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Article

The Trans-Pacific Partnership Deal (TPP): What Are the Economic Consequences for In- and Outsiders?

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THE TRANS-PACIFIC PARTNERSHIP DEAL (TPP): WHAT ARE THE ECONOMIC CONSEQUENCES FOR IN- AND OUTSIDERS?

RAHEL AICHELE AND
GABRIEL FELBERMAYR*

Introduction

After over five years of intensive negotiations, the United States and eleven other Pacific Rim countries – Australia, Brunei, Chile, Canada, Japan, Malaysia, Mexico, New Zealand, Peru, Singapore, and Vietnam – concluded the Trans-Pacific Partnership (TPP) deal on 5 October in Atlanta, establishing the world's largest free trade zone of 800 million people with a combined GDP of 28 trillion US dollars (about 37 percent of world GDP measured in current US dollars). Apart from addressing traditional trade issues such as the abolition of duties and quotas, the partnership is intended to break new ground on issues like labour laws and technology.

US president Barack Obama welcomed the TPP, stating that it will “eliminate more than 18,000 taxes that various countries put on US products”. The deal “reflects America's values and gives our workers the fair shot at success they deserve” he argued, adding that the United States should not “let countries like China write the rules of the global economy”. In a separate statement the US Trade Representative (USTR) Office underlined that the “TPP brings higher standards to nearly 40 percent of the global economy”.

Japanese Prime Minister Shinzo Abe told reporters the deal was a “major outcome not just for Japan, but also for the future of the Asia-Pacific”, while Tim

Groser, New Zealand's Trade Minister emphasized the ‘strategic’ implications of the deal for global trade were ‘enormous’. Moreover, Canadian Prime Minister Stephen Harper said during a press conference announcing the deal: “today is a historic day. It is a great day for Canada. It is a great day for Canadians”. Drawing a historical comparison, he predicted that the partnership “is going to be the new gold standard for global trade agreements”. EU trade commissioner Malmström also welcomed the conclusion of TPP negotiations. At the same time, many observers fear that TPP will marginalize Europe in the race to shape global standards and rules.

Negotiations on a TPP- agreement started in 2010. They build on a predecessor agreement: the so-called Trans-Pacific Strategic Partnership between Brunei, Chile, New Zealand and Singapore, which was signed in 2005, and entered into force in 2006. In 2008, the United States joined the talks. As of 2014, twelve countries are part of the trade negotiations: Australia, Brunei, Canada, Chile, Japan, Malaysia, Mexico, New Zealand, Peru, Singapore, the United States and Vietnam.

For the United States, the TPP is an important part of a strategy reorientation towards East Asia, the so-called pivot. The key pillars of this regional strategy are: strengthening bilateral security alliances; deepening our working relationships with emerging powers, including with China; engaging with regional multilateral institutions; expanding trade and investment; forging a broad-based military presence; and advancing democracy and human rights (Bush 2012). The Obama administration made TPP one of the top priorities in its trade agenda. Repeatedly, in his State of the Union speeches, the president referred to these talks. They are an important part of the US's pivot towards East Asia.

The deal has now to be signed formally by each country and ratified by the respective parliament. A ‘comprehensive’ text of the agreement in principle has yet to be released, but cornerstones of the deal have been made public. Ratification is by no means certain. Hilary Clinton, the likely presidential candidate of the US Democratic Party, has said about the deal: “as of



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today, I am not in favour of what I have learned about it".¹ An interesting debate during the presidential campaign is sure to follow.

Yet, the question arises, whether the enthusiastic remarks with which heads of government celebrated the breakthrough are not entirely overblown. So, in this report we ask:

- What are the economic advantages of TPP to the insider countries? Who benefits most?
- How are outsiders, like Europe or China, affected?
- What is the price that the TPP countries pay for keeping China out?

What the agreement is about

Goods

The TPP agreement abolishes tariffs in a wide array of products, relaxes quantitative restrictions, and establishes mechanisms to avoid unjustified sanitary and phytosanitary (SPS) measures, as well as technical barriers to trade (TBT). These policy changes also affect the sensitive agricultural, food, and textile markets, but a number of compromises have been made.

Central areas of conflict have been sugar, milk quotas, rules of origin in the automotive industry, and biopharmaceuticals. New Zealand and Australia negotiated better access to the US milk market, which is still strongly protected. In return, American dairy farmers asked for better access to the Canadian and Japanese milk markets, where tariff and non-tariff protection is very high. Details on the negotiated quota and tariff system are still not known, but all sides must have made compromises.

In the automotive industry, Canada and Mexico have strong incentives to demand very strict rules of origin, so that the use of car parts produced outside of the TPP zone must be small enough for the final car to enjoy tariff-free access. Japan has contrary incentives, because it sources a large share of car parts from non-TPP countries such as Thailand. Here, too, a bargain was struck, with details still pending.

Public procurement is a thorny issue in many countries, particularly in the United States, which has ruled

¹ CNN, 7 October 2015. <http://edition.cnn.com/2015/10/07/politics/hillary-clinton-opposes-tp/index.html>.

out dropping policies like Buy American requirements, or measures that help small businesses to obtain government contracts.

Services

In the area of services, TPP focuses on improving the transparency and predictability of regulatory procedures with a special emphasis on financial services and telecommunications. Given the very different states of development of participating nations, and their very different political orientations, market access improvements are, however, limited. Yet the agreement is the first to address digital trade and a friction free operation of the global internet. It includes provisions on protection of practices such as cloud computing; and prevents national governments from requiring that TPP companies build data centers to store data as a condition for operating in a TPP market.

Intellectual property

The agreement includes several provisions that build on foundations established in the WTO Agreement on Trade-Related Aspects of Intellectual Property Rights and other international intellectual property agreements, such as the World Intellectual Property Organization (WIPO) Copyright Treaty, the WIPO Performances and Phonograms Treaty, and the Patent Cooperation Treaty. The objective is to protect patents, trademarks, copyrights, and trade secrets, including safeguards against the cyber theft of trade secrets. Controversially, the United States wanted to protect the inventors of bio-pharmaceuticals for 12 years after the end of patents by granting them the right not to share the data on their products. This implies that producers of generic pharmaceuticals cannot simply use the data of the original inventors when they seek market admission of their products, but have to provide own data and tests, which results in higher costs. Australia, for example, grants 'data exclusivity' rights for five years. The TPP compromise resulted in a common limit of 8 years.

Investment

The deal also includes the Investor State Dispute Settlement (ISDS) mechanism that will allow investors to bring TPP governments to arbitration. At the request of Australia, which has no ISDS mechanism with the United States yet, the ISDS mechanism will not cover the tobacco industry.

Level playing field

Since TPP is an agreement that covers some of the richest and most advanced countries of the world (such as the United States), but also some rather poor ones (such as Peru, Malaysia or Vietnam), special attention was paid to the need to guarantee a level playing field for all market participants. For this reason, the deal sets up new workers' rights, including rules on child labour, forced labour and discrimination. It also includes rules on state-owned enterprises (SOEs), which still play a huge role in an officially communist country like Vietnam. Since rules like these are missing in existing agreements that tie TPP members (such as the North American Free Trade Area, NAFTA), these existing pacts are updated by TPP.

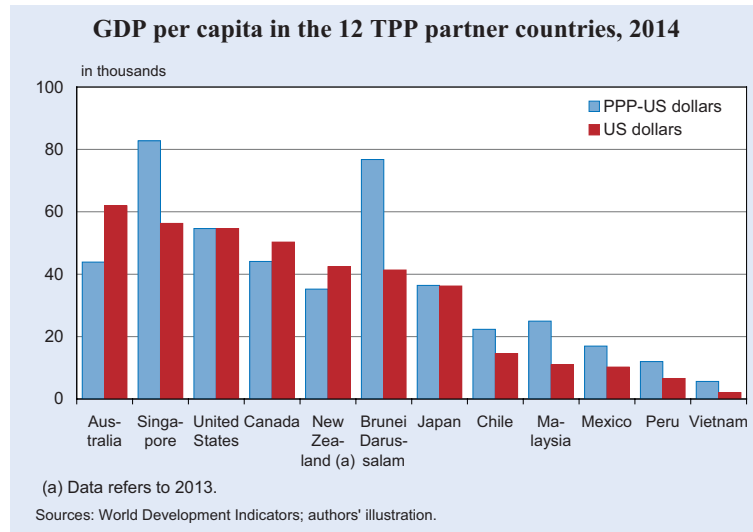
Summarizing

From what is known to date, TPP is more of a standard trade agreement of the type that the United States or the EU have signed in recent years (e.g. with South Korea) than of a new generation deal that cuts into new topics such as regulatory cooperation, the mutual recognition of standards, or the joint setting of standards. It does not go very far in services or government procurement, and important carve-outs in agriculture are very likely.

What this means for our simulations

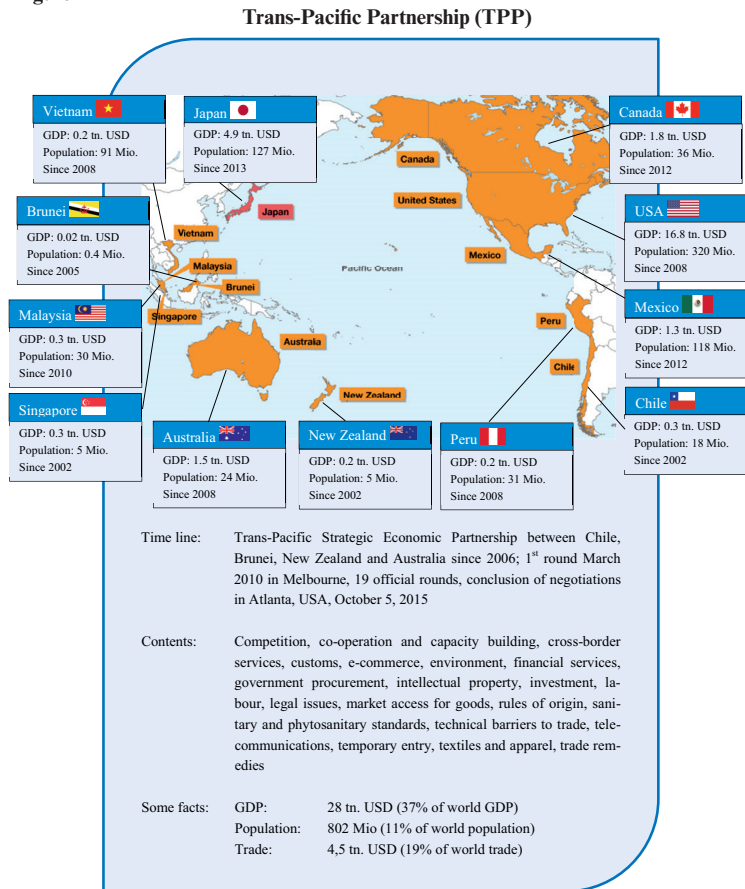
TPP is an ambitious agreement, in that it brings together some of the richest and most developed countries of the world with rather poor ones, one of which still has a communist regime (Vietnam has a single party system and a per capita GDP that is just one tenth of the US level, measured in purchasing

Figure 1



power parities). This wide geographical and developmental reach does limit its depth. In the simulations below, we assume that the TPP agreement eliminates all tariffs between the parties (even if we know that some tariffs may remain for certain products). We also assume that the agreement reduces non-tariff barriers by as much as medium-depth agreements that already

Figure 2



Source: Authors' conception.

exist do. We describe the methodology in more detail below.

Some facts about the TPP partners

The following illustration demonstrates key facts about the reach of TPP. The agreement would cover roughly 40 percent of world GDP, 10 percent of the world's population and 20 percent of world trade. However, the degree of heterogeneity is huge. Figure 1 shows that, in 2014, per capita GDP (expressed in current US dollar) was over 60,000 US dollars in Australia versus just 2,000 US dollars in Vietnam. In purchasing power parities (PPP), discrepancies look similarly large.² Peru, Mexico, Malaysia and Chile are substantially richer than Vietnam, but the per capita income of the richest of these countries, Chile, is still just one quarter of the Australian level.

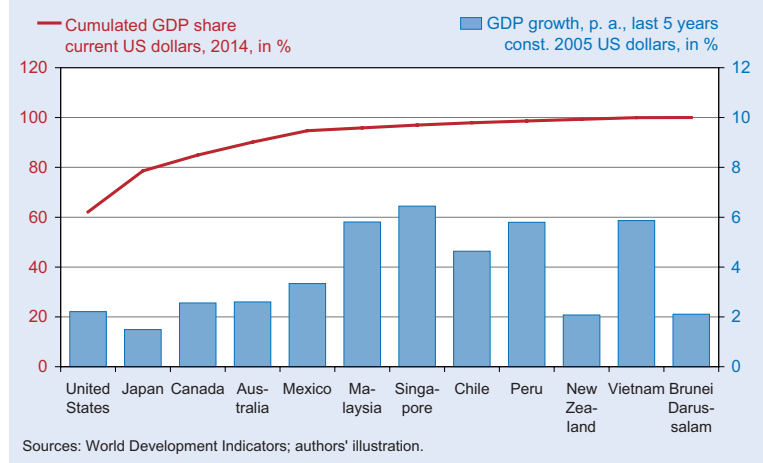
Figure 3 reveals another two dimensions of heterogeneity. Firstly, the TPP agreement is very heavily dominated by the economic clout of the United States. The figure ranks TPP member states according to falling GDP, measured in current US dollars. The solid red line in the illustration shows the cumulated share of countries of total TPP GDP. The United States accounts for almost 62 percent of TPP's economic power; and when combined with the other rich OECD countries Japan, Canada and Australia, this share rises to about 90 percent. Together, Vietnam and Brunei add less than 1 percent to total TPP GDP.

In terms of recent growth rates (of GDP in constant 2005 US dollars), however, it is the countries with smaller GDPs that have tended to grow faster (with the exception of ultra-rich Brunei and New Zealand). The TPP region as a whole featured an average growth rate of real per capita income of over 4 percent over the last ten years, according to World

² In the current context, income per person should be measured in the currency which is used for international transactions.

Figure 3

Shares in total GDP of TPP group and average GDP growth over last 5 years



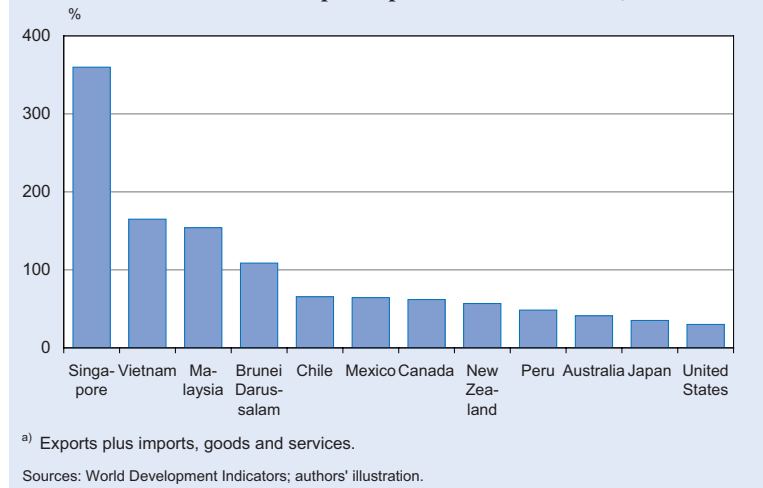
Bank data. The TPP countries form a dynamic region, and the region's rising income level makes it an increasingly attractive market for companies from the United States and Europe. Looking to the future, this is why the agreement makes sense to the United States and why it may pose threats to Europe.

Finally, Figure 4 shows that the TPP members differ dramatically with respect to their degree of openness as measured by total trade (goods plus services) as a fraction of GDP. Singapore is the world's most open economy: exports plus imports amount to almost 360 percent of GDP. In the United States, in contrast, this share is just 30 percent.

This heterogeneity explains the difficulties in finding common ground and also accounts for the fact that the agreement has a strong focus on development

Figure 4

Total trade^{a)} over GDP per capita in TPP countries, 2013



related aspects such as labour and environmental issues.

Including China: the Free Trade Area of the Asia-Pacific

Other countries, which are currently excluded from the TPP agreement, have signaled their interest in joining the agreement. These countries are Colombia, Philippines, Thailand, Indonesia, Taiwan and South Korea.

China is not yet a member of this group. However, it has advocated another big trade policy initiative in Asia at the APEC (Asia-Pacific Economic Cooperation) summit in Beijing in November 2014, which brings the TPP countries, and other Pacific Rim countries including China together into a Free Trade Area of the Asia-Pacific (FTAAP). APEC leaders agreed to launch 'a collective strategic study' on the FTAAP and instruct officials to undertake the study, consult stakeholders and report the result by the end of 2016. However, the idea of a free trade area spanning the Pacific has been around for almost 50 years.

Although originally proposed by the United States, the push for a Free Trade Area of the Asia-Pacific has not been welcomed by the United States, which appears to have resisted conducting a full feasibility study. The United States does not seem to want FTAAP negotiations to start before TPP is completed. TPP would give the United States more pre-eminence in the Asia-Pacific region than an FTAAP that also includes China and Russia.

An FTAAP agreement would be even bigger than TPP. It would cover 21 countries, including two of the world's three largest economies, and many other fast growing countries. In total, it would account for 2.7 billion consumers, 40 percent of the world's population. It would cover 56 percent of world GDP, i.e. 43 trillion US dollars. In terms of economic size, the agreement would be truly gigantic, making the TTIP agreement that the EU is negotiating with the United States look like a minor undertaking.

For the time being, it is unclear how comprehensive and deep an FTAAP could be. This would depend on the precise mix of countries that engage in negotiations. It is hard to imagine trade talks between the United States and Russia, both being APEC members.

Negotiations between China and the United States would also imply a full turn-around of the containment strategy pursued by the United States with regard to China over the last decade. Petri *et al.* (2014) have described FTAAP as an intermediate agreement, less-ambitious than TPP, but more so than the Regional Comprehensive Economic Partnership (RCEP) agreement that China is pursuing with ASEAN countries (many of which are either in TPP, or on the list of interested countries) and other major trade partners such as India.

In any case, the Chinese initiative, and its endorsement at the APEC summit shows that regional economic integration in South and East Asia is likely to progress in the future in one way or another. TPP, RCEP and FTAAP take different forms and have different levels of ambition for the countries included. Yet, they will all affect Germany, Europe, and the other countries left out. Their size will make them potentially relevant for the entire world trade order. Below, we not only look at the effects TPP could have on countries around the world, but also study the FTAAP agreement. This will show how costly it is to exclude China, and which additional advantages a larger regional agreement would possibly deliver.

Modelling the effects of trade agreements

To simulate the effects of a trade agreement such as TPP or FTAAP, one needs a model of the world economy that accounts for countries' different levels of development, for their different geographical locations, the particular structure of their cultural, linguistic and political bilateral ties. A model that is able to do this is the one developed by Caliendo and Parro (2015). Aichele *et al.* (2014) have added non-tariff barriers and services sectors to this model, and have prepared it for the *ex-ante* analysis of trade agreements.³ The key idea is to provide a mathematical framework that is able to replicate the structure of world trade, of sectoral value added, and of aggregate incomes at the country-level as it is observed in the status quo data. This is no easy task, because the world consists of roughly 170 independent nations, and so there are 170 times 169 possible trade links (28,730) in each of the 30 sectors of economic activity that we model.

³ For a more detailed analysis than we can reasonably provide here, we refer the reader to the mentioned papers.

The *status quo* situation takes account of the structure of trade barriers as they exist in the data: tariffs, and the sum of all other barriers that hinder the flow of goods and services across international borders. Some of these barriers are given by nature, such as geographical distance, or have been formed by thousands of years of history, such as language ties. Others can be changed by trade agreements. These non-tariff barriers are hard to quantify empirically. The nice feature of the employed model is that the level of these barriers need not be known; it is enough to know the expected change of these barriers due to the proposed agreement.

To define an appropriate scenario, one could simply assume changes in these barriers. This is not what we do in this paper. Rather, we assume that the proposed agreements, both TPP and FTAAP will be as successful in reducing non-tariff barriers between member states as other, comparable agreements. We use data from Dür *et al.* (2014), who have classified hundreds of existing trade agreements with respect to their depth. In our setup, the studied trade agreements are more than just about tariffs, but they fall short of the most ambitious agreements that reach deep into non-tariff barriers, such as NAFTA or the EU.

The simulations we report below answer the following question: what if, in the world as we observe it today, there were a trade agreement between the TPP countries that is as comprehensive and as deep as other medium-depth agreements that already exist?

The simulations return a wealth of data on things like changes in the sectoral trade structure, the sectoral value added, total income, prices and the price indices of all countries. In this brief report, we limit ourselves to describing the effects on real per capita incomes. Trade, of course, is not an objective *per se*; whether an agreement is successful or not is measured by its effect on average incomes.⁴

Changes in per capita incomes derive from two sources: changes in income, expressed in international currency, and changes in the aggregate price index (i.e. the cost of purchasing a representative basket of goods). Due to the agreement, incomes may increase as lower trade costs allow countries to specialize more strongly in the sectors in which they enjoy a compara-

tive advantage, or because they allow the production of specific goods to be concentrated in fewer places, therefore enabling economies of scale. Incomes may fall, however, because tariffs on imported goods no longer reach the public coffers. The price level may fall because lower trade costs imply that foreign goods are delivered more cheaply to domestic consumers, and because specialization or economies of scale lower production costs of foreign and domestic producers.

In most of the following tables, we use a multi-industry model that replicates the pattern of specialization of about 130 countries (and some aggregate regions that collect many small countries for which data coverage is insufficient) in about 30 sectors. A key assumption in this exercise is that the technological structure of comparative advantage does not change due to TPP. This may be correct in the medium run, but in the very long run, systemically relevant trade agreements may affect sectoral productivity levels and, thus, the technological structure of comparative advantage. We turn to results provided by Felbermayr *et al.* (2015) to address this issue.

Regional trade agreements do not cover all countries of the world. Because they reduce trade costs between insiders, but not between insiders and outsiders to the agreements, they reduce the competitiveness of outsiders relative to insiders. This is why these agreements are also called ‘preferential’: they extend preferences to certain countries, but withhold them from others. This leads to trade creation between insiders, and to trade diversion between in- and outsiders to the extent that they produce similar goods. However, because a successful agreement raises incomes in the insider countries, and this income is spent on goods from all over the world, outsiders can benefit as well. This income (or scale) effect is magnified if outsider countries are strongly tied into value added chains of insiders: in such cases, higher production triggers higher demand for raw materials, or components. If these income effects are strong enough compared to the diversion effects, then outsiders can actually benefit from a preferential trade agreement.

The reported numbers are to be understood as the long-run effects that materialize over time and are, as evidence suggests, (almost) fully available after 10 years. Since income is a flow variable, an increase by x percent means that incomes are permanently higher by this percentage amount for the entire history

⁴ The model, like many others, is silent on distributional consequences within countries. This is a shortcoming. It is worth noting, however, that trade may affect the structure of gross incomes. What matters, however, for individual incomes are net incomes which are shaped by the tax-and-transfer system.

after the agreement is in full swing, holding all other determinants of per capita incomes constant.

The effects of Pacific agreements for members

Table 1 demonstrates the effects that the TPP and the FTAAP agreements would have on current real per capita incomes. Looking first at the TPP deal, it is clear that merely eliminating tariffs would not affect per capita incomes much. The reason for this is that tariffs are already low between the OECD countries, and between TPP members that already have trade agreements with each other (as, for example, the United States has with Chile or Peru). Only Vietnam and New Zealand benefit in a measurable way from a tariffs-only TPP. In the case of New Zealand this is because of the fact that the country has no bilateral trade agreements in place with large TPP members such as Japan, the United States or Canada.

Looking at the comprehensive scenario, which also addresses non-tariff barriers, it becomes apparent that TPP can unlock rather sizeable gains amongst members. Again, for the same reasons as those explained above, New Zealand turns out to be the biggest winner, with long-term benefits as large as 6 percent. Poor countries, such as Vietnam, also have a lot to gain from better market access to large and mature econo-

mies such as the United States or Japan. The latter also stand to benefit, but at a lower rate of about 2 percent. The country with the smallest gains is Singapore. Not surprisingly, Singapore is one of the most open economies of the world, it is already extremely specialized, and its overall openness cannot increase by as much as is possible elsewhere. Interestingly, Mexico, a TPP partner, could actually stand to lose from the agreement. The reason for this is preference erosion, as Mexico, a NAFTA member, runs almost 80 percent of its export business with the United States. If other countries, and particularly Japan, enjoy better access to the US markets in crucial industries such as automotive, this could crowd out Mexican producers and hurt the Mexican economy. However, the simulated loss is small (– 0.08 percent).

Looking at countries in the Pacific region that are excluded from TPP, one observes some slight losses for China (– 0.08 percent) or Thailand (– 0.12 percent). These countries are hurt by trade diversion, but the damage is limited due to increased demand for their products as TPP countries grow richer and produce and consume more. Other outsiders, such as Indonesia, actually stand to gain, if only slightly, as the demand effect outweighs trade diversion.

Turning to the FTAAP scenario, which is defined in the same way as TPP with the difference that it covers

additional countries, we may state that all countries (except Mexico) would gain from the elimination of tariffs. Countries with sizeable tariff protection, such as Taiwan or Thailand could gain handsomely. Other countries benefit substantially more than under the TPP scenario; again, the reason is that tariff barriers amongst the additional FTAAP members are still high. Looking at the comprehensive scenario, FTAAP benefits everyone in the group, including Mexico. Countries with strong trade ties, but no existing free trade agreement with China, will benefit most. Compared to TPP, the United States has only modest advantages from FTAAP. While better access to the Chinese market is a big prize, the United States is not particularly competi-

Table 1

Effects of TPP and FTAAP on real per capita income in insider countries, %

	Membership		Real income change (in %)			
			TPP		FTAAP	
	TPP	FTAAP	tariffs	Comprehensive	tariffs	Comprehensive
Australia	yes	yes	0.06	4.52	0.73	7.04
Canada	yes	yes	0.01	2.08	0.07	3.43
Chile	yes	yes	0.04	0.13	0.19	0.58
China	no	yes	– 0.04	– 0.08	0.95	5.89
Hong Kong	no	yes	0.00	– 0.06	0.39	4.45
Indonesia	no	yes	0.00	0.02	0.95	3.20
Japan	yes	yes	0.08	2.17	0.46	3.82
South Korea	no	yes	– 0.02	– 0.07	0.77	4.33
Mexico	yes	yes	– 0.03	– 0.08	– 0.01	0.59
Malaysia	yes	yes	– 0.09	3.11	1.86	7.62
New Zealand	yes	yes	0.33	6.33	0.95	9.05
Peru	yes	yes	– 0.01	2.40	0.02	3.55
Philippines	no	yes	– 0.03	0.05	0.18	2.87
Russian Federation	no	yes	0.00	0.08	0.29	6.14
Singapore	yes	yes	0.01	0.86	0.82	3.31
Thailand	no	yes	– 0.09	– 0.12	1.61	5.93
Taiwan	no	yes	– 0.05	– 0.07	1.94	10.77
United States of America	yes	yes	0.02	1.95	0.10	2.79
Vietnam	yes	yes	0.70	5.38	0.40	8.18

Source: Authors' calculations. No data for Brunei and Papua New Guinea.

tive in China and faces the risk of losing market shares in other countries, such as Japan, which would, through FTAAP, attract more competitors from China. In a sense, the costs of containing China do not turn out to be very large for the United States. Maybe this is the reason why the United States focused on TPP rather than on FTAAP.

The effects on world regions

Next, we turn to other world regions. Table 2 reports aggregate (i.e. population weighted) gains from TPP and FTAAP in major economies or world regions. For non-TPP or non-FTAAP countries, the key question is whether the damaging trade diversion effects are offset by positive demand effects. This is an empirical question that the simulation exercise can answer. The same table documents that the average world citizen benefits from both TPP and FTAAP, but the gains obtained by insiders are many times bigger than those for outsiders. The only big economic entity to lose from TPP is China. However, the damage is very limited and statistically indistinguishable from zero. The same is true for the EU27, which also remains largely unscathed. Growth in the TPP region triggered by TPP boosts demand for European products and this keeps the negative trade diversion effects at bay. Maybe this is the rea-

son why EU trade commissioner Malmström welcomed the political breakthrough of 5 October.

FTAAP would be much more beneficial globally than TPP, as it would leave world GDP almost 4 percent higher. This is due to its larger economic size: adding China and ASEAN countries (including regional heavy-weights such as Indonesia) does make a very significant difference. China and the ASEAN countries would register benefits of 6 percent and 5 percent, respectively, if they gained improved access to the US, Japanese and Canadian markets (amongst others). It also turns out that resource rich countries, from which China sources, would benefit massively. This is true for the South African Customs Union (SACU), oil producing countries, or Sub-Sahara Africa. In other words, FTAAP is much better for the world as a whole than TPP, while the advantage to the United States is only minor.

Zooming in on Europe

Table 3 sheds a closer look on the effects of Pacific trade agreements on Europe and Germany. Overall, the TPP agreement has no measurable effect on Europe. Apparently, trade diversion and income effects neatly cancel each other out. Behind the averages, some countries are affected more than others. Malta, for example, a major global supplier of shipping services, could benefit from TPP by 0.3 percent. The same is true for Greece, albeit at a lower rate. Germany, on the other hand, is likely to lose out slightly (– 0.04 percent), the same is true for countries with similar comparative advantage or with strong production ties to Germany (Austria, Czech Republic, the Netherlands, Slovak Republic). The effects are, however, statistically indistinguishable from zero.

By contrast, the larger FTAAP agreement would have larger effects on European countries. If it were limited to tariffs, Germany would lose 0.23 percent, but the very substantial income effects triggered by an agreement that does address non-tariff barriers generates far more positive effects. Europe, despite being an outsider, would gain 3 percent; this is more than the gains that the United States, an insider, can expect. The reason is that Europe would benefit far more than the United States from an increase in global demand since it is more open. That it overtakes the United States is, however, a surprise. The gains are supported by strong benefits in Britain, but also in France, Germany, or Spain.

Table 2

Real income effects of Pacific mega regionals on world regions

	TPP	FTAAP
Alianza del Pacifico	0.14	1.15
ASEAN	0.87	4.70
Australia & New Zealand	4.77	7.32
Canada	2.08	3.43
Central Asia	0.06	7.75
China	– 0.08	5.80
East Asia	1.74	3.92
EFTA	0.03	3.00
EU27	0.02	2.90
Eurasian Customs Union	0.07	5.84
Latin America & Caribbean	0.16	5.06
MENA	0.08	6.35
MERCOSUR	0.00	2.64
Oceania	0.25	9.36
Oil exporters	0.38	11.75
Rest of Europe	0.10	3.12
SACU	0.08	7.48
South Asia	0.04	3.54
Sub-Saharan Africa	0.07	8.27
Turkey	0.04	2.41
USA	1.95	2.79
World	0.84	3.67

Source: Authors' calculation.

Table 3

Real income effects of Pacific mega regionals in Europe (%)

	TPP		FTAAP	
	Comprehensive	Tariff only	Comprehensive	Tariff only
<i>European Union</i>	0.02	0.00	2.90	-0.08
Austria	-0.03	0.00	2.36	-0.11
Belgium	0.11	0.00	5.24	-0.18
Bulgaria	0.11	0.01	4.61	0.06
Cyprus	0.18	0.01	6.44	0.23
Czech Republic	-0.05	-0.01	1.47	-0.26
Germany	-0.04	0.00	2.48	-0.20
Denmark	0.04	0.00	3.09	-0.03
Spain	0.06	0.00	2.62	0.02
Estonia	0.12	0.01	5.51	0.11
Finland	0.03	0.00	3.79	-0.17
France	0.04	0.00	2.60	-0.04
United Kingdom	0.06	0.00	3.57	0.01
Greece	0.13	0.01	4.64	0.13
Hungary	0.00	0.00	2.42	-0.27
Ireland	0.03	-0.02	5.84	-0.42
Italy	0.02	-0.01	2.18	-0.08
Lithuania	0.19	0.01	7.93	0.18
Luxembourg	0.14	0.00	6.25	0.02
Latvia	0.16	0.01	5.78	0.32
Malta	0.30	0.00	31.46	0.16
Netherlands	-0.02	-0.01	1.70	-0.18
Poland	0.06	0.00	3.16	-0.02
Portugal	0.08	0.00	3.17	0.08
Romania	0.08	0.01	3.01	0.12
Slovakia	-0.02	0.00	2.73	-0.24
Slovenia	0.07	0.00	3.70	-0.02
Sweden	-0.03	0.00	2.60	-0.11

Source: Authors' calculation.

These results show very clearly how strong global trade links can multilateralize the gains from trade arising from systemically relevant regional deals. As China grows richer from FTAAP, its trade partners benefit too. An old truism is confirmed again: growth in one region in the world need not be harmful to other regions if it is due to productivity improvements.

Flexible comparative advantage

The results discussed so far come from microeconomic simulation results that take sectoral detail into account and also consider global value chains. In order to address third country effects, such a perspective is preferable to a macroeconomic view, which does not distinguish between different industries and, thus, may overstate trade diversion effects. However, the macro perspective implicitly assumes that the comparative advantages of countries are malleable in the long run. In other words, with technology transferable internationally, the only driver of cross-country differences in GDP per capita is the endowment with human capital. In other words, even if countries specialize in certain

industries in the baseline equilibrium, the long-run pattern can change. So specialization patterns do not provide much of a defence against trade diversion effects. With TPP, Asian countries will move into producing products that have traditionally been produced in Europe. As they move into new industries, any income expansion in the TPP or RCEP regions will also lead to smaller demand effects generated by Europe, as a larger share of the new demand will be satisfied by local producers.

Table 4 shows the simulated changes in real per capita income from the macro study of Felbermayr *et al.* (2015). The gains predicted for most TPP members are larger than in the micro study presented in the previous chapters. But the sorting of the countries is roughly similar, with New Zealand benefitting the most, and

Mexico and Chile the least. Again, Mexico, a TPP partner, could actually stand to lose from the agreement, as could Chile. The reason is preference erosion, particularly with the United States.

In Felbermayr *et al.* (2015), all welfare changes for European countries are expected to turn out negative. The size of the effects, however, is not very large. Countries with strong ties to the United States lose heavily from TPP. Moreover, smaller economies tend to lose more than larger ones (Finland, Baltic countries). Countries that are very open with respect to the entire world lose less (Austria, Belgium and the Netherlands).

The macro results describe a worst-case scenario for Europe, because they show larger diversion and smaller income effects than models that take the currently observed patterns of comparative advantage as fixed. While these patterns are probably much less fungible than the macro studies implicitly assume, the results are still illustrative: they are a strong warning against not taking the global shifts due to large regional trade policy initiatives seriously enough.

Table 4

**Effects of TPP with flexible comparative advantage, selected countries,
% of real per capita income**

	%		%
Austria	-0.15	United States*	2.14
Belgium	-0.11	New Zealand*	12.66
Bulgaria	-0.22	Japan*	8.20
Croatia	-0.22	Singapore*	4.04
Cyprus	-0.25	Vietnam*	3.75
Czech Republic	-0.17	Australia*	2.37
Denmark	-0.19	Peru*	0.89
Estonia	-0.25	Canada*	0.27
Finland	-0.28	Bangladesh	-0.13
France	-0.18	Egypt, Arab Rep.	-0.20
Germany	-0.19	India	-0.24
Greece	-0.24	Turkey	-0.24
Hungary	-0.20	Kenya	-0.26
Ireland	-0.24	Cameroon	-0.28
Italy	-0.21	Cote d'Ivoire	-0.39
Latvia	-0.24	Korea, Rep.	-0.39
Lithuania	-0.23	Argentina	-0.41
Luxembourg	-0.13	Cambodia	-0.46
Malta	-0.26	Colombia	-0.51
Netherlands	-0.15	Brazil	-0.52
Poland	-0.20	Morocco	-0.52
Portugal	-0.26	South Africa	-0.52
Romania	-0.20	Russian Federation	-0.64
Slovak Republic	-0.19	Senegal	-0.70
Slovenia	-0.17	China	-0.86
Spain	-0.28	Chile*	-1.00
Sweden	-0.25	Mexico*	-1.13
United Kingdom	-0.27	Indonesia	-1.28

Note: * indicates TPP member states. No data for Brunei and Malaysia.

Source: Authors' calculations based on Felbermayr *et al.* (2015).

Sectoral effects in Europe and Germany

Next, we turn to sectoral effects and focus on Europe and Germany. This shows where vulnerabilities and opportunities may lie. Table 5 ranks the sectors in Europe according to their relative importance in the world. For example, about 51 percent of world value added in the business services industry is generated in Europe. The Pacific agreements would slightly reduce this share, but only, if they involve reductions in non-tariff barriers. The metals and the leather industries, where the EU has large shares of global value added, could see sizeable reductions in their relative global weight if FTAAP is realized but not with TPP.

The same holds true for the automotive industry, albeit on a much larger scale. This is the only sector that faces a sizeable threat from TPP. However, this threat is dwarfed by what FTAAP could bring. The simulations suggest that Europe's share in global value added, today around 37 percent, could fall by almost 18 percentage points to 19 percent. This would be a dramatic evolution mostly driven by a strong integration of the Asian production network (into non-TPP member

countries such as China, Thailand, or Indonesia) and a resulting massive improvement in the relative competitiveness of car producers based in Japan, South Korea and China in world markets, including Europe. Interestingly, this effect does not hinge on whether the United States is part of FTAAP or not. It is really about a stronger integration of business processes in Asia. Please note that Table 5 shows the effects of value added generated in Europe by firms that may be headquartered around the world; it does not account for value added generated by European firms in foreign countries like, for example, in Asia.

Other sectors in which Europe looks vulnerable in the FTAAP scenario are textiles, wood, metals, but also the agri-food sector. These vulnerabilities have various reasons and affect different EU member states differently. For example, stronger competitive pressure

for European producers in the agri-food area would be mostly driven by the United States, while the other mentioned sectors are threatened by higher competition from China. Within Europe, it is mostly the Southern and Eastern European countries that would be affected. This becomes apparent when looking at Table 6, which provides results for Germany. For Germany, the Pacific agreements bring opportunities for the machinery sector, as higher growth in the Pacific regions would increase demand for German investment goods. However, they threaten the motor vehicles sector for reasons explained above.

Conclusions

This paper's major findings are summarized below:

1. Negotiations on the Trans-Pacific Partnership (TPP) agreement are concluded. Now the text has to move to the 12 participating countries' parliaments for ratification. In the United States, TPP faces strong opposition, particularly in the Democratic Party.

2. A defining feature of the agreement is the strong asymmetry amongst its members: the United States accounts for over 60 percent of GDP in the group of TPP member states; yet it relies far less on international trade in goods and services than its partners. The richest TPP country (Australia) has a GDP per capita (in current US dollars) that is more than 30 times as large as that of the poorest member (Vietnam).

3. While no final text on TPP is available yet, negotiators had to strike a number of difficult compromises. While ambitious in many respects, the deal does not totally eliminate all barriers in the agri-food sector, it does not go far in services liberalization, and it does very little to open public procurement.

4. While a tariffs-only TPP would not be worth much, a medium-depth agreement (reducing tariffs, addressing non-tariff barriers such as in comparable other existing agreements), TPP can raise incomes in the member states and in the world.

5. TPP raises real world income by about 1 percent. However, insiders to the deal (such as Australia, Vietnam or the United States) reap the benefits (5 percent, 5 percent and 2 percent, respectively), while outsiders either benefit or lose marginally. China loses from TPP, as it suffers more from trade diversion than other countries. Losses are, however, only minor.

6. The FTAAP agreement, which in contrast to TPP includes China, would be much better for the world than TPP, as it could boost world income by almost 4 percent. All world regions would benefit; insiders more than outsiders, but many poor, resource rich economies (such as in Sub-Saharan Africa), with close ties to China, would benefit handsomely.

7. For the United States, FTAAP is only marginally better than TPP. This is because both agreements

Table 5

The EU's Importance in global sectoral value added with TPP and FTAAP

	Initial share in world value added (%)	Change in world value added share (%-points)			
		TPP		FTAAP	
		Comprehensive	Tariffs only	Comprehensive	Tariffs only
Business services nec	51.08	-0.17	-0.02	-0.88	-0.28
Metal products	42.42	0.08	-0.03	-2.05	-0.64
Leather	41.25	-0.02	-0.10	-3.14	-3.60
Paper	37.79	-0.12	-0.02	-1.58	-0.39
Machinery nec	37.30	0.16	-0.02	0.71	-0.68
Motor vehicles	36.56	-1.48	-0.06	-17.98	-0.85
Food, processed	36.33	-0.15	-0.02	-1.37	-0.76
Chemicals	35.03	0.04	-0.04	1.27	-0.88
Construction	33.75	-0.10	0.00	-0.97	-0.25
Manufactures nec	33.60	-0.09	-0.02	-0.47	-0.35
Mineral products	32.95	-0.07	-0.01	-0.49	-0.49
Recreational services	32.61	-0.11	0.00	-0.83	-0.22
Textiles	32.04	-0.01	-0.07	-2.24	-2.48
Communication	31.41	-0.09	0.00	-0.50	-0.16
Air transport	31.06	-0.28	0.01	-1.04	0.41
Other services	29.84	-0.15	-0.01	-1.06	-0.29
Transport nec	29.48	-0.16	-0.01	-1.03	-0.15
Electricity	28.93	-0.14	-0.02	-1.00	-0.34
Wood	27.58	-0.06	-0.02	-3.58	-0.26
Electronics	24.39	-0.07	-0.02	0.32	-0.25
Ferrous metals	23.48	-0.37	-0.14	-1.07	-0.56
Metals nec	21.24	-0.35	-0.03	-5.89	-0.27
Insurance	20.87	-0.06	0.00	-0.04	-0.01
Water	20.73	-0.11	-0.02	-0.85	-0.24
Financial services nec	20.42	-0.04	0.00	-0.26	-0.09
Trade	18.89	-0.09	-0.01	-0.71	-0.17
Agriculture & food	17.52	-0.09	-0.04	-2.05	-0.43
Water transport	15.11	0.08	0.00	-0.51	0.16
Gas	13.54	-0.02	0.00	0.11	0.07
Dwellings	11.62	-0.10	0.00	-0.65	-0.18
Mining	5.74	0.02	0.01	1.22	0.05
Total	29.74	-0.14	-0.01	-1.16	-0.35

Source: Authors' calculation.

do not cut very deeply in areas where the United States is competitive in China (such as services), but increased competition from China in TPP markets would put additional pressure on US firms.

8. For Europe, an outsider to both TPP and FTAAP, the latter is much more beneficial than the former. FTAAP could unlock very substantial gains in China, which would spill over to Europe through the strong production networks that have emerged between these regions over the last two decades. While TPP leaves Europe essentially unaffected, FTAAP could lead to additional income of 3 percent, almost as much as the United States, an insider to FTAAP, could expect.

9. The optimistic outlook for Europe, however, depends on a given technological structure of comparative advantage. If the latter changes as a result of TPP, more sizeable losses could materialize. The same is true for China, which would lose much more (-0.9 percent) than the EU (-0.2 per-

cent), while effects on TPP insiders would remain qualitatively similar to the case of fixed comparative advantage.

10. Across all sectors, both TPP and FTAAP imply market share losses for EU and German industries. This does not mean that most industries shrink due to the trade pacts, but it does reflect an important shift in the competitiveness of the old continent.

11. On the sectoral level, TPP turns out to be a particular threat to the European and the German automotive industries. This is even more pronounced in the case of FTAAP, where Germany's share in global value added could fall by almost 50 percent. This massive effect is explained by the fact that the Pacific agreements are expected to strongly reduce barriers in this industry, meaning that trade diversion effects could be sizeable. It is worth noting, however, that the numbers report value added in Germany, not value added generated by German firms outside Germany.

12. The machinery and chemicals industries in Germany could benefit from both TPP and FTAAP. The reason is that the former benefits strongly from higher growth abroad (due to increased investment demand), while the latter is sheltered as non-tariff barriers in this area are not assumed to change much between TPP and FTAAP partners.

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Table 6

Germany's importance in global sectoral value added with TPP and FTAAP

	Initial share in world value added (%)	Change in world value added share (%-points)			
		TPP		FTAAP	
		Comprehensive	Tariff only	Comprehensive	Tariff only
Machinery nec	12.40	0.09	-0.01	0.45	-0.20
Motor vehicles	10.80	-0.56	-0.02	-5.23	-0.24
Business services nec	10.39	-0.04	0.00	-0.25	-0.06
Metal products	10.28	0.01	-0.01	-0.47	-0.13
Chemicals	7.70	0.07	-0.01	0.68	-0.19
Recreational services	7.10	-0.03	0.00	-0.27	-0.06
Paper	6.95	-0.02	0.00	-0.28	-0.08
Manufactures nec	6.49	-0.01	0.00	-0.12	-0.07
Air transport	6.28	-0.04	0.00	-0.30	0.08
Electronics	6.17	0.01	0.00	0.26	-0.04
Food, processed	5.85	-0.02	0.00	-0.25	-0.14
Electricity	5.61	-0.03	0.00	-0.21	-0.07
Wood	5.34	0.00	0.00	-0.63	-0.05
Mineral products	5.34	0.00	0.00	-0.02	-0.09
Other services	5.17	-0.03	0.00	-0.22	-0.06
Trade	4.86	-0.03	0.00	-0.23	-0.05
Communication	4.80	-0.02	0.00	-0.13	-0.03
Metals nec	4.78	-0.08	-0.01	-1.32	-0.04
Transport nec	4.77	-0.04	0.00	-0.32	-0.03
Leather	4.68	0.01	-0.01	-0.44	-0.54
Textiles	4.53	0.01	-0.01	-0.35	-0.43
Ferrous metals	4.35	-0.06	-0.02	-0.17	-0.10
Water	4.24	-0.03	0.00	-0.23	-0.05
Construction	4.16	-0.01	0.00	-0.13	-0.03
Financial services nec	3.91	-0.01	0.00	-0.09	-0.02
Insurance	3.46	-0.01	0.00	-0.06	-0.01
Dwellings	2.76	-0.03	0.00	-0.18	-0.05
Agriculture & food	1.99	-0.01	0.00	-0.28	-0.05
Water transport	1.58	0.01	0.00	-0.14	0.01
Gas	1.45	0.00	0.00	0.11	0.03
Mining	0.43	0.01	0.00	0.18	0.02
Total	5.86	-0.03	0.00	-0.26	-0.07

Source: Authors' calculation.

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