Bernhard Tröster, Werner Raza

ASSESS_EU_MERCOSUR:

ASSESSING THE CLAIMED BENEFITS OF THE ASSOCIATION AGREEMENT BETWEEN THE EU AND MERCOSUR

Final Report

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12 July 2021

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Study commissioned by Arbeiterkammer Wien

CONTENTS

LIST OF FIGURES AND TABLES

EXECUTIVE SUMMARY

In June 2019, the EU and the Mercosur group of countries (Mercado Común del Sur – Argentina, Brazil, Paraguay and Uruguay) announced the political agreement on the conclusion of an Association Agreement (EUMAA) including a comprehensive trade component. With negotiations stretching over two decades, the long debate on the agreement has a structural reason in the profound asymmetries of the EU-Mercosur trade relationship. Mercosur exports to the EU have been traditionally dominated by agricultural and food products, as well as minerals and other commodities. On the other side, EU exports to the Mercosur countries consist largely of manufactured goods such as machinery, motor vehicles, chemicals and pharmaceuticals.

The agreement now reached focuses on the removal of tariff barriers for more than 90 % of tariff lines in bilateral trade. Only trade liberalization for sensitive agricultural products on the EU side will remain limited. The agreement also covers a wide range of other trade issues including chapters on Sanitary and Phytosanitary Measures (SPS) and Technical Barriers to Trade (TBT) regulations, Services and Establishment, Public Procurement and, Trade and Sustainable Development. The agreement is, therefore, *comprehensive* as it goes far beyond enhanced market access for trade in goods. As an Association Agreement, it is a mixed agreement affecting competences of the EU Member States. But it is not as *deep* as other EU trade agreements in recent years and excludes comprehensive harmonization of regulatory measures and investment liberalisation including investors' rights to dispute settlement.

The EUMAA is controversially discussed in the European public. Given a strong surge in tropical deforestation rates in the Amazon region since 2019, and increasing violations of the rights of indigenous people, above all, the environmental and human rights impacts of the agreement have become contested. These debates have resulted in a number of EU Member State governments including, amongst others, Austria and France currently opposing the agreement. Also, on 7 October 2020 the European Parliament (EP) adopted a Resolution stating that the agreement cannot be ratified "as it stands" (Resolution P9_TA(2020)0252). As a consequence, the European Commission (EC) has started consultations with Mercosur countries on a Joint Declaration, which would set out (pre-ratification) commitments to address environmental obligations and maybe human rights and labour standards of the two parties. At the time of finalizing this report, these negotiations were still pending.

Against this background, in this report we aim at providing a critical assessment of the economic impacts of the trade part of the EU Mercosur Association Agreement and address social and environmental issues. To this end, we firstly assess the status-quo of trade relations and protective barriers between the EU, Austria and Mercosur in order to infer potential effects. Secondly, we scrutinize the methodology and the reported results of five selected impact assessments based on Computable General Equilibrium (CGE) models, including the impact assessment carried out by the London School of Economics (LSE 2020) on behalf of the EC, and a study based on a structural gravity model. Finally, key issues related to the policy coherence for sustainable development of the agreement are addressed, given the EU's commitment to combating climate change and to implement the European Green Deal.

The main findings of our assessment can be summarized as follows:

Studies expect small economic gains for both parties, but provide little or no details on underlying data and simulations: The analysed impact assessments use standard CGE models, which are mainly microeconomic optimization exercises. Gains from trade are derived through the reallocation of factors of productions and the behaviour of utility-maximizing consumers. However, the results are not derived in a transparent way as little

or no specifics are provided on simulation details or data and parameter inputs. For instance, the LSE SIA does not report the results of its baseline simulations to 2032, to which all reported changes relate. Data on tariffs and trade costs reductions through non-tariff measures (NTMs) and their impact on the results as well as data on applied parameters are either missing or not documented in detail. Moreover, none of the CGE simulation studies report results for the single EU member states. Without such details on underlying data and methodologies, the claimed benefits of the EUMAA cannot be validated by third parties and essentially remain outcomes from a 'black box'.

Reported changes to the Mercosur trade balances are implausible: All CGE impact studies report substantially higher growth for EU exports to Mercosur than vice versa. Taking the LSE SIA study as the benchmark, EUMAA is expected to increase EU exports to Mercosur countries by 67.5 % until 2032, driven by manufacturing sectors. On the other side, total Mercosur exports to the EU are expected to rise by only 13.9 %, particularly in the agri-food sectors. Based on recent trade data, the EUMAA would increase the *bilateral* trade deficit for the Mercosur against the EU from USD 10 billion to USD 45 billion. However, the *total* net trade effects for Mercosur countries are reported as strongly positive, with an increase of USD 10 billion. Such diverging effects in bilateral and total trade can only be rationalized by the model assumption of strong substitution effects between bilateral imports and imports from third countries, such that Mercosur production is only slightly affected by competition from more EU imports. This however is unlikely.

Impacts on overall real GDP are small, but sectors are affected differently: According to all reviewed CGE impact studies, the expected macroeconomic effects of the agreement will be small, but positive for both parties. The LSE SIA study expects EU GDP to increase by +0.1 % or EUR 15 billion by 2032 – equivalent to EUR 2.50 per capita and year. GDP changes in Mercosur range from 0.1 % in Paraguay (or EUR 1.20 per capita per year) to 0.7 % in Argentina (or EUR 8.6 per capita per year). At the sector level, output in EU agri-food sectors shrinks, in particular in the sectors beef (-1.2 %) and sugar (-1.0 %), while manufacturing and services remain unchanged or see modest growth ('Vehicles, transport equipment' +0.6 % and 'Machinery' +0.5 %). In Mercosur, output effects are mixed. Agri-food sectors in Brazil and Argentina would benefit, for example output in Brazilian 'Poultry meat, pork' +3.7 %. Most manufacturing sectors in Mercosur will contract, e.g. 'Machinery' -5.1 % in Brazil and 'Vehicles, transport equipment' -14.4 % in Uruguay. By assuming trade cost reductions from EUMAA-induced regulatory changes, the LSE SIA derives positive output effects in services sectors in Mercosur countries. Given the large size of the service sectors in the total economy, this contributes to the positive overall economic results in Mercosur countries.

Assessment results imply negative employment effects for the EU, but details and implications are missing: As the only CGE impact assessment, the LSE SIA reports sectoral employment effects in terms of percentage changes. Based on current employment data, we estimate that this leads to a total reduction of -0.06 % or 120,000 jobs in the EU, particularly in agriculture (-16,100 / -0.5 %) and food sectors (-33,800 / -0.7 %) as well as in the services sectors (-103,400 / -0.07 %). Only EU manufacturing sectors would see higher employment (+33,000 / +0.11 %). The employment effects and the underlying model specifications are, however, not discussed in the LSE SIA report. In general, the impact studies do not address potential adjustment costs through temporary unemployment and re-training, and neglect any potential negative effects on employment in the long run.

Effects for single EU member states are not available from CGE models, but effects for Austria are most likely mixed: None of the CGE model assessments show effects for the single EU member states, even though the exposure to Mercosur exports and imports differ significantly. Combining Austria's trade profile and the LSE results on employment, job effects for Austria depend on the effects in services sectors. With minor employment losses in agriculture (-60 / -0.18 %) and food (-500 / -0.64 %), and some

gains in manufacturing industries (+1,100 / +0.11 %), Austria's negative trade balance in bilateral services trade could affect employment changes adversely and lead to an overall employment loss for Austria in the order of 1.200 jobs.

EUMAA will deepen traditional specialization patterns, but model results are not sufficient to fully assess the impact: The EUMAA will contribute to deepening the traditional international division of labour between the so-called industrialized and developing countries. The re-primarization of the Mercosur economies will be deepened with the risk of socio-ecological conflicts from expanding agricultural frontiers. All studies report higher production and exports of agricultural and food products (in particular soya, meat, ethanol), while most studies expect output losses for manufacturing industries. Adjustment costs in Mercosur countries will thus have to be borne by industrial workers, which will suffer from job losses and wage pressures, and by local, mostly indigenous communities to the extent, that an expanding agricultural frontier appropriates their land for agricultural use. In the case of the EU, import competition from Mercosur products such as beef, sugar and other agri-food products will intensify structural change in EU agriculture and increase economic pressure, mostly on small-scale, family-based farming. However, the CGE model results are not sufficient to show the real magnitude of the impact in the agricultural sectors, particularly as the scenarios do not reflect current tariffs and quota liberalisation.

Assessment studies claim limited environmental impacts, but the analysis does not cover the full picture: Based on its results for output changes, the LSE SIA expects only small changes in CO_2 and other Green House Gas (GHG) emissions due to the EUMAA. According to the LSE SIA, CO_2 emissions in the EU are expected to increase slightly by 0.05 % or 200 million tons and in Mercosur countries by 180 million tons until 2032. However, the LSE SIA does not address additional CO_2 emissions from the transport services sector or possible emissions from land-use changes. Moreover, giving additional emissions a price, reduces the overall welfare gains from EUMAA by almost 60 %. Against the background of strongly rising annual deforestation rates in the Amazon region in recent years, the LSE SIA unconvincingly argues that an expansion of agricultural production in Mercosur countries is not necessarily linked to deforestation. In contrast, other studies, expect an acceleration of annual deforestation during the implementation period of the agreement. The SIA study does not address such uncertainties regarding impacts, by e.g. performing a sensitivity analysis.

Policy coherence for sustainable development (PCSD) is crucial for reducing ecological footprint of EUMAA and other trade agreements, but is missing in the current EU approach: Deforestation as well as climate change and other environmental effects of the EUMAA will depend on the future trajectory of in particular meat and soy production in Mercosur countries. The latter will in turn depend on *inter alia* the future development of global and EU demand for these products. By facilitating market access and reducing trade costs, agreements like EUMAA contribute to deepening the extractivist economic model in Mercosur countries, in which economic growth increasingly depends on expanding large-scale agricultural production and mineral extraction. Commitments under the Paris Agreement require the EU to drastically reduce its carbon footprint by 2050. As a matter of fact, during the last 30 years, the EU has increasingly resorted to achieving this by carbon leakage, i.e. by importing goods with a growing amount of GHG embodied in them. The EUMAA will likely continue this process, as all environmental provisions of the agreement are of a best-endeavours nature and not subject to binding dispute settlement. If the strategic interests of the EU include the accomplishment of the climate targets of the Paris Agreement and the promotion of the UN Sustainable Development Goals both at the domestic and the global level, a profound revision of the agreement will be necessary. Such a PCSD-oriented EU trade policy approach would instead promote trade in sustainable products and support sustainable production models in partner countries.

ZUSAMMENFASSUNG

Im Juni 2019 verkündeten die EU und der Mercosur (Mercado Común del Sur – Argentinien, Brasilien, Paraguay und Uruguay) die politische Einigung über den Abschluss eines Assoziierungsabkommens (EUMAA) inklusive einer umfassenden Handelskomponente. Die lange Debatte über das Abkommen, dessen Verhandlungen sich über einen Zeitraum von zwei Jahrzehnten erstreckten, hat einen strukturellen Grund in den tiefgreifenden Asymmetrien der Handelsbeziehungen zwischen der EU und Mercosur. Die Exporte des Mercosur in die EU sind traditionell von Agrar- und Lebensmittelprodukten sowie Mineralien und anderen Rohstoffen dominiert. Auf der anderen Seite bestehen die Exporte der EU in die Mercosur-Länder größtenteils aus verarbeiteten Industriegütern wie Maschinen, Kraftfahrzeugen, Chemikalien und Arzneimitteln.

Das jetzt erzielte Abkommen konzentriert sich auf die Beseitigung von Zollschranken für mehr als 90 % der Zolllinien im bilateralen Handel. Lediglich die Handelsliberalisierung für sensible landwirtschaftliche Produkte auf EU-Seite bleibt begrenzt. Das Abkommen deckt auch eine breite Palette anderer Handelsfragen ab, darunter Kapitel über sanitäre und phytosanitäre Maßnahmen (SPS) und Vorschriften über technische Handelshemmnisse (TBT), Dienstleistungen und Niederlassung, öffentliches Auftragswesen sowie Handel und nachhaltige Entwicklung. Das Abkommen ist daher als *umfassend* (*comprehensive*) zu bezeichnen, da es weit über einen verbesserten Marktzugang für den Warenhandel hinausgeht. Als Assoziierungsabkommen ist es ein gemischtes Abkommen, das die Zuständigkeiten der EU-Mitgliedstaaten berührt. Es ist jedoch nicht so *tiefgreifend* (*deep*) wie andere EU-Handelsabkommen der letzten Jahre und schließt eine umfassende Harmonisierung von Regulierungsmaßnahmen und die Liberalisierung von Investitionen einschließlich der Rechte von Investoren auf Streitbeilegung aus.

Das EUMAA wird in der europäischen Öffentlichkeit kontrovers diskutiert. Angesichts eines starken Anstiegs der Abholzungsraten im Amazonasgebiet seit 2019 und zunehmender Verstöße gegen die Rechte indigener Völker sind vor allem die umwelt- und menschenrechtlichen Auswirkungen des Abkommens umstritten. Diese Debatten haben dazu geführt, dass mehrere Regierungen von EU-Mitgliedsstaaten, darunter u.a. Österreich und Frankreich, derzeit gegen das Abkommen sind. Auch das Europäische Parlament (EP) hat am 7. Oktober 2020 eine Resolution verabschiedet, die betont, dass das Abkommen "in seiner jetzigen Form" nicht ratifiziert werden kann (Resolution P9_TA(2020)0252). Infolgedessen hat die Europäische Kommission (EK) Konsultationen mit den Mercosur-Ländern über eine Gemeinsame Erklärung aufgenommen, in der Verpflichtungen (vor der Ratifizierung) festgelegt würden, die sich auf Umweltverpflichtungen und möglicherweise auf Menschenrechte und Arbeitsnormen der beiden Parteien beziehen sollten. Zum Zeitpunkt der Fertigstellung dieser Studie waren diese Verhandlungen noch nicht abgeschlossen.

Vor diesem Hintergrund zielen wir in dieser Studie darauf ab, eine kritische Bewertung der wirtschaftlichen Auswirkungen des Handelsteils des EU-Mercosur-Assoziierungsabkommens vorzunehmen, sowie soziale und ökologische Fragen zu diskutieren. Zu diesem Zweck bewerten wir zunächst den Status-quo der Handelsbeziehungen und Zollschutzniveaus zwischen der EU, Österreich und Mercosur, um daraus mögliche Auswirkungen abzuleiten. Zweitens untersuchen wir die Methodik und die Resultate von fünf ausgewählten Folgenabschätzungen, sog. (Sustainability) Impact Assessments (SIA), die auf Computable General Equilibrium (CGE)-Modellen basieren, darunter die Folgenabschätzung, die von der London School of Economics (LSE 2020) im Auftrag der EK durchgeführt wurde (LSE SIA), sowie eine Studie, die auf einem strukturellen Gravitationsmodell basiert. Schließlich werden zentrale Fragen im Zusammenhang mit der politischen Kohärenz für eine nachhaltige Entwicklung des Abkommens thematisiert, die sich angesichts der Verpflichtung der EU zur Bekämpfung des Klimawandels, zu

Umsetzung der UN Sustainable Developments Goals (SDGs) und des europäischen Green Deal stellen.

Die wichtigsten Ergebnisse unserer Analyse lassen sich wie folgt zusammenfassen:

Studien erwarten geringe Wohlfahrtsgewinne für beide Parteien, liefern aber wenige oder keine Details zu den zugrundeliegenden Daten und Simulationen: Die analysierten Folgenabschätzungen verwenden Standard-CGE-Modelle, die hauptsächlich mikro-ökonomische Optimierungsübungen sind. Gewinne aus dem Handel werden durch die Reallokation von Produktionsfaktoren und das Verhalten von nutzenmaximierenden ProduzentInnen bzw. KonsumentInnen abgeleitet. Die Ergebnisse werden jedoch nicht auf transparente Weise hergeleitet, da wenig oder gar keine Angaben zu Simulationsdetails oder verwendete Daten und Parameter gemacht werden. So berichtet die LSE SIA beispielsweise nicht über die Ergebnisse ihrer Baseline-Simulationen bis 2032, auf die sich alle berichteten Änderungen beziehen. Daten zu Zöllen und Handelskostensenkungen durch nicht-tarifäre Maßnahmen (NTMs) und deren Auswirkungen auf die Ergebnisse sowie Details zu verwendeten Parametern fehlen entweder gänzlich oder sind nicht detailliert dokumentiert. Darüber hinaus berichtet keine der CGE-Simulationsstudien Ergebnisse für die einzelnen EU-Mitgliedsstaaten. Ohne solche Details zu den zugrundeliegenden Daten und den verwendeten Methoden können die behaupteten Vorteile des EUMAA nicht von Dritten validiert werden und bleiben im Wesentlichen Ergebnisse aus einer "Black Box".

Die für die Mercosur Handelsbilanzen ausgewiesenen Veränderungen erscheinen unplausibel: Alle CGE-Impact-Studien weisen für die EU-Exporte in die Mercosur-Länder ein deutlich höheres Wachstum aus als andersherum. Nimmt man die SIA-Studie der LSE als Maßstab, so wird erwartet, dass das EUMAA die EU-Exporte in die Mercosur-Länder bis 2032 um 67,5 % steigern wird, angetrieben von der verarbeitenden Industrie. Auf der anderen Seite wird erwartet, dass die Gesamtexporte der Mercosur-Länder in die EU nur um 13,9 % steigen werden, insbesondere in den Agrar- und Nahrungsmittelsektoren. Basierend auf aktuellen Handelsdaten würde das EUMAA das bilaterale Handelsdefizit der Mercosur Länder gegenüber der EU von USD 10 Mrd. auf USD 45 Mrd. erhöhen. Die gesamten Netto-Handelseffekte für die Mercosur-Länder werden jedoch mit einem Anstieg von USD 10 Mrd. als stark positiv angegeben. Solche divergierenden Effekte im bilateralen und gesamten Handel lassen sich nur durch die Modellannahme starker Substitutionseffekte zwischen bilateralen Importen und Einfuhren aus Drittländern erklären, infolge dessen die Mercosur-Produktion nur geringfügig von der Konkurrenz durch mehr EU-Importe betroffen ist.

Die Auswirkungen auf das gesamte reale BIP sind gering, aber Sektoren sind unterschiedlich betroffen: Gemäß allen überprüften CGE-Wirkungsstudien werden die erwarteten makroökonomischen Effekte des Abkommens gering, aber positiv für beide Seiten sein. Die LSE-SIA-Studie erwartet für die EU einen Anstieg des BIP um +0,1 % bzw. EUR 15 Mrd. bis 2032 – das entspricht EUR 2,50 pro Kopf und Jahr. Die BIP-Veränderungen im Mercosur reichen von 0,1 % in Paraguay (oder EUR 1,20 pro Kopf und Jahr) bis 0,7 % in Argentinien (oder EUR 8,6 pro Kopf und Jahr). Auf Sektorebene schrumpft die Produktion in der EU-Agrar- und Nahrungsmittelwirtschaft, insbesondere in den Sektoren Rindfleisch (-1,2 %) und Zucker (-1,0 %), während die verarbeitende Industrie und der Dienstleistungssektor unverändert bleiben oder ein geringes Wachstum verzeichnen ("Fahrzeuge, Fahrzeugbau" +0,6 % und "Maschinen" +0,5 %). Im Mercosur sind die Auswirkungen auf die Produktion uneinheitlich. Die Agrar- und Nahrungsmittelsektoren in Brasilien und Argentinien würden profitieren, z. B. der brasilianische Sektor „Geflügelfleisch, Schweinefleisch“ mit +3,7 % mehr Produktion. Die meisten Sektoren des verarbeitenden Gewerbes in Mercosur-Ländern werden schrumpfen, z. B. „Maschinen“ mit -5,1 % in Brasilien und „Fahrzeuge, Transportausrüstung“ mit -14,4 % in Uruguay. Unter der Annahme von Handelskostensenkungen durch EUMAA-induzierte regulatorische Änderungen leitet das LSE SIA positive Produktions-

effekte in den Dienstleistungssektoren der Mercosur-Länder ab. Angesichts des großen Anteils der Dienstleistungssektoren an der Gesamtwirtschaft trägt dies maßgeblich zu den positiven gesamtwirtschaftlichen Ergebnissen in den Mercosur-Ländern bei.

Die ausgewiesenen Beschäftigungseffekte sind für die EU negativ, aber es fehlen wiederum die zugrundeliegenden Modellannahmen: Als einzige CGE-Folgenabschätzung gibt das LSE SIA sektorale Beschäftigungseffekte in Form von prozentualen Veränderungen an. Basierend auf aktuellen Beschäftigungsdaten schätzen wir, dass dies zu einem Gesamtrückgang von -0,06 % oder 120.000 Arbeitsplätzen in der EU führt, insbesondere in der Landwirtschaft (-16.100 / -0,5 %) und im Lebensmittelsektor (-33.800 / -0,7 %) sowie im Dienstleistungssektor (-103.400 / -0,07 %). Nur in der verarbeitenden Industrie der EU würde die Beschäftigung steigen (+33.000 / +0,11 %). Die Beschäftigungseffekte und die zugrundeliegenden Modellspezifikationen werden im SIA-Bericht der LSE jedoch nicht diskutiert. Im Allgemeinen gehen die Studien nicht auf mögliche Anpassungskosten durch temporäre Arbeitslosigkeit und Umschulung ein und vernachlässigen mögliche negative Auswirkungen auf die Beschäftigung in langfristiger Perspektive.

Effekte für einzelne EU-Mitgliedsstaaten sind aus den CGE-Modellschätzungen nicht verfügbar, aber Effekte für Österreich sind höchstwahrscheinlich gemischt: Keine der CGE-Modellbewertungen zeigt Effekte für die einzelnen EU-Mitgliedsstaaten, obwohl sich deren Handelsprofile gegenüber den Mercosur-Staaten deutlich unterscheiden. Kombiniert man Österreichs Handelsprofil und die LSE-Ergebnisse zur Beschäftigung, so hängen die Beschäftigungseffekte für Österreich von den Effekten in den Dienstleistungssektoren ab. Geringfügige Beschäftigungsverluste in der Landwirtschaft (-60 / -0,18 %) und in der Nahrungsmittelindustrie (-500 / -0,64 %) stehen moderaten Zuwächsen in den Industriesektoren (+1.100 / +0,11 %) gegenüber. Die negative Handelsbilanz Österreichs im bilateralen Dienstleistungshandel könnte sich jedoch negativ auf die Beschäftigungsentwicklung auswirken und zu einem geringen Gesamtbeschäftigungsverlust für Österreich in der Größenordnung von 1.200 Arbeitsplätzen führen.

EUMAA wird die traditionellen Spezialisierungsmuster vertiefen, aber die Modellergebnisse reichen nicht aus, um die Auswirkungen vollständig zu beurteilen: Das EUMAA wird zur Vertiefung der traditionellen internationalen Arbeitsteilung zwischen den sogenannten Industrie- und Entwicklungsländern beitragen. Die Reprimarisierung der Mercosur-Volkswirtschaften wird verstärkt werden mit dem Risiko sozial-ökologischer Konflikte durch die Ausweitung des Flächenverbrauchs für Landwirtschaft und Bergbau. Alle Studien berichten von höherer Produktion und Exporten von Agrar- und Nahrungsmittelprodukten (insbesondere Soja, Fleisch, Ethanol), während die meisten Studien Produktionsverluste für die verarbeitende Industrie erwarten. Die Anpassungskosten in den Mercosur-Ländern werden also von IndustriearbeiterInnen zu tragen sein, die unter Arbeitsplatzverlusten und Lohndruck leiden werden, und von den lokalen, meist indigenen Gemeinschaften in dem Maße, in dem eine expandierende Agrarproduktion sich indigenes Land für die landwirtschaftliche Nutzung aneignet. Im Falle der EU wird die Importkonkurrenz von Mercosur-Produkten wie Rindfleisch, Zucker und anderen landwirtschaftlichen Produkten den Strukturwandel in der EU-Landwirtschaft verstärken und den wirtschaftlichen Druck vor allem auf die kleinbäuerliche, familiengeführte Landwirtschaft erhöhen. Die Ergebnisse der CGE-Modelle reichen jedoch nicht aus, um das tatsächliche Ausmaß der Auswirkungen in den landwirtschaftlichen Sektoren aufzuzeigen, zumal die Szenarien nicht die tatsächlich vereinbarte Zoll- und die Quotenliberalisierung widerspiegeln.

Folgenabschätzungsstudien behaupten begrenzte Umweltauswirkungen, aber die Analyse ist unvollständig: Basierend auf ihren Ergebnissen für Output-Veränderungen erwartet das LSE SIA nur geringe Veränderungen bei den CO_2- und anderen Treibhausgas Emissionen durch EUMAA. Laut LSE SIA werden die CO_2-Emissionen in

der EU bis 2032 leicht um 0,05 % oder 200 Millionen Tonnen und in den Mercosur-Ländern um 180 Millionen Tonnen ansteigen. Das LSE SIA geht jedoch nicht auf zusätzliche CO_2-Emissionen aus dem Transportdienstleistungssektor oder mögliche Emissionen aus Landnutzungsänderungen ein. Darüber würde die Bepreisung der zusätzlichen Emissionen (z.B. durch eine Klimasteuer) die gesamten Wohlfahrtsgewinne aus der EUMAA um fast 60 % senken. Vor dem Hintergrund, dass in den letzten Jahren die jährliche Entwaldung in der Amazonasregion stark angestiegen ist, ist die Argumentation des LSE SIA wenig überzeugend, dass eine Ausweitung der landwirtschaftlichen Produktion in den Mercosur-Ländern nicht zwangsläufig mit mehr Entwaldung verbunden ist. Andere Studien erwarten dagegen eine Beschleunigung der jährlichen Entwaldung während der Umsetzungsperiode des Abkommens Die SIA-Studie geht auf solche Unsicherheiten bezüglich der Auswirkungen nicht ein, z. B. mittels Durchführung einer Sensitivitätsanalyse.

Politikkohärenz für nachhaltige Entwicklung (PCSD) ist entscheidend für die Reduzierung des ökologischen Fußabdrucks von EUMAA und anderen Handelsabkommen, aber diese zeigt sich im derzeitigen Zugang der EU nicht: Die Entwaldung und damit die Klimaeffekte sowie andere Umwelteffekte des EUMAA werden von der zukünftigen Entwicklung insbesondere der Fleisch- und Sojaproduktion in den Mercosur-Ländern abhängen. Letztere wird sich wiederum u.a. durch die zukünftige Entwicklung der globalen und EU-Nachfrage nach diesen Produkten bedingen. Durch die Erleichterung des Marktzugangs und die Senkung der Handelskosten tragen Abkommen wie das EUMAA zur Vertiefung des extraktivistischen Wirtschaftsmodells in den Mercosur-Ländern bei, in denen das Wirtschaftswachstum zunehmend von der Ausweitung der landwirtschaftlichen Massenproduktion und dem Abbau von mineralischen Rohstoffen abhängt. Die Verpflichtungen im Rahmen des Pariser Abkommens verlangen von der EU, ihren CO_2-Fußabdruck bis 2050 drastisch zu reduzieren. Tatsächlich hat die EU in den letzten 30 Jahren zunehmend darauf zurückgegriffen, dies durch Carbon Leakage zu erreichen, d. h. durch den Import von Gütern, in denen immer mehr Treibhausgase enthalten sind. EUMAA wird diesen Prozess mit hoher Wahrscheinlichkeit fortsetzen, da alle Umweltbestimmungen des Abkommens nur Absichtserklärungen sind und keiner sanktionsbewehrten Streitbeilegung unterliegen. Wenn es zu den strategischen Interessen der EU gehört, die Klimaziele des Pariser Abkommens zu erreichen und die UN-Ziele für nachhaltige Entwicklung sowohl auf nationaler als auch auf globaler Ebene zu fördern, wird eine tiefgreifende Überarbeitung des Abkommens notwendig sein. Ein solcher PCSD-orientierter handelspolitischer Ansatz der EU würde den Handel mit nachhaltigen Produkten fördern und nachhaltige Produktionsmodelle in den Partnerländern unterstützen.

1. INTRODUCTION

In June 2019 the EU and the Mercosur group (Mercado Común del Sur – Argentina, Brazil, Paraguay and Uruguay) announced the political agreement for an Association Agreement including a trade component after the "longest trade negotiations in the world" (Ghiotto/Echaide 2020: 8). Starting officially in 1999, the negotiation process has been influenced by multiple factors including the crisis in the multilateral trading system around the Doha Round of negotiations, the rise of China as a key player in global trade and, last but not least, the resistance of centre-left governments mainly in Brazil and Argentina against far-reaching trade liberalization. With the political changes in the two Latin American countries from 2016 onwards, the negotiations could eventually be finalized as the new governments of Mauricio Macri in Argentina and Jair Bolsonaro in Brazil gave up resistance against EU liberalization requests, particularly on public procurement and on safeguard measures (Ghiotto/Echaide 2020).

The struggles around the agreement have a structural reason in the long-standing asymmetries of the EU-Mercosur trade relation. While the trade balance between the two regions has almost been in equilibrium during recent years, Mercosur exports to the EU are dominated by agricultural and food products, as well as minerals and other commodities. On the other side, EU exports to the Mercosur countries consist largely of manufactured goods such as machinery, motor vehicles, chemicals and pharmaceuticals. These structural differences in the trade flows exist despite the high levels of protection through tariffs and EU tariff rate quotas (TRQ) in the sectors most exposed to imports. Therefore, producers in the most competitive sectors in the respective regions argue in favor of the agreement, while producers and workers in protected sectors fear to be exposed to highly competitive imports. Still others see the agreement as a starting point for future liberalization of protected and subsidized sectors (agriculture in the EU and industry in Mercosur) (Baltensperger/Dadush 2019).

The agreement now reached focuses on the gradual removal of tariff barriers for more than 90 % of tariff lines in bilateral trade, while further trade liberalization for sensitive agricultural products on the EU side will remain limited. The agreement also covers a wide range of other trade issues including chapters on Customs and Trade Facilitation, Trade Remedies, Sanitary and Phytosanitary Measures (SPS), Dialogues, Technical Barriers to Trade (TBT), Services and Establishment, Public Procurement, Competition, Subsidies, State-owned Enterprises, Intellectual Property Rights including Geographical Indications, Trade and Sustainable Development, Transparency, Small and Medium-sized Enterprises and Dispute Settlement (EC 2020). The EU-Mercosur agreement is, therefore, *comprehensive* as it goes far beyond enhanced market access for trade in goods. As an association agreement, it is a mixed agreement that also affects the competences of the EU Member States. But it is not as *deep* as other EU trade agreements in recent years as it does not include comprehensive harmonization of regulatory measures, or investment liberalisation including investors' rights to dispute settlement.

According to the EU impact assessments, to be assessed in this study, the expected macroeconomic effects of the agreement are small, but positive for the EU as a whole and all Mercosur countries in aggregate, with more pronounced positive as well as negative effects on the sectoral level in both regions. However, these results are reported without detailed discussions on underlying methodologies and data, and assessment results are not reported for the single EU member states including Austria, even though the single EU member states have very different trade patterns on the import side with the Mercosur countries. Further, many key aspects of the agreement are not (or cannot be) addressed entirely with quantitative assessments. This refers for instance to the potential expansion of agricultural production in Mercosur countries and potential ecological effects as well as

the increased import competition for EU producers in the agricultural and manufacturing sectors.

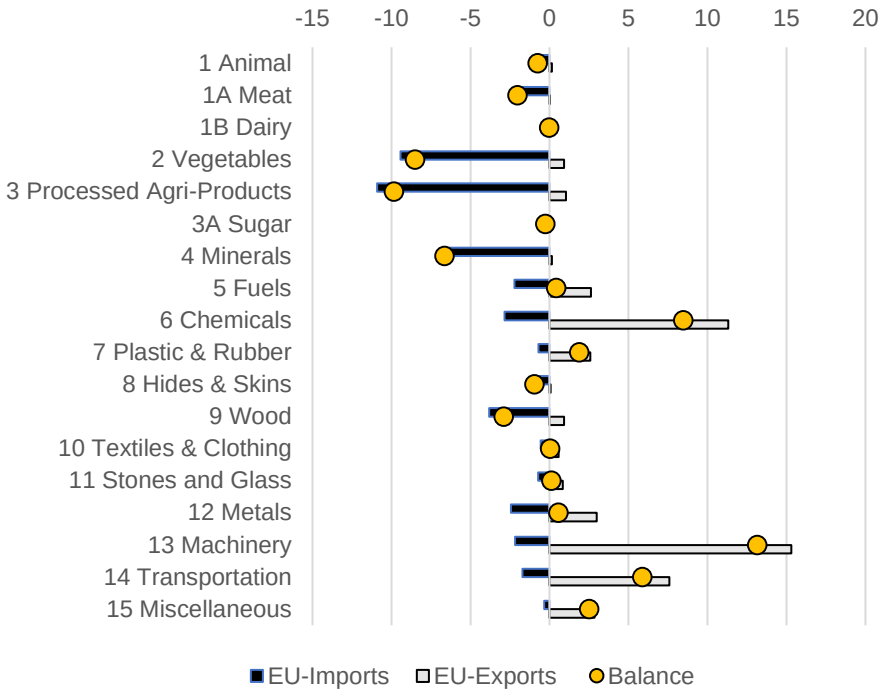
In this report, we will therefore firstly assess the status-quo of trade relations and protective barriers between the EU, Austria and Mercosur in order to infer potential trade effects of the agreement. This analysis is then, secondly, related to the reported results of selected impact assessments with a focus on discussing the potential limits and gaps in these studies. Finally, key issues related to the policy coherence for sustainable development of the agreement are addressed, given the EU's commitment to climate change, the UN Sustainable Developments Goals and the European Green Deal.

2. TRADE AND TRADE BARRIERS BETWEEN THE EU, AUSTRIA AND MERCOSUR

2.1. Trade between EU, its member states and Mercosur

Trade in goods between the EU-27[1] and Mercosur countries evolved dynamically in the 2000s, but has declined slightly since 2012. Total trade is almost balanced in recent years, with an annual average of USD 50.1 billion in EU-27 exports and an import value USD 49.1 billion between 2012 and 2019 (UN Comtrade data)[2]. In addition, the EU runs a trade surplus in services with exports of EU 20 billion and imports of EU 10 billion (Sinabell et al. 2020). There are, however, major differences in the relative importance and the sectoral composition of trade between the two regions. EU-27 trade with Mercosur represents only 2.2 % of extra-EU exports and imports, while Mercosur exports to the EU-27 account for 18 % of its extra-Mercosur exports, and Mercosur imports from the EU-27 account for 21 % of imports from outside the Mercosur bloc. EU-Mercosur trade volume is notably around 20 % higher than the volume of Intra-Mercosur trade, thus rendering the agreement very important for Mercosur from an economic point of view.

Figure 1: EU-Mercosur Trade by Sector (annual average 2012-2018, in billion USD)



Source: UN Comtrade

The other major difference is the composition of trade flows in goods by sectors. Mercosur countries have a significant trade surplus in agricultural goods (2 Vegetable, 3 Processed Agri-Products), Commodities (4 Minerals) and Wood products (9 Wood) (see Figure 1). On the other side, European exports consist primarily of manufactured goods (6 Chemicals, 13 Machinery and 14 Transportation), which compensate for the trade deficit in agricultural goods.

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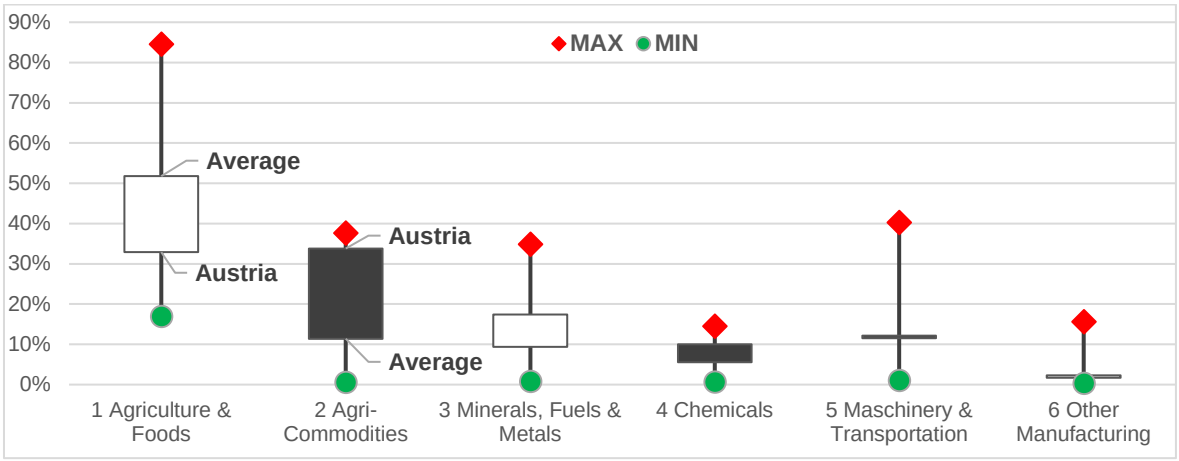
1 The UK is excluded from the EU in our analysis.

2 We use UN Comtrade data in US Dollar for EU member states, which record import flows based on the country of origin (similar to Statistik Austria). Eurostat data differ as imports from Mercosur countries via other EU member states are recorded as inter-EU trade. See also Sinabell et al. (2020) for a detailed analysis of EU and Austrian trade relations with Mercosur.

Even though these agricultural-industrial patterns are also true for most EU member states, there are significant differences on a sectoral level, by share of trade with Mercosur in Extra-EU trade and by trade balance. For instance, the shares of Agriculture & Food products in imports range from 17 % in Hungary to 82 % in Lithuania. In Austria, imports are above the EU-27 average in Agri-Commodities (for instance in Hides & Skins and Wood), but below average in Agriculture & Foods or Minerals, Fuels & Metals (Figure 2). On the export side, the sectoral shares also differ widely, including the Machinery & Transportation sector, with shares ranging from 9 % in the case of Lithuania to 83 % in the case of Latvia. Austrian export shares by sector are closer to the EU-27 average (Figure 3).

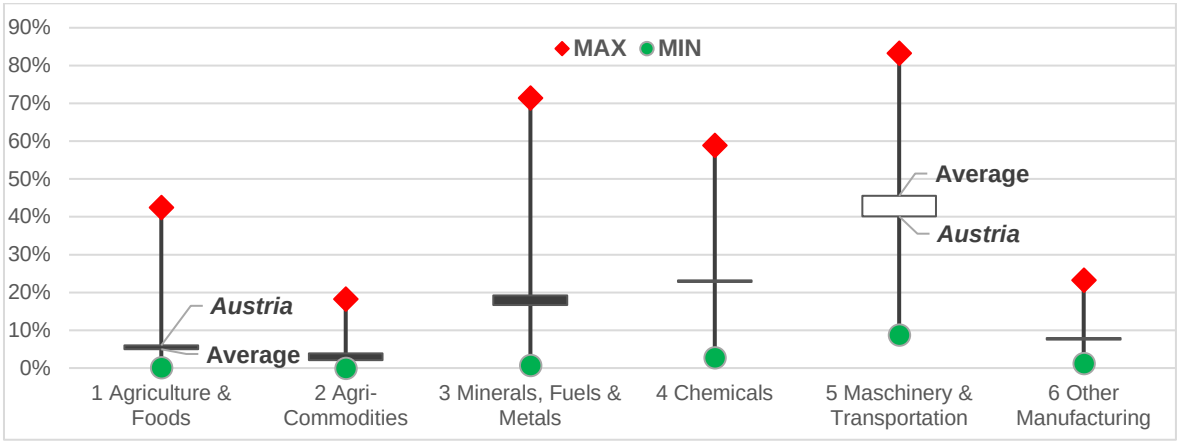
Figure 2: EU countries' import shares by sector (average 2012-2018)



Notes: These candlestick charts show the range of shares in imports (or exports in Figure 3) by sectors among EU member states. The top (red) symbol indicates the highest shares in a sector, the lower (green) symbol the lowest share. The average share and the share of Austria are indicated by the box frames. In case that Austrian shares are lower than the EU average the box is coloured white and black if Austrian shares are above the average. Trade data refer to average 2012 to 2018.

Source: UN Comtrade

Figure 3: EU countries' export share by sector (average 2012-2018)



Notes: See Figure 2

Source: UN Comtrade

The shares of exports to Mercosur countries in Extra-EU trade range from 0.4 % for Bulgaria, Croatia and Lithuania to 3.7 % for Spain and 4.7 % in the case of Portugal (average 2012-2019, Austria: 2.0 %). On the import side, these shares vary between 0.4 % for Latvia to 3.7 % for Spain and 7.0 % for Portugal (Austria: 1.1 %). Furthermore, 13 out of the 27 EU member states run a trade deficit with Mercosur countries, with the largest deficits in the Netherlands (USD -3.1 billion) and Spain (USD -1.5 billion) and the largest

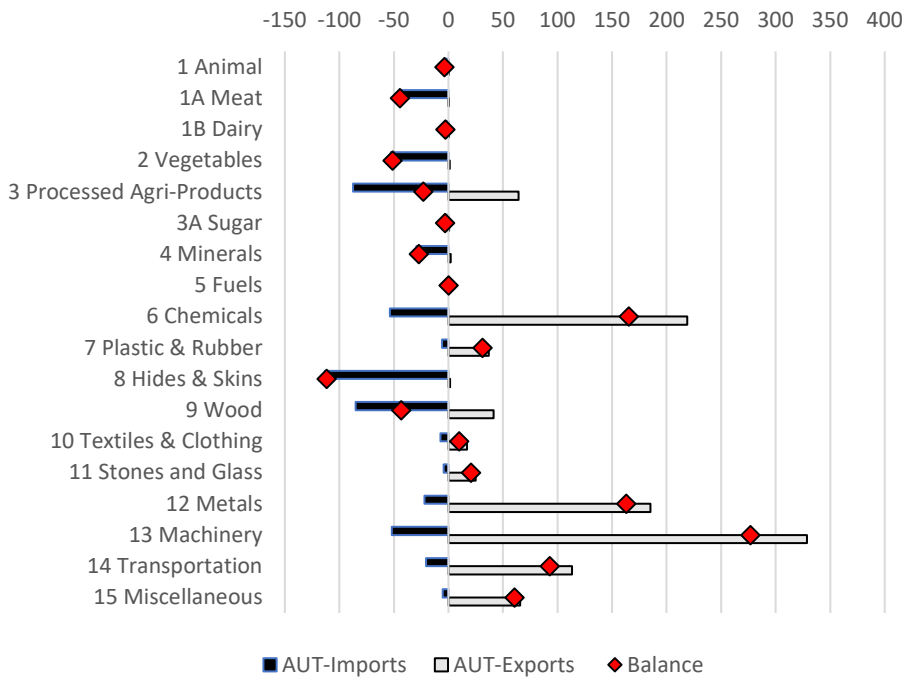
surpluses in Germany (USD 3.6 billion) and France (USD 2.4 billion). Overall, these differences indicate that the single EU-27 member states are potentially affected in different ways by the EU-Mercosur agreement.

2.2. Trade between Austria and Mercosur

Austria has a clear trade surplus in goods trade with Mercosur countries, as goods exports of USD 1,100 million per year exceed imports of USD 593 million by almost USD 500 million per year (average 2012 to 2019). This surplus is the second-highest relative to the total trade volume (30 %) behind Sweden (36 %). In trade in services, Austria runs a deficit with the Mercosur countries, with exports of around EUR 100 million and imports of EUR 150 million (average 2012 to 2019, Eurostat data). The main Austrian services sectors with a trade deficit with Mercosur are 'Transport' (EUR -45 million), 'Other Business services' (EUR -14 million) and 'Travel' (EUR -7 million), while telecommunication and financial services show a trade surplus (EUR 6 million and 5 million, respectively).

The drivers of trade in goods are (13) machinery, (6) chemicals and (12) metals, which includes steel products. Austrian imports from Mercosur countries in (2) vegetables, (4) minerals and (3) processed agri-products are less pronounced than in the EU-27 (Figure 4), in particular as Austria imports less soya bean oilcake for animal feed (HS 2304) and exports more beverages (see also details in section 3). Other import sectors such as (8) Skins & Hides and (1A) Meat are relatively more important than for the entire EU-27.

Figure 4: Austria-Mercosur Trade by Sector (annual average 2012-2018, million USD)



Source: UN Comtrade

Compared to the EU-27 average, there are also specific trade patterns of Austria with the single Mercosur countries. The most important trade partner is Brazil with a share of 82 % in exports (EU-27: 76 %) and 61 % of imports (EU-27: 61 %), which results in a relatively high trade surplus for Austria in the bilateral trade with Brazil (Table 1). Argentina and Uruguay are relatively underrepresented as a share of Austrian exports, but overrepresented in the imports, which leads to a trade deficit with Uruguay. Trade flows between Paraguay and Austria are relatively low, but Austria runs a trade surplus with Paraguay.

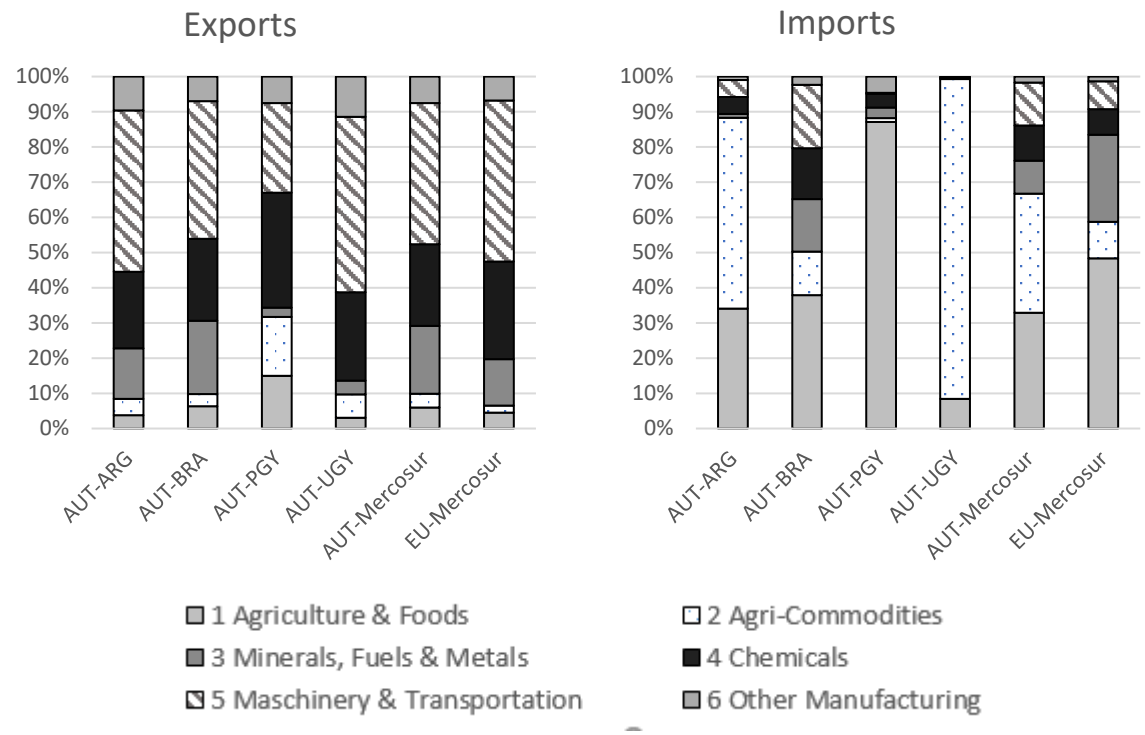
Table 1: Austrian Trade with Mercosur Countries (average 2012-2018)

		ARG	BRA	PGY	UGY
Exports	*EU-27*	20%	76%	1%	3%
	Austria	14%	82%	2%	2%
Imports	*EU-27*	20%	75%	2%	3%
	Austria	23%	61%	1%	15%
Trade Balance	EU-27	1.4%	1.6%	-25.8%	-1.3%
(% of total trade)	Austria	6.7%	42.5%	64.3%	-53.2%

Source: UN Comtrade

There are also different sectoral patterns in the bilateral trade flows of Austria with the Mercosur countries, in particular in imports. While the breakdown of Austrian exports by aggregated sectors are relatively similar to EU-27 export patterns (see columns AUT-Mercosur and EU-Mercosur in exports (LHS) in Figure 5), Austria imports relatively more Agri-Commodities ((8) Hides & Skins from Argentina and (9) Wood from Uruguay) and more products of Machinery & Transportation compared to the EU-27 average, due to higher imports from Brazil in this sector. Otherwise, Austria imports relatively fewer minerals, fuels & metals (see columns AUT-Mercosur and EU-Mercosur in imports (RHS) in Figure 5).[3]

Figure 5: Austrian Trade with Mercosur by sectors (average 2012-2018)



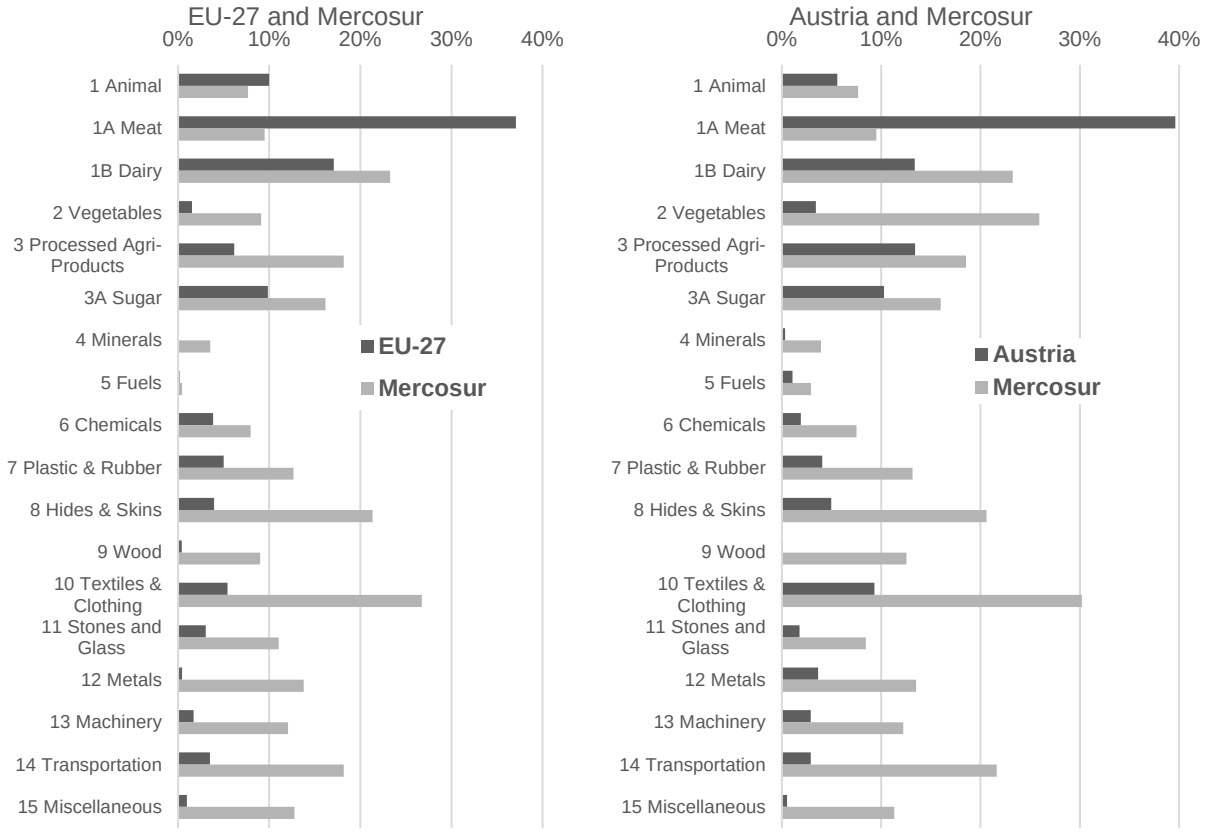
Source: UN Comtrade

[3] See also Carrico et al. (2020) for a detailed analysis of EU-Mercosur trade and Sinabell et al. (2020) for Austrian-Mercosur trade

2.3. Current Trade Barriers between EU and Mercosur

The sectoral patterns of agricultural (Mercosur surplus) and manufactured goods (EU surplus) in trade between EU and Mercosur is indicative of the economic specialization and competitiveness of the two blocs. This is underlined when taking into account tariff and non-tariff barriers, which are highest in those sectors with the highest import exposure. Overall tariffs in the Mercosur countries against EU-27 products are higher with a trade weighted tariff protection of 11.5 % compared to 3.1 % in the case of the EU-27.[4] As shown in Figure 6, tariffs in Mercosur are particularly higher in manufactured goods, while there are high tariff rates in agricultural sectors also on the EU side, most prominently in the (1A) Meat sector. The EU does, however, not apply traditional tariffs, but applies 'Tariff Rate Quotas' (TRQ) with in-quota and out-of-quota tariff rates, which are expressed as tariff rate equivalents in Figure 6.[5] For Austrian-Mercosur trade flows, the trade-weighted tariffs are very similar, but tariff equivalents for Meat imports are higher in Austria compared to the EU-27 level, as imports from Mercosur are concentrated on beef.

Figure 6: Trade Weighted Tariffs (2017-2019)



Source: WTO and UN Comtrade

[4] In contrast to simple tariff rates per products, trade weighted tariffs express the average of tariff protection for all product imports or a selection of imported products, for instance in a sector.

[5] Tariff information are derived from WTO's 'Tariff Download Facility' (http://tariffdata.wto.org/Default.aspx?culture=en-US). EU product lines with TRQs are empty in this database and AVEs of TRQs are added based on data from ITC Market Access Map (https://www.macmap.org/), EU TARIC (https://ec.europa.eu/taxation_customs/dds2/taric/taric_consultation.jsp?Lang=en) and AVE estimations by Carrico et al. (2020) on beef imports.

Besides tariff and tariff rate quotas, so called non-tariff measures (NTMs) affect international trade flows. NTMs are defined as national policy measures, “other than ordinary customs tariffs, that can potentially have an economic effect on trade in goods, changing quantities traded, or prices or both” (UNCTAD 2010: xvi). The measures include, for instance, regulations to safeguard the health and safety of consumers, which uniformly apply to domestic and imported products and can thereby have indirect effects on trade and foreign producers.

Public regulations between the EU and Mercosur differ considerably in many aspects. This includes regulations on agricultural issues such as food safety, animal and plant health and other SPS regulations (van Wagenburg et al. 2012), regulations on manufactured products, production processes and labour standards as well as different regulatory frameworks for services sectors and investment (LSE 2020). Indicators that express the restrictiveness of different regulations for trade in goods and services show that there are barriers for both trading partners. For instance, The World Bank (2021) reports ad-valorem equivalents of non-tariff measures (NTMs) in the motor vehicles sector of 9.3 % for EU exports to Brazil and of 13.7 % for Brazilian exports to the EU. Also, the World Bank Service Trade Restrictiveness Index indicates barriers in the different modes of services trade in the EU and in Mercosur countries (LSE 2020: 285–286).

In standard impact assessments, the alignment or harmonization of such regulations between trading partners is assumed to reduce trade costs. The extent of such a trade cost reduction in the assessments depends on the translation of (expected) agreement outcomes into the simulation designs (see chapters 3 and 4 for this exercise for the EUMAA). However, the narrow view in standard impact assessments on NTMs as trade costs ignores potential trade enhancing effects of regulations and standards (for instance of SPS standards in agricultural goods' trade, see Ghodsi et al. 2017) or other welfare-enhancing effects on producers and consumers (de Melo/Nicita 2018).

3. THE POTENTIAL ECONOMIC EFFECTS OF THE EU-MERCOSUR AGREEMENT – A FIRST APPROXIMATION

Based on the structure of bilateral trade flows and trade barriers between the EU, Austria and the Mercosur countries, we now proceed to discuss the potential impact of trade policy changes through the EU-Mercosur agreement with a focus on trade in goods. The key changes in market access are the removal of tariffs and more generous TRQs. Both sides open up their markets for imports by liberalizing more than 90 % of trade volume (Table 2).

Table 2: Market access for trade in goods (according to the Agreement in Principle)

	EU	Mercosur
Total	Fully liberalize 92 % of imports (95 % of tariff lines) 10 year transition period	Fully liberalize 91 % of imports (91 % of tariff lines) 15 year transition period
Agriculture	Fully liberalize 82 % of imports Reciprocal TRQ on cheese, milk powder and infant formula Partial liberalization through tariff-rate quotas	Fully liberalize 91 % of imports (93 % of tariff lines) Reciprocal TRQ on cheese, milk powder, and infant formula (+ Removal of export duties)
Industrial goods	Fully liberalize 100 % of imports 10 year transition period	Fully liberalize cars, car parts, machinery, chemicals and pharma. 10 year transition period for machinery and car parts 15 year transition period for passenger vehicles incl. transition quota

Source: EC (2020b)

The main differences are the asymmetry in transition periods for selected products (up to 10 years in the EU and up to 15 years for Mercosur countries) and the partial liberalization in agriculture. On the side of Mercosur, tariffs on 91 % of agriculture and food imports are entirely removed and TRQs are newly introduced in 10 annual steps for cheese, milk powder and infant formula in parallel to the equivalent TRQs on the EU side. The EU already uses TRQ extensively as an instrument for a variety of agricultural products against many trading partners. In the case of Mercosur, the EU installs new TRQs for Mercosur exports of rice, honey, sweet corn and ethanol in 6 equal annual steps with duty-free in-quota volumes and MFN tariffs above the quota (EC 2020b).

For other agricultural products that are highly protected in the EU, the existing TRQs are extended. This includes sugar with a small increase in the quota volume for Paraguay and a reduction of in-quota tariffs for refined sugar from Brazil. The most controversial TRQs changes refer, however, to meat products, in which Mercosur countries are highly competitive. For pork meat, a new TRQ of 25,000 tonnes with an in-quota duty of EUR 83 per ton will be set up. The quota quantities for poultry meet will be increased by 180,000 tons (50 % with bone and 50 % boneless) from currently 330,000 tons with zero tariffs. The current poultry quota is largely used for exports from Brazil. Finally, the existing TRQ ("Hilton quota") on beef will be extended for the Mercosur countries by 99,000 tons with an in-quota duty of 7.5 %, and the in-quota duty on the current quota of 47.500 tons will be removed (see also Baltensperger/Dadush 2019; Carrico et al. 2020; Ghiotto/Echaide 2020; Kartepe et al. 2020 and discussion below for further details)

Besides tariff removals and adjustments to TRQs, which are expected to generate increased trade flows due to improved price ratios, trade facilitation measures and the adjustment of national regulation determine trade effects. The EU-Mercosur agreement texts published by the EC (EC 2019b) include Chapters on TBT, SPS and customs and trade facilitation. These chapters do not aim for strong regulatory alignment, which is in contrast to other recent EU trade and association agrrements. The TBT chapter in the EU-Mercosur agreement lacks regulatory cooperation (such as in the EU-Canada agreement) or mutual recognition of conformity tests (Canada, Japan), but rather highlights alignment to international standards and best use of good regulatory practice (ibid.; Ghiotto/Echaide 2020). However, there is an explicit reference to international standard-setting organisations and standards, which are "consistent with the EU's understanding of international standards" (EC 2020b: 8) and an emphasis on UNECE standards in motorvehicles, to which EU technical standards are closely aligned (EC 2020a). Futher, Mercosur countries accept EU conformity tests and the chapter fixes joint cooperation to eliminate unnecessary barriers, cooperation beyond the WTO TBT agreement and for future convergence on technical regulations standards (EC 2020b). Thereby, the agreement opens the possibility for interventions by the EC and Mercosur governments in decision-making processes for technical standards in the other bloc and the stronger inclusion of private stakeholders in these processes (Ghiotto/Echaide 2020).

The chapter on SPS regulations in the EU-Mercosur agreement is of particular importance due to the high share of agricultural and food products in the exports of Mercosur countries. The EC guarantees, however, that "the agreement shall uphold the stringent SPS disciplines protecting EU consumers (food safety, animal health and plant health) and any standards applied by the EU [for imported agricultural and food products]" and preserve "the safety of EU consumers at any moment" (EC 2020b: 6). In order to ensure that bilateral trade in agricultural goods is nevertheless elevated and facilitated, the agreement shifts the control of regulatory compliance of 'approved establishments' to the competent authorities in the exporting countries and simplifies import procedures including less frequent import checks carried out by the importing party (Fritz 2018; Ghiotto/Echaide 2020). Further, the principle of regionalization and compartmentalization is introduced, which allows for ongoing exports from regions or entities not affected by diseases (ibid.). The agreement includes, however, also a novel safeguard clause in case an agricultural sector is seriously affected by imports from the partner (EC 2020c).

The agreement also includes the creation of a SPS Subcommittee that primarily discusses monitoring and exchanges in SPS issues among "representatives of the Parties with responsibility for SPS" (EC 2019b: SPS chapter p.14), which does not exclude the involvement of private actors (Fritz 2018). Other topics, such as animal welfare, agricultural biotechnology, fight against antimicrobial resistance, scientific issues related to food safety and the health of animals and plants are delegated to 'dialogues' in subcommittees. Thus, disputed topics including the regulation of GMOs are moved to a dialogue forum, in which the different approaches to GMOs are addressed, but without the objective to align regulations. In this context, it is nevertheless noteworthy that the EU precautionary principle is not part of the SPS or the dialogue chapters, but included in the trade and sustainability chapter, which is not subject to the dispute settlement (ibid.). This also reflects the resolution of a WTO dispute between Brazil, Argentina and other countries against the EU on GMO, in which the EU had to lift a moratorium on transgenic products based on the precautionary principle and start dialogue forums on biotechnology in agriculture (Ghiotto/Echaide 2020).

Based on the policy changes for tariffs, TRQs and regulations, the potential impact of the agreement can be assessed. Figure 7 shows the sectoral breakdown of bilateral trade balances at a more detailed level (in particular in agricultural and food products) in combination with the differences in tariff barriers between the blocs. The diameter of the

bubbles represents the value of bilateral trade by sector. Four sectoral categories of sectors can be identified in this presentation:

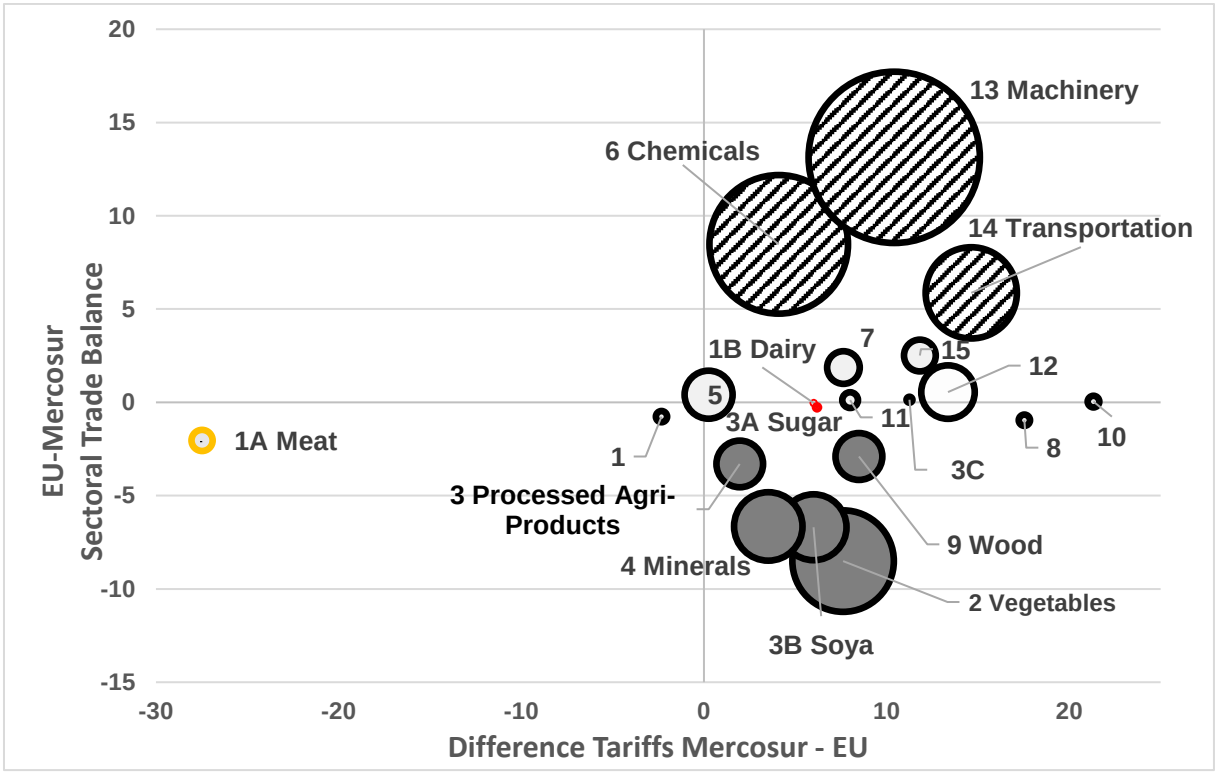
I) The sectors (13) Machinery, (6) Chemicals and (14) Transportation with a significant trade surplus for the EU (top quarters), higher tariff barriers by Mercosur countries (right quarters) and the largest bilateral trade volumes.

II) The sector (1A) Meat, with a surplus for Mercosur countries (bottom quarters) and a relatively high rate of tariff and TRQ protection by the EU (left quarters).

III) The sectors (2) Vegetables & Fruits, (3) Processed Agri-Products, (3B) Soya, (4) Minerals, (9) Wood with a surplus for Mercosur countries (bottom quarters), relatively higher tariff barriers by Mercosur countries (right quarters) and a high trade volume.

IV) Other sectors, with mostly balanced trade flows and low trading volume, but relatively high tariff barriers by Mercosur countries (right quarter). This includes (1B) dairy and (3A) sugar, which are (among other products) subject to changed or new TRQs.

Figure 7: EU-Mercosur trade flows and tariff barriers (annual average 2012-2018)



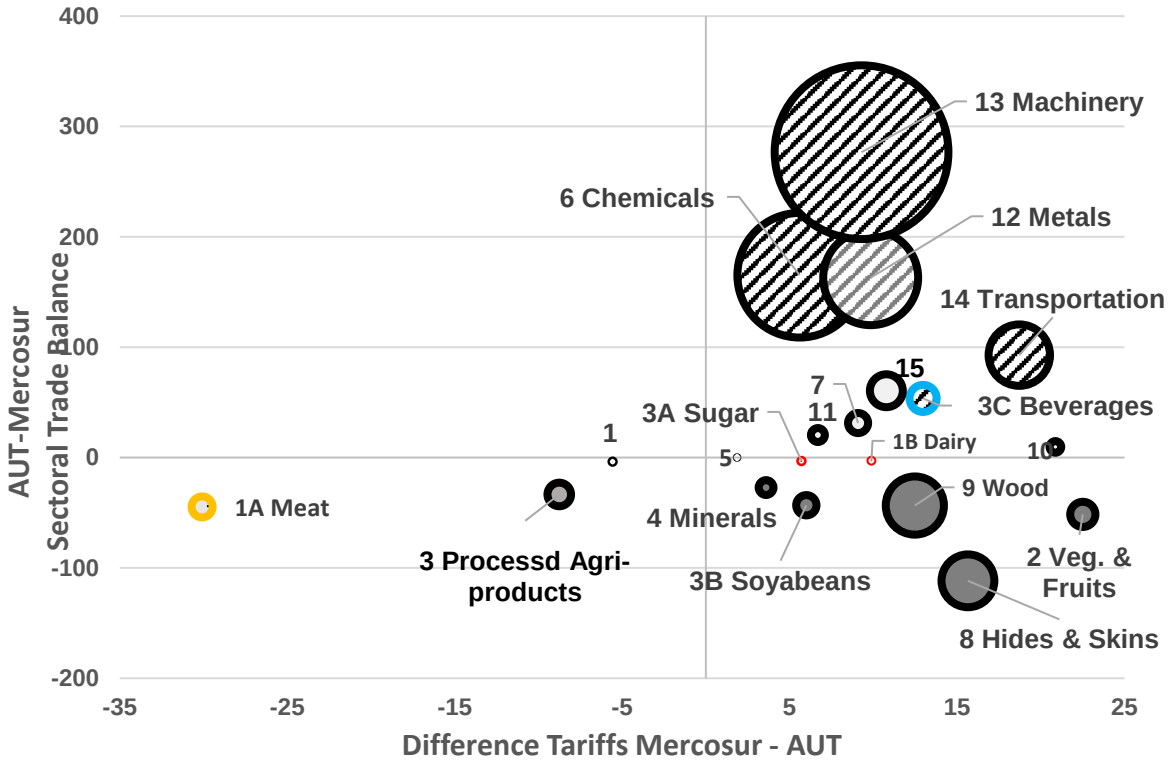
See sectoral details also in Figures 3, 4 and 6.

Source: UN Comtrade and WTO data

On the EU side, the sectors in category (I) with a large trade surplus potentially benefit most from wide-reaching liberalization of tariffs as expected. Even in the sectors in category (III) with a trade deficit for the EU, the tariff barriers in the EU are lower, but the products that drive this deficit such as green coffee beans ((2) Vegetables & Fruits), soya bean oilcake ((3B) Soya), and mineral ores and concentrates in ((4) Minerals) reflect geographical specialization in raw materials extraction and production. This is also largely valid for (3) Processed Agri-Products with orange juice as a major Mercosur export good, and for (4) Wood with wood pulp exports from Mercosur countries. These sectors include, however, also products with export surpluses for EU countries such as vegetable and fruit preparations (HS 2004 and 2106) or chocolate (HS 1806), or paper and paperboard (HS

4801). Similar, for sectors in category (IV) with lower trade values and balanced trade, removal of tariffs would be advantageous for EU countries, the only exception could be the (1B) Dairy sector in which the new TRQ volumes are similar for both sides. The only sector with a significant potential for an expansion of exports for Mercosur countries would be the sector (1A) Meat, which includes beef and poultry. However, the trade volume is relatively small compared to the dominant manufacturing sectors and the new EU TRQ regulations fall short of ambitious market opening and will thus limit the growth of Mercosur exports in these sectors, while the Mercosur countries open up these sectors for EU imports. As a whole, it can be expected that the EU benefits significantly more from tariff reductions in merchandised trade.

Figure 8: Austria-Mercosur trade flows and tariff barriers (annual average 2012-2018)



See sectoral details also in Figures 3, 4 and 6.
Source: UN Comtrade and WTO data

For Austria, the potential benefits from the EU-Mercosur are slightly higher than for the EU due to the trade surplus in manufacturing sectors (in particular (13) Machinery), which also includes the sector (12) Metals as a major exporting sector (Figure 8). In addition, the sectoral trade deficits against Mercosur countries (category III) in sectors such as (2) Vegetables and Fruits, (3B) Soya and (4) Minerals, are relatively small in EU comparison. Exceptions in the sectoral patterns compared to the EU level are (8) Hides & Skins driven by imports from Argentina and Uruguay and (3) Processed Agri-products due to relatively lower exports of Austrian food products. Further, Austria shows a trade surplus in (3C) Beverages driven by the exports of soft drinks. This export potential is also highlighted in EC (2020c). The sector (1A) meat has the largest exposure to Mercosur exports and a relatively high level of tariff protection. Trade in other key sectors in the EUMAA negotiations, such as sugar or dairy, is currently almost non-existent.

This simplified assessment of potential impacts reveals the advantageous constellation of sectoral trade patterns and tariff barriers for EU countries, in particular in manufacturing, and for single EU member states such as Austria with a specialization in manufacturing exports. The overall effects depend, however, also on the relative importance of the

respective bilateral exports. The surplus in trade in most agricultural sectors for Mercosur countries in combination with the reduction of tariff barriers on the EU side is the basis for an expansion of exports of agricultural and food products from Mercosur countries to the EU and Austria. Vice versa, the trade surpluses in manufacturing in combination with the elimination of tariffs on goods by Mercosur is the basis for expanded EU exports of manufactured goods. An assessment how these potential changes in trade in goods and services impact output, value-added, income and employment, and other macroeconomic variables, requires a modelling approach. We, thus, turn to a critical overview of existing quantitative impact assessments in the next chapter.

4. ASSESSING THE RESULTS OF ECONOMIC IMPACT ASSESSMENT STUDIES

Several impact assessments on the EU-Mercosur agreement have been conducted with ***Computable General Equilibrium Models***, with the first official Sustainability Impact Assessment (SIA) for the EC back in 2009 (University of Manchester 2009) and further studies commissioned by the EC and DG Trade in 2011 (Burrell 2011; Thelle et al. 2011). Due to the long duration of the negotiations and the changes in market access offers, a second official SIA for the EC was conducted between 2017 and 2020 (LSE 2020). Differences between the two SIAs relate to TRQ adjustments, NTM trade cost reductions and the version of the underlying GTAP database used for simulations. Even though the most recent SIA by LSE (2020b) for the EC serves now as the official basis for discussion on the EU level, it does not yet apply the actual market access offers of the 2019 political agreement and does not use the most recent GTAP database (version 10). Apart from the SIAs, only a few other impact studies have been performed, such as Breuss (2020), who conducted a study on several EU FTAs including the EU-Mercosur agreement and reports changes on selected macroeconomic variables. All these CGE models report results on an aggregates EU level only. An exception is the study by Carrico et al. (2020) that apply a CGE model with a focus on the Netherlands and report aggregate effects for the other EU member states.

For the case of Austria, Sinabell et al. (2020) analyze the potential effects of the agreement for Austria and conduct a quantitative assessment with a ***Structural Gravity Model*** with detailed results for all EU and Mercosur member states. In addition, Timini/Viani (2020) provide a short study with a Structural Gravity Model with a focus on the effects on Spain.

4.1. CGE Models

All the selected studies that apply CGE models show positive effects from the EU-Mercosur agreement on welfare, GDP, value-added and real wages for the EU-28 and the four Mercosur countries. This is not surprising since the CGE models used in these studies simulate gains from trade through the reallocation of factors of production, following standard trade theory (Piermartini/Teh 2005: 16). The removal of tariffs and NTM trade costs introduces changes to relative prices between national and foreign products and services. Upon this basis, production and consumption adjust until all markets are simultaneously in equilibrium, as producers maximize profits and consumers maximize their utility (WTO, UNCTAD 2012). The neoclassical CGE models assume that the summation of the changes instigated by economic agents, driven by microeconomic motivations, explains the macroeconomic behavior of an economy as a whole. Further, the macroeconomic interrelations in these models are supply-driven, meaning that income determines consumption and that aggregate savings determine investment in most applications (Burfisher 2016). This somewhat misleading use of the term ‘general equilibrium’ and the model features that come along with the neoclassical foundation (for instance full employment) have been repeatedly scrutinized by several scholars over the last two decades (Ackerman/Nadal 2004; Raza et al. 2016, 2014; Taylor/von Arnim 2006; see also Capaldo/Ömer 2021).

It should be noted that the microeconomic representation of price-dependent market interactions in standard CGE models does not necessarily lead to aggregated gains from trade liberalization in all countries participating in a free trade agreement. There are, however, many factors that influence the direction and the magnitude of model outcomes, as discussed below. These include the assumption of homogenous goods and services in trade (Armington and Melitz assumptions) in combination with assumptions on the magnitude of the elasticities of substitution used in the model, the development of baselines and the design of liberalization scenarios, or the national or international mobility

of capital in dynamic versions of CGE models. Even though many papers and books attempt to explain the theoretical foundations and basic features of CGE models (Burfisher 2016; Nilsson 2018; Piermartini/Teh 2005; WTO, UNCTAD 2012), the statement is still valid that "[w]ithout detailed programming knowledge, the CGE approach is doomed to remain a "black box" for non-modelers" (Böhringer et al. 2006: 32).

The problem of model assumptions is often amplified by missing details on data and parameters inputs, scenario designs and the style of reporting. In particular, the LSE SIA provides little information on the specifications of their model and baseline development and adjustments to the data.[6] The study is based on GTAP data with the base year 2011, that are projected to the year 2032 by incorporating the effects of other EU trade agreements with Canada and Korea and countries in Africa and Latin America. However, the outcomes for this baseline projections are not published, even though all reported changes relate to these estimations. Most reports present aggregated effects without details and discussions on the multiple interactions that drive these results. Often selected results are presented, even though only the full set of results enables readers to interpret the model results properly. Further, none of the selected CGE model studies document details on exogenous behaviour parameters such as Armington elasticities that determine the substitutability of domestic against imported products. Overall, the lack of detail on modelling and results makes it difficult to interpret the results and the underlying drivers. Missing sensitivity analyses prohibit the reader from identifying the impact of assumptions made by the modellers.

In the case of the EUMAA, a comprehensive presentation of the model results would be particularly necessary. Firstly, the higher level of tariff protection in Mercosur compared to the EU, and the limits for Mercosur exports in many agricultural products through TRQs, puts Mercosur countries in a difficult position to benefit from trade liberalization (as shown in section 3). The reported benefits for these countries require detailed discussions to see the drivers and limitations of these effects. Secondly, the reported model results are also the basis for a quantification of ecological effects such as CO_2 emissions and the basis for a discussion on deforestation effects. It is, therefore, necessary to use reliable economic outcomes as, for instance, assumptions on tariff rates and TRQs determine exports effects and, in turn, the ecological consequences. Thirdly, detailed results by sectors would be necessary on the level of single EU member states due to the different export and import patterns with Mercosur countries (as shown in chapter 2 and 3).

Effects on trade

The results of CGE models depend, besides many other factors discussed below, on the design of the trade policy shocks in the scenarios, as larger trade cost reductions imply more pronounced effects. The first SIA (University of Manchester 2009) includes a wide-reaching liberalization of tariffs, TRQs and trade barriers in services sectors, which result in very distinct effects for Mercosur countries (see Table 3 and Table 4). The CGE studies in 2011 by Thelle et al. (2011) and Burrell (2011) explicitly consider detailed market access offers on tariff and TRQ liberalization, with their conservative assumption on adjustments to TRQs being relatively close to the market access offers in the agreement of 2019.[7] The most recent study by Carrico et al. (2020) is the only study in our sample that uses the actual (unpublished) tariff schedule and adjustments to TRQ in its simulations. In comparison to the former, the market access offer of 2019 is potentially less advantageous for the Mercosur countries, as it includes the removal of more tariff-lines for Mercosur countries. The new SIA by LSE (2020b) includes two scenarios, which are not based upon the actual schedule of 2019. While the ambitious scenario reflects actual tariff removals

[6] The LSE (2020) study was published as 'Final Report' on the 29 March 2021, but is dated as of December 2020. Previously, a 'Final Draft' , a 'Final interim' and a 'Inception Report' provide only little additional information on the modelling and simulation details. Our questions on the methodology and the results sent to LSE consulting were not answered as of now (July 2021).

[7] We, therefore, report the results on the less ambitious scenarios in Tables 3 and 4.

more closely, but trade cost reductions from TRQ adjustments are better represented by the conservative scenario. This implies that results for Mercosur are most likely smaller than reported in the ambitious scenario.[8] However, the SIA does not model TRQs in detail, and instead uses a partial liberalization of tariffs by 30 %, "[g]iven the limitations of the CGE analysis" (ibid.: 185), even though the other studies discuss and model the TRQ adjustments explicitly (see for instance Carrico et al. 2020). Finally, the studies by Thelle et al. (2011), Carrico et al. (2020) and LSE (2020b) include changes in NTM trade costs, for which the most recent two studies assume only one-sided reductions in trade cost from the changes in NTMs in manufacturing and services sectors for the Mercosur countries.

A closer look at the CGE model results for the EU-Mercosur agreement reveals that all studies report strong, but asymmetric surges in bilateral trade flows in favour of the EU (Table 3). The trade flows show particular sectoral patterns as expected from the analysis of trade patterns and trade barriers. In the ambitious scenario in the LSE SIA (ibid.: 34 Table 10), for instance, EU exports to Mercosur countries increase by 67.5 % until the year 2032, with the most pronounced surges in industrial goods (+94.1 %) driven by the dominant export sectors 'Vehicles, transport equipment' (+114.4 %) and 'Machinery' (+100.5 %), in which the EUMAA eliminates the relatively high tariffs in Mercosur countries. Also, EU exports of agri-food sectors such as 'Dairy products' (+120.9 %) or 'Poultry meat, pork' (+50 %) are expected to grow. On the other side, total Mercosur exports to the EU rise by 13.9 % with the most pronounced increases in Agri-Food sectors (+30.7 %), in particular in 'Dairy products' (+165.3 %), 'Processed foods, fish' (+92.8 %) and meat sectors (Beef +63.7 % and Poultry +78.8 %), as expected. In industrial sectors, where EU tariffs are already low, Mercosur exports to the EU nevertheless rise in 'Vehicles, transport equipment' (+47.5 %) and Machinery (+24.0 %). Moreover, bilateral exports in services from Mercosur countries are expected to increase significantly more than EU exports in services, for instance in 'Telecoms, business services' (+9.2 %) and 'Financial Services' (+8.5 %). Changes in these sectors are driven by the model assumptions with respect to reduced NTM trade costs. The LSE SIA assumes that these NTM trade cost reductions in industrial and services sectors favour only Mercosur exports. This, however, seems unwarranted, since reductions in trade costs should profit both trade partners. The SIA itself recommends mutual recognition and regulatory harmonisation in selected sectors, which would change trade costs for NTM regulations in the EU and Mercosur.

Other studies see even larger trade changes assuming larger NTM trade cost reduction: Thelle et al. (2011) report increases in EU exports to Mercosur by +90 % (Experiment 1) and changes in Mercosur exports to the EU by 30 % due to higher NTM trade cost reductions. Also Carrico et al. (2020) show changes in bilateral EU exports of up to 300 % in selected sectors (dairy and machinery, Netherlands and other EU) and strong increases in Mercosur exports to the EU in industrial sectors and in agricultural sectors. Only Burrell (2011) reports relatively modest changes in bilateral trade (EU +9.5 %; Mercosur +3.5 %) considering tariff and TRQ liberalization only.

[8] See also discussion in the European Parliament's Committee on International Trade https://multimedia.europarl.europa.eu/en/committee-on-international-trade_20210225-1345-COMMITTEE-INTA_vd

Table 3: Trade effects in selected CGE Models

	University of Manchester (2009)	Thelle et al. (2011)	Burrell (2011)	LSE (2020)	Carrico et al. (2020)
CGE Model	*Model based on Francois et al (2005)*	*Model based on Francois et al (2005)*	*GLOBE & CAPRI*	*GDyn*	*MAGNET*
Scenarios Number; Details	1; tariffs, TRQ and NTMs in all sectors + trade facilitation	2 Scenarios + 2 Baselines, Tariffs & TRQs + NTMs + Trade Facilitation	5; (incl Doha round) tariff & TRQ changes	2; Conservative & Ambitious; tariff, TRQ changes & NTMs	1; tariff, TRQ changes & NTMs
Reported Scenario		*Experiment 1*	*Scenario 1*	*Ambitious*	
Bilateral EU Exports	---	**Total: +90%** Agri +57% Manufactures +98% Services +53%	**Total: +9.5%** Agri-Food +19.7% Manufactures: +14.1% Services +0.2%	**Total: +67.5%** Agri-Food +44.9% Industrial: +94.1% Services: +2.1%	**Sectoral, Other EU:** Dairy +220% Machinery: +180%
Bilateral Mercosur Exports	---	**Total: +30%** Agri +33% Manufactures: +34% Services +8%	**Total: +3.5%** Agri-Food: +6% Manufactures: +3.3% Services -0.05%	**Total: +13.9%** Agri-Food: +30.7% Industrial: +9.6% Services: +6.4%	**Sectoral, Other EU:** Dairy +210% MVH: +100%
Total EU Exports & Imports	**Exports+0.4%** Foods -5% Machinery +1.4% **Imports: +1.4%** Processed Food +23% Machinery +1.6%	---	---	**Exports +0.6%** Beef -1.7% MVH +1.9 Services -1% **Imports +1.1%** Beef +19.3% Poultry +22.1%	---
Total Mercosur Exports &Imports	**Exports +26%** Processed Food +210% Machinery -13% **Imports: +1.4%** Processed Food +205% MVH +90%	---	---	**Exports (BRA) +6.1%** Beef +20%, Machinery +16.5% **Imports (BRA) +1.4%** Poultry +24.7% Metal Product +14.3%	---

Source: own elaboration

In relation to the bilateral trade flows and their sectoral breakdown, these percentage changes would generate a substantial surplus for EU countries in trade with Mercosur countries, as manufacturing exports from the EU are expected to increase most. In comparison, percentage changes in agricultural exports as the dominant part of Mercosur exports are lower. According to Thelle et al. (2011), who report bilateral trade changes in absolute terms, EU exports to Mercosur (EUR +27.0 billion) would exceed EU imports from Mercosur (EUR +11.8 billion) by more than EUR 15 billion, driven by exports of industrial goods. The results of the LSE (2020b, Table 10) study imply that the bilateral trade surplus for the EU would surge from USD 10 billion to USD 45 billion, based on trade data of 2019. However, standard CGE models assume that increasing imports from the agreement partner replace primarily imports from other trade partners. This is reflected in the changes in total imports in (ibid.: 32 Table 6)[9]. Total imports increase only slightly in Mercosur countries and substantially less than bilateral imports from the EU, as exports of other countries and regions to Mercosur decline strongly. On the other hand, higher imports can have positive implications on production and consumption in standard CGE models due to the use of imports as intermediate goods in the nested production functions and due to the availability of imports with lower prices for utility-optimizing consumers. As a consequence, changes in total net trade in most Mercosur countries is shown to be positive in the LSE

[9] The only exception among the Mercosur countries is Argentina. However, the results of the ambitious scenario in the final draft and the final report LSE (2020: p.30 Table 6) differ from results shown in the interim report (Table 6). According to the final report, Argentinean imports increase by 4.6 % instead of 1.4 % without giving any explanations for these changes.

SIA. Based on current trade data (2019) the total surplus of Mercosur countries in goods and services trade would increase by USD 10 billion.[10]

Effects on output and GDP

The net trade effects in the different sectors generally reflect the changes in output. The EU-Mercosur agreement amplifies the specialization of production patterns between the regions. All CGE studies report that agricultural and food output increases in Mercosur countries, while output in most manufacturing sectors tends to decline in this region. The output changes in the EU show the opposite development. As the share of bilateral trade in total trade is, however, significantly higher for Mercosur countries, the magnitude of output changes is larger in Mercosur countries. In particular, the studies by Burrell (2011) and by University of Manchester (2009) report changes in total and sectoral output, which are also reflected in the changes of value-added and real income changes. Also Thelle et al. 2011) show these patterns in changes in value-added (see Table 4).

Table 4: GDP and output results in selected CGE Models

	University of Manchester (2009)	**Thelle et al. (2011)**	**Burrell (2011)**	**LSE (2020)**	**Carrico et al. (2020)**
Output EU	**Total +0.1%** Food -0.16% Machinery +0.09%	---	**Total +0.02%** Agri-Food -0.13% Agri -0.06% Manufact: +0.06%	**Total +0.04% *** Agri-Food -0.24% Manufactures + 0.15% Services + 0.04%	**Sectoral Other EU:** Beef: -0.6% Machinery +1.5%
Output Mercosur	***Selected sectors (countries)*** Foods (PRY) +75% (BRA) + 50% Animal Products (BRA) +33% Machinery (ARG) -15% MVH (BRA) -33%	---	**Total + 0.09%** Agri-Food +0.89% Agri +0.73% Manufact.: -0.24%	**Total +0.42% *** Agri-Food +1.57% Manufact. -0.13% Services +0.47%	---
GDP EU	**Total +0.1%**	**Total: +0.1%** Agri -1.0% Manufact.: +0.3% Services +0.2%	**Total + 0.02%** *Value-added* Agri-Food – 0.11% Agri – 0.06%	**Total +0.1%**	**Total: +0.02%** NL: 0.03% OtherEU: +0.02%
GDP Mercosur	BRA +1.5% ARG +0.5% URY +2.1% PRY +10%	**Total: +0.3%** Agri +7.0% Manufact.: -0.6% Services +0.1%	**Total + 0.15%** Agri-Food + 1.11% Agri + 0.97%	BRA +0.3% ARG +0.7% URY +0.4% PRY +0.1%	BRA +0.45% ARG +0.35% URY +0.9% PRY+0.2%

Source: own elaboration

In the most recent SIA for the EC by LSE (2020b) there are, however, several specific aspects with regard to changes in output and value-added. Firstly, the sectoral output changes are reported for the EU-28, i.e. including the UK, and the four Mercosur countries (Table 7 and 9). The output in most agricultural and food sectors in the EU-28 declines (including -1.2 % in 'Beef and sheep meat' in the ambitious scenario), while most manufacturing sectors increase output (including +0.6 % in 'Vehicles, transport equipment'). For the Mercosur countries, the output changes show particular patterns:

[10] As shown in Table 3, the LSE (2020) SIA is the only study that reports both, bilateral and total trade changes.

i) The reported differences in output changes between agricultural and manufacturing sectors are primarily valid for Brazil and Argentina, while many agricultural sectors in Uruguay and Paraguay see declining output. At the same time imports tend to increase in most agri-food sectors (Tables 125 and 126). Thus, EU exports potentially affect agricultural sectors in Uruguay and Paraguay, while Brazilian and Argentinean agri-food exports benefit.[11]

ii) Changes in the output of manufacturing vary significantly between the Mercosur countries. For instance, output in 'Vehicles, transport equipment' declines by -1.8 % in Brazil and by -14.4 % in Uruguay. One reason is the input-output structure of the underlying GTAP data, in which Brazil uses imports in this sector primarily as intermediate inputs in the production, while Uruguay consumes these imports directly. Increased competition by EU imports, therefore, replaces local production. In addition, Brazil and Argentina can further benefit from increasing bilateral and total exports in the manufacturing sector. This is primarily driven by the inclusion of NTM trade cost reductions of 5 % in the conservative scenario and 10 % in the ambitious scenario for non-agricultural goods (ibid.: 24). No details are stated on the magnitude of NTM ad-valorem equivalents, but the bilateral Mercosur exports to the EU rise between 10 % ('Non-metallic minerals') and 40 % ('Vehicles, transport equipment') (ibid.: 34 Table 10), despite the low level of tariffs removed by the EU in these sectors (see section 2). These one-sided NTM cost reductions for Mercosur exports potentially limit the adverse effects in Mercosur manufacturing sectors, particularly in Brazil. However, as discussed in section 3, the content of the agreement on TBT regulations is more favourable for EU exporters and Mercosur exporters would need to adjust to EU regulations. This, in turn, would entail compliance costs for Mercosur producers, which are not taken into account of in the model simulations.

iii) Mercosur countries show positive output reactions in services sectors, for instance 1.0 % in 'Telecoms, business services' in Argentina. As value-added in services amounts to around 75 % of total value-added in the Mercosur economies (GTAP data), these positive output effects in services dominate the aggregate economic effects. Besides higher demand for services as intermediaries, the increasing output in services caused by the application of NTM cost reductions[12] leads to increasing Mercosur bilateral exports (+6.4 %) and total trade in these sectors (Tables 125 and 126).

Based on the sectoral output data in GTAP 9, the reported output changes of the ambitious scenario in LSE (2020b) would result in an increase in output in the Mercosur countries Brazil (+0.3 %), Argentina (+0.7 %) and Uruguay (+0.3 %) due to higher production in agricultural and services sector, while output in Paraguay would decline slightly by (-0.1 %). For the EU28, total output would only change marginally by 0.04 %.[13]

The selected CGE studies also report results for changes for GDP, value-added, real incomes or welfare (Table 4). Generally, changes to GDP or value-added tend to be positive, but small even though they are more pronounced in models that show higher changes in trade flows due to NTM trade cost reductions (in particular University of Manchester (2009) and Thelle et al. (2011)). The LSE SIA expects EU GDP to increase by +0.1 % or EUR 15 billion until 2032 – equivalent to EUR 2.50 per capita and year. All studies see negative changes in value-added in the EU agricultural sectors (up to -1 % in

[11] LSE (2020) does report changes in bilateral trade only for Mercosur as a bloc and not for the single Mercosur countries.

[12] Details on the application of NTMs in services sectors in the LSE SIA model are limited to one paragraph (LSE 2020: 24) and the model results of these NTM cost reductions are not explicitly discussed in the sector chapter of the SIA. Ambec et al. (2020: 33) emphasize that the text of the SIA is ambiguous with regard to NTM trade cost reductions and on the question of whether these reductions also applied for the EU. However, given the trade surplus in services for the EU (LSE 2020: 280), similar NTM trade cost reduction on both sides would imply higher export effects on the EU side.

[13] LSE (2020b) reports output changes only on a sectoral basis relative to a baseline. The report gives no details on the baseline, in contrast to Burell (2011).

Thelle et al. (2011) and positive effects in EU manufacturing (up to 0.3 % in Thelle et al. (2011)). In Mercosur countries, GDP changes vary from +10 % for Paraguay in the old SIA by University of Manchester (2009) to +0.1 % for the same country in the new SIA by LSE (2020b). In the most recent studies by LSE (2020) and Carrico et. al. (2020), GDP changes for Mercosur countries vary around 0.5 %, ranging from 0.1 % in Paraguay (or EUR 1.20 per capita per year) to 0.7 % in Argentina (or EUR 8.6 per capita per year) in the LSE (2020) SIA. However, the LSE (2020) studies show the highest changes in GDP relative to changes in trade flows, since the LSE study introduces changes in capital stocks in the GDyn model used. The modelling of international capital mobility as in LSE (2020) increases the allocative efficiency between sectors and thereby the GDP results. As shown in LSE (2020: 30 Table 6), the variable 'invest' increases in EU-28 and the Mercosur countries, while it declines in all other regions. Changes in the capital stock potentially affect the incomes of the factors labour and employment. However, LSE (2020) does not provide any details on sectoral value-added nor on factor incomes.[14]

Effects on real wages and employment

With regard to real wages, the SIA reports increases in the EU-28 by 0.3 % and up to 0.8 % in Paraguay and no changes in Brazil (ibid.: 56 Table 17). This assumes that higher demand for labour translates into higher real wages given fixed employment. Jobs would simply move from contracting to expanding sectors. The SIA does, however, not address the extent of such job shifts and the potential costs associated with such sectoral changes, which include temporary job losses, additional public expenditure for retraining and unemployment payments, as well as arguably costs for long-term unemployment.

In the analysis of social effects of the EUMAA (chapter 3), the LSE (2020) study indicates effects on employment changes, which implies a different configuration of the model with an alternative closure rule for the labour market, including fixed real wages and adjustments in employment. Without offering any details or discussions in the final report, the SIA includes four tables (Tables 127-130) on employment changes for unskilled and skilled labour for the two scenarios. According to Table 129 and 130 (p.402 and 403), skilled and unskilled employment in the EU declines in all sectors except manufacturing sectors, with the most pronounced losses in 'Bovine and other ruminant meats' of -1.3 % and the largest gains in 'Vehicles, transport equipment' and 'Machinery' (both +0.5 %). In the Mercosur countries, these employment effects are positive in most agricultural sectors, but strongly negative in manufacturing with losses of -5.5 % in machinery in Brazil and -14.5 % in the sector 'Motor, transport equipment' in Uruguay.

Relating the reported employment changes with actual employment data shows the potential effects on job markets in the EU and in Austria. Even though these estimations should be interpreted with caution given that (i) the effects of the model simulations for employment are not fully reported, and (ii) the LSE SIA reports changes relative to a baseline in the year 2032 and not for current sectoral job data, such an exercise indicates the scale of the absolute employments effects to be expected from the agreement (See details on the methodology used for our estimations in the Appendix).

Based on current ILO employment data, the sectoral employment changes reported in the LSE SIA amount to a small, but negative effect for the entire EU-28 (including the UK, as in the LSE SIA). Jobs are lost in agriculture (-16,100 / -0.5 %) and food sectors (-33,800 / -0.7 %) and only EU manufacturing sectors would see higher employment (+33,000 / +0.11 %). In sum, the number of jobs in sectors of tradable goods would be reduced by -16,900 jobs (-0.05 %) (see Table 5). In services sectors, the LSE SIA sees benefits for Mercosur countries, assuming a one-sided reduction of trade costs due to regulatory changes. In employment terms, this would generate negative effects for the EU services sectors. These changes are relatively small (-0.07 %), but due to the large share of

[14] See in comparison, Burrell (2011) for a comprehensive reporting of these outcomes.

employment in services sectors it would amount to a loss in employment of -103,500 jobs. This, in turn, would lead to an overall loss of around -120,000 jobs or -0.06 % in the EU-28. However, given the assumptions used in the SIA model simulations, the results for the services sectors should be with caution. But even without considering services, the SIA analysis reports negative, though small, employment effects for the EU-28.

Table 5: Estimated employment effects EU-28 and Austria

	EU-28			Austria		
	jobs	*in %*		*jobs*	in %	
Agriculture & Commodities	-16,100	-0.50%		-60	-0.18%	*adjusted*
Food	-33,800	-0.69%		-500	-0.64%	*adjusted*
Industry	+33,000	+0.11%		+1,100	+0.18%	*adjusted*
Sectors tradable goods	***-16,900***	***-0.05%***		***+ 540***	***+0.08%***	
Services	-103,400	-0.07%		- 1,740	-0.07%	*EU-Average*
Total	**-120,300**	**-0.06%**		**- 1,200**	-0.03%	

Note: based on own estimations (see details in Appendix)

Source: ILO and LSE (2020) data

As the LSE SIA results are reported for the EU-28 only, an estimation of employment effects for Austria requires an approximation based on the differences in the Austrian trade profile with Mercosur countries in comparison to the EU trade profile (see chapter 2). Austria has, on the one hand, a larger trade surplus in industry sectors with Mercosur countries compared to the EU-28 average. Thus trade effects from tariff liberalisation should be positive for Austria. On the other hand, Austria has a relatively smaller deficit in agricultural and food sectors than the EU-28, that is, in sector in which import competition from Mercosur countries should increase. Using employment data for Austria and adjusting for the different trade profile of Austria (by using the sectoral net trade balances pointing in the same direction for the EU and for Austria), results in a small, but still negative change for Austrian employment in agriculture and forestry (-60 jobs, -0.18 %) and in the food sector (-500/-0.64 %), while the manufacturing sector in Austria would benefit from an increase in employment by 1,100 jobs (+0.18 %). This amounts to a small, but positive change in employment by 540 jobs (+0.08 %) in sectors of tradeable goods. The unknown factor for the overall employment effects in Austria are, however, changes in services sectors. Austria runs an aggregated trade deficit in services with Mercosur driven by trade deficits in the sectors 'Transportation' and 'Recreation and other services'. The overall and the sectoral deficits are in contrast to the surplus of the EU-28, which makes an adjustment of employment effects based on relative net balances problematic. However, using only the respective EU-28 changes in services for Austrian employment results in a loss of -1,740 jobs in these sectors. This would amount to an aggregate net loss of -1,200 jobs for the Austrian economy. This underlines the importance of disaggregated results for the single EU member states in order to understand the full implication of the EUMAA, even though overall employment effects might be small.

Effects on emissions

Finally, the LSE (2020) SIA analyses the ecological impact of the Agreement, and quantifies changes in Green House Gas (GHG) emissions based on the economic effects of the CGE model, again without providing details on the methodology. The report foresees only small changes in CO_2 emissions in the EU (+0.05 %, 200 million tons of CO_2) until 2032, Brazil (+0.18 %), and Argentina (+0.69 %), but lower emissions in Paraguay and Uruguay, which sum up to 180 million tons in absolute terms for the Mercosur countries

(ibid.: 86 Table 23) . However, global emissions would decline due to lower production in the rest of the world. The reallocation of productive activity towards agricultural sectors in Mercosur countries causes, however, higher methane and nitrous oxide emission in these countries, while these emissions would decline in the EU (ibid.: 87 Table 24). Other ecological impacts, for instance on deforestation, air pollution or waste, are assessed through qualitative analysis. As all these effects are inferred from the expected economic changes, which come with large uncertainties, these ecological effects should be interpreted with caution. As is the case for economic effects, LSE (2020b) does not apply sensitivity analysis or other instruments to address such uncertainties.

4.2. Structural Gravity Models

A second option for ex-ante assessments of free trade agreements is the application of structural gravity models. As an econometric model, the standard gravity model of trade predicts that bilateral trade is positively related to the size of the two countries and inversely to trade costs, which are caused by multiple factors (Piermartini/Teh 2005). The approach to the estimation of gravity models of trade has been given theoretical underpinnings, which allow for a structural interpretation of regression coefficients ('structural gravity model') (Anderson/van Wincoop 2003). Moreover, recent advances in linking structural gravity models with general equilibrium models and macroeconomic variables have allowed for assessing changes in trade policies and their effects on trade, output or employment (Yotov et al. 2016). For this purpose, estimations of a structural gravity model with trade policy variables are used to construct general equilibrium indices with macroeconomic variables, compared with the general equilibrium indices based on estimations of a second counterfactual gravity model in which trade policy variables are adjusted and integrated into a 'full endowment' scenario to capture endogenous effects between trade and macroeconomic variables (Anderson et al. 2015; Yotov et al. 2016).

Sinabell et al. (2020) apply this structural gravity model approach for the EU-Mercosur agreement based on trade in goods and include variables such as tariffs, the existence and the depth of FTAs, as well as a separate measure of centrality. In the counterfactual estimation, the tariffs between EU and Mercosur countries are removed and an FTA with a depth score of 5 (out of 7) is introduced. The results for changes in output, exports, employment and real GDP are presented for 28 EU member states and the four Mercosur countries. For Austria, exports are estimated to increase by 2.2 % and output by 0.45 %, while changes in employment (0.006 %) and real GDP (0.08 %) are much lower, but still positive. Despite the Austrian trade surplus in goods' trade with Mercosur, Austria's effects are close to the EU average. Among the EU member states, the largest export effects are reported for Spain (+4.1 %) and the lowest for Ireland (+1.4 %) and GDP effect range from +0.146 % in the Netherlands to +0.03 % in Greece. For the Mercosur countries, the effects are more pronounced with export growth rates of 25.7 % in Paraguay to 40.0 % in Brazil. These large trade effects translate to changes in real GDP between 0.33 % in Brazil to 0.52 % in Uruguay but to negative output effects (up to -2.25 % in Argentina) as domestic production declines due to a substitution towards imports and minor employment changes. This indicates that the effects in structural gravity models are basically driven by relative trade price changes, which generate positive export and real GDP effects in case of trade cost reductions despite adverse effects on output. In a second study with a structural gravity model, Timini/Viani (2020) estimate more modest increases in EU trade (+0.6 %) and of EU GDP (+0.07 %), with Mercosur trade increasing by +14 % and its GDP by +0.4 %. However, this model is simpler by including FTAs only as dummy variables and the authors do not document the model and the results in detail.

The results of the structural gravity model of Sinabell et al. (2020) indicate that the single EU member states are affected differently by the agreement, even though the effects are generally small due to the low share of trade with Mercosur countries relative to total trade. The advantages of structural gravity models for the assessment of FTAs relate to their

foundation on an inductive econometric model with a high predictive power for bilateral trade flows, the use of easily accessible and up-to-date data, and the good documentation of the approach (Yotov et al. 2016). Nevertheless, there are several drawbacks. The assessment is based on data on trade in goods only, leaving aside services sectors, which are important drivers of the results in the LSE (2020) SIA. The baseline and the counterfactual model need to be specified by the authors, which obviously influences the final results (see for instance discussion on depth of FTAs in Sinabell et al. (2020: 21) and comparison with results in Timini/Viani (2020)). The results are further determined by model specifications of parameters such as the trade elasticity and the set-up of the 'full endowment' scenario.

4.3. Main conclusions from impact assessments

The results of assessments of the EU-Mercosur agreement with CGE models and Structural Gravity Models indicate both that the EU in total can expect small but positive changes on a macroeconomic level. It can be assumed that effects for individual EU member states will vary (as indicated by the study for the Netherlands (Carrico et al. 2020) and in Structural Gravity Models (Sinabell et al. 2020). Differences to the aggregate are, however, limited, as the importance of Mercosur countries for EU trade is relatively low. In contrast, macroeconomic effects for Mercosur countries are expected to be more pronounced and positive for all four countries, as the EU is the most important trading partner. There are, however, larger variations in the country specific effects due to the structural differences between these countries and their individual trade patterns with the EU. Even though Mercosur countries would see a massive trade deficit with the EU countries, all studies see positive GDP effects derived from standard CGE models.

Behind these aggregated macroeconomic effects are negative as well as positive changes on a sectoral basis. The selected studies report a concentration of output, income and exports on these sectors in the regions that benefit most from trade cost reductions from the agreement. These are manufacturing sectors in the EU and agricultural sectors in Mercosur countries. However, the model results are driven by the underlying scenario design and the assumption and data used for trade costs. Scrutinizing these assumptions and the results also reveals limitations of the CGE analyses themselves.

In the case of manufacturing sectors, the EU and Austria are in an advantageous position against Mercosur countries as the relative tariff reductions offered by Mercosur for these EU sectors are larger (see also section 2.3.). Consequently, model results show a strong increase in EU exports in these sectors due to the removal of high tariffs in Mercosur, which also drives output, value-added and incomes in these sectors and in the aggregate. These positive expectations for the Austrian manufacturing sectors are also underlined by EC (2020c) and (Sinabell et al. 2020: 2). However, the CGE models results in the LSE (2020) SIA and in Carrico et al. (2020) show that manufacturing exports from Mercosur countries could increase due to NTM trade cost reduction. Therefore, they conclude that "stronger Mercosur competition is anticipated to emerge as well as a result of the agreement." (ibid.: 36) Even though the underlying assumptions on the magnitude and mode of action of NTM trade cost reductions in standard CGE models are problematic, the CGE model results imply that import competition could also emerge in manufacturing sectors. Very similar uncertainties come with the estimated effects in services sectors, in which Mercosur countries could generate a trade surplus according to the LSE (2020) SIA. Again, the underlying assumptions that lead to these effects are to be seen critically, but the CGE model results and the related discussion give no clear picture of potential adverse effects for services sectors in the EU.

The most controversial debate has, however, emerged around the effects in agricultural sectors, in which Mercosur countries are expected to benefit most and in which they might expand agricultural production for EU exports with concomitant negative environmental

effects, in particular in terms of deforestation. EU producers in the agri-food sectors would see negative economic effects on the other side. The CGE model results support these expectations, even though there are specific agri-food sectors in the EU with export potential, for instance dairy or processed food products and beverages (Sinabell et al. 2020: 49-51). There are, however, limitations in the CGE modelling approaches and results, which make a comprehensive assessment of the effects in agri-food sectors difficult. A first issue are sectors, with currently low or non-existing trade flows, such as sugar and dairy. The percentage changes to the trade flows in the model cannot reflect the potential effects in full, which grow significantly stronger in reality.

Another example is the sector 'Processed foods, fish', for which LSE (2020) sees the largest change in bilateral exports from Mercosur (+89 %) and the second largest change in sectoral exports from Brazil (+39.5 %). This is driven particularly by potentially higher exports of orange juice, which is the main export product of Mercosur in this sector (UN Comtrade data) and which face the highest EU tariffs of more than 20 % (WTO tariff data). The model results suggest that the removal of these EU tariffs would trigger more export volumes of orange juice. This would imply an expansion of orange production in Brazil under potentially problematic working and environmental conditions (Public Eye 2020). However, as Brazil is the largest producer of orange juices globally, trade liberalization could also lead to higher profit margins, when lower tariffs are not translated into lower consumer prices in the EU, which would lower welfare gains in EU countries.[15] Thus, the actual impact requires a more detailed modelling approach with a differentiated sectoral breakdown in combination with a discussion on the expected volume and price effects (Ambec et al. 2020).

The limits of CGE model results for the debate on the comprehensive effects can also be shown for the beef sector. All CGE models see the largest negative output effects in the EU for the beef sector (LSE 2020 -1.2 %) and the largest adverse income effects for farmers in the Netherlands (-1.5 %) (Carrico et al. 2020). However, these estimated effects come with uncertainties. Firstly, the LSE (2020) does not explicitly model the actual changes to TRQ and secondly, the effects are also determined by the underlying trade and substitution elasticities, which are not reported in these studies. Moreover, the evaluation of potential effects requires an analysis that goes beyond the abilities of CGE models. For instance, EC (2019) suggests that "the new quota for "fresh" beef will replace some of the imports that are already taking place", as the volume of beef exports from Mercosur countries already exceeds the new TRQ volumes. However, for a full assessment of the effects also the type of quota expansion (for grass-fed beef) and the quality criteria must be considered (Ghiotto/Echaide 2020).Price and volume effects of beef exports depend also on the behaviour of beef producers in Mercosur countries (Kartepe et al. 2020). In a report to the French Prime Minister, Ambec et al. (2020) critically assess the potential impact on beef exports from Mercosur and see potential effects in high-value parts of beef in which exports from Mercosur could capture 24 % of the EU market, compared to 12 % now, which would put prices in the EU under pressure. Moreover, a segmentation of export markets for Mercosur beef into higher and lower value pieces (for instance EU and China) would result in stronger increase in the number of cattle (+980.000) compared to simple estimations based on additional TRQ volumes (ibid.: 121).

A more detailed analysis within and beyond the CGE modelling approaches is also necessary to assess the comprehensive ecological impacts of the agreement. For instance, LSE (2020b) does not address additional emissions from the transport services sector (Ambec et al. 2020: 138). By monetizing the costs of additional CO_2 emissions Ambec et al. (2020: 139) argue that these ecological costs reduce the overall welfare gains of the agreement by almost 60 %. In the case of deforestation, it is argued that an expansion of agricultural production in Mercosur countries is not necessarily linked to

[15] The role of orange juice is not addressed in the sectoral discussion in LSE (2020).

deforestation, if based on an intensification of production and increased productivity (LSE 2020: 90–92). The effects on deforestation require, however, a detailed discussion on a sectoral and product level, which is again linked to the possible effects of beef and other crop production as major drivers of deforestation in Mercosur countries (WWF 2021). The SIA correctly refers to data on deforestation, but the future effects on agricultural production and ecological effects that come with large uncertainties are not addressed “as this would require some form of a judgement call” (LSE 2020: 408). In contrast, Ambec et al. (2020) develop scenarios for deforestation and see a potental acceleration of annual deforestation by 5 % in Mercosur countries during the implementation period of the agreement. Options such as extended sensitivity analysis or the reporting of ranges for model outcomes and a related discussion of these effects have not been considered in the SIA.

Last, but not least, important economic impacts are not covered by the assessments, including by LSE (2020). Firstly, the structural adjustment triggered by trade liberalization comes along with adjustment costs for producers and workers. For instance, workers losing their jobs face the risk of temporary unemployment and require retraining and the acquisition of new skills to find new jobs in potentially expanding sectors of the economy. For older and less-skilled manufacturing workers, finding a new job that pays the same wage as the old job will turn out difficult, if not impossible (Dauth et al. 2017). This is especially relevant for those industrial sectors in Mercosur that are particularly exposed to import competition from EU products. The consideration of these costs would lower the reported welfare gains from the EUMAA. Secondly, public adjustment costs, including the loss of tariff revenues, have not been considered in the LSE assessment until the final report. According to this analysis, the loss in central government revenues due to lower import duties on EU products would amount to a maximum reduction of 0.9 % in Brazil and 1.8 % in Paraguay (LSE 2020: 35). However, further results indicate that Uruguay will see negative welfare effects in the conservative scenario due to lower public revenues. Thirdly, welfare enhancing effects of changes in the sectoral structure in the two regions emerge within the neoclassical model framework based only on profit and utility maximization. It is necessary to consider also other aspects and criteria such as food security, ecological and social sustainability or development opportunities that are influenced by structural changes in the long run. These factors are of equal importance for assessing the welfare changes triggered by trade liberalization.

5. THE EU-MERCOSUR AGREEMENT FROM THE PERSPECTIVE OF POLICY COHERENCE FOR SUSTAINABLE DEVELOPMENT (PCSD)

In its new trade strategy published on 18 February 2021, titled "An Open, Sustainable and Assertive Trade Policy", the European Commission emphasizes the need for trade policy to support the Paris climate goals and the UN Sustainable Development Goals, as well as to "…unequivocally support the Green Deal in all its dimensions, including the ambition to achieve climate neutrality by 2050." (EC 2021: 9). To this end, a variety of objectives are formulated, for instance, that the sustainability of global supply chains shall be strengthened, that worker rights should be promoted and forced labor be outlawed. The integration of goals into EU trade policy that for a long time have been referred to somewhat depreciatively as "non-trade concerns", acknowledges the need of EU policies to support the UN 2030 Agenda for Sustainable Development and its 17 Sustainable Development Goals (SDGs). As laid out in the 2017 EU Consensus on Development, the EU has committed to policy coherence for sustainable development (PCSD) across all policy areas.[16] The EU-Mercosur agreement will likely be the first agreement that will be assessed against the new EU Trade Strategy and its PSCD focus. In this chapter, we provide a tentative assessment of the PCSD dimension of the EUMAA.

Given the high profile the EU-Mercosur agreement has recently attained in the context of the increasing rates of deforestation of the Amazon rainforest, a growing number of studies and academic statements has taken issue with the likely environmental effects of the agreement as well as the remedies available in the agreement itself to manage environmental issues.[17] Although the agreement contains a chapter on trade and sustainable development (TSD) addressing a wide variety of environmental issues including notably forest governance, the obligations under the TSD chapter are of a best-endeavors nature. This means that implementation essentially depends on the political will of the parties. Implementation is facilitated by regular consultations in the respective trade and development committee established under the agreement. Any disputes arising with regard to the provisions on trade and sustainable development might involve extensive consultations between the parties, including amongst others civil society groups. In particular, a Panel of Experts could be established to examine an issue. However, unlike under the general dispute settlement mechanism, the Panel cannot impose sanctions for non-compliance. Even if the Panel of Experts were to find a violation of the TSD Chapter, if its recommendations are not implemented, the dispute resolution mechanism foresees no further steps to ensure its recommendations are followed. In practice, this means that once the agreement entered into force, even if a party were to withdraw from the Paris Agreement, the terms of the agreement mandate the other party to keep providing preferential access to its market, with no possibility of full or even partial suspension of the market access commitments it made under the agreement (Harrisson/Paulini 2020).

What is more, the TSD chapter is limited in scope. For instance, it only includes environmental and labor issues and does not provide guarantees that trade and investments are conducted in conformity with international human rights obligations. On indigenous peoples, the agreement merely contains a commitment for the parties to promote the inclusion of forest-based local communities and indigenous peoples in the supply chains of forest products, for which they should give their "prior informed consent". This happens against the well-known background of massive and increasing human rights violations. In 2017, in Brazil, the highest number of murdered environmental defenders was registered in one year (57 people) (Global Witness 2018). In 2019, according to the Brazilian Pastoral Land Commission, murders of indigenous leaders in the Brazilian

[16] For more info on the EU Consensus on Development see HERE.

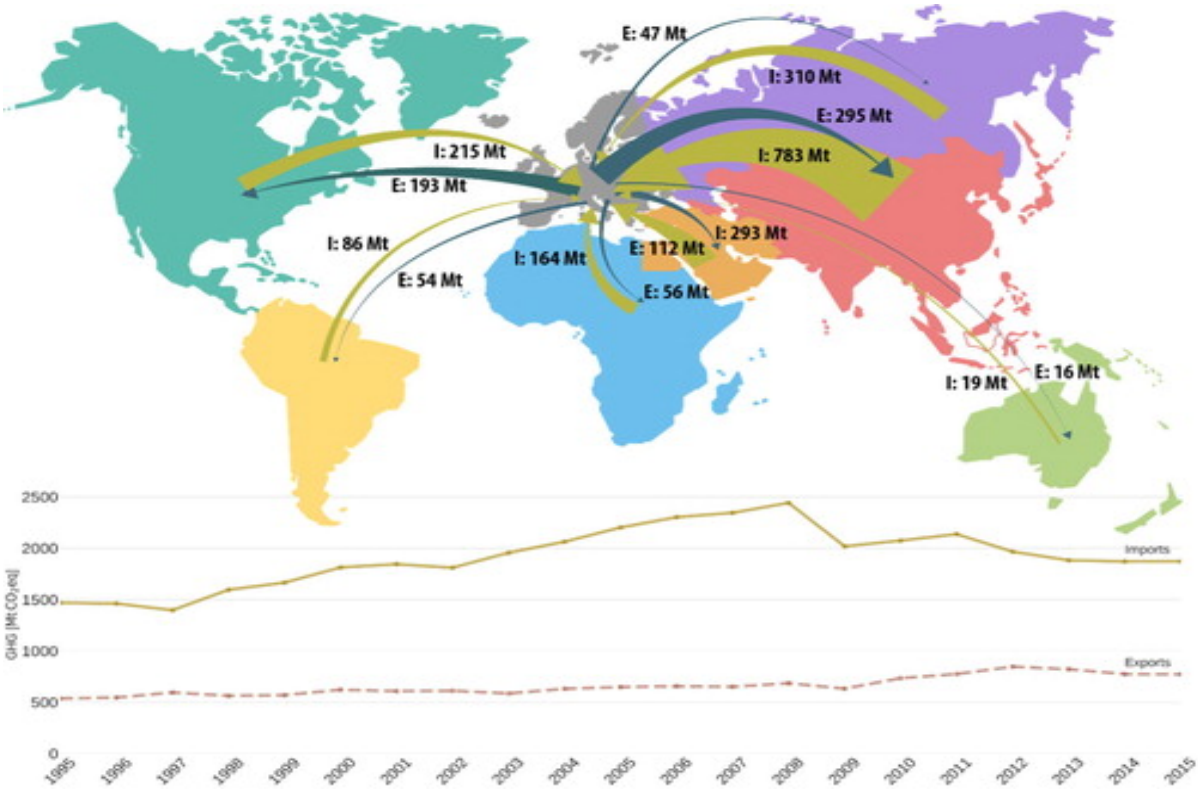
[17] See e.g.(Kehoe et al. 2020); and Academic Statement: Proposals on the EU-Mercosur Association Agreement and the Environment (8 February 2021), signed by an interdisciplinary group of academic experts, https://warwick.ac.uk/fac/soc/law/research/centres/chrp/governance/eumercosuraa/statement.pdf

Amazon hit the highest level in two decades. Also, modern slave labor in Brazil is widespread. According to the Global Slavery Index 2018, a reported 369.000 people were subject to forms of modern slavery in Brazil (Walk Free Foundation 2018). Highly exploitative labor conditions have in particular been reported for the meat industry (chicken and cattle farming, slaughterhouses), as well as for the fruit, coffee and sugar industry.[18]

Even on issues that are included in the TSD chapter, there are gaps. For instance, on forests, the focus of the respective article (Article 8) is largely on combating illegal logging and sustainable management of forests. Other critical issues, including land allocation, land use and the rights of third parties which are vital for ensuring that forest-based products are not causing deforestation or forest degradation are not included (Ambec et al. 2020; Ghiotto/Echaide 2020; Harrisson/Paulini 2020).

In sum, the TSD Chapter is ambiguous on the actions required to fulfil the obligations it sets out to effectively implement the UNFCCC and the Paris Agreement. It also fails to effectively safeguard the rights of indigenous peoples affected by deforestation, extraction of raw materials and other harmful activities. The agreement's dispute settlement mechanism for violations of the TSD Chapter is also inadequate. It remains to be seen whether the Joint Declaration currently negotiated between the EU and Mercosur and which is planned to include more specific environmental and human rights obligations for the parties will deliver on these issues.[19]

Figure 9: GHG emissions embodied in the EU trade



Note: Map at top: trade flows of embodied GHG emission transfers of the EU with other world regions for 2015. 'I': GHG emissions embodied in EU imports originating in another region, 'E': emissions embodied in EU exports to other world regions. Values depict GHG emissions in Mt CO2 eq. Graph at bottom: totally traded GHG emissions from 1995 to 2015.

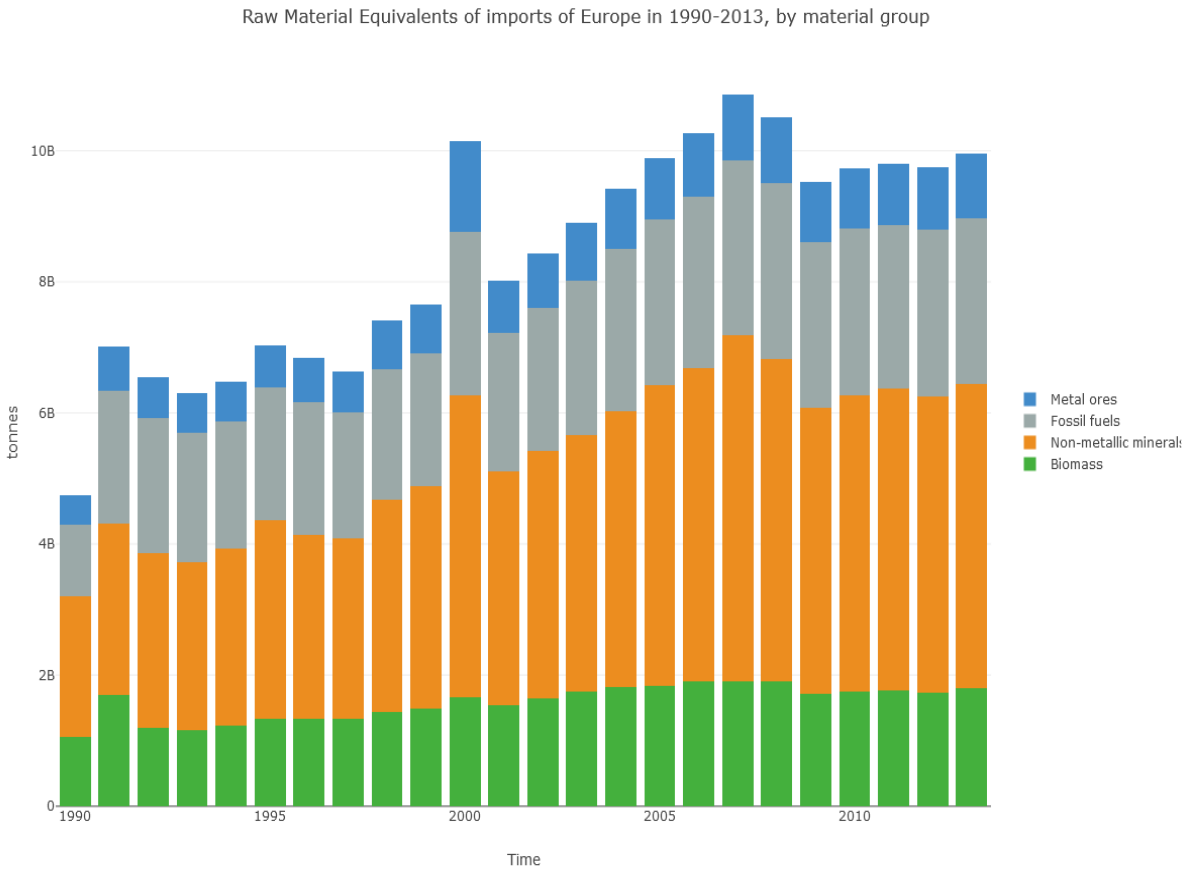
Source: Wood et al. (2020)

[18] For more info on labor conditions in the meat industry see HERE, for chicken see HERE, slaughterhouses see HERE, fruits see HERE, for coffee see HERE, for sugar see HERE,

[19] See https://borderlex.net/2020/12/10/eu-mercosur-eye-joint-declaration-on-environment-to-flank-trade-pact-ahead-of-ratification/ (03 March 2021)

With respect to the issue of climate emissions triggered by the trade activities induced by the agreement, based on the SIA impact assessment (LSE 2020), the EC argues that these will likely be small. Apart from the fact that the SIA does not include CO_2 emissions from transportation, the argument of marginal emissions due to single agreements has been repeatedly used for almost every bilateral trade agreement in the recent past. This line of argumentation hence does not take into account the cumulative effects of all the FTAs, the EU has concluded during the last decades. As a matter of fact, the net greenhouse gas (GHG) emissions embodied in EU trade have significantly increased during the last 25 years, with import-related GHG emissions growing faster than the respective emissions on the export side (Figure 9).

Figure 10: Raw material equivalents of imports of Europe 1990-2013



Source: www.materialflows.net

Similar is true for natural resources embodied in EU trade. Since 1990, according to the Global Material Flows Database of the UN International Resource Panel, imports of raw materials equivalents (i.e. raw materials embodied in imports) have more than doubled (see Figure 10).[20] The EU is a major importer of goods and services associated with natural habitat conversion in that it imports over one-third of all internationally traded commodities linked to deforestation (Cuypers et al. 2013; WWF 2021). A sixth of the carbon footprint of an average EU diet is due to deforestation emissions (Pendrill et al. 2019). With respect to imports from Mercosur, the EU annually imports commodities with a deforestation footprint of 120,000 hectares, mainly beef and soya (ibid.). According to a study by the European Commission's Joint Research Centre, Brazilian soya cultivation not

[20] It should be noted, however, that due to methodological differences, Eurostat data on raw materials equivalents (RMEs) are lower in absolute numbers. But also Eurostat reports a rising RME trend for EU imports. See https://ec.europa.eu/eurostat/databrowser/view/ENV_AC_RME__custom_899088/default/table?lang=en (03/05/2021)

only leads directly to the deforestation of the dry savannah of the Cerrado and the Amazon rainforests, but also to indirect changes in land use. With grazing land in southern and central Brazil being converted into soya fields, livestock farming is being displaced to the northern states, in particular, Amazonia (Follador et al. 2019; see also Kuschnig et al. 2019; Seymour/Harris 2019). Given Brazil's importance as the most biologically diverse country in the world – it is estimated that Brazil hosts between 15-20 % of the world's biological diversity, with the greatest number of endemic species on a global scale – an expanding agricultural frontier driven by deforestation exacerbates the loss of biodiversity. According to the latest Living Planet Report (WWF 2020), Latin America is already now the continent with the highest decline in biodiversity, with a staggering drop of population sizes by 94 percent in the American tropics, including the Caribbean and Latin America.[21]

The rising emission and resource intensities of EU imports point to an increasingly unsustainable production and consumption model, the transformation of which is at the center of the European Green Deal. More specifically, the growing imports of soya and beef are a testament to a clearly unsustainable EU agricultural and food system, both for environmental and public health reasons, given, amongst others, the growing prevalence of obesity, cardiovascular and other lifestyle diseases related to excessive meat and sugar consumption. Further liberalization of agricultural trade thus threatens to exacerbate existing trends, thereby exerting pressure on small-scale and organic agriculture in the EU as well as curtailing efforts to move consumption habits of EU citizens to more sustainable and healthy diets by increasing the availability of cheap and abundant supplies of meat (both imported and local meat produced in the EU with imported soya).

Vice versa in Mercosur countries, the prevailing specialization in mineral resource extraction and capital-intensive agro-industrial production will be deepened with likely increases in land use, including through deforestation. The SIA argument frequently cited by the EC that previous experience in the 2000s indicates that agricultural production without a further expansion of the agricultural frontier is possible in Brazil and mainly a question of domestic regulation, ignores the changed political situation. In the 2000s, the center-left PT government was forced to strike a delicate balance between agro-industrial interests on the one side and indigenous and peasant movements on the other side, with the latter belonging to its political supporters, and the former considered important for the neo-developmentalist project of the PT government (see e.g. Welch 2011). Agricultural policies under the PT government supported stricter enforcement of forest conservation policies and expanded protected areas as well as indigenous territories. From 2004 through 2012, protected areas and indigenous territories grew by 68 % to encompass 47 % of the entire Brazilian Amazon region (Nepstad et al. 2014). Access to credit for farmers was made conditional on compliance to forest protection policies, and more sustainable forms of agriculture were supported by government programs. In addition, the economic position of small-scale farmers and rural populations was strengthened with land redistributions, economic support via enhanced access to credit and social policies. Though far from perfect, this resulted in marked improvements with respect to levels of protection for land rights, better enforcement of environmental regulations, and an agricultural development strategy that relied more on enhancing productivity and intensification of production. Contrary to that, the power base of the right-wing government of President Bolsonaro is closely tied to agro-industrial interests and openly hostile to indigenous communities and their claims on land (de Area Leão Pereira et al. 2020). As a consequence, the Bolsonaro government has been offensively dismantling environmental protection as well as curtailing the rights of small-scale farmers and of indigenous peoples, all of which resulted in a significant increase in violence and repression against indigenous

[21] The Living Planet Index used by the Living Planet Report measures the population abundance of thousands of vertebrate species around the world. Also other indicators of biological diversity, such as e.g. indicators of the extent and structural condition of ecosystems, of the composition of ecological communities, and of species populations overwhelmingly, also show net declines over recent decades (WWF 2020).

communities (CIMI 2019; de Carvalho et al. 2021). Behind the Bolsonaro government, a power bloc has consolidated, which is composed of parties closely aligned with the financial and agro-industrial interests, Evangelical churches organizing popular support (Zilla 2020), and the military expanding its role in the government and state apparatus.[22] Under these circumstances, it is highly unlikely that the shift in the political power balance that has happened during the last decade will be easily reversed in the medium-term future, regardless of whether Jair Bolsonaro remains president after the 2022 election or not.

The EU will thus indeed have to make a strategic choice. A conclusion of the agreement as its stands will likely deepen the existing extractive economic model both in Brazil based on the massive depletion of natural resources and the exploitation of human labor, and in the other Mercosur countries, and thus tend to strengthen the political forces closely aligned with this model. If the strategic interests of the EU include the accomplishment of the climate targets of the Paris Agreement and the promotion of a more sustainable global economy both at the domestic and the global level, a profound revision of the agreement will be necessary. This revision must not only strengthen environmental and human rights obligations, but promote a more sustainable production model, both in the Mercosur and the EU. Instead of liberalizing agricultural trade as such, EU trade policy needs to move towards promoting agricultural trade in sustainable products and thus support deforestation-free, organic and other sustainable forms of agriculture not only in the EU internally but also vis-à-vis trading partners. Sustainably produced products, both in agriculture and manufacturing – should benefit from preferential treatment, while environmentally destructive and socially harmful trade should be discouraged. Various proposals have been put forward to this end. These range from tariff preferences and other financial incentives for sustainable products, to import restrictions for products that involve deforestation and other harmful practices (see e.g. Raza et al. 2020), to more systemic approaches that dynamically calibrate tariff preferences to the achievement of set reforestation and other sustainability goals (see e.g. (Harstad 2020).[23]

[22] See https://brazilian.report/power/2021/03/02/dangers-bolsonaro-de-facto-military-government/ (02 March 2021)

[23] See also the proposals in the Academic Statement „Proposals on the EU-Mercosur Association Agreement and the Environment“ (8 February 2021), including on pre-ratification commitments, https://warwick.ac.uk/fac/soc/law/research/centres/chrp/governance/eumercosuraa/statement.pdf

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APPENDIX

Estimating employment effects

We translate the reported percentage changes in employment per sector of the impact assessment study conducted by LSE (2020b) into absolute changes of jobs. This requires several steps:

1) The LSE study shows employment changes for unskilled and skilled labour for the two scenarios in the tables 127-130 on pages 400 to 403. For four out of the 31 sectors, changes in unskilled and skilled labour differ slightly. We therefore use the GTAP 10 database to weigh the employment changes by skill for the ambitious scenario.

2) Employment data of the EU-28 member states for the year 2019 are drawn from ILO Stat[24] in the format of ISIC-Rev.4, 2 digit level.

Table 1A: Bridging Table GTAP to ISIC sectors

	Sectors (LSE)	GTAP 9	GTAP 10	ISIC Rev 4
1	Cereals	2, 3	2, 3	1
2	Rice	1, 23	1, 23	1
3	Vegetables, fruits, nuts	4	4	1
4	Oil seeds, vegetable oils	5, 21	5, 21	1
5	Sugar	6, 24	6, 24	10
6	Plant & animal fibres and other crops	7, 8, 12, 14	7, 8, 12, 14	1
7	Other food products	25	25	3, 10
8	Bovine and other ruminant meats	9, 19	9, 19	10
9	Other meats (poultry,	20	20	10
10	Other animal products	10	10	10
11	Beverages and tobacco	26	26	10
12	Dairy products	11, 22	11, 22	10
13	Wood and paper	13, 30, 31	13, 30, 31	2, 16, 17, 18
14	Coal	15	15	5
15	Oil	16	16	6
16	Gas	17, 44	17, 47	9
17	Minerals	18	18	7, 8
18	Textile, apparel, leather	27, 28, 29	27, 28, 29	13, 14
19	Chemicals, rubber,	33	33, 34,35	20, 21, 22
20	Petroleum, coal products	32	32	19
21	Metal products	35, 36, 37	37, 38, 39	24, 25
22	Non-metallic minerals	34	36	23
23	Motor vehicles & transport equipment	38, 39	43,44	29, 30
24	Machinery	41	41,42	27, 28
25	Electronic equipment and other manufacture	40, 42	40,45	26, 31, 32, 33
26	Electricity	43	46	35
27	Utility (construction,	46, 45	48, 49	36, 37, 38, 39, 41, 42, 43
28	Transport	48, 49, 50	52,53,54,55	49, 50, 51, 52
29	Communication and business service	51, 54,	56, 59, 60	53, 58, 59, 60, 61, 62, 63, 68, 69, 70, 71, 72, 73, 74, 75, 77, 78, 79, 80, 81, 82
30	Financial service and insurance	52, 53	57,58	64, 65, 66
31	Recreational and other services	55, 56, 57, 47	50,51,61,62,63,64,65	45, 46, 47, 55, 56, 84, 85, 86, 87, 88 90, 91, 92, 93, 94, 95, 96, 97, 98, 99

[24] https://www.ilo.org/shinyapps/bulkexplorer59/?lang=en&segment=indicator&id=EMP_TEMP_SEX_ECO_NB_A, The data for Austria are also available as ‚Unselbständig Erwerbstätige (ILO) nach ÖNACE und Geschlecht, 2019' from Statistik Austria.

3) The concordance tables[25] between GTAP sectors and ISIC classification are used to bridge LSE employment changes with ISIC sectoral data. As the concordance tables are available for the GTAP 10 version with 65 sectors, a translation from GTAP 9 sectors to the newer version is necessary as an intermediate step (see Table 1A).

4) As the ISIC classification has sectors with higher levels of aggregation, sectors in the LSE have to be aggregated to this sectoral breakdown, in particular, agricultural and food sectors.

For the EU-28, the sectoral job changes are shown in Table 2A and in aggregated form in Table 3A (rounded to the nearest 100):

Table 2A: Sectoral changes in employment EU-28

	ILO ('000 jobs)	%-Changes (LSE)	Changes in jobs
Agriculture	2,555	- 0.58	- 14,723
Food	4,376	- 0.77	-33,762
Beverages	518	-	-
Wood and paper products	2,596	- 0.10	- 2,596
Coal	248	- 0.10	-248
Oil	59	- 0.10	- 59
Gas	106	- 0.80	-846
Minerals	256	- 0.10	- 256
Textile, apparel, leather	1,999	- 0.10	- 1,999
Chemicals, rubber, plastic	3,926	0.10	3,926
Petroleum, coal products	191	-	-
Metal products	4,562	0.19	8,495
Non-metallic minerals	1,225	0.19	2,288
Motor vehicles & transport equipment	4,601	0.50	23,006
Machinery	4,848	0.50	24,242
Electronic equipment and other manufacture	4,875	- 0.50	- 24,374
Electricity	1,575	- 0.02	-298
Utility (construction, water)	13,344	0.30	40,033
Transport	9,248	- 0.03	- 2,585
Communication and business service	27,360	- 0.10	- 27,360
Financial service and insurance	5,910	- 0.20	- 11,821
Recreational and other services	101,423	- 0.10	- 101,423
Total	**195,802**	**-0.06**	- **120,360**

Table 3A: Aggregated sectoral changes in employment EU-28

Sector	Changes in Jobs	%-Changes
Agriculture & Commodities	- 16,100	-0.50%
Food	- 33,800	-0.69%
Industry	33,000	0.11%
Services	- 103,400	-0.07%
Total	- 120,300	-0.06%

[25] https://www.gtap.agecon.purdue.edu/databases/contribute/concordinfo.asp

Employment changes in the LSE SIA are not reported on the EU member state level. We therefore adjust the EU-28 data in the sectors with trade in goods by the difference in the net exposure in trade (relative to total trade) of Austria and the EU-28 with the Mercosur countries (based on sectoral trade data (average 2012 to 2019) from UN Comtrade and Eurostat). The exposures per sector in Austria and the EU-28 point into the same direction for all agricultural, food and manufacturing sectors and differ only in their magnitude (see column ratios in Table 4A). As shown in chapter 2, Austria has a distinct surplus in trade in most manufactured sectors (ratios >1) and a smaller deficit in agricultural goods and food in comparison to the EU-28 average (ratios <1). We therefore use the ratio of these exposures as a proxy to adjust the LSE employment changes for the case of Austria.

Austria has a trade deficit in several services sectors, while the EU has a surplus. However, the sectors balances show different directions and are therefore not suitable to estimate sectoral effects. Therefore, we apply the %-changes from the LSE SIA as a proxy for the lower bound of expected employment changes. For a more detailed analysis, model simulations on a country basis would be necessary.

Table 4A: Sectoral changes in employment Austria

	ILO ('000 jobs)	%-Changes (LSE)	Ratio net exposures Austria/EU-28	%-Changes (Unadjusted Services)	Changes (Unadjusted Services)
Agriculture	26	- 0.58	0.4	- 0.21	-56
Food	68	- 0.77	0.9	- 0.73	-497
Beverages	9	-	- 7.0	-	0
Wood and paper	64	- 0.10	1.0	- 0.10	-63
Coal	-	- 0.10	-	-	0
Oil	-	- 0.10	-	-	0
Gas	-	- 0.80	-	-	0
Minerals	5	- 0.10	0.1	- 0.01	0
Textile, apparel,	13	- 0.10	9.5	- 0.95	-122
Chemicals, rubber, plastic	70	0.10	1.3	0.13	91
Petroleum, coal products	-	-	0.0	-	0
Metal products	121	0.19	2.5*	0.47	564
Non-metallic minerals	25	0.19	2.5	0.46	117
Motor vehicles & transport equipment	61	0.50	0.7	0.35	215
Machinery	131	0.50	1.5	0.75	989
Electronic equipment and other manufacture	106	- 0.50	1.3	- 0.66	-695
Electricity	26	- 0.02		*-0.02*	-5
Utility (construction, water)	340	0.30		*0.30*	1020
Transport	180	- 0.03		*-0.03*	-50
Communication and business service	508	- 0.10		*-0.10*	-508
Financial service and insurance	122	- 0.20		*-0.20*	-245
Recreational and other services	1,948	- 0.10		*-0.10*	-1948
Total	**3,823**			**-0.03**	**-1,195**

Notes: * The ratio of net exposures in metal products amounts to 128 due to almost balanced trade on the EU-28 level. We use the ratio on the non-metallic minerals as a proxy.

Table 5A: Aggregated sectoral changes in employment Austria (unadjusted Services)

Sector	Changes in Jobs		%-Changes
Agriculture & Commodities	-	60	-0.18%
Food	-	500	-0.64%
Industry		1,100	0.18%
Services	-	1,740	-0.06%
Total	**-**	**1,200**	**-0.03%**

Note: rounded to the nearest 10

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