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Call for comments on transfer pricing workstreams

Dear Ingela, dear Mathew,
dear Tax Committee,

We, Deloitte Germany, would like to thank you for the opportunity to provide our comments on the seven transfer pricing work streams as described in paragraphs 5 to 11 of the Co-Coordinator's report. We hereby provide input on the following three work streams to further support the valuable and important work of the United Nations on Transfer Pricing:

- COVID-19 / economic downturn
- CO2 certificates
- Industry / sector guidance for primary products

1. Work Stream "COVID-19 / economic downturn" (written by Dr. Björn Heidecke and Dr. Nael Al-Anaswah, Transfer Pricing Economist "Benchmarking and Economic Analysis" at Deloitte)

Given the unforeseen pandemic and the resulting economic crisis with an instant impact on economic results benchmarked profitability ranges under the arm's length standard could also be affected. Consequently, there was an immediate need for adjustment of transfer pricing policies (e.g. potentially including revisions of intercompany contracts or even APAs) to cope with the impact of Covid-19 and navigate through such challenging times. However, any transfer pricing changes for 2020 could not be supported by regular benchmarking studies as the data for 2020 was not available until end of 2021. Therefore, data and evidence-driven analyses consistent with the arm's length standard were required to support any changes made to TP policies for 2020.

Generally, we observed two different approaches. The first approach used conventional data adjustments to construct benchmarks that incorporated Covid-19 impacts, while the second approach used econometric regression analysis to forecast potential effects caused by Covid-19. These two approaches are outlined further in the following sections. Similar techniques could also be applied to analyze other economic downturns and the impact for transfer pricing as requested with the call for comments. Examples could be inter alia a turmoil due to the Ukrainian war, the impact on businesses due to the increase of interest rates such as recently indicated by the European Central Bank and the Federal Reserve potentially leading to a recession, or a financial crisis as observed in 2008 / 2009.

For all of these examples, as well as the Covid-19 effects, it is recommendable to carefully analyze – also qualitatively – the impact on the respective industry and sector at hand. Useful industry data insights such as production cost, raw material prices, consumer price indices and others split per country and sector are provided by the European Central Bank in the Data Warehouse available under: Macroeconomic and sectoral statistics - ECB Statistical Data Warehouse (europa.eu).[1]

1.1. Conventional data adjustments / rule-of-thumb-approaches

The following more conventional approaches are adopted to address the lack of available benchmarking data.

Consideration of loss-making companies

When benchmarking studies are prepared, companies with permanent losses are usually excluded. This may seem appropriate and in accordance with the decree that permanent losses "indicate" incomparability at a first glance. Nevertheless, even in times of economic stability, one should not directly derive "incomparability" from this indicator. Ultimately, the criteria for the selection of comparable companies is not profitability, but the comparability of the companies. Profitability is not a criterion of comparability in this case. The indication that permanently loss-making companies are not comparable is particularly unlikely to be reliable in times of a widespread economic downturn. On the contrary, losses are likely to be common in many industries. Therefore, in each case, reasons must be given why permanent loss-making enterprises should or should not be excluded, with reference to the comparability criteria. In order to take the economic downturn into account, a benchmarking study that also takes permanent loss enterprises into account could be appropriate.

Extension of the period

An extension of the benchmarking study period between eight and ten years could be useful to cover both the growth and the recession phase.

Capital adjustment calculations

If inventories, receivables, and liabilities during the Corona crisis are assumed to be above the usual amounts, a distortion in comparison to the comparable companies could result from different commitments to capital. This could be offset by routine capital adjustment calculations

Using financial data exclusively from the crisis period

As soon as the crisis years are recorded in the database, this data could be used.

Using financial data exclusively from previous crises

It should be assessed if data from former economic crises is available, such as the financial crisis of 2008/09. Moreover, it should also be considered that other factors could affect the margins or the effects may hit another sector / industry. Hence, it should be tested if a margin is in fact affected by the crisis and if the same sector / industry was affected.

Rule-of-thumb

An alternative could be that the UN estimates by application of econometric models the impact of Covid-19 (and potentially other crisis) on the margins and formalizes the results. If such data is prepared, multinationals and tax authorities alike may refer to such data and apply it to a benchmark study relying on non-crisis years. An example could be that the UN estimates that the margins in sector XY are 10% below the typical margins achieved without the impacts of Covid-19. As such, the range could be reduced by 10%, e.g., a normal range could be 3-8% operating profit margin

[1] https://sdw.ecb.europa.eu/browse.do?node=9691101

and as such the range considering these rule-of-thumb could be 2.3% to 7.2%. Evidently, such an assessment is only an indication and should be carefully applied to the case at hand. But it could provide an "easy-to-apply" yardstick to tax authorities and taxpayers alike.

1.2. Adjustment calculations (Econometric Models)

An alternative to the "rule-of-thumb" or conventional approach could be a more advanced calculation of the benchmark range. The below section explains one way of performing an adjustment calculation to determine a range for a crisis period based on various econometric adjustments that have been applied. We limit the description to the assumptions made, the input parameters required, and the econometric techniques applied, and do not go into detail regarding the mathematical details of the various statistical methods. The goal of the econometric adjustment is to estimate the impact of Covid-19 on profit level indicators ("PLIs" such as operating margin, cost plus, etc.).

In order to attain this, historical annual data for the comparable companies, as well as historic data for a broader set of companies identified in the typical databases (e.g., BvD databases), can be used to compose a regression to estimate the changes to the range based on predicted micro- or macro-economic data for the tested party.

Since a basic reliance on comparables data from earlier years (of economic decline) may be challenged by the tax authorities, whose focus is on 'contemporaneous' data, different approaches were developed using sophisticated statistical analysis tools like regression analysis in various forms. This took the form of a prediction analysis, as comparable results are only available with a considerable lag in most regions.

Generally, it was expected that depending on the industry and the group of the comparable companies, break-even or lower level of profitability would be forecasted. The forecast was subject to a sensitivity analysis checking for robustness by applying a portfolio of statistical tests, as well as the use of different specifications, to obtain the best possible fit.

Within the international Deloitte network, senior transfer pricing economists developed standard approaches (ready to use regressions purely focusing on functional comparability and ignoring industry specific characteristics) as well as customized approaches, which are developed for particular sets of comparable companies in order to capture the important industry specific characteristics.

1.2.1. Standard Models

The analysis examined the PLI impact of macroeconomic indicators on previously accepted comparable datasets. If a correlation was established, it would indicate how PLIs are expected to be affected in the future given a previously observed downturn (global financial crisis) and through natural economic growth cycles. Such a combined cycle is represented by the period 2007–2019. Based on this premise, several **predictive models** were created using macroeconomic indicators for the following transactions: a) Manufacturing (APAC, Americas and Europe regions) and b) Distribution (APAC, Americas and Europe regions). Part of the analysis considered the following relationships:

a. Relationship between PLI and equity index return

   We considered the price index value of the stock market as an indicator of market performance. It states the underlying demand of a particular stock which in turn indicates how the particular firm or firms are operating in the economy. The study considered the Dow Jones Industrial Average ("DOW") (for North America), FTSE Straits Times Index (STI) (for Asia Pacific) and the DAX performance Index (DAX) (for European region) as a proxy of the market portfolio.

b. Relationship between PLI and GDP growth rate

   GDP growth was considered as it provides an overall snapshot of the state of the economy for a region. The scope of the study entailed a period ranging from 2007 through 2019, i.e. covering the global financial crisis followed by

the subsequent global recovery. The objective was to help understand how the PLI of distributors and manufacturers reacted during the crisis and the subsequent economic recovery.

c. Relationship between PLI and bond yield movement

The bonds of corporations and emerging markets trade are based on their credit ratings, which are driven by their underlying financial strength. Stronger economic growth is more likely to be a positive factor for higher-yielding bonds where the issuer's creditworthiness is a primary concern for investors.

The study has utilized the data of multiple sets of distributors and manufacturers. The sets were composed by aggregating the final comparable companies available in the internal Deloitte repository obtained through various comparable studies undertaken for the period of the global financial crisis and subsequent recovery. The relevant financials for these identified comparable companies for the period 2007 to 2019, i.e., a period of 13 years, have been collected and analyzed. The time-period was selected as it would represent two economic cycles covering the global financial crisis followed by the subsequent global recovery.

The key features of the analysis were the following:

- The comparable companies used for the purpose of our analysis are across industries. Hence, the models are industry agnostic and can be used to predict PLI movement of comparable companies for all manufacturing and distribution data sets for the three regions.

- Independent Dynamic Panel Data (DPD) regression models were fitted to understand the indicative impact of key macroeconomic indicator on the PLIs of distributors and manufacturers. These DPD models consist of lagged PLIs as a dependent variable along with other macroeconomic independent variables.

- If the derived relationships are both statistically and quantitatively significant, then it can be expected that an industry cycle including a downturn impact in the key macroeconomic indicator(s), would affect the PLIs in a predictable manner. The derived quantified relationship(s) would also provide an opportunity to predict changes in future profitability of distribution and manufacturing comparable companies based on the projected growth rates in the identified key macroeconomic indicators (i.e. the so called Arellano-Bond approach).

Applicability

Leaving aside the technical model specifications of the various models it turned out that the predictive analysis showed the expected downturn effects for the manufacturing as well as for the distribution sets with different impacts in each of the regions under analysis.

The validated regression models for manufacturers and distributors indicate how the PLIs are expected to evolve in the future, and, specifically, predict the comparable companies' PLI for 2020/2021 given the available forecast data for macroeconomic indicators, as well as individual comparable company-level data. Based on the estimated coefficients of the predictive regression models, the estimated NCP and OM for our specific comparable manufacturer and distributor sets, respectively could be evaluated: For example, given a TNMM/CPM search prepared for 2019 including comparable data for the period 2016-2018. Herein, we could use the predictive model(s) to predict the PLI movement of the comparable set for 2019, 2020 & 2021. Based on predicted PLIs for each of the comparable companies, the median and interquartile range (IQR) for 2019, 2020 & 2021 could also be computed.

As an alternative we also developed a model focusing on macroeconomic data. The cornerstones of this model were the following: We predicted changes in the interquartile range of a given sector/benchmark using a regression analysis based on macroeconomic conditions. In particular, we applied a quantification using time series regressions (1 regression per quartile) on macro-sectoral data over a large period of time (min 15 years). The datasets used here were historical IQRs of a given sector/benchmark built with Amadeus/Orbis data (as for traditional benchmarks) or

collected on the BACH (Bank for the Accounts of Companies Harmonized) database, which contains aggregated (WA and IQR) and harmonized information on the annual accounts of the non-financial corporations of EU countries (per 2-digit NACE sector). For the measurement of macroeconomic conditions, we used national/regional macroeconomic indicators collected on (inter-)national statistical institutes.

The results of this predictive analysis on a set of wholesale traders were as follows: a 10% slump in real GDP in 2020 yielded to a 1.11 percentage point decrease in the median quartile (ceteris paribus).

This approach has a wider use compared to individual comparable set regressions, although the macroeconomic model for certain sectors may need to be recalibrated. At the same time, since the data used is aggregated (median or lower/ upper quartile per the set of companies in the certain economic sector), it will allow for fewer variations than an individual comparable set where the data points are individual firm observations.

1.2.2. Customized (industry specific) models

Customized regressions were developed by senior transfer pricing economists from the international Deloitte network based on certain comparable sets. They are hence specific to the region as well as the precise function and industry. Customized regressions explain and help to predict the change in PLI based on:

- Comparables' specific statistics (e.g., a change in turnover is used most frequently).
- External indices (macroeconomic)
- Combination of the above

In the following we describe illustrative regression models for the following functions and markets to illustrate the approach for European automotive manufacturers, North American automotive manufacturers
and European mining companies

a. European automotive manufacturers

The methodology applied here is based on a paper by Hayri and Clark (2002). They used a regression analysis for the years 1991 to 2001 to measure the influence of the sales level on the profitability of the comparable companies (manufacturing and distribution companies in the electrical and automotive industries). The model for performing adjustment calculations in crisis periods and thus also the regression equation, which we describe in the following, is based on correlations between sales growth and profitability. The basis of the presented approach is the correlation between relative sales growth (growth rate) and profitability.

In order to measure the impact on the profitability of a company due to drop in sales, caused by external parameters, it is first necessary to understand the economic correlation between the two parameters. It seems difficult to economically justify a direct influence of the volume of sales on the profitability of a company. However, it is reasonable to assume a positive correlation between the growth rate and profitability. Furthermore, it is assumed that the correlation is stronger when the growth rate of a company is negative. This leads to the following hypotheses:

Hypothesis 1: Positive correlation between growth rate and margin.
Hypothesis 2: Positive correlation stronger for enterprises with negative growth rate.

These hypotheses are based on economic theories and are used to determine the model. However, it is necessary to ensure its applicability. It is only appropriate to test and quantify the described correlation between growth rate of sales and profitability if these are statistically significant. If this is the case, the quantification of correlation can be used in the course of an adjustment calculation.

The data record contained the financial ratios of 74 comparable companies (routine companies) from the "Automotive Manufacturing" sector. The observation period covers the period 2008 to 2015. A total of 529 valid and complete data

vectors, consisting of sales, growth rate, margin and absolute margin change, were available. The crisis year 2009 and the crisis period 2009 to 2011 were included in the data records.

Validation of the Hypotheses

In order to test these hypotheses, the annual ranges of growth rate and margin were calculated for the years 2008 to 2015.

Hypothesis 1, positive correlation between growth rate and margin, is supported by the similar development of the annual ranges of growth rate and margin. The influence of the crisis in 2009 also gives evidence to the significant decline in both variables.

Furthermore, it could be concluded that the influence of a negative growth rate on the margin is stronger than the influence of a positive growth rate. The range for margins with negative growth rate is further distant from the total range than the range for margins with positive growth rate. Consequently, Hypothesis 2, should not be disregarded due to its stronger correlation between negative growth rate and margin, at this point.

The descriptive analyses provided positive results regarding both hypotheses. Therefore, the model could not be rejected at this point. The following paragraph focuses on testing statistical significance and quantifying the relationship between growth rate and margin.

Derivation of the Forecast Parameters

The data pairs used were differentiated according to the different observation periods, namely a) 2008-2015, b) 2009 (crisis year) and c) 2009-2011 (crisis period) and according to the growth rate associated with the margin a) all, b) negative and c) positive. Consequently, nine regressions and nine coefficients were derived.

The coefficients measured the influence of the growth rate on the absolute change in margins. For example, if growth rates are -10% and -0.1, the enterprise's margin decreased ceteris paribus by 0.1096 x (-0.1)=0.0110 and 1.10 percentage points in one of the model specifications and by 0.2044 x (-0.1)=0.0204 and 2.04 percentage points in another model specification.

The estimated coefficients were consistently positive and statistically significant at the typical significance levels; the relevant P-values were without exception zero. Therefore, hypothesis 1 could not be rejected. Furthermore, the coefficients in models for margins associated with negative growth rates were significantly higher than in the models for margins associated with positive growth rates. Consequently, Hypothesis 2 could also not be rejected. Furthermore, the impact of growth rate for margins combined with a negative growth rate hardly depends on the period considered. This led to the assumption that a company with declining sales would not be affected by the phase of the business cycle. This assumption was not supported by the results for margins associated with a positive growth rate or the overall view.

Moreover, the higher explanatory content of the regression model in the crisis year or period should be mentioned. A considerable part of the variance in data can be explained by means of regression, especially in some of the model specifications.

The application of the theory using the example of "automotive manufacturing" was a first indicator for the empirical validity of this methodology. The values obtained could provide a starting point for an adjustment calculation in practice. The quality of the adjustment calculation during the practical application can be improved if, starting from the data set for the respective industry, hypotheses are first tested and subsequently the factors for the adjustment calculation are derived.
However, one weakness of the regression model is the absolute change in margins only depending on the growth rate, which probably does not reflect reality. Rather, other variables would affect the absolute margin change or the margin

itself. The models described in the following examples consider - to a certain extent - additional variables as well as more sophisticated regression models.

b. North American automotive manufacturers

The approach here is a prediction of changes in profitability based on microeconomic and macroeconomic information. The developed model uses as input variables the comparable companies' historic financials (microeconomic variables) as well as macroeconomic information. The particular microeconomic input variables are historic changes in the PLIs as well as historic changes in sales and fixed costs. This is supplemented by lagged variables of these input variables in order to increase the fit of the model specification. The macroeconomic variables used here are the changes in real GDP. The model is estimated in changes (meaning the use of the changes between t and t-1) in order to generate a stationary model that can be used for time regressions. The econometric methods used in this model are technically advanced by utilizing GMM Panel regressions. The parameters used to control the outcome of the model are sales declines as observed in 2020 as well as a change of the fixed costs, which were assumed to remain stable between 2019 and 2020. Macroeconomically the observed/estimated change in real GDP as communicated by official state bodies has been used in the model. Using these parameters, significant declines in the interquartile ranges of the net cost plus PLI were observed for the forecasted year 2020.

c. European mining companies

The approach in this model is to explain the change in the operating margin ("OM") by a change in turnover and an industrial index. More specifically, the model links the change in OM to (1) Purchasing Managers' index (PMI) reflecting market trends in manufacturing and services sectors, as well as (2) to a forecasted drop in the sales level. In contrary to the previous models described, this model tries to estimate the effect on the OM of the tested party and not the comparable companies. The statistical tool being used here is a simple OLS Regression model. The data consists of 28 small mining companies from the Amadeus database, with an average turnover of approximately EUR 3 million. The time span used was 10 years and there were in total 251 observation points available. The 2016-2018 OM range was between 2.8% and 12.1% with median at 5.4%. The result of the regression model showed a highly significant coefficient establishing a link with a change in sales as well as a highly significant coefficient establishing a link with the index. Overall, the model predicted that the OMs of comparables in the mining industry are impacted more by the economic index then by a change in sales. An application of this model to the tested party led to a decrease in the operating margin by almost 3.5% when there was a decrease in sales of 20% and a fall in the PMI index of 10%. In an alternative scenario, a more moderate decrease in sales and the PMI index of 10% and 5% correspondingly translates into a decrease of operating margin by 2.3%.

2. Work Stream "CO2 certificates" (written by Dr. Björn Heidecke)

2.1. Overview CO2 certificates

Emission trading had been implemented as an instrument to steer carbon dioxide output and reduce it accordingly as result of the Kyoto conference from 1997. The Kyoto protocol outlines: "The Conference of the Parties shall define the relevant principles, modalities, rules and guidelines, in particular for verification, reporting and accountability for emissions trading. […]. Any such trading shall be supplemental to domestic actions for the purpose of meeting quantified emission limitation and reduction commitments […]."[2] Emissions trading allows countries to sell excess capacity to countries that consume more carbon dioxide than they committed to in the Kyoto targets. A new supply and demand is created which forms the carbon market with the new commodity in the form of emission reductions.[3] The Kyoto protocol allows for two main mechanisms to reach the Kyoto targets. One mechanism is to buy emission certificates from other countries which reduced or resolved its emission. The second option is to support emission reduction projects in developing countries and gain emission certificates.[4] The first mechanism is called "joint implementation" the later "clean development mechanism". Accordingly, the United Nations defined the so-called emission reduction unit (ERU) which is obtained as consequence of trade between countries and the certified emission reduction (CER) which results in a credit of the Kyoto target as result of supporting developing countries. Those two terms are defined: The ERU is a emission reduction unit which „[… is a unit issued pursuant to the relevant provisions [Article] 13 [Kyoto Protocol] and is equal to one metric tonne of carbon dioxide equivalent, calculated using global warming potentials […]."[5] „A [CER is a] certified emission reduction […] is a unit issued pursuant to Article 12 [Kyoto Protocol], and is equal to one metric tonne of carbon dioxide equivalent, calculated using global warming potentials […]"[6] Projects which would like to offer certified emission reduction certifications need to get their emission reductions validated by Designated Operational Entities, i.e. third party validators and verifiers and registered by the CDM Executive Board.

Based on these ideas, further mechanisms had been developed around the globe. These mechanisms were explained in a recent report by the World Bank in greater detail. The World Bank identifies three categories of mechanisms for how credits are generated and the way the crediting mechanism is administered: International crediting mechanisms are those governed by international climate treaties such as the Kyoto protocol and are administered by international institutions. Examples are the Clean Development Mechanism and Joint Implementation as explained above. Independent crediting mechanisms are steered by private and independent third-party organizations such as NGOs. Examples are the Gold Standard and the Verified Carbon Standard. The third layer are regional, national and subnational crediting mechanisms governed by their respective jurisdictional legislature. Examples include the Australian Emissions Reduction Fund and the US State of California's Compliance Offset Program.[7]

Based on this theoretical background, **two main markets** had been developed: The mandatory or **compliance market** and the **voluntary market**. Within the mandatory market companies and governments are obliged to obtain certificates to offset their emissions to reach the Kyoto targets and fulfil legal requirements such as required under the EU-ETS (see below). Within the voluntary market the companies purchase certificates to voluntarily offset their emissions. They buy these certificates from entities or individuals potentially also in developing countries who are certified under a standard that they reduce carbon emission e.g., by plating of trees. The result of a voluntary emission reduction or often also named verified emission reduction (VER) is a voluntary carbon credit. In order to grant a VER the issuing entity needs to fulfil certain requirements, which also need to be audited. VERs are often used to claim a "carbon neutral" production. It is worth noting that a VER cannot be used by companies to comply with regulations

[2] United Nations (1998), KYOTO PROTOCOL TO THE UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE, Art. 17.

[3] UNFCCC, Emission Trading, https://unfccc.int/process/the-kyoto-protocol/mechanisms/emissions-trading.

[4] United Nations (1998), KYOTO PROTOCOL TO THE UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE, Art. 6 and 12.

[5] UNFCCC (2006), Report of the Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol on its first session, held at Montreal from 28 November to 10 December 2005, Annex Definitions.

[6] UNFCCC (2006), Report of the Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol on its first session, held at Montreal from 28 November to 10 December 2005, Annex Definitions.

[7] World Bank Group (2020), State and Trends of Carbon Pricing 2020, Sec. 3.3.

implemented to reach the Kyoto targets, while a CER, which forms part of the Kyoto system, can be used by entities wanting to voluntarily compensate for their emissions.

An important mechanism and part of the compliance market adopted by the **European Union is the EU Emission Trading System** ("EU-ETS"), which is a consequence of the Kyoto protocol. The 27 EU member-states together with Norway, Iceland and Liechtenstein implemented a carbon trading system, which was linked to the Swiss system in 2020. The UK left the system at the end of 2020. Under the EU-ETS, which is governed by an EU-Directive,[8] the governments issue carbon certificates. Each certificate allows for one tonne of carbon-dioxide emission. Multinationals within a defined set of industries need these certificates to emit carbon. The affected industries currently include energy, coal, metal, chemical industry and aviation. The guiding principle for the EU-ETS is Cap & Trade. The governments define a national cap of available certificates which results in trading in case of excess demand or supply of emission certificates for a multinational. Initially, the certificates were granted for free and have since been offered under auction, while simultaneously reducing the share of freely allocated certificates to 0 until 2030, with few exceptions. Over time, the number of newly issued certificates has declined. The most important markets are the ICE in Amsterdam / Netherlands, the EEX in Leipzig / Germany and the EXAA in Vienna / Austria. In case a multinational acquired ERUs or CERs (see above), it was possible until 2020 to reduce the required number of EU-ETS certificates or to sell the excess EU-ETS certificates. The following figure shows the price per certificate over the last several years considering the several phases of the ETS mechanism. In the first phase there was no trading, as the certificates had been granted free of charge. It shows a massive increase of the price lately, while the mechanism was less demanding for a rather long period.

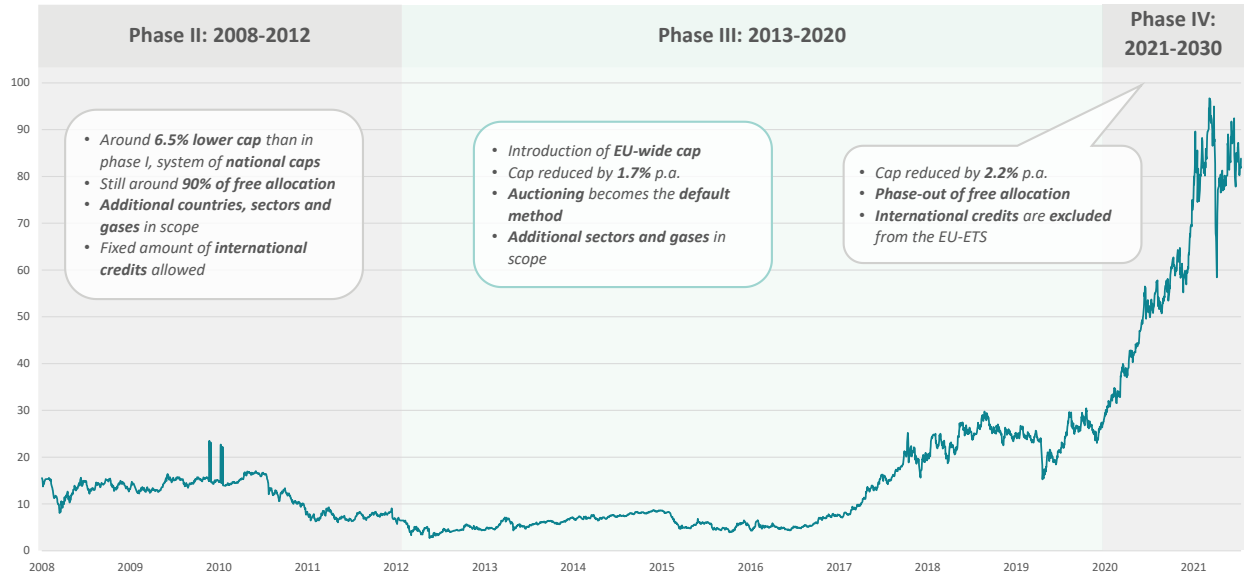

Figure 1: Developments of Carbon Prices in EUR per certificate from 2008 to 2021. Source: Own Illustration based on data from ARIVA and the European Commission (Directorate-General for Climate Action).

Under the Fit-for-55 initiative, the EU decided to further improve the EU-ETS trading system during Phase 4 (2021-2030), especially as in the past the incentives for multinationals to buy / sell the certificates was limited due to a rather low price. [9] Germany implemented a national emission trading system, the so-called nEHS, which exists for certain

[8] EU (2003), Directive 2003/87/EC of the European Parliament and of the Council of 13 October 2003 establishing a system for greenhouse gas emission allowance trading within the Union and amending Council Directive 96/61/EC (Text with EEA relevance).

[9] An exemplary adjustment is the exclusion of international credits (ERUs and CERs) from the EU-ETS. Because international credits are offered in accordance with less stringent international targets, their inclusion into the EU system contributed to decreasing prices of EU-ETS certificates. The new measures ensure alignment between the emissions cap set by the EU and the number of allocated/auctioned EU-ETS certificates.

industries next to the EU-ETS. The new system was implemented in October 2021 and targets the transportation and heating industries.

While the two Kyoto mechanisms provided around three-quarters of all credits issued to date, others are becoming more and more important. The mechanisms and the subsequent credits differ by development costs and the emission reduction potential. As such, it becomes a focal question for multinationals to define which certificates to buy. It remains to be seen how the EU-ETS system will evolve and how the other crediting systems will operate also in the light of the Paris conference which replaces the standards as defined under the Kyoto protocol. The results of the Paris conference will impact both the compliance and the voluntary market. Irrespective of the Paris agreement, it is expected that the voluntary market will become more relevant due to the desired claim for carbon neutral production. More players will enter the market. The so-called "Taskforce on Scaling Voluntary Carbon" was initiated prior to the world climate summit COP26 initiated by the UN. The aim is to enhance and further develop the market around voluntary emission trading. The Taskforce on Scaling Voluntary Carbon has in the meantime more than 450 members including business, NGOs and Think Tanks.

2.2. Relevant Functions

As outlined, both the compliance and voluntary markets are relatively new. As such, we observe that multinationals are about to start implementing strategies, systems and processes to cope with them. As per the request under the call for comments, we will outline typical functions within multinationals along the carbon trading value chain. As this is a rather new topic, it remains to be seen and monitored how this will evolve in the future. There is also a need to discuss which intercompany transactions result from carbon trading. Further, we understand that at this stage no input is requested on potential intercompany transactions and no assessment of routine and entrepreneurial functions is required, but rather a description of the different mechanisms as outlined under 2.1. above and potential functions within multinationals along the value chain, which is presented below. The following focusses mainly on the buyer of certificates and less on the issuer of certificates, e.g., an individual or organization that runs a project and is entitled to issue carbon certificates, less on the third party NGOs / private companies who develop a certificate standard and determine the requirements and less on the intermediaries between the seller / issuer of a certificate and the buyer, i.e. trading platforms or traders with certificates. Still, the entire value chain of the voluntary market can be described by the standard setter, the issuer which runs a project and is entitled to issue certificates under the standard, potential traders and trading platforms and the buyer who needs the certificate to compensate carbon emissions.

Strategy

Starting point for a multinational would be the strategic decision how to cope with emission trading and especially outside of the compliance market where there is more flexibility. They also need to factor in potential impacts of carbon trading on the brand value and consider their social responsibility. As carbon trading results in further costs, there is need for an analysis of which costs are acceptable from a business perspective, who bears the costs, i.e., if it is production or marketing costs, and how to charge the costs within a multinational. Additionally, multinationals need to strategically decide which VER should be purchased, i.e., from which intermediary, and which underlying project should be sponsored.

Legal Set-up

Both the issuer of a certificate – especially in the case of a VER – and the company which purchases the certificate need to fulfill the legal requirements. The issuer of a VER needs to be approved and audited to ensure the reduced carbon was in line with the legal requirements and has the right to grant and sell an emission certificate. The buyer of the certificate needs to understand what it is buying and which rights and claims it is entitled to. We observed examples where a company intended to buy VERs but it turned out that the VERs had not been validated. Hence, the company was not entitled to claim a carbon neutral production. Furthermore, in case of carbon neutral claim, it should be analyzed which requirements make this possible and how it may be used in marketing/advertising.

Emission Planning

As outlined, certain production activities require an offset with mandatory certificates e.g. under the EU-ETS. It needs to be assessed what amount of carbon dioxide is emitted in production and how many certificates are needed. Legal

requirements need to be monitored in the different countries against national and supranational, such as EU, requirements. Next to the mandatory part, it needs to be assessed how many further voluntary certificates need be obtained and at which price.

Trading

The trading of the "new commodity", i.e., the emission certificates, both in the voluntary market and on official exchange platforms such as the EEX, needs to be executed. That means that multinationals need individuals who are capable of these trades and are familiar with the trading platforms. In particular, the voluntary market is not well structured. These trading activities come with questions such as demand planning, timing and hedging. Furthermore, it needs to be considered whether the trading of certificates within multinationals is permissible. For instance, if a multinational has 5 manufacturing sites within Europe, is it possible to buy certificates centrally and share them between the entities and if so, at which price. It seems plausible that similar mechanisms are applicable as for intercompany loans when applying the internal CUP or cost of function approach. Once traded within multinational groups, how to account for the certificates in the balance sheets needs to be analyzed.

3. Work Stream "Industry / sector guidance for primary products" (written by Dr. Rainer Holst, Transfer Pricing Economist "Agriculture" at Deloitte)

3.1. Overview Value Chain

The following section focusses on the agricultural sector as part of the primary products industry. Value chains in the agricultural sector can be quite distinct from common industry value chains. One of the primary causes of this stems from the fact that agricultural production is in essence an exercise in the multiplication of plants or animals that is conducted in the natural environment, with value added along the way. In contrast, industrial production is normally characterized by the consumption of natural resources (raw materials) for the creation of products, often under conditions sheltered as far as possible from the natural environment.

The exposedness of agricultural production to all sorts of influences beyond its control (from the natural environment and other sources) highlights the importance of functioning value chains in the agricultural sector, not least to promote food security around the globe. Thus, the Food and Agricultural Organization of the United Nations ("FAO") concludes: "How value chain actors react to shocks and stresses is a critical aspect of resilience in agrifood systems […]."[10] From a transfer pricing perspective, the specifics of agricultural value chains and of agricultural production processes in general have a variety of implications, especially when trying to assess the behavior of those other (unrelated) actors in the value chain. In the following, a selected set of these implications shall be further elaborated with the intention to advance the application of standard transfer pricing methods and concepts to agribusiness. In this respect, the discussion will focus on an exemplary combined value chain for seed production and subsequent crop production (e.g. grain farming) to highlight the salient points. A stylized value chain is illustrated in the following figure starting with the laboratory, the basic seed and the further processing until the crop reaches the retail industry and the final consumer.

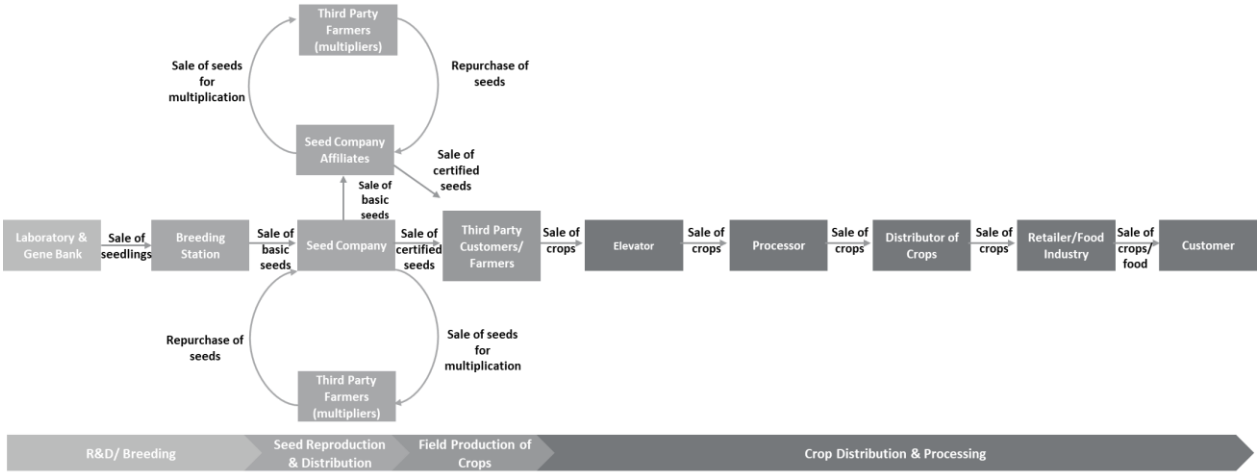

Figure 2: Stylized value chain agricultural sector

3.2. Practical problems and potential solutions

Against this background, some practical problems are explained and potential solutions are outlined.

Market level

It is one of the defining characteristics of crop production that the main input factor – seeds – is basically the same as the output factor (harvested crops). It is in this sense that the goal of the crop production process is a multiplication of the input, despite harvested crops, for various legal and technical reasons, rarely being used by farmers for seeding their fields in the next season.

[10] FAO. 2021. The State of Food and Agriculture 2021. Making agrifood systems more resilient to shocks and stresses. FAO, Rome. (https://doi.org/10.4060/cb4476en)

When determining arm's length transfer prices in an intercompany context, it is often a key challenge to identify suitably independent but otherwise comparable companies in the market which can be used for benchmarking purposes. The above represents an additional difficulty when conducting a benchmarking study for example for the seed industry. It might in fact be difficult to discern from the short business descriptions in the databases whether, e.g., a distributor sells seeds that are intended for crop production or whether the product sold is the crop itself that is being sold for use in the food industry and ultimately for consumption.

The margins that can be realized from sales in these different levels of the market can differ significantly. Thus, careful attention should be paid to selecting companies on the same market level as the tested party. Where this cannot be done unambiguously based on the short business descriptions in the database, a careful of review of company websites might help. Also, where companies with a portfolio of products have to be considered as comparables, the composition of that portfolio might allow a conclusion concerning the market level of the distributor. If, for example, fertilizer, pesticides or other input factors of agricultural production are part of the portfolio, this would point to a company that caters to the needs of farmers and that does not deal in harvested crops.

Volatility in arm's length testing

Being conducted in the natural environment, agricultural production (and in particular crop production) is affected by a host of external factors, not all of which are clearly identifiable or predictable. Prominent examples of such external factors are the weather (incl. extreme whether events) within a season and the effects of long-term changes in climate. Also, regional insect or fungal infestations could severely affect crop production. Further external factors, besides those from the natural environment, include e.g., changes in agricultural or environmental policies or shifts in global market conditions to name but a few.

These factors impact the success and profitability of seed and crop production and, hence, are again of relevance from a transfer pricing point of view. As with other cyclical or volatile industries, it appears difficult to judge the arm's length nature of transfer prices based on the results of only a single year of data on the side of the tested party or that of the comparables. Individual years could, for any number of the above reasons be statistical outliers, which should alone determine whether transfer prices were set in line with the arm's length principle. Hence, multi-year averages should be used. However, the question arises how many years of data should ideally be considered. Common practice in transfer pricing is to use three years of data where one is not sufficient, even though the OECD Transfer Pricing Guidelines 2022 (Para. 3.75)[11] avoids stating any prescriptive guidance as to the number of years to be included in a multi-year analysis when recommending this approach. In the case of crop production (or in many other parts of agriculture) using three years of data might not lead to the best results and it might in fact be more advisable to consider other (less established) time periods for multi-year analyses, in consideration of the specific situation/ environment in which the tested party operates. In particular, weather events and climate influences can easily lead to multiple bad seasons in a row. In such cases, a three-year period might not be able to average out the external shock. Longer periods could be more helpful.

The seed industry is particularly vulnerable to weather/ climate events due to its long-term planning horizon. The development (breeding) of a new seed variety and production of sufficient basic seeds to enter the production of certified seeds for eventual sale to customers takes years. Industry experience shows that for many seed varieties up to ten years can pass between the first investments and a potential start of the amortization for the breeder. Even the reproduction of basic seeds after breeding, which usually takes place in several repeated cycles, can take around 2-3 years. Hence, the commercial success depends on the cumulative effect of all external factors that affected the production process (and the business in general) over those years. This again strengthens the case for longer periods in multi-year analyses, i.e., more than three years.

[11] OECD. 2022. OECD Transfer Pricing Guidelines for Multinational Enterprises and Tax Administrations 2022. OECD Publishing, Paris. (https://doi.org/10.1787/0e655865-en)

Other approaches to compensate for the more extreme part of fluctuations in company results (that are beyond the company's control) could be to apply statistical smoothing techniques, such as backward moving averages or local linear regressions. This, however, also requires longer time series of financial data, most certainly more than three years.

Regional considerations

External factors do not affect the global agribusiness in a uniform way. Even across or within regions, the effects may be diverse. For transfer pricing purposes, established practice is to conduct regionalized benchmarking studies, e.g. by limiting the search to comparables from Europe, America or Asia-Pacific. Given the nature of many of the aforesaid external factors, it might be helpful to complement pan-continental benchmarking studies with more narrow analyses focusing on smaller regions, such as North/ South America, Eastern/ Western Europe, etc. Even national studies for only the country of residence of the tested party might in more extreme cases be appropriate.

This might allow for a closer match between the factors the tested party is exposed to in the time period being considered and those to which the comparables are exposed. Weather or climate influences for example might differ in their impact from region to region. Similarly, market conditions or political decisions might have a regional dimension as well.

However, it should always be kept in mind that an increasing granularity and regionalization in benchmarking studies tends to decrease the number of potential comparables. Thus, there is a trade-off between an increase in the contextual validity of benchmarking results, through a finer regionalization, and a loss of statistical validity, through a smaller number of comparables. To avoid this loss of statistical validity, it might be beneficial to review larger sets of potentially comparable companies when conducting benchmarking studies. This might be achieved through selection of additional (thematically similar) industry codes or a certain relaxation in other search criteria (such as revenue thresholds). Effectively, such an approach might help to find more comparable companies, even for regional sub-sets of benchmarking studies. Stringent manual reviews, however, of each potential comparable are still required, especially when relaxing automatic selection filters.

At least as corroborative analysis, it may also be helpful to separately analyze the financial performance of the tested party's direct competitors, even though those would mostly be rejected in a benchmarking search process due to a lack of independence from other companies. Still, as a sanity check and to determine general trends in the industry during the years being considered, such an analysis should be considered. Determination of industry trends in this fashion may even be helpful for fine-tuning the statistical analyses.

3.3. Summary

The above discussion has shown that agricultural value chains have specific characteristics which themselves have implications for economic analyses (i.e. arm's length analyses) and especially benchmarking studies in transfer pricing.

Given that agricultural production is essentially an exercise in the multiplication of inputs (especially where seeds are concerned), it is highly important observe the market level when conducting benchmarking studies, as production and distribution take place on different stages of the value chain.

In addition, volatility due to external factors influences / characterizes agricultural production. The validity of the economic analyses might be improved through consideration of multiple-year averages over a longer period or application of statistical smoothing techniques. Further improvements in economic analyses in the agricultural sector may be achieved through analyzing regional sub-sets. Even separate analyses of the tested party's competitors might be helpful.

As initially outlined, only a selected set of topics has been addressed here. There are further specifics of agricultural production that deserve attention to advance the application of standard transfer pricing methods and concepts to the agribusiness, such as intellectual property questions in connection with genetic material and the consideration of

state aid and legislative boundaries impacting the margins of agricultural enterprises, which are not addressed so far, but should be considered within further work.

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We hope that our considerations are helpful for the discussions within the three work streams. We would be glad to present our ideas during a personal meeting or within a conference call. Likewise, we are fully committed to further support the ongoing work of the transfer pricing subcommittee.

We remain at your disposal for questions you may have.

Yours sincerely,

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