E.CA COMPACT

Is self-supply in the relevant market?

Vertically integrated firms supply upstream goods to their own downstream units (self-supply). At the same time non-integrated upstream firms may supply the upstream good to independent down-stream firms (third party sales). Should only third party sales constitute the market when calculating market share thresholds in State aid control, or should self-supply also be considered? This note shows that the presence of self-supply may significantly reduce the downward pressure on prices that can result from a State aid-induced output expansion. If so, self-supply should be considered in market definition.

As legal consequences are attached to market shares in competition law, market definition can be of critical importance. The Regional Aid Guidelines, for example, trigger a "detailed verification" if "*the production capacity created by the project is more than 5% of the market measured using apparent consumption data for the product concerned*"[1] (henceforth "the threshold test"). The outcome of such a threshold test may depend on whether the relevant market comprises deliveries of products by a vertically integrated firm to its downstream units or subsidiaries ("self-supply") in addition to the supply to third parties.[2]

The purpose of threshold tests

Threshold tests serve to focus the resources of the competition authority on relevant cases (with potentially large harmful effects). To this end, market shares must contain meaningful information on how State aid could

potentially harm competitors and consumers. One principal concern is that State aid squeezes efficient competitors out of the market. The market share of a State aid induced capacity increase in a well-defined market serves as an indicator of the expected effects on prices. An increase in production capacity that is small relative to market size is likely to only have a small impact on prices. Therefore it is important that all market volumes that have a significant influence on price formation after a capacity increase are taken into account when defining the relevant market.

One may argue that self-supply by vertically integrated producers does not affect prices for third party sales as these volumes do not appear on the third party sales market. However, such an argument ignores the relatively larger increase in demand for third party sales for a given price drop in the presence of a vertically integrated firm. A capacity increase on the third party sales market reduces input prices for vertically separate downstream firms, but not for vertically integrated firms. If the former can steal business from the latter, demand for third party sales of the input good is higher and the impact of State aid is lower, compared to a situation without a vertically integrated firm.

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[1] Guidelines on national regional aid for 2007-2013, Paragraph 68, OJ (2006/C 54/08).

[2] This question was, inter alia, the topic of a dispute between the Commission and the Smurfit Kappa Group (SKG) before the CFI. In its 2007 decision (Case N 582/2007) the Commission cleared State aid by Germany to Progroup AG for a capacity expansion for the production of container boards (CCM), referring inter alia to Paragraph 68 (b) RAG quoted above. The Commission found that on the basis of two alternative market definitions for CCM the State aid supported capacity increase by Progroup was below the 5% threshold and thus no detailed verification was necessary. In its appeal SKG argued, inter alia, that only CCM deliveries to third parties should be considered for the threshold test as a vertically integrated producer would not affect the market place. E.CA advised Progroup AG in the matter.

The impact of vertically integrated firms[3]

To see this, consider Figure 1 below, which depicts a world without vertical integration with three upstream firms U0, U1 and U2 and three downstream firms D0, D1 and D2. The rectangle denoted "Expansion" illustrates a State aid-induced capacity expansion by the non-integrated upstream firm "U2" (1).

Figure 1: No Self-Supply
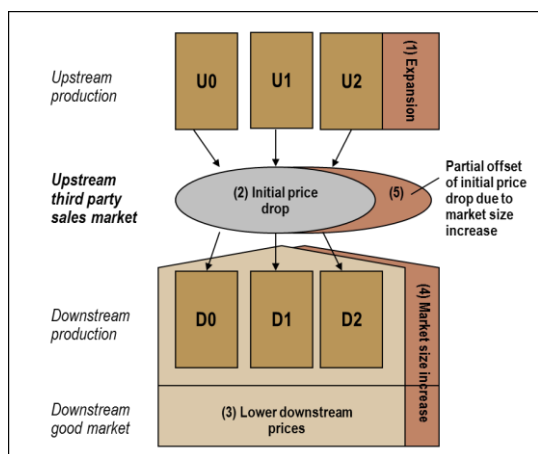
Source: E.CA Economics.

The capacity expansion leads to a positive supply shock, which in turn causes an **initial price drop for the up-stream good** (2).

Lower prices on the upstream good market mean lower input prices for all downstream producers. Under any market structure lower input prices lead to **lower out-put prices** in equilibrium (3).

Lower downstream prices will trigger **higher demand** (illustrated by the area denoted "Market size increase") (4).

In turn, this will induce the downstream producers to buy larger quantities of the upstream good such that the **initial price drop** due to the capacity expansion of U2 **will be partially offset by higher demand** for the up-stream good from all downstream producers (5).

Now consider a situation in which firms U0 and D0 have integrated vertically to firm 0 depicted in Figure 2. Again

[3] The following arguments are a simplified presentation of the analysis in: Roman Inderst and Tommaso M. Valletti: "Market analysis in the presence of indirect constraints and captive sales", Journal of Competition Law and Economics 2007 3(2):203-231.

there is a capacity increase by the non-integrated upstream producer U2 (1).

Figure 2: Third party sales and Self-Supply
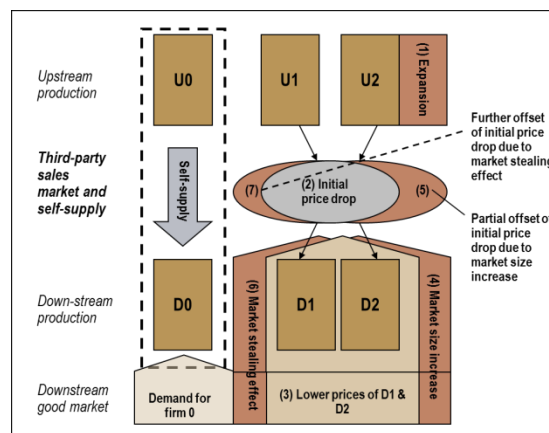
Source: E.CA Economics.

This will lead to an initial price drop on the third party sales market (2). As the third party sales market is smaller now due to the vertical integration of firm A, **the initial upstream price drop will likely be larger** for a given magnitude of capacity expansion (relative to the price drop in a world without a vertically integrated firm).

Lower upstream prices on the third party sales market mean lower input costs for the downstream firms D1 and D2, which purchase on the third party sales market. In turn, the decrease in the downstream prices of firms D1 and D2 may also be more pronounced than in a situation without vertical integration (3).

This may also cause a **larger absolute increase in downstream demand** (the area denoted "Market size increase") (4).

Note that firm 0, due to full vertical integration, does not benefit from lower upstream prices on the third party upstream sales market and thus cannot profitably decrease downstream prices.[4] Therefore increased demand is mostly served by non-integrated firms D1 and D2, which can offer the lower prices. The (relatively larger absolute) increase in downstream demand translates into a (relatively larger absolute) increase in upstream demand by non-integrated firms D1 and D2 on the third party sales market. Therefore, while the initial price drop on the third party upstream sales market is larger in the presence of vertical integration, so is the offsetting force in the form of higher

[4] It is assumed that the vertically integrated firm cannot buy or sell the up-stream good on the third party sales market, e.g. due to close technical integration.

absolute demand for the upstream good on the third party sales market (relative to a smaller initial upstream third party market size) (5). In equilibrium the upstream price level within the third party sales market may well be comparable to the level in the world without vertical integration.

However, non-integrated downstream firms D1 and D2 not only benefit from additional demand due to in-creased downstream market size. They also benefit from an **improved competitive position relative to the vertically integrated firm 0**, which does not benefit from a decrease in input costs. This allows them to steal market share from 0. This translates into additional demand by D1 and D2 for the upstream good on the third party sales market (illustrated by the area labelled "Market stealing effect" in Figure 2) (6).

Therefore, the **offsetting effect of the price drop may even be stronger than it would be in a world without a vertically integrated firm** (7). This means that after a capacity expansion of a given magnitude by a non-integrated upstream producer the price level on the third party upstream sales market may actually be higher in the presence of a vertically integrated firm than it would have been if only non-integrated firms participated in the market. Therefore the price drop on the third party sales market due to a State aid-induced capacity increase may be less severe in the presence of vertically integrated firms.[5]

Conclusions for threshold tests

Without vertically integrated firms, the market share of a State aid induced capacity increase is a reasonable indicator of the expected gravity of the price drop on the product market. With vertically integrated firms, self-supply has an important effect on the price equilibrium in third party sales markets. Therefore, taking only third party sales into account when calculating market size, may grossly overestimate the implied severity of the price drop due to a capacity increase by a vertically separated upstream producer. Likewise, it ignores (and thereby underestimates) the price drop on the third party sales market due to an upstream capacity increase by a vertically integrated firm. Therefore, the natural starting point for calculating market size in the threshold test is to include self-supply.

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[5] An analogous argument holds for an upstream capacity expansion of a vertically integrated firm. As vertical integration increases the elasticity of demand on the third party upstream sales market, demand for the upstream good on the third party sales market drops by relatively more and prices can be lower than for the same upstream capacity increase in a world without a vertically integrated firm.