Asia-Pacific
Economic Cooperation

Advancing Free Trade
for Asia-Pacific Prosperity

Report on APEC Information Sharing Best Practices Workshop on Merger Control Regimes

Santiago, Chile | 28 February - 1 March 2019

APEC Competition Policy and Law Group

May 2019

APEC Project: CPLG 01 2018A

Produced by
FNE

For
Asia-Pacific Economic Cooperation Secretariat
35 Heng Mui Keng Terrace
Singapore 119616
Tel: (65) 68919 600
Fax: (65) 68919 690
Email: info@apec.org
Website: www.apec.org

APEC#219-EC-04.3

Table of Contents

1. Introduction

The APEC Seminar on Economic Analysis in Horizontal and Non-Horizontal Mergers was held in Santiago, Chile, on February 28 and March 1 2019.

The workshop was arranged by the APEC Secretariat and the Chilean Domestic Competition Agency, Fiscalía Nacional Económica (FNE).

The workshop was facilitated by Francisco Muñoz, economist for the merger division of the FNE. The opening welcome was given by Mr Felipe Cerda, Deputy Chief for the FNE.

The seminar allowed economies to discuss the strengths and weaknesses of different tools used to measure the potential competitive impact of horizontal and non-horizontal mergers. The aim was to evaluate the importance and validity of simpler tools that are commonly used to identify which mergers are likely to present more risks.

The main objectives of the seminar were:

1) to provide practical knowledge for the APEC economies to enhance their capacity to use economic evidence in dealing with merger control;
2) to weigh the quantitative evidence according to its validity in the decision-making process; and,
3) to bring in expert advice from competition experts on the strengths and weaknesses of the different quantitative tools used in the study of horizontal and non- horizontal mergers.

The workshop stemmed from APEC's broader initiatives to promote competition in economies within the region. Those initiatives include:

- the work of the APEC Economic Committee and the Competition Policy and Law Group;
- the Renewed APEC Agenda for Structural Reforms (RAASR) 2016 – 2020:
    - RAASR pillar 1 encourages more open, well-functioning, transparent and competitive markets;
    - RAASR pillar 2 encourages deeper participation in those markets by all segments of society, including MSMEs, women, youth, older workers, and people with disabilities.

12 presentations were given at the workshop. These presentations represented the approaches taken to merger review in seven APEC member economies, namely: Australia; Canada; Chile; Japan; Mexico; Russia; United States.

The workshop was attended by 14 economies. The presentations were well received by the delegates who participated in the discussion that was held after each presentation and during scheduled breaks in the program.

This report summarises the main contributions made at the workshop. It is intended to provide a record of those contributions in furtherance of the objectives of the workshop.

2. Economic evaluation of mergers, general perspectives - Aileen Thompson (Federal Trade Commission (FTC), USA)

The first presentation gave a first overview to the horizontal merger guidelines.

The presentation highlighted the following topics:

(i) Market definition
  - Relevant product market
  - Relevant geographic market

(ii) Market concentration

(iii) Competitive effects
  - Unilateral effects
  - Coordinated effects

(iv) Efficiencies

(v) Entry

(i) Market definition

The purpose of market definition is to identify the areas where the proposed transaction is likely to raise competitive concerns and facilitate the calculation of market shares and concentration. Its definition is divided in two: product market and geographic market.

The product market can be defined with help from the "Hypothetical Monopolist Test" ("**HMT**") that tries to answer whether a candidate market is a properly defined relevant antitrust market. The market will be one, if a hypothetical monopolist that is the only seller of the products in that market would likely impose at least a small but significant and non-transitory increase in price ("**SSNIP**") on at least one product in the market.

The potential sources of evidence would include company documents or marketing studies, demand model estimation, natural experiments, win/loss reports, or Consumer surveys. An example where product market definition was reviewed, was the Whole Foods case.

When it comes to defining the geographic market, the question is very similar: Would consumers substitute to products outside of a candidate geographic market in response to a SSNIP?

For the aforementioned case, the potential sources of evidence would be shipping costs, including fuel and time; customers' willingness to travel; actual substitution based on natural experiments, or business decisions based on consumer substitution.

It is important to state that the relevant market for one case would not necessarily be the same for another case; it all depends on each of the case's facts.

(ii) Market concentration

After the market is defined, market shares can be calculated. They provide an initial indicator of relative sizes of different competitors in the market, and are important for Antitrust Case Law.

Market shares must be interpreted with caution, because they rely on market definition, treat all firms in the market as if they were equally close, and assume that no competitive pressure would be exerted from outside the defined market. They also do not focus on marginal consumers.

With market shares, Herfindahl-Hirschman Index ("**HHI**") can be calculated, which provides an initial screen and is important for Antitrust Case Law.

(iii) Competitive effects

The key question that must be answered in order to identify effects is: how does a merger change the pricing incentives of firms? In this context the Upward Pricing Pressure Index presents two main inputs which are pre-merger margins and diversion ratios. This was exemplified in the presentation with the Whole Foods case.

In bidding markets, the key question changes and now it tries to identify whether competition between the merging parties influences the level of the winning bid. This can be established for example by frequency analysis or regression analysis.

(iv) Efficiencies

If the parties claim efficiencies, some considerations must be evaluated such as the likelihood of occurrence, the level of inherence to the merger and the likelihood of cost-savings efficiencies that would be passed on to consumers.

(v) Entry

The main question is whether entry is likely, timely and sufficient in magnitude to alleviate anticompetitive concerns. Some potential candidates for entry might be firms who make similar products, large customers of existing firms, newly-created firms or firms who sell the product in a separate geographic area. But there might be barriers to entry, which are characteristics of the product or market that delay for a long time the entry, or prevent entry from being profitable.

3. Market Definition and the Use of Upward Pricing Pressure - Paul Reeve (CMA)

The second presentation addressed two topics:

(i) Market definition

(ii) The use of Upward Pricing Pressure indexes

(i) Market Definition

The first question that was posed in the presentation was why is it important to define markets. The answer focused on market definition as part of the legal framework and a helpful tool to frame the analysis. It is also important to calculate market shares and HHI and it is consistent across cases.

It is important to note that market definition is not a separate exercise from competitive assessment. In addition, is important to be careful when setting the scene, since different market definitions could result in two different conclusions on anti-competitive effects.

In Competition Law assessment, a relevant economic market is defined as "*a set of products or services that can be profitably monopolized*". One way to define the market is the use of the "hypothetical monopolist test" or "SSNIP". The SSNIP test depends on the question: "Given a particular set of goods or services, would a hypothetical monopolist of those goods or services be able to sustain profitably a Small but Significant and Non-transitory Increase in Prices above the competitive level?

There are other elements that make market definition complex and questions how useful market shares are, for example, in the case of differentiated product, how close a firm is to another matters. Other complex topics are asymmetric competition; two side markets/network effects; and potential competition/dynamic effects.

There are some issues with price to consider when addressing the product market definition.

First, different prices do not necessarily imply different markets, i.e. Quality adjusted price. Also, the focus on marginal costumers; and some products do not compete on price.

One interesting point in addressing who competes in the same market is distinguishing between Migration vs Diversion. One example is physical magazines versus online news. An important amount of people is switching to online portal of news, but that does not necessarily mean that both of them compete, it could be a movement in consumer preferences that causes migration.

On the other hand, to identify the geographic market, it is important to consider that more than one geographic market can be involved. For example, pricing can be domestic, but innovation international. Or pricing can be domestic while service is local.

In assessing if the geographic market is domestic or international, there are some things to be considered such as current scale of import. In addition, the focus has to be on what customer need, not where the good is produced. Other things to consider are if competition is similar, the barriers i.e. tariff and regulation. The idea is to try to answer what is important to competition.

When defining whether geographic market is domestic or local/regional some tools that can be used are the Hypothetical Monopoly Test and the 80% rule in which plot the distance and obtain the percentile 0.8 of distance to the store. Another tool is the catchment areas, but when using this tool, you have to be cautious and consider that catchment area is not a market, there are endogenous to competition and there are different types of catchment (i.e average, maximum, individual).

Other tools are the willingness to travel, time isochrones, price correlation isochrones and combinational.

As a conclusion to why to define markets, first, this is part of the legal framework. This is true, but it might be better to define it after some analysis is already done. It helps framing analysis: for this, it would be sufficient to scope the case.

It would not be necessary to define the market. Although, it allows us to obtain market shares and HHI, there are other tools that allow to caption competitive effects better.

Market definition allows for some consistency across cases, but this could induce into confusion, then each case is different.

(ii) <u>Upward Pricing Pressure</u>

The concept of Upward Pricing Pressure (UPP) was first introduced by Farrell and Shapiro (2008) as a simple diagnostic test to flag mergers that are more likely to raise prices. It could be seen as a screen, a filter, a decision rule or just another part of the evidence. The last approach is the main use in the UK.

The concept of the UPP captures if there is an incentive to raise prices by the merged firms. It can ignore efficiencies (GUPPI) or include them (UPP).

In a framework of two firms that merged, let´s call them Firm 1 and Firm 2, there may be an incentive to raise prices to Firm 1 (or Firm 2) after the merger. On one hand if Firm 1 raises prices it also loses some sales, so it may not be profitable to do so. But after the merger, there may be an incentive to raise prices, since that loss in sales may be recaptured by Firm 2.

For the measurement of the GUPPI, the commission needs to obtain the margins of both firms, prices pre-merger and the Diversion Ratios -this is, how many sales loss by Firm 1 (Firm 2) are recaptured by Firm 2 (Firm 1).

The GUPPI index needs to be obtained for each firm. One advantage is that there is no need to define a relevant market and no assumptions on the demand function. This index ignores efficiencies and does not predict the price level, only if there is an incentive to raise prices.

The UPP is the GUPPI addressing the efficiencies. For measuring this index, it is necessary to know the marginal cost pre-merger and what and estimation of the cost post-merger will be. The efficiencies enter the index as a percentage of marginal cost.

Another index used by competition authorities is the Illustrative Price Rise (IPR). This index calculates the likely rise of prices after a merger between two firms. The formulation for this index varies, and depends on the demand function imposed. To measure it, margins and Diversion Ratios are needed. This index includes feedback between the merged firms.

On the intervention threshold of these indexes, is important to note that different indicators could show different results. It is also important to note that these are useful indicators with low data requirements, also margins and diversion ratios are also useful on their own and GUPPI does not take concentration into account.

On measuring relevant margins, it is important to keep in mind the variable costs, exclude VAT and think about additional sales i.e. razors.

There are different ways to obtain the Diversion Rations, some examples are natural experiments, cross elasticities (requires good data), market shares (useful when good is homogenous) and surveys

When using surveys, some things to consider are that they have to be applied to representative costumers and the order of the questions and wording are crucial.

The appropriate threshold of the GUPPI may vary from case to case, depending on the purpose of using these indicators (i.e. screen, filter or decision), if you are assuming or measuring efficiencies, the type or importance of the product and if there is a measurement bias.

4. Public policy recommendations on merger control – Sean Ennis – OECD Consultant, former Senior Economist at the OECD Competition

The third presentation gave a policy perspective on merger control.

There are different types of rationale behind the decision of firms to merge benign rationales, behavioral type or anti-competitive rationale.

When firms have benign rationales, companies want to overcome difficulties in contracting between themselves, achieve cost (fixed or marginal) or non-cost synergies or facilitate investment in the acquired firm or to save a failing firm.

Regarding a more behavioral type, the companies look for increase management scope/power base and thus remuneration (either current or future).

Lastly, anti-competitive rationale expects to increase market power and thereby profits.

It is important to note that many rationales can apply to a same deal.

The origins of competition law and control of monopoly power grew from concerns about exercise of monopoly power, whether from individual entities (e.g., a bridge owner charging a toll) or joint activity by companies (e.g., US “trusts”). The activity of trusts in 19th century in the United States amounted to running a group of independently-owned companies as a cartel. Absent merger control, the natural regulatory arbitrage for companies seeking to avoid cartel violations is to merge their operations so that they can legitimately set prices and quantities for previously independent companies. There are many benign and positively beneficial reasons for mergers, so a blanket ban on mergers, which could have been considered, is not generally a part of a merger control system.

There are key business facts on mergers that are important to consider. Firstly, mergers are not small business decisions; they are often rather major strategic ones. Also, timing of the merger decision matters, as they can be a result from a financial or personnel reason. Furthermore, it is important to consider the planning that the companies have in place for the integration, as efficiencies can only be achieved with a successful integration. Lastly, merger reviews can be quite expensive as there are multi-jurisdictional filings, and firms can be dealing with “second stage” investigation when a preliminary concern has been identified by the reviewer.

Some key questions that public policies should consider are:

- When should a merger be subject to review?
- How should the review be performed?
- What standards / criteria should be used in the review?
- What actions should the reviewer/government body be able to take when a problem is identified? (menu of powers)
- What actions should the reviewer/government body take when a problem is identified? (best practice)
- How can the techniques of the review be made transparent and permit ex ante prediction of existence of potential problem and ways to resolve that?

Regarding the competition policy system that should be in place, a balance must be achieved between business needs, but also legitimate government interests. The creation of a competition authority with a general responsibility helps to ensure consistency of merger review across sectors. Also, merger thresholds should be in place, where companies that merge below a minimum threshold are not going to be reviewed. As for the review itself, there should be tight merger review timelines, as well as guidelines on mergers, in order to have a common understanding of bases for action (there may state zones of no action as well). Competition authorities must consider the failing firm defense, as well as be cautious regarding the release of information about blocked deals. Finally, the possibility of an appeal should be in place.

There are two types of errors that occur in merger review. First, over enforcement (type I error) that arises when the competition authority prevents a merger that should have been allowed. Second, under enforcement (type II error): it occurs when it allows a merger that should have been stopped.

It is important to note that different policies will have different impacts on the likelihood of each of these types of errors. For example, the standards of proof applied can affect the likelihood of type I and type II errors. Also, the capacity the competition authority has of gathering evidence can affect the information available to decide, thus the chances of incurring in the error above.

Some economies have retained an economic political oversight of merger review (like Germany and Costa Rica). For example, the United Kingdom has used a financial stability argument (see Lloyds/HBOS case). Sometimes, political debate threatens to change ground rules (see Alstom-Siemens). Other economies like United States and Australia undergo a domestic security review, or a public interest for authorities to assess including employment effects, like in the case of South Africa.

Many merger cases raise a cross-border dimension. They are the most frequent type of cases to involve cooperation across enforcers. Competition agencies have different techniques to undertake this cooperation, such as negative and positive comity.

Negative or traditional comity involves an economy's consideration of how to prevent its laws and law enforcement actions from harming another economy's important interests. The OECD's successive Recommendations on co-operation in competition matters (the most recent in 2014) recommended that in seeking to implement negative or traditional comity an economy should: (1) notify other economies when its enforcement proceedings may affect their important interests, and (2) give full and sympathetic consideration to ways of fulfilling its enforcement needs without harming those interests.

Positive comity involves a request by one economy that another economy undertakes enforcement activities in order to remedy an allegedly anti-competitive conduct that is substantially and adversely affecting the interests of the referring economy.[1] The 2014 OECD Recommendation sets out that an economy should: (1) give full and sympathetic consideration to another economy's request that it open or expand a law enforcement proceeding to remedy conduct in its territory that is substantially and adversely affecting another economy's interests; and (2) take whatever remedial action it deems appropriate on a voluntary basis in considering its legitimate interests.[2]

Cooperation between agencies is essential for a number of factors. World trade has increased since 1980, as well as Mergers and Acquisitions in value and number since 1997. The number of jurisdictions with competition authorities increased by a factor of five between 1990 and 2013. Finally, the number of non-EU companies with an EU merger filing have grown since 1990.

There are many reasons why there are different competition law decisions on a merger in different jurisdictions. First, there may be different substantive rules, which can consider

[1] Positive comity provisions have been included in the OECD Recommendations on co-operation since 1973, although the term "positive comity" has not been used specifically.

[2] Source for negative and positive comity: "Implication of Globalisation for Competition Policy: The Need for International Co-operation in Merger and Cartel Enforcement" by Antonio Capobianco, John Davies and Sean F. Ennis, OECD, 20 June 2014

employment effects or small business impacts. There can also be different conditions of competition; in one jurisdiction the competition may be more vigorous, or there are more competitors in one place than another. Finally, there may be different evaluation of impacts/remedies, as humans may disagree on interpretation of facts. Competition authorities with commissions often do not agree unanimously.

The main benefit arising from cooperation is the reduction of the costs of disagreement. These can include international discord, externalities when efficient remedies require cross-border agreement, remedies may require asset sales outside of jurisdiction identifying the problem, or many (most) jurisdictions do not feel in a position to block a global deal. Regarding this last possibility, the cost is related to the possibility that the affected firm may simply withdraw from domestic market with enforcement, or that the companies file strategically, by filing a deal in small jurisdictions only after large jurisdictions indicate acceptance of the deal.

One jurisdiction blocking a deal successfully may mean less than 20% of economic activity's determination but has an effect on remaining 80%. The implications of the above are that the strictest standard prevails and that it is difficult to obtain multi-jurisdictional agreement.

Finally, certain merger policies can favor cooperation between competition authorities. Proposed techniques of cooperation could include bilateral sharing of theories (public information); coordination of case timing; common training; bilateral sharing of confidential information by enforcers; legislative safeguards for shared information; developing common waivers; developing standards for formal comity; and domestic ability to adopt or defer to a decision from another enforcer.

Unfortunately, the complexity of having an active cooperation likely increases as the number of active authorities increases, but it also makes it even more necessary.

5. Efficiencies Analysis in Canada - Lourdes DaCosta (Competition Bureau Canada)

The fourth presentation discussed the efficiencies analysis in merger reviews. It had two main topics, the first was the efficiency defense in Canada and the other was the application of the efficiency defense in practice.

The role of efficiencies is expressed on the Competition Act, that provides an explicit efficiency exception/defense to an anti-competitive merger, that includes a trade-off between efficiencies and anti-competitive concerns, which is different from the integrated analysis applied in most jurisdiction.

In most cases the assessment of efficiencies is unnecessary since it is only important if anti-competitive concerns arise. The trade-off is between gains of efficiency not likely to be attained if an order is made and the effects of any prevention or lessening of competition likely to result from the merger. For the gains of efficiency, it is the merging parties' burden to show the nature, magnitude, likelihood and timelines of them, and that they will offset anti-competitive effects.

On the other hand, the effects of prevention or lessening of competition is the Commissioner's burden to show effects of any of them as a result from the merger.

It is the merging parties' burden to demonstrate that efficiencies will be greater than, and will offset, any anti-competitive effect. For screening cognizable efficiencies, it is needed that the efficiencies:

- Must not likely be attained if an order were made;
- Must be likely to be brought out by the merger;
- Must relate to certain categories of efficiencies (i.e. primarily productive efficiencies, also dynamic)
- Must accrues to the Canadian economy
- Must not be brought about by reason of a redistribution of income between two or more people

In identifying anti-competitive effects, the Commission needs to see if the merger will have price effects and/or non-price effects. In price effects there are two components the deadweight loss (**DWL**) and the wealth transfer (**WT**). DWL arises because some costumers stop purchasing the good. In this case there is a loss of allocative efficiency so there is an anti-competitive effect. WT arises because some costumers are willing to pay the higher price resulting from the merger.

Redistributive effect may or not be anti-competitive, depending on the welfare standard. Some Welfare Standards are:

- Price standard: $\text{Price}_{\text{Pre Merger}} - \text{Price}_{\text{Post Merger}} \geq 0$
- Consumer surplus standard (CSS): E>WT+WDL
- Total surplus standard (TSS): E>DWL
- Weighted surplus standard (WSS): E>w*(WT)+DWL. The current approach in Canada (w<1). Differentiated weighting of consumer surplus proportionate to social economies differences.

The validation and analysis efficiency claims conducted by Bureau officers and economists as well as experts may be considered by the Competition Tribunal in a contested proceeding and may also be considered by the Commissioner without going to Competition Tribunal. Those claims are substantiated by documents that are prepared in the ordinary course of business.

Some examples where efficiencies mattered in Canada were two contested cases (Propane, Tervita) where Competition Tribunal/Courts accepted the efficiencies defense. In addition, on recent examples the Commissioner approved a merger on the basis of efficiencies without applying to the Competition Tribunal. These cases were Superior/Canexus (2016) and Superior/Canwest (2017).

To assess the trade-off (i.e. a quantification of the anti-competitive effects) the following information is required:

- Estimates of demand elasticity
- Merger simulation models
- Open to Competition Tribunal to accord qualitative weight

Additional information that is needed to measure efficiencies might also include usual savings in fixed costs and variable costs, and also elimination of double marginalization (in vertical cases) which are usually considered on the measurement of efficiencies.

However, some savings that do not count on measuring efficiencies are the ones that are redistributive in nature; that would have been achieved through alternative means; that would not be affected by remedial order; that not accrue to the Canadian economy and that result from a reduction in output, service, quality or product choice.

Also, in measuring efficiencies, it is necessary to deduct costs of implementing the merger and achieving the efficiencies.

6. Merger assessment experiences from the perspective of different APEC economies – Elena Zaeva (FAS, Russia)

The Russian Competition Authority (FAS) presented a case related to mergers on multilateral digital market with network effect this is the Yandex.Taxi and Uber.

FAS firstly carried out a market analysis by considering different elements. It assessed the network effect's influence, the switching ability of consumers, and the possible influence through positioning in adjacent markets. Then they looked upon measures aimed at competition promotion, and finally carried on a merger impact assessment.

The market for taxi services was analyzed, comparing two different kinds of services the traditional (Yandex) and the mobile aggregator (Uber). There were major factors of market power and possibilities of influence through various aspects. Mobile aggregator taxi services benefit from network effects and the possibility of having an online platform presents an added value for consumers. The competition authority considered customer's habit-forming and the switching limitations. Lastly, the price fixing was different in each type, as well as the type of offers (priority or normal).

The geographical boundaries were defined as the territory of the Russian Federation, because the ability to access the mobile aggregator taxi services does not depend on driver and passenger location. On the other hand, product boundaries are defined as services for information exchange between drivers and passengers.

FAS evaluated the interchangeability of traditional and mobile aggregator using a consumer survey (passengers). It reached the conclusion that passengers use both ways to call a taxi, in big cities by mobile aggregator and in small cities by phone. The survey also reported that passengers easily change the method of calling a taxi and that they choose this mostly because of the price. With the abovementioned, the competition authority proved that there is interchangeability of methods of calling a taxi.

As for the identification of sellers, more than 30 were found in app stores (AppStore, PlayMarket), among them Yandex.Taxi, Uber, Gett group, Fasten group, Maxim, Citymobil, etc. The evaluation of market volume was elaborated upon the number of rides. The merged company's market share (Yandex.Taxi+Uber) was 36%, which would almost represent the biggest company, besides Fasten group. Market growth reached more than 100% in a year.

A barrier to entry in this market was identified, given that the network effect is significant. Specifically, the number of drivers determined the popularity between passengers, then waiting time is reduced; vice versa, the number of passengers determine the popularity between drivers, then standing time is reduced. No other barriers to entry were found, given that there is free user switching, limiting the possibility of abuse.

Many elements were taken into consideration while assessing the possibility of influence through the position in adjacent markets:

- Software: such as maps, navigators, taximeters.
- Taxi and carsharing availability.
- Food delivery services (Uber Eats and others).

The merger was finally cleared by FAS.

Regarding the measures aimed at promoting competition and innovations, the parties of the Yandex.Taxi and Uber's transaction were instructed not to limit drivers and passengers to use applications of other companies, in order to keep the ease of switching and, to inform the passenger about the driver and the ride conditions.

The competition authority expected that the instructions will be accepted by all market participants as basic rules of market behavior, and that, if market participants (not participants in the transaction) would limit the switching possibilities, their actions would be considered as an act of unfair competition.

Finally, the merger impact assessment informed that the share of corporate business increased to 49%, the share of small participants increased to 5% and the share of the regional group Fasten decreased to 39%. Market prices have not changed; furthermore, the market growth is higher than expected, totaling 200% per year. Lastly, there are still no restrictions on choosing aggregators (switching).

7. Bayer – Monsanto Merger - Margaret Loudermilk (US Department of Justice)

The eighth presentation described the US Department of Justice Bayer-Monsanto's Merger review.

For this particular case, the greatest difficulty was to detect which were the most problematic products. As a first step, the DoJ first asked for the list of products and their description. With this information and among other records, they could understand which products were substitutes or shared supplies between both firms.

The relevant products were screened by using the post-merger HHI, and the change in this index in relation with the pre-merger situation. There were many products that overpassed the HHI threshold.

For these products the DoJ used different tools to establish the horizontal effects. The tools typically used include critical loss to test whether a set of products constitutes a relevant market; the Upward Pricing Pressure Index to predict incentives the parties have to change prices post-merger; and finally, merger simulation to estimate consumer harm. For these analyses the data required are generally margin estimates; diversion estimates; elasticity estimates; prices; output; revenues and costs.

Also, the possible future structure of the market was analysed. One of the parties had a product that basically had no competitors, and the other party was going to release a new product. These products were analysed similarly than the aforementioned.

There were non-horizontal effects analysed. Tools used for vertical analysis include vertical arithmetic and vGUPPI. Merger simulation is another tool, but is much more complex, it needs twice as much information than a horizontal merger simulation, then there are two markets. It is necessary to understand the vertical relation and, also, it is harder to model, then it can happen simultaneously or sequentially.

Innovation was also an item that was considered, information about patent activity, R&D expenditures, firm estimates of the net present value of innovation and estimates of potential cannibalization of sales by future innovation and documents were used to assess the innovation competition.

A divestiture was considered to maintain the competition otherwise lost through the merger. For the analysis the following questions were considered:

- What assets would be required?
- Are assets beyond the specific product markets required to maintain competition?
- Is there an appropriate buyer for the divestiture assets?
- Would there be potential anticompetitive effects from the proposed divestiture acquisition?

They were answered by using the same principles and tools as the original merger.

8. <u>**Assessing Non-Horizontal Mergers - Jan Peter van der Veer (RBB Economics)**</u>

The ninth presentation focussed on the main features of the MCR in New Zealand.

This presentation gave an overview on the analysis of non-horizontal mergers, with the main focus being on vertical mergers.

While horizontal mergers involve products that are substitutes, non-horizontal mergers involve complements, indirect substitute or complements, or non-related products (in the case of conglomerate mergers).

Horizontal mergers eliminate a direct competitive constraint that may lead to a price increase, while non-horizontal mergers (in the case of complementary products) may lead to a price decrease now that the firm internalized the externality of *boosting* the demand of the other good.

This makes non-horizontal mergers more likely to be pro-competitive, but in some cases, they may raise anti-competitive concerns, particularly regarding input or customer foreclosure strategies for vertical mergers, or the tying of sales in conglomerate ones.

(i) <u>Input Foreclosure</u>

In an Input Foreclosure behavior, in order to affect competition downstream, the upstream firm refuses to deal (Total Input Foreclosure) or charges higher prices to the competitors of the downstream firm to capture further sales (Partial Input Foreclosure).

Consumers can be harmed under this strategy if the downstream rivals raise their prices due to the higher costs they can face.

In assessing non-horizontal mergers, the approach in Europe has changed from an abstract theory of harm to the adoption of the Non-Horizontal Merger Guideline (2008) ("**NHMG**")

In the NHMG to evaluate if the strategy of Input Foreclosure could harm competition, there are three closely intertwined elements to evaluate: (i) ability; (ii) incentive; and (iii) effect.

Ability focuses on assessing if the upstream firm has market power. In the absence of it, it is highly unlikely that the input foreclosure strategy can affect the competitors of the downstream firm.

But it is not only about market power, it is also necessary to address if the good that the upstream firm sells is an important good for downstream rivals. It is easier to harm the rival's ability to compete if the input that the upstream firm sells represents a higher share of the total costs of the good produced by the upstream firms.

In assessing if the merged firm has the incentive to foreclose the downstream firm competitors, the commission needs to address if the strategy is profitable.

The upstream rival may lose sales due to the price increase (or refusal to sell) while the downstream firm may increase sales if it is rivals raise their prices and the sales that they lost are recaptured by the merged firm.

Some key parameters to evaluate if the merged firm has the incentives to incur in this strategy are diversion ratios of affected rivals downstream and margins of the upstream and downstream firms.

In assessing if the strategy would have effects on final consumers, the commission needs to see if the strategy would push the price of the downstream firms affected by the foreclosure upwards.

Since non-horizontal merger can be pro-competitive due to the elimination of the double marginalization, the final price needs to balance both elements. The Commission will only intervene in cases when price increase would be significant.

From a theoretical view a Total Input Foreclosure is equivalent to a Partial Input Foreclosure with a very high price increase. The Commission will thusly generally focus on Total Input Foreclosure first, in which case:

- If there is an incentive to engage in Total Input Foreclosure there will be incentive to engage in Partial Input Foreclosure.
- If the is no incentive to engage in Total Input Foreclosure, there may still be an incentive to engage in Partial Input Foreclosure.

One quantitative method that is used to evaluate if the merged firm has the incentive to engage in Input Foreclosure is the vGUPPI. This method is a modification of the standard GUPPI used for horizontal mergers to account for various leakages of applying the standard GUPPI in this framework like probability of downstream firm rivals switching to another supplier and how much of the wholesale price increase is passed on to higher retail price.

For the vGUPPI, Diversion Ratios, Pass Through Estimates, and Probability of the firm switching retailer are needed. This can cause some measurement issues to arise.

Some cases where the authorities have used vGUPPI are Tesco/Booker-CMA and AT&T/Warner-FNE.

(ii) <u>Customer Foreclosure</u>

In this strategy, the downstream merged firm refuses to deal with the rivals of the upstream firm.

This could affect the upstream rivals' economies of scale causing the firms to operate at higher costs. This increase in costs can make the upstream merged firm to charge higher prices to the downstream firm rivals, benefitting directly from it or the upstream firm rivals to charge higher prices to downstream rivals resulting in end users switching to the downstream firm.

Again, it is necessary to address if the merged entity will have the ability and incentive to engage in this strategy and if this occurs, if it would affect end consumers.

For identifying if ability exists for the merged firm, it is necessary to answer some questions, such as if there are substantial scale economies and if the downstream firm is critical for achieving them, if upstream rivals cannot induce downstream rivals to grow, if upstream rivals cannot forward integrate and if downstream rivals do not have alternative sources of supply.

For assessing incentive to foreclose it is important to assess what is the impact of foregoing upstream rivals' input, i.e. will downstream firm cost raise or reduce revenue? It is also important to see how this negative impact compare to the gains of the upstream or downstream firm.

To assess if there will be any effect on consumers, the agency needs to address if the higher costs of the downstream rivals could be offset by the downstream firm efficiency gains.

(iii) <u>Conglomerate mergers</u>

Conglomerate theories of harm have only been raised in cases where products are closely related.

Some theories of harm are (i) Tying; (ii) Pure Bundling or (iii) Mixed Bundling.

In assessing the ability to engage in any of these practices it is necessary to answer if there is ability to foreclose, not the mere ability to engage in tying or bundling. A key point is to see if the firm has enough market power in the leveraging or tying market. One example in which this is the case is must-have products.

In addressing incentives, there is a trade-off between cost associated with bundling or tying (some customers stop buying altogether), and gains from expanding sales: some customers start buying two goods instead of one and possibly higher prices.

For the overall effect on consumers, the agency must analyze if the costumers will accept or resist the tie/bundle, affected rivals have the ability to compete, and if the merged entity will increase its prices.

9. Demand estimation and merger simulation with differentiated products: applications to merger control – Mr Enrique Andreu (Compass Lexecon – Private Consultancy Firm)

The tenth presentation described several demand estimation and merger simulation techniques. In particular, the focus was on discrete choice models, the almost ideal demand system (AIDS), and applications of each of them.

In markets with differentiated products the key aspect is to assess the degree of closeness of substitution and to quantify the incentives to increase prices post-merger. One method commonly used for markets with differentiated products is the estimation of the upward pricing pressure (UPP) indexes. These indexes required as inputs the margins of the parties and the diversion ratios from the parties to their competitors.

In particular, the diversion ratios reflect the preferences of consumers and the characteristics of the demand. The empirical evidence has shown that diversion ratios based on market shares are not a good approximation of the true diversion ratios, which must capture the cross elasticities of demand.

Also, the data requirements, in order to systematically identify changes in prices explained by changes in quantities –and therefore, estimate diversion ratios through a demand model–, are enormous.

The first demand model estimation presented was the nested logit, which required SKU level data –typically, cross section variability suffices–, is a relatively easy way of modelling substitution patterns between different segments. Indeed, the model can be calibrated easily as only two parameters define demand. Although it requires of instrumental variable estimation, it is not typically difficult to find appropriate instruments.

Among the limitations of the nested logit model it must be mentioned that the structure imposes restrictions on the patterns of substitution –as it states that the competition occurs more intensively between the nest, but closeness of substitution within a nest depends on the relative size of shares of the brands–. Also, the independence of irrelevant alternatives (IIA) property implies that if the price of one good increases, consumers switch to others goods in proportion to the latter's market shares (within the nest)

The second model presented was the AIDS. The main advantages of AIDS model are the great flexibility in comparison with the nested logit as substitution patterns are less restricted; and the fact that the cross-price elasticities within a segment do not depend on market shares. In contrast, it is computationally more complex and more data is needed, and confronts several limitations such as the aggregation across SKUs, endogeneity, and the stockpiling phenomenon.

Therefore, considering a merger simulation with a nested logit demand estimation, two approaches could be taken in consideration: (i) estimated elasticities and (ii) calibrated elasticities –which is often used as a screening device–. While in the first approach the elasticities are estimated through market data, in the second for each possible combination of the relevant parameters –alpha and sigma–the model is calibrated in order to obtain a vector of calibrated marginal costs, so the combination of parameters that are consistent with actual calibrated marginal costs are selected.

The presentation ended with the exposition of two cases. First, in the merger between DEMB and Mondelez –two large distributors of coffee products in Europe–, in which a merger simulation was submitted based on a nested logit model. In this simulation, three nests where considered: (i) R&G Arabica, (ii) R&G Robusta, (iii) Filter Pads, and the outside good was thought to incorporate instant, capsules, and other drinks. This framework considers the competition between segments as well as the competition among brands within a segment.

The simulation results showed moderate predicted price changes across R&G and filter pad products following the merger. These price effects turn quite small (or even negative) after divestment for some brands. Overall, the merger simulation results indicate that after the divestment of the brands L'Or and Grand Mere, the transaction is not likely to have a significant effect on prices in any of the affected segments.

AIDS was also applied in order to assess the constraint imposed by R&G competing brands on merging parties' brands in filter pads. The results showed that R&G products impose a significant competitive constraint on filter pad products, and that the brands to be divested (L'Or and Grand Mére) were close competitors to the brands which will stay under the control of the new entity post-merger. Finally, the results recognized that private labels exert a significant constraint on manufacturer branded products in France.

Several criticisms by the European Commission (EC) were made. Specifically, the EC claims that the coffee demand model estimated by Compass Lexecon cannot be relied upon because coffee was often put on promotion and consumers stockpiled during promotions and that the demand model does not account for stockpiling behaviour by consumers. According to the EC this implies that estimated own-price elasticities are larger in absolute terms than they are likely to be in reality, and hence over-estimate the price sensitivity of coffee consumers; and estimated cross-price elasticities are larger than they are likely to be in reality and hence incorrectly point to significant inter-segment substitution.

On the other hand, Compass Lexecon argued that coffee promotions were relatively infrequent (less than 20% of coffee sales were made on promotion), promotions do not seem to impact consumer behaviour in a significant way, and elasticity estimates were robust to using monthly data and consistent with the results in the relevant literature.

10. Quantitative analysis in market definition: recent cases – Mr Bruce Mikkelsen (ACCC, Australia)

The tenth presentation focused on the quantitative tools used by the Australian Authority to assess the market definition on several cases.

There is no mandatory notification under the Australian merger regime. Voluntary notification is recommended in the ACCC Merger Guidelines where the products of the merger parties are substitutes or complements and the merged firm will have greater than a 20% market share.

Saputo/Murray Goulburn was a case analyzed by the Australian Authority and related to the dairy industry. In particular, Murray Goulburn was considered the largest dairy processor, and Saputo owned a very large processing plant in southwest Victoria.

In this case, the analysis was enriched with an extensive dataset and also the price reduction implemented by Murray Goulburn and Fonterra for the raw milk acquisition, provided a useful natural experiment. Many other tools were utilized in the examination of the case such as maps, diversion analysis, and market shares calculated in different scenarios.

Finally, the ACCC did not oppose to Saputo's proposed acquisition of Murray Goulburn's assets, after accepting a court-enforceable undertaking from Saputo to divest Murray Goulburn's Koroit plant.

The second case presented was the Pacific National/Aurizon where the parties were active in the intermodal or containerized rail linehaul (long distance). That business consisted of several interconnected components, including the Acacia Ridge Terminal, and its interstate intermodal and Queensland intermodal businesses.

Pacific National and Aurizon were the only providers of intermodal rail linehaul on the North Coast Line servicing northern Queensland. The ACCC alleges that the operation would have the effect of creating a monopoly on that route. Further, Pacific National and Aurizon were the two of only three competitors on interstate routes.

The analysis confronts several difficulties, particularly related to incomplete and inconsistent data, and also the aggregation and smoothing of the data, which leads to inconsistent econometric evidence with the customers and merger party documents.

11. Mergers in differentiated products markets and multiproduct firms: acquisition of Nutrabien by Ideal – Mr Fernando Coloma (FNE Chile)

The eleventh presentation addressed the case of Ideal/Nutrabien, the first prohibition done by FNE since the instauration of the new mandatory regime of merger notification back in June 2017.

The operation involved two companies that are active in the sweet snacks industry, which is characterized by the presence of highly differentiated products.

In that sense, the FNE considers that the products analyzed have different levels of competitive closeness, carrying out a price pressure calculation that forego the definition of the relevant market.

Two important inputs for the calculation of upward pricing pressures (UPP) indexes are the diversion ratios and margins.

The diversion ratios were calculated using two customer surveys that ask the consumers what would they do in front of the unavailability of each of the products sold by the parties.

The margins were obtained through the accountant information on cost that reasonably could be considered as variable, such as raw material, transportation cost and direct labor.

On the other hand, the parties claimed several efficiencies but the FNE only accepted efficiencies in logistic and product transportation –given the more efficient distribution system of Ideal–, in consideration of three principles: to be merger-specific, verifiable, and sufficient to reverse the merger's potential harm to costumers.

The results of GUPPI, IPR and CMCR calculations consistently suggested the existence of an upward pricing pressure. Indeed, the FNE, the economist of the parties and Massimo Motta – commissioned by the FNE– obtained GUPPI/CMCR above 10%.

Therefore, in the light of the quantitative and qualitative evidence obtained, the FNE argued that the transaction would imply a substantial lessening of competition given that it would lead to a significant upward pricing pressure that was not offset by merger efficiencies.

In addition, the FNE blocked the transaction in a context of high entry barriers and proposed behavioral remedies that did not fulfill the standard requirements for the risks identified.

Nonetheless, the Competition Tribunal (TDLC) finally overturned the FNE's decision and cleared the transaction pursuant to the remedies proposed by the parties.

12. <u>FTC Japan Yuichiro Tsuji Caso: Steel manufacturers merger (price test and critical loss analysis)</u>

In the Japan Fair Trade Commission, the Merger and Acquisitions Division has an Economic Analysis Section that consist in a separate team of economist which join the case team in all secondary review cases but only in some of the primary cases.

The presentation included a brief review of two cases related with the steel industry.

(i) Nippon Steel & Sumitomo Metal / Sanyo Special Steel

In this case the main questions were if the bearing seamless tube was in the same product market than other seamless tube, and if the bearing steel bar was a substitute for it.

The first question was answered with a price test, watching the correlation coefficient between the price of bearing tubes and the price of other tubes. This coefficient was sufficiently low and the theory that both products could be in the same market was discarded. For the second question the investigation team observed a natural experiment, which was a supply shock in bearing steel bar industry. The hypothesis that bearing seamless tube and steel bar are substitutable was not supported.

(ii) Nippon Steel & Sumitomo Metal / Nisshin Steel

For this case, the main question was whether the geographic market was wider than Japan. To answer this, the JFTC realized a critical elasticity analysis. They compared the actual elasticity with the critical elasticity. Since the critical elasticity was greater than the actual elasticity, a hypothetical monopolist could raise the price without decreasing its profit. Therefore, for this case, the conclusion was that the market was not wider than Japan.

13. Merger assessment experiences from the perspective of different APEC economies – Lizeth Martínez – COFECE, Mexico

The last presentation of the Seminar was made by a representative of the Mexico (Lizeth Martínez from the Mexican authority, COFECE), which focused in the merger case of Rea Magnet Wire Company & Xignux. This was the first time the authority blocked a merger backed by efficiency gains claims.

In 2017 Rea Magnet Wire Company (Rea Magnet) and Xignux notified a merger to the Mexican authority, as the companies intended to create a joint venture for manufacture and distribution of magnet wire in the United States and Mexico. This would permit to combine both companies' assets, as well as leverage operational and supply chain synergies, including an enamel manufacturing plant.

Rea Magnet is a global wire manufacturer of magnet and non-ferrous wire products, with two subsidiaries in Mexico producing magnet and non-ferrous wire, such as copper and aluminum wire (bare and isolated), as well as electromagnetic wires. Rea Magnet is a company from USA with six facilities, with only one located in Mexico.

Xignux is a Mexican company with four business divisions: cables and electrical conductors, transformers, infrastructure, and food. The company is vertically integrated, as it produces enamel (input used to cover the wire). Viakable through Magnekom (subsidiaries of Xignux) produces and distributes the magnet wire. Magnekom has four facilities located in Mexico dedicated to the manufacture of cooper and aluminum cable for electric power transmission and distribution. The company produces a broad variety of products with aluminum and copper conductors, including rectangular and square wire-bare, paper wrapped and coated.

The magnet wire is manufactured using bare wire, made of an electrical conductor, which is covered with an insulating material. The most common electrical conductors are copper and aluminum wire. The magnet wire is produced in different sizes and it could be done in different shapes, according to its industrial use. Magnet wire is used as input for a wide variety of products such as: motors for heating and air conditioning units, electrical appliances, electronics, telecommunications, electromechanical and automotive industries, among others.

Regarding the production dimension of the market definition, the merging parties argued that they do not differentiate magnet wire based on any of its physical characteristics. In that sense, they consider magnet wire as a generic category. The parties claimed that magnet wire is a commodity, due to fact that its production relies on international standards established by independent specialized agencies. Therefore, the magnet wire is a homogenous and standardized product, and substitution exists on the supply side and competitors have the ability to respond to new needs. Furthermore, they argue that there is no intellectual property that restricts production in terms of processes or materials used in its production.

On the other hand, the Mexican authority made a substitution analysis of the product based on its four physical dimensions, which are: (i) the conductive material; (ii) the shape required; (iii) its thickness; and (iv) the different types of insulating coating. COFECE found that the application manufacturers determined and decided the conductive material, the required shape, its thickness and the type of insulating, coating, depending on the industrial use of the wire, therefore, is not a decision from the magnet wire manufacturers. Furthermore, the machinery that makes the rectangular magnet wire can also make the round wire, but the other way around is not possible. Thus, on the supply side there is asymmetric substitution between both forms of magnet wire; however, the decision regarding the use of a particular physical characteristic of the product completely depends on the application manufacturers. In conclusion, COFECE determined that all types of magnet wires regardless its material, shape, caliber and coating must be considered into the same relevant market.

As for the geographical dimension of the market definition, the merging parties argued that many aspects must be considered. First, the main manufacturers of magnet wire are global producers with facilities in many economies around the world and customers are mainly multinational companies with local and global purchasing teams. In addition, magnet wire imports are significant of around 7% of the total production. Some of the imports to NAFTA are from Asia and other regions, and exert considerable competitive constraint in terms of prices and alternative sources of supply.

On the other hand, the Mexican authority concluded that the geographic relevant market is NAFTA, given the evidence. First, documental evidence provided by the merged entities showed that the only region considered in their commercial strategies was NAFTA. Also, the exports made from Mexico are mostly destined to the USA magnet wire producers and the imports mostly came from the United States and Canada.

In addition, the parties´ argument that an increase of 5% in the magnet wire price would trigger the amount of imports from Asia does not hold up, since they did not consider all the costs involved to keep operation viable.

Finally, the closeness of the magnet wire supply is a factor that impacts on the application manufacturer's operation, because it represents several costs savings such as low stock, no need to have facilities dedicated to the storage of supplies, timely delivery, lower freights, among others. All of this reduces the probabilities that the application's manufacturers seek markets outside the region.

Having considered all the above, the COFECE defined the relevant market as the manufacture and distribution of magnet wire in North America.

The Mexican authority identified activities of the notifying parties that overlap in the manufacture and distribution of magnet wire in North America. Furthermore, it considered the market shares, concluding that the notified transaction would have merged North America's first and third largest companies, Rea and Xignux, in the production and distribution of magnet wire in North America. The merged entity would accumulate significant market share (more than 50 %) in terms of both sales and installed capacity. The Herfindahl-Hirshman index revealed, in terms of sales a post HHI of 3,874 and a variation of 840. In terms of installed capacity, a post IHHI of 3,434 and a variation of 589.

According with the COFECE's Concentration Index Criteria, the notified transaction does not meet any of the three technical criteria: that concentration is unlikely damage, distort or impede effective competition and free market access.

Additionally, COFECE found the existence of high barriers to entry and stable participation among current competitors over recent years, shown by the fact that COFECE did not observe the continuous entry of new competitors in the market in North America. At least since 2010, the market shares of the four main competitors have remained relatively stable.

Also, the required amount and recovery period of the investment to establish a magnet wire plant is a significant barrier to entry for new competitors. Another fact is that magnet wire manufacturers must approve standardized process to be a certified provider of magnet wire. This process lasts more than two years, which represents significant barrier to entry to any potential entrant.

Moreover, application's manufacturers do not like to import from other regions such as China and customers of magnet wire could not substitute their acquisitions with imports from other regions, such as Asia, because this would imply increases in transportation costs, and greater delivery times and logistics risks. Additionally, imports from other regions imply long waiting periods. For example, the transfer from China to Mexico lasts three months, while NAFTA's transfers last one month.

Regarding competition concerns, in terms of sales, as it was mentioned before, the concentration would represent the union of two of the three main magnet wire producers (the new entity would have more than 50% of the market). The main magnet wire producers would have more than 80 % of the market, therefore it will unlikely that the competitive fringe could counteract the market power of the new entity. For magnet wire customers, the Joint Venture would represent the disappearance of a competitive alternative. Therefore, it would be likely the result would be an increase in prices resulting from the new company, as it would be in a position of power that would negatively affect free market access and competition. Due to the above, the notified transaction raised competition concerns which could restrict, reduce or impede competition. Thus, COFECE notified those concerns (risk notification) to the merging parties.

Due to the risk notification from COFECE, the merging parties issued an economic study to prove that the notified transaction would create a more efficient market and therefore improve consumer welfare.

To be considered as such, COFECE would have to see that efficiencies accomplish the following elements:

- Merger-specific: That is, the efficiencies must be likely to be accomplished with the notified merger and unlikely to be accomplished in the absence of the merger.
- Verifiable: The agencies can verify the likelihood and magnitude of each asserted efficiency.
- Pass-on: The efficiencies must be to reverse the merger's potential to harm consumer. This is, the efficiencies have to be passed on to consumers, rather than only benefit the merging parties.
- Net-effects: efficiencies are assessed net of costs produced by the merger or incurred in achieving those efficiencies.

This means that the efficiency claims will be rejected if equivalent or comparable savings can reasonably be achieved by the parties through other means without the merger's potential adverse competitive effects.

The presented claims by the merging parties showed some efficiency gains (synergies, reduction of marginal costs, savings in transportation costs) that might impact directly in the variable costs, but the merging parties did not prove that this reduction would be transferred to consumers (the pass-on element). Additionally, the parties did not present evidence to prove that they will not have incentives to absorb the cost reductions adjusting their own margins. COFECE considered that most of the efficiency gains were not merger specific, since it was possible to achieve costs savings and reductions in variable costs through alternative actions.

Then, the merging parties issued only one remedy in order to address COFECE's concerns. The proposed remedy was behavioral, in which the parties undertake to maintain the same commercial conditions with their clients, previous the merger, for a limited period of time. The purpose of this remedy was to prove that the merged entity will not increase prices to their clients. COFECE argued that the remedy proposed by the parties is neither ideal nor sufficient to correct the identified risks, since it is not directly linked to the correction of the merger effects and it is not proportional with the intended correction.

Finally, in June 2017 the Board of Commissioners decided not to authorize the joint venture between Rea Magnet Wire Company and Xignux, considering COFECE's fundamental responsibility to sanction or block concentrations that may generate risks or anticompetitive conducts.

14. Conclusion

The workshop was designed with the objective of sharing knowledge regarding the implementation of tools to analyse and assess merger cases, as well as experiences and best practices of more experienced competition agencies of APEC economies. That information included specific methodologies, best practices and relevant cases in the economies' experience.

The seminar started by reviewing how to assess the market definition and the main economic tool presented was the Hypothetical Monopolist Test. This test focuses in answering whether a proposed market is properly defined and relevant in the specific antitrust case context. In order to answer this question, the agency must analyse if a hypothetical monopolist (the sole seller of the products in that market) would likely impose at least a small but significant and non-transitory increase in price on at least one product in the market.

The relevance of market definition was also reviewed. While it is currently a part of most legal frameworks, market definition analysis ends up being a necessary step for agencies. However, in practice, competition agencies prefer to review relevant market definition during the curse of the investigation rather than just at the beginning. Market definition also allows to obtain market shares and Herfindhal Hirschman Index (HHI) which are used in the following steps of the investigation, though there are other tools that might allow to measure competitive effects better. In any case, a useful tool that helps in this definition is Upward Pricing Pressure (UPP), which operates as a filter, a decision rule or just another part of the evidence.

The seminar also showed that, in considering the effects of the mergers that are being assessed, it is important to consider efficiencies that are created from these mergers. Most cases won't need an efficiencies defense by the merger parties, given that this is only requested once risks are identified. But when presented, they must be able to demonstrate that efficiencies will be greater than, and will offset, any anti-competitive effect.

Non-horizontal mergers were also discussed, as different anticompetitive concerns were analyzed regarding input or customer foreclosure strategies for vertical mergers, or the tying of sales in conglomerate mergers. For these types of assessments, the use of different tools such as vGUPPI, Diversion Ratios, Pass Through Estimates, and Probability of the firm switching retailer were reviewed.

Other quantitative tools were also addressed, such as merger simulation techniques, price tests and critical elasticity analysis. Various cases were analyzed, in order to see how all of these tools have been used in practice by the different economies. In that context, the Russian Competition

Authority presented the Yandex.Taxi and Uber case, involving a merger on multilateral digital market with network effect. The US Department of Justice, on the other hand, presented Bayer-Monsanto's Merger review; while the Japanese Fair Trade Commission presented Nippon Steel & Sumitomo Metal / Sanyo Special Steel Case and Nippon Steel & Sumitomo Metal / Nisshin Steel Case. Prohibitions were also addressed, leading to the review of both Chile's first experience in blocking a merger since the mandatory notification merger regime came into force, and also Mexico's where efficiency gains claims were alleged by the merging parties.

The importance of international cooperation between agencies in merger control review was also discussed, establishing a distinction between positive and negative comity. The former involves a request by one economy alleging an anti-competitive conduct is affecting its interests, so that the requestee might undertake enforcement activities in order to seek remedy. The latter involves an economy's consideration of how to prevent its laws and law enforcement actions from harming another economy's important interests. Given the increase in multi-jurisdictional mergers that are mandatorily filed in multiple economies, the expansion of these sort of cooperation is essential for the development of these assessments.

This workshop allowed different APEC economies to share their knowledge about quantitative tools to analyse horizontal and non-horizontal mergers, and their best practices with the help of real cases and it was a learning experience for all the attendees.