of RTAs and the culture-specific provisions contained therein on bilateral trade in cultural goods. Our findings suggest that the formation of an RTA increases overall bilateral trade in cultural goods by 27% among members. We observe some degree of heterogeneity of this effect across different cultural sub-groups, with the cultural heritage and visual arts sectors experiencing the most significant effects. We also find that the existence of an RTA increases bilateral non-cultural trade in goods among member states by 15%, a smaller proportional increase but on a much larger volume of trade. These results are consistent with existing literature on the impact of RTAs on international trade. Additionally, we observe the phasing-in effects of RTAs on certain cultural sub-groups. Specifically, after a twelve-year period, the formation of an RTA leads to a 69%, 58%, and 21% increase in bilateral trade in cultural heritage, visual arts, and printed matter categories, respectively.

Our analysis further reveals that the effectiveness of RTAs in boosting cultural trade depends on the inclusion and legal enforceability of culture-specific provisions. For example, RTAs that include IPRs demonstrate substantial positive effects beyond those of generic RTAs, with these effects being particularly pronounced when IPRs are legally binding and incorporated into dispute resolution mechanisms. Similarly, RTAs with AV and CC provisions have significant impacts beyond generic RTAs on overall cultural trade, the cultural heritage category, and specific goods within the audio & audio-visual media category, such as cinematographic films and video games. These effects are also contingent upon whether the provisions are legally enforceable and included in dispute resolution processes.

Interestingly, the inclusion of IPRs, AV, and CC provisions within RTAs also promotes non-cultural trade when these provisions are legally enforceable, though their impact is 2 times stronger on cultural trade compared to non-cultural trade. This evidence indicates that policymakers who want to promote cultural trade in goods should aim to include legally enforceable provisions related to IPRs, AV, and CC. Among the three types of provisions, the protection of IPRs is the one that exerts the highest impact when it is legally enforceable.

In conclusion, while RTAs generally promote bilateral cultural trade, the presence and legal enforceability of culture-specific provisions are critical to maximising their trade-enhancing potential for cultural goods. Given that trade agreements evolve in response to economic, technological, societal, and geopolitical changes and often require periodic renegotiations, policymakers interested in increasing trade in cultural goods should pay close attention not only to the inclusion of culture-related provisions that significantly impact bilateral international trade in cultural goods but also that the language used in these provisions does not simply pay lip-service but is such that they are enforceable.

Like many other sectors, the cultural sector is also affected by digitalisation and technological progress, blurring traditional boundaries between goods and services. Platforms like Netflix and Spotify, offering intangible cultural products such as streaming and downloads, have supplanted physical formats like DVDs and CDs. This shift has enabled cultural services to transcend national borders, increasingly substituting physical goods trade and reshaping the landscape of global cultural trade. Despite these advancements, comprehensive data on the trade of cultural services remains limited, posing challenges for researchers and policymakers alike. Given these data constraints, our analysis in this study focuses exclusively on the trade of cultural goods. Therefore, while this study makes significant contributions to the literature on international cultural trade, it also acknowledges the broader trends shaping the cultural economy in the digital age, which could be the object of future research.

Table 1 RTA Effects on Cultural Trade and Sub-Sectors

	(1) OLS	(2) PPML	(3) PPML	(4) PPML	(5) PPML	(6) PPML	(7) PPML	(8) PPML
Variables	**lnCultural Trade**	**Cultural Trade**	**Cultural Heritage**	**Printed Matter**	**Music & Per. Arts**	**Visual Arts**	**Audio & Audiovisual**	**Non-Cultural Trade**
lnDIST	-0.610***	-0.448***	0.074	-0.527***	-0.603***	-0.221***	-0.603***	-0.759***
	(0.017)	(0.061)	(0.098)	(0.069)	(0.072)	(0.072)	(0.173)	(0.034)
CONTIG	1.135***	0.653***	0.626**	0.964***	0.201	0.319*	0.265	0.494***
	(0.104)	(0.154)	(0.243)	(0.155)	(0.169)	(0.187)	(0.318)	(0.093)
COMLANG	0.500***	0.892***	0.379**	1.526***	0.818***	0.565***	-0.199	-0.042
	(0.029)	(0.160)	(0.161)	(0.175)	(0.179)	(0.169)	(0.231)	(0.080)
COL45	1.066***	0.938***	0.595***	0.708***	0.224	0.653***	1.644***	0.562***
	(0.157)	(0.137)	(0.197)	(0.177)	(0.221)	(0.203)	(0.611)	(0.164)
COMRELIG	0.347***	1.005***	1.014**	0.982***	1.070***	1.276***	0.645	0.091
	(0.040)	(0.224)	(0.517)	(0.238)	(0.319)	(0.341)	(0.522)	(0.099)
WTO_MEM	0.334***	1.308***	-1.177	1.351***	0.434	-1.031*	1.273*	0.386**
	(0.032)	(0.242)	(0.910)	(0.244)	(0.408)	(0.526)	(0.726)	(0.154)
RTA	0.495***	0.118	-0.087	0.336***	0.765***	-0.273**	0.960***	0.274***
	(0.032)	(0.114)	(0.157)	(0.120)	(0.159)	(0.138)	(0.301)	(0.059)
Obs.	116,381	114,230	53,228	50,310	105,907	51,152	93,375	110,834
R-squared	0.726	0.703	0.780	0.673	0.709	0.773	0.513	0.830

All regressions include directional time-varying fixed effects. Standard errors are clustered by country pair and reported in parentheses. Asterisks signify statistical significance levels, with (***), (**), and (*) denoting p-values less than 0.01, 0.05, and 0.1, respectively.

Table 2 RTA Effects on Cultural Trade: Endogeneity and Phasing-In

	(1) ENDOG	(2) PHSNG	(3) ENDOG	(4) PHSNG	(5) ENDOG	(6) PHSNG	(7) ENDOG	(8) PHSNG	(9) ENDOG	(10) PHSNG	(11) ENDOG	(12) PHSNG	(13) ENDOG	(14) PHSNG
Variables	**Total Cult. Trade**	**Total Cult. Trade**	**Cultural Heritage**	**Cultural Heritage**	**Printed Matter**	**Printed Matter**	**Music & Per. Arts**	**Music & Per. Arts**	**Visual Arts**	**Visual Arts**	**Audio & Audio-visual**	**Audio & Audio-visual**	**Non-Cult. Trade**	**Non-Cult. Trade**
WTO_MEM	0.312	0.303	0.098	0.136	0.469	0.518	0.258	0.201	-1.513***	-1.437***	0.473	0.617	0.141*	0.127
	(0.285)	(0.288)	(0.700)	(0.706)	(0.574)	(0.572)	(0.662)	(0.664)	(0.318)	(0.318)	(0.749)	(0.732)	(0.084)	(0.083)
RTA	0.239***	0.242***	0.465***	0.487***	0.061	0.071	0.169	0.223	0.229*	0.225**	-0.027	-0.248	0.136***	0.117***
	(0.077)	(0.069)	(0.137)	(0.129)	(0.041)	(0.045)	(0.179)	(0.179)	(0.117)	(0.108)	(0.377)	(0.415)	(0.024)	(0.024)
RTA_LAG4		-0.017		-0.014		0.035		-0.140*		-0.077		0.390**		0.049**
		(0.058)		(0.200)		(0.043)		(0.076)		(0.078)		(0.177)		(0.022)
RTA_LAG8		0.003		-0.092		-0.055		-0.652		0.499**		0.804		-0.040
		(0.176)		(0.187)		(0.050)		(0.553)		(0.209)		(0.579)		(0.027)
RTA_LAG12		-0.013		0.147		0.139**		0.607		-0.193		-0.654		0.002
		(0.187)		(0.209)		(0.055)		(0.551)		(0.237)		(0.677)		(0.027)
CATEs		0.215**		0.528***		0.189***		0.038		0.455**		0.292		0.128***
		(0.107)		(0.206)		(0.066)		(0.256)		(0.188)		(0.400)		(0.036)
Obs.	76,132	76,132	12,487	12,487	64,006	64,006	14,705	14,705	46,868	46,868	14,581	14,581	79,073	79,073
R-squared	0.743	0.743	0.798	0.798	0.753	0.753	0.858	0.858	0.811	0.811	0.546	0.546	0.886	0.886

All regressions include directional time-varying fixed effects as well as country-pair fixed effects. Standard errors are clustered by country pair and reported in parentheses. Asterisks signify statistical significance levels, with (***), (**), and (*) denoting p-values less than 0.01, 0.05, and 0.1, respectively.

Table 3 RTA-IPR Effect on Cultural Trade and Sub-Sectors

Variables	(1) Cultural Trade	(2) Cultural Heritage	(3) Printed Matter	(4) Music & Per. Arts	(5) Visual Arts	(6) Audio & Audiovisual	(8) Non-Cult. Trade
WTO_MEM	0.393	0.129	0.492	0.225	-1.555***	0.067	0.193**
	(0.282)	(0.703)	(0.573)	(0.738)	(0.308)	(0.847)	(0.085)
RTA_NIPR	0.323***	0.077	0.067	0.212	0.517***	-0.532	0.098**
	(0.113)	(0.192)	(0.091)	(0.286)	(0.158)	(0.404)	(0.045)
RTA_IPR_NLE	0.038	1.004	0.168	0.003	-0.293	0.996***	-0.024
	(0.186)	(0.755)	(0.188)	(0.387)	(0.244)	(0.369)	(0.076)
RTA_IPR_LE_EXC	0.569***	2.250***	-0.120	1.206***	0.178	2.232***	0.192***
	(0.188)	(0.682)	(0.133)	(0.444)	(0.158)	(0.608)	(0.053)
RTA_IPR_LE	0.234***	0.432***	0.059	0.031	0.220*	-0.373	0.173***
	(0.075)	(0.132)	(0.049)	(0.249)	(0.128)	(0.460)	(0.030)
Obs.	74,824	12,173	62,843	13,967	45,905	14,139	77,801
R-squared	0.743	0.798	0.753	0.858	0.811	0.546	0.889

All regressions include directional time-varying fixed effects as well as country-pair fixed effects. Standard errors are clustered by country pair and reported in parentheses. Asterisks signify statistical significance levels, with (***), (**), and (*) denoting p-values less than 0.01, 0.05, and 0.1, respectively.

Table 4 RTA-AV Effect on Cultural Trade and Sub-Sectors

Variables	(1) Cultural Trade	(2) Cultural Heritage	(3) Printed Matter	(4) Music & Per. Arts	(5) Visual Arts	(6) Audio & Audiovisual	(8) Non-Cult. Trade
WTO_MEM	0.369	0.134	0.513	0.266	-1.581***	0.252	0.155*
	(0.293)	(0.702)	(0.572)	(0.731)	(0.322)	(0.770)	(0.085)
RTA_NAV	0.253***	0.473***	0.054	0.197	0.233**	0.036	0.140***
	(0.081)	(0.138)	(0.048)	(0.200)	(0.118)	(0.405)	(0.026)
RTA_AV_NLE	-0.022	0.893**	0.107	-0.250	-0.395	-0.044	0.119
	(0.144)	(0.421)	(0.167)	(0.228)	(0.258)	(0.403)	(0.113)
RTA_AV_LE_EXC	0.378**	0.067	0.049	-0.011	0.676	-1.600**	0.124**
	(0.189)	(0.483)	(0.088)	(0.388)	(0.452)	(0.732)	(0.054)
RTA_AV_LE	0.122	1.432***	-0.219	-0.081	0.221	0.401	0.412**
	(0.142)	(0.311)	(0.162)	(0.684)	(0.181)	(0.469)	(0.200)
Obs.	74,824	12,173	62,843	13,967	45,905	14,139	77,801
R-squared	0.743	0.798	0.753	0.858	0.811	0.546	0.889

All regressions include directional time-varying fixed effects as well as country-pair fixed effects. Standard errors are clustered by country pair and reported in parentheses. Asterisks signify statistical significance levels, with (***), (**), and (*) denoting p-values less than 0.01, 0.05, and 0.1, respectively.

Table 5 RTA-CC Effect on Cultural Trade and Sub-Sectors

Variables	(1) Cultural Trade	(2) Cultural Heritage	(3) Printed Matter	(4) Music & Per. Arts	(5) Visual Arts	(6) Audio & Audiovisual	(8) Non-Cult. Trade
WTO_MEM	0.377	0.187	0.523	0.270	-1.574***	0.273	0.156*
	(0.294)	(0.693)	(0.576)	(0.733)	(0.324)	(0.773)	(0.085)
RTA_NCC	0.264***	0.498***	0.091**	0.123	0.220*	0.131	0.147***
	(0.083)	(0.138)	(0.045)	(0.205)	(0.120)	(0.433)	(0.026)
RTA_CC_NLE	0.049	0.047	-0.098	0.234	0.126	-0.607	0.057
	(0.149)	(0.404)	(0.122)	(0.417)	(0.433)	(0.719)	(0.044)
RTA_CC_LE_EXC	0.360**	0.114	0.076	0.168	0.614	-1.052*	0.119**
	(0.181)	(0.474)	(0.085)	(0.355)	(0.406)	(0.556)	(0.057)
RTA_CC_LE	0.116	1.309***	-0.130	-0.305	0.251	0.373	0.230*
	(0.129)	(0.311)	(0.151)	(0.576)	(0.164)	(0.493)	(0.139)
Obs.	74,824	12,173	62,843	13,967	45,905	14,139	77,801
R-squared	0.743	0.798	0.753	0.858	0.811	0.546	0.889

All regressions include directional time-varying fixed effects as well as country-pair fixed effects. Standard errors are clustered by country pair and reported in parentheses. Asterisks signify statistical significance levels, with (***), (**), and (*) denoting p-values less than 0.01, 0.05, and 0.1, respectively.

References

Anderson, J. E., & Van Wincoop, E. (2003). Gravity with gravitas: A solution to the border puzzle. *American Economic Review*, *93*(1), 170-192.

Anderson, J. E., & Van Wincoop, E. (2004). Trade costs. *Journal of Economic Literature*, *42*(3), 691-751.

Anderson, J. E., & Yotov, Y. V. (2016). Terms of trade and global efficiency effects of free trade agreements, 1990–2002. *Journal of International Economics*, *99*, 279-298.

Baier, S. L., & Bergstrand, J. H. (2002). *On the endogeneity of international trade flows and free trade agreements*. Unpublished Manuscript. https://citeseerx.ist.psu.edu/document?repid=rep1&type=pdf&doi=35e19697eb36cea7ab56b4142b2b7c7f96342b46

Baier, S. L., & Bergstrand, J. H. (2004). Economic determinants of free trade agreements. *Journal of International Economics*, *64*(1), 29-63.

Baier, S. L., & Bergstrand, J. H. (2007). Do free trade agreements actually increase members' international trade? *Journal of International Economics*, *71*(1), 72-95.

Baier, S. L., Bergstrand, J. H., & Feng, M. (2014). Economic integration agreements and the margins of international trade. *Journal of International Economics*, *93*(2), 339-350.

Baldwin, R., & Taglioni, D. (2006). *Gravity for dummies and dummies for gravity equations*. (No. 12516). NBER Working Paper. https://doi.org/10.3386/w12516

Benavente, J. M., & Grazzi, M. (2017). *Public policies for creativity and innovation: Promoting the Orange Economy in Latin America and the Caribbean*. Inter-American Development Bank Publication. http://dx.doi.org/10.18235/0000841

Bergstrand, J. H., Egger, P., & Larch, M. (2013). Gravity Redux: Estimation of gravity-equation coefficients, elasticities of substitution, and general equilibrium comparative statics under asymmetric bilateral trade costs. *Journal of International Economics*, *89*(1), 110-121.

Bergstrand, J. H., Larch, M., & Yotov, Y. V. (2015). Economic integration agreements, border effects, and distance elasticities in the gravity equation. *European Economic Review*, *78*, 307-327.

Cheng, I. H., & Wall, H. J. (2005). Controlling for heterogeneity in gravity models of trade and integration. *Federal Reserve Bank of St. Louis*, *87*(1), 49–63.

Conte, M., Cotterlaz, P., & Mayer, T. (2023). *The CEPII gravity database*. (No. 2023-10). CEPII Working Paper. http://www.cepii.fr/DATA_DOWNLOAD/gravity/doc/Gravity_documentation.pdf

DCMS. (2001). *Creative industries mapping document 2001*. DCMS Report. https://www.gov.uk/government/publications/creative-industries-mapping-documents-2001

DCMS. (2023). *Creative industries section vision: A joint plan to drive growth, build talent and develop skills.* DCMS Report. https://assets.publishing.service.gov.uk/media/64898de2b32b9e000ca96712/Creative_Industries_Sector_Vision__accessible_version_.pdf

Disdier, A. C., & Mayer, T. (2007). Je t'aime, moi non plus: Bilateral opinions and international trade. *European Journal of Political Economy*, *23*(4), 1140-1159.

Disdier, A. C., & Head, K. (2008). The puzzling persistence of the distance effect on bilateral trade. *The Review of Economics and Statistics*, *90*(1), 37-48.

Disdier, A. C., Tai, S. H., Fontagné, L., & Mayer, T. (2010). Bilateral trade of cultural goods. *Review of World Economics*, *145*(4), 575-595.

Fally, T. (2015). Structural gravity and fixed effects. *Journal of International Economics*, *97*(1), 76-85.

Fazio, G. (2021). *A review of creative trade in the economics literature*. Creative Industries Policy & Evidence Centre (PEC) Discussion Paper. https://pec.ac.uk/discussion-papers/a-review-of-creative-trade-in-the-economics-literature.Feenstra, R. C. (2004). *Advanced international trade: Theory and evidence*. Princeton University Press.

Gaulier, G., & Zignago, S. (2010). *BACI: International trade database at the product-level (the 1994-2007 version)*. CEPII Working Paper. https://www.cepii.fr/pdf_pub/wp/2010/wp2010-23.pdf

Gourieroux, C., Monfort, A., & Trognon, A. (1984). Pseudo maximum likelihood methods: Applications to Poisson models. *Econometrica: Journal of the Econometric Society*, 701-720.

Guèvremont, V., & Otašević, I. (2017). *Culture in treaties and agreements: Implementing the 2005 Convention in bilateral and regional trade agreements*. UNESCO Report. https://unesdoc.unesco.org/ark:/48223/pf0000249829

Guèvremont, V., & Bernier, I. (2019). *Guide to the negotiations of cultural clauses in trade agreements*. UNESCO Report. https://www.unescodec.chaire.ulaval.ca/sites/unescodec.chaire.ulaval.ca/files/guide_-_6_fevrier_2020_-_eng_-_final.pdf

Haveman, J., & Hummels, D. (2004). Alternative hypotheses and the volume of trade: the gravity equation and the extent of specialisation. *Canadian Journal of Economics, 37*(1), 199-218.

Head, K., & Mayer, T. (2014). *Gravity equations: Workhorse, toolkit, and cookbook*. (No. 2013-27). CEPII Working Paper. http://www.cepii.fr/pdf_pub/wp/2013/wp2013-27.pdf

Heid, B., Larch, M., & Yotov, Y. V. (2021). Estimating the effects of non-discriminatory trade policies within structural gravity models. *Canadian Journal of Economics*, *54*(1), 376-409.

Helpman, E., Melitz, M., & Rubinstein, Y. (2008). Estimating trade flows: Trading partners and trading volumes. *The Quarterly Journal of Economics*, *123*(2), 441-487.

Hofmann, C., Osnago, A., & Ruta, M. (2017). *Horizontal depth: A new database on the content of preferential trade agreements*. (No: 7981). World Bank Policy Research Working Paper. https://openknowledge.worldbank.org/server/api/core/bitstreams/daf3725e-216f-51f1-8a39-b80385a6e2a3/content

Hofmann, C., Osnago, A., & Ruta, M. (2019). The content of preferential trade agreements. *World Trade Review*, *18*(3), 365-398.

Horn, H., Mavroidis, P. C., & Sapir, A. (2010). Beyond the WTO? An anatomy of EU and US preferential trade agreements. *The World Economy*, *33*(11), 1565-1588

Hummels, D. (2001). *Toward a geography of trade costs*. (No. 1162). Global Trade Analysis Project (GTAP) Working Paper. https://www.gtap.agecon.purdue.edu/resources/res_display.asp?RecordID=1162

KEA European Affairs. (2011). *Implementing cultural provisions of CARIFORUM-EU EPA: How do they benefit the Caribbean?* (No. 118). European Centre for Development Policy Management Discussion Paper. https://ecdpm.org/work/implementing-cultural-provisions-how-do-they-benefit-the-caribbean-cultural-sector

La Porta, R., Lopez-de-Silanes, F., Shleifer, A., & Vishny, R. (1999). The quality of government. *Journal of Law, Economics, and Organisation*, *15*(1), 222-279.

Martin, W., & Pham, C. S. (2020). Estimating the gravity model when zero trade flows are frequent and economically determined. *Applied Economics*, *52*(26), 2766-2779.

Mattoo, A., Mulabdic, A., & Ruta, M. (2022). Trade creation and trade diversion in deep agreements. *Canadian Journal of Economics*, *55*(3), 1598-1637.

Mayer, T., & Zignago, S. (2011). *Notes on CEPII's distances measures: The GeoDist database*. (No. 2011-25). CEPII Working Paper. http://www.cepii.fr/CEPII/en/publications/wp/abstract.asp?NoDoc=3877

McCallum, J. (1995). National borders matter: Canada-US regional trade patterns. *The American Economic Review*, *85*(3), 615-623.

Melitz, M. J. (2008). Language and foreign trade. *European Economic Review*, *52*(4), 667-699.

Melitz, M. J., & Toubal, F. (2014). Native language, spoken language, translation and trade. *Journal of International Economics*, *93*(2), 351-363.

Olivero, M. P., & Yotov, Y. V. (2012). Dynamic gravity: Endogenous country size and asset accumulation. *Canadian Journal of Economics*, *45*(1), 64-92.

Overman, H. G., Redding, S., & Venables, A. J. (2003). *The economic geography of trade, production, and income: A survey of empirics*. In: Kwan-Choi, E., Harrigan, J. (Eds.), Handbook of International Trade. Basil Blackwell, Oxford, pp. 353–387.

Piermartini, R., & Yotov, Y. V. (2016). *Estimating trade policy effects with structural gravity*. (No. ERSD-2016-10). WTO Staff Working Paper. https://www.wto.org/english/res_e/reser_e/ersd201610_e.htm

Redding, S., & Venables, A. J. (2004). Economic geography and international inequality. *Journal of International Economics*, *62*(1), 53-82.

Romalis, J. (2007). NAFTA's and CUSFTA's impact on international trade. *The Review of Economics and Statistics*, *89*(3), 416-435.

Rose, A. K., & Van Wincoop, E. (2001). National money as a barrier to international trade: The real case for currency union. *American Economic Review*, *91*(2), 386-390.

Rose, A. K. (2004). Do we really know that the WTO increases trade? *American Economic Review*, *94*(1), 98-114.

Scavia, J., Fernández De La Reguera, P., Olson, J. E., Pezoa, N., & Kristjanpoller, W. (2021). The impact of cultural trade on economic growth. *Applied Economics*, *53*(38), 4436-4447.

Santos-Silva, J., & Tenreyro, S. (2006). The log of gravity. *The Review of Economics and Statistics*, *88*(4), 641-658.

Santos-Silva, J., & Tenreyro, S. (2011). Further simulation evidence on the performance of the poisson pseudo-maximum likelihood estimator. *Economics Letters*, *112*(2), 220-222.

Tinbergen, J. (1962). *Shaping the world economy: Suggestions for an international economic policy*. Twentieth Century Fund.

Trefler, D. (2004). The long and short of the Canada-US free trade agreement. *American Economic Review*, *94*(4), 870-895.

UNCTAD. (2018). *Creative economy outlook. Trends in international trade in creative industries: Country profiles 2005-2014*. (No. UNCTAD/DITC/TED/2018/3). UNCTAD Report. https://unctad.org/system/files/official-document/ditcted2018d3_en.pdf

UNCTAD. (2022). *Creative economy outlook 2022. The international year of creative economy for sustainable development: Pathway to resilient creative industries*. (No. UNCTAD/DITC/TSCE/2022/1). UNCTAD Report. https://unctad.org/system/files/official-document/ditctsce2022d1_overview_en.pdf

UNCTAD. (2024). *Creative economy outlook 2024.* (No. UNCTAD/DITC/TSCE/2024/2). UNCTAD Report. https://unctad.org/publication/creative-economy-outlook-2024

UNESCO. (2000). *Culture, trade, and globalisation: Questions and answers*. (No. CUA/286). UNESCO Report. https://unesdoc.unesco.org/ark:/48223/pf0000121360

UNESCO. (2005). *International flows of selected cultural goods and services, 1994-2003*. (No. UIS/AP/05-01). UNESCO Report. https://uis.unesco.org/sites/default/files/documents/international-flows-of-selected-cultural-goods-and-services-1994-2003-en_1.pdf

UNESCO. (2015). *Reshaping cultural policies 2005 convention global report: A decade promoting the diversity of cultural expressions for development*. (No. CUA/440). UNESCO Report. https://uis.unesco.org/sites/default/files/documents/reshaping-cultural-policies-a-decade-promoting-the-diversity-of-cultural-expressions-for-development-2015-en_0.pdf

UNESCO. (2021). *The African film industry: Trends, challenges, and opportunities for growth*. (No. CUA/478). UNESCO Report. https://doi.org/10.58337/DEJM2927

UNESCO. (2022). *Reshaping policies for creativity: Addressing culture as a global public good*. (No. CUA/440/3). UNESCO Report. https://doi.org/10.58337/OILN3726

Wooldridge, J. M. (2010). *Econometric analysis of cross section and panel data*. Cambridge, Massachusetts: The MIT Press.

Yotov, Y. V., & Anderson, J. E. (2011). *Terms of trade and global efficiency effects of free trade agreements, 1990-2002*. (No. 17003). NBER Working Paper. https://doi.org/10.3386/w17003

Yotov, Y. V., Piermartini, R., Monteiro, J., & Larch, M. (2016). *An advanced guide to trade policy analysis: The structural gravity model*. Co-published by the WTO and UNCTAD. https://www.wto.org/english/res_e/booksp_e/advancedwtounctad2016_e.pdf

Appendix A

Table A1 List of Core and Related Cultural Goods

CORE CULTURAL GOODS	RELATED CULTURAL GOODS
Cultural Heritage	Music, Cinema, Radio, and Television Material
Collections and collectors' pieces	Musical instruments
Antiques of an age exceeding 100 years	Sound and video reproducing and recording equipment
Printed Matter	Cinematographic and photographic supplies
Books, brochures, dictionaries, etc.	Television receivers, video monitors, and projectors
Children's picture, drawing or colouring books	Radio radio-telephony receivers
Newspapers, journals, and periodicals	Architecture plans and drawings and trade
Printed music	advertisement materials
Maps	
Postcards, personal greeting, etc.	
Pictures, designs, and photographs	
Music & Performing Arts	
Gramophone records	
Discs for laser reading systems for reproducing sound only	
Magnetic tape (recorded)	
Other recorded media for sound	
Visual Arts	
Paintings, drawings, and pastels	
Other visual arts (sculptures, engravings, statuettes, etc.)	
Audio & Audiovisual Media	
Photographic plates and film, exposed and developed	
Cinematographic film, exposed and developed	
Videogames used with a television receiver	

Table A2 Descriptive Statistics

Variable	Obs	Mean	Std. dev.	Min	Max
lnDIST	950,996	8.82348	0.7793588	2.349373	9.898699
CONTIG	1,006,556	0.0126213	0.1116332	0	1
COMLANG	950,996	0.1753572	0.3802725	0	1
COL45	950,996	0.0063281	0.0792973	0	1
COMRELIG	766,674	0.1680304	0.2425874	0	0.997002
WTO_MEM	1,006,556	0.4679521	0.4989721	0	1
RTA	1,014,584	0.1234496	0.3289527	0	1
IPR	998,621	0.0654402	0.2473012	0	1
AV	998,621	0.0119345	0.1085912	0	1
CC	998,621	0.0395085	0.1948014	0	1

Table A3 Correlation matrix of culture-specific provisions

	IPR	Audio Visual	Cultural Cooperation
IPR	1		
Audio Visual	0.4163	1	
Cultural Cooperation	0.5392	0.5468	1

Appendix B

Notes: All regressions in Tables B1 and B2 include directional time-varying fixed effects as well as country-pair fixed effects. Standard errors are clustered by country pair and reported in parentheses. Asterisks signify statistical significance levels, with (***), (**), and (*) denoting p-values less than 0.01, 0.05, and 0.1, respectively.

Table B1 RTA-AV Effect on the Audio & Audio-Visual Media Category

	(1)	**(2)**	**(3)**	**(4)**
Variables	Video Games	Photographic Film	Cinematographic Film ≥ width of 35cm	Cinematographic Film < width of 35cm
WTO_MEM	1.084	1.639*	1.736*	-0.145
	(1.144)	(0.921)	(0.914)	(1.510)
RTA_NAV	0.712**	-0.556	0.452	0.078
	(0.319)	(0.491)	(0.315)	(0.354)
RTA_AV_NLE	-0.221	-0.264	-0.583	-1.125*
	(0.787)	(0.474)	(0.448)	(0.590)
RTA_AV_LE_EXC	-0.002	-1.660***	2.010**	2.398**
	(0.531)	(0.332)	(0.878)	(1.190)
RTA_AV_LE	0.952**	0.087	0.617	0.543
	(0.434)	(0.651)	(0.457)	(0.601)
Obs.	26,544	17,982	17,819	10,847
R-squared	0.531	0.580	0.521	0.502

Table B2 RTA-CC Effect on the Audio & Audio-Visual Media Category

	(1)	(2)	(3)	(4)
Variables	Video Games	Photographic Film	Cinematographic Film ≥ width of 35cm	Cinematographic Film < width of 35cm
WTO_MEM	1.124	1.638*	1.758*	-0.078
	(1.147)	(0.918)	(0.902)	(1.524)
RTA_NCC	0.998***	-0.555	0.417	-0.261
	(0.283)	(0.492)	(0.324)	(0.364)
RTA_CC_NLE	-0.190	-0.511	-0.284	2.179**
	(0.684)	(0.387)	(0.333)	(1.101)
RTA_CC_LE_EXC	0.166	-1.657***	2.047**	2.998***
	(0.293)	(0.331)	(0.896)	(1.068)
RTA_CC_LE	1.285***	-0.511	0.582	2.251**
	(0.400)	(0.700)	(0.433)	(0.933)
Obs.	26,544	17,982	17,819	10,847
R-squared	0.531	0.580	0.521	0.502

Table B3 RTA Effects on Related Cultural Goods

	(1)	(2)	(3)
VARIABLES	PPML	ENDOG	PHSNG
lnDIST	-0.514***		
	(0.054)		
CONTIG	0.518***		
	(0.129)		
COMLANG	-0.190		
	(0.174)		
COL45	0.649***		
	(0.227)		
COMRELIG	0.513**		
	(0.220)		
WTO_MEM	0.248	-0.753***	-0.585***
	(0.327)	(0.230)	(0.207)
RTA	0.687***	-0.030	-0.015
	(0.098)	(0.070)	(0.068)
RTA_LAG4			0.025
			(0.065)
RTA_LAG8			0.065
			(0.071)
RTA_LAG12			0.206***
			(0.073)
CATEs			0.280***
			0.096
Observations	113,721	77,194	77,194
R-squared	0.601	0.663	0.663

All regressions include directional time-varying fixed effects. Columns 2 and 3 also include country-pair fixed effects. Standard errors are clustered by country pair and reported in parentheses. Asterisks signify statistical significance levels, with (***), (**), and (*) denoting p-values less than 0.01, 0.05, and 0.1, respectively.

Creative Industries Policy and Evidence Centre

Led by Newcastle University Business School

with RSA

Discussion paper

For more details visit www.pec.ac.uk
or follow us on LinkedIn creative-pec
or Bluesky creativepec.bsky.social