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**From cartels to futures. The aluminium industry, the London Metal Exchange and European competition policies, 1960s-1980s.**

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## From cartels to futures.

The aluminium industry, the London Metal Exchange and European competition policies, 1960s-1980s.\*

### Abstract:

In 1978, the London Metal Exchange started a futures trade for aluminium. Before then, the global aluminium trade was regulated by a producers' list price, which was settled through cartel networks and served as price referral for the market price. Many observers agree that the start of the futures was a turning point for the aluminium industry because it reshaped global markets and the strategies of the main actors into the industry. Despite this recognition, little attention has been paid to the factors behind this change. This article shows that this outcome was helped by an antitrust action of the European Commission. Discussing the weight that the European Commission held in this change, this research brings new evidences about the nexus between competition policies and the governance of global market for commodities. One major conclusion is that the European antitrust contributed in making the producers' list prices unworkable, assisting the emergence a new pricing system.

Keywords: commodity trade, international cartels, competition policies, futures, produce exchanges, metal traders

In the October 1978, the London Metal Exchange (hereafter LME) launched a futures contract for aluminium. This fact surprised the non-ferrous market analysts for two reasons. First, aluminium was never traded through a futures exchange because its pricing system, historically based on a producers' list price, avoided in the previous decades harsh fluctuations of prices, making useless the adoption of futures – i.e. contracts about forward transactions for mitigating the risk linked to price fluctuations. Actually, the LME and other commodity exchanges, both in Europe and in the US, failed in starting such a trade in the previous decades, while aluminium producers openly boycotted this initiative, demonstrating a strong preference for their historical list prices.<sup>1</sup> Second, the launch of futures

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3 contracts was announced concomitantly with the start of an antitrust law suit of the European  
4 Commission. A few days before the start of LME's futures, the antitrust division of the European  
5 Commission (the DG IV) formally accused the European producers and their trade association, the  
6 European Primary Aluminium Association, of collusive behaviours.<sup>2</sup> According to the sentence, which  
7 the European Commission formulated some years later in 1984, the protracted boycott of the LME  
8 was considered a serious evidence of anti-competitive behaviours. As a consequence, the sentence  
9 suggested that the adoption of a futures trade was more aligned with a competitive market, paving the  
10 way to the success of LME's aluminium trade.<sup>3</sup>

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19 The transition from a list price system to futures is considered a major turn in the history of  
20 aluminium. This change is often explained as the outcome of mere economic forces, such as the  
21 emergence of new strategic groups of producers or the natural effect of the full maturation of this  
22 industry.<sup>4</sup> Also the traders who have taken part to the introduction of aluminium at the LME never  
23 clarified if this transition was helped – and how – by the European anti-trust authorities.<sup>5</sup> This article  
24 attempts to discuss the weight that the European anti-trust had played in the establishment of futures  
25 contracts in such as an important commodity as aluminium. It argues that the European antitrust  
26 authorities and the LME not only found common goals in establishing a futures contract for  
27 aluminium, but also cooperated in changing the pricing policies in this industry. While looking at  
28 cooperation between the European antitrust authorities and the LME, this article contributes to three  
29 main areas of research: first, the dynamics of international cartelisation and subsequent decartelisation;  
30 second the connections between law and big business, and the history of international commodity  
31 trade, with particular reference to the role of the commodity exchanges in their governance. In relation  
32 to this point, it deals with the way in which global markets are reshaped by setting up explicit and tacit  
33 rules and institutions.<sup>6</sup>

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First established after the invention of aluminium electrolysis in 1886 (the Hall-Hérout process), this industry grew as a global business. At the end of the nineteenth century aluminium was still a young and unknown metal, but it progressively became a key industrial material during the twentieth century. From 1900 to the 1970, the demand for aluminium grew by about 10% per year, while its global output soared from about 5,000 tons in 1900 to about 15 million tons in 1979. After

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3 the World War II, aluminium output progressively overtook that of other non-ferrous metals, such as  
4 tin, zinc, lead and copper, becoming the first non-ferrous metal in terms of demand and output;  
5 nowadays, it is even challenging the position of iron and steel. The applications of aluminium are very  
6 broad, ranging from drink cans to airplanes and from low to high technology applications.<sup>7</sup> There is no  
7 single explanation behind the success of aluminium: this is the combination of intense research and  
8 development, vertical integration and ad hoc commercial policies that, differently to other non-ferrous  
9 metals, relied on list price instead of futures. Specific events, such as the two world wars stimulated  
10 important applications and end-uses and, as a consequence, innovation and demand.<sup>8</sup> The historical  
11 majors firms, such for instance ALCOA, Pechiney and Alusuisse, moreover, succeeded in carrying out  
12 upward and downward integration, which were crucial both to the creation and expansion of new  
13 outlets, and, more importantly, to a quick transition of the aluminium firms from a war to peace  
14 economy, a development which could be taken for granted soon after the war.<sup>9</sup>

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16 With regard to the commercial policy, producers adopted a fairly stable list price in the early  
17 stage of the history of this metal to make aluminium compete against other non-ferrous metals. Price  
18 stability represented one features in the history of this trade. Actually, a common and stable price list  
19 policy, which was settled through cartels and similar co-operative arrangements, remained in place  
20 until the start of aluminium futures in the late 1970s.<sup>10</sup> The price policy of aluminium producers was  
21 an important factor in the success of this metal and in its spectacular growth. For instance, users were  
22 in position to establish reliable figures when adopting aluminium as substitute of other metals, while  
23 producers took advantage from stable returns that were used to invest in new outputs. Against this  
24 background, the reasons as to why this industry opted for another pricing system, i.e. the futures trade,  
25 are of paramount importance. After having discussed the methodological issues linked to the transition  
26 from a list price system to futures trade in the part 1, the article will describe the framework of  
27 aluminium cartelisation in the post-World War II era in the part 2 in order to explain how producers  
28 were able to continue their price policy. This implies that producers adopted a specific political and  
29 legal strategy, analysed in the part 3, which was used to cover them from the anti-trust concerns. The  
30 part 4 will focus on the EU Commission's anti-trust suit, which drove both producers' cartel network  
31 and their pricing policy to an end.

### 1. From cartels to futures. A state of the art about the aluminium industry.

While the history of aluminium cartels is already known by the scholarly studies, it is less clear how this industry is linked to the futures trading and, in particular, how this metal was introduced into the trading of the LME. Aluminium industry was often considered a shining example of international cartelisation. In the first studies about international cartels, the aluminium industry was described as one of the most cartelised business on the global level.<sup>11</sup> The specific economic and technological features of this industry, notably its huge capital outlays, strong industrial concentration, and standardisation, were often used to explain the cartel behaviour of aluminium firms.<sup>12</sup> The literature focused mostly on the period before 1945, when a series of official cartels with a virtually global reach were created.<sup>13</sup> However, the aluminium cartel was re-activated after the World War II, confirming the researches of Harm Schröter and Jeffrey Fear, which suggested that cartelisation continued after 1945.<sup>14</sup> Moreover, the case of the aluminium industry confirms also that cartelisation was not only a feature of the European economy, having a true global reach.<sup>15</sup> Stuckey and Holloway first explored cartelisation in aluminium industry after the World War II, and they inferred that it took other forms of collaboration, such as joint-ventures and trade associations, but they could not, for various reasons, back up their argument with archival and other primary research material.<sup>16</sup> Recent studies provided detailed information about cartelisation in the aluminium industry after the Second World War, suggesting that the kernel of the industrial cooperation was the adoption of the same pricing system world-wide.<sup>17</sup>

The fact that a cartel survived after the war is important for a number of reasons, not least because it provides some insight into the debate about cartel stability and cartel success initiated by Stigler in the late 1960s and continued more recently by Levenstein and Suslow.<sup>18</sup> The ability to put in place governance systems aimed at the control or definition of global prices, i.e. cartel or anti-competitive arrangements, remained central in this industry after 1945, which attributes the success of cartels to their ability to adapt to given institutional conditions and exerts leverage on a certain degree of commitment.<sup>19</sup> From this standpoint, the introduction of aluminium at the LME appears as a deep historical rupture. Referring to the French national case, Hachez-Leroy claimed that although 'still

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3 unexplored,' the introduction of aluminium in the LME remains 'central to understand the evolution of  
4 the aluminium industry since 1979.'<sup>20</sup> Other studies already proposed the introduction of aluminium at  
5 the LME as the end of this industry's cartelisation.<sup>21</sup> Company histories in addition showed that in the  
6 1980s some aluminium producers, such as ALCOA or Alusuisse, began to use the LME on the ground  
7 that it was part of a broader transformation which saw those firms to emphasise a more financially-  
8 oriented.<sup>22</sup> Studies about other aluminium producers, notably Pechiney and ALCAN, also confirmed  
9 the transformation during the 1970s of their financial strategies that were, in its turn, more in line  
10 with the LME.<sup>23</sup> However, these elements do not provide a complete explanation for the adoption of  
11 LME's devices. It is still unclear how the LME won the resilience of the historical producers to futures  
12 trading.

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These points seem legitimate research questions because, in spite of the role of the LME as price settler for aluminium market, it appeared that price manipulations continued in more recent times, for instance during 1994, as reported by Stiglitz, and also in 2013, as reported by the trader press.<sup>24</sup> According to Slade, a scholar who inspected in detail both pricing approaches for non-ferrous metals, prices 'determined on exchanges are not synonymous with competitive prices' and aluminium at LME does not make exception.<sup>25</sup> From the standpoint of the economic theory, the two pricing options analysed for the history of aluminium industry, i.e. producers' list price and commodity exchanges' pricing, are idiosyncratic: the one excludes the other. According to the pioneer studies about futures trading of Goss, some conditions are required to set a successful futures trade, such as a relevant variation of prices, the presence in the market of economic agents with commitments (traders for instance), high standardisation, the possibility to store the commodities traded, and, finally, demand for risk hedging facilities.<sup>26</sup> Other researchers also tried to establish a comprehensive framework to analyse futures markets feasibility, arguing that they provide facilitations to stockholding, to hedging, to collect and disseminate information, and to perform a forward pricing function.<sup>27</sup>

Nevertheless, it is hard to define which is the best option for an industry, even though we can assume that exchange prices are more volatile than producers' list prices. Exchanges' pricing has both positive and negative aspects. On the one hand, fluctuations in prices can create concerns to producers,

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2 especially to the ones operating in heavy industries that make plans about production and investments.  
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4 Consumers can share similar concerns, especially when they need to make costs foresights. On the  
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6 other hand, exchanges could provide hedging facilities to cover both producers and consumers from  
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8 the risk of price fluctuation. They could also provide facilities for handling inventory excess; their  
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10 services could be particularly valuable in the case of an industry affected either by chronic  
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12 overproduction or by technical rigidities. Moreover, while producers' list prices could be considered  
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14 not fully transparent for consumers, exchanges provide in many cases more. When a commodity is  
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16 traded through exchanges, this also reduces the need to make foresights, because the price can serve as  
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18 a barometer to illustrate the supply/demand situation – thus providing elements to a producer to decide  
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20 about production and investments. In an industry with high concentration, firms are more often driven  
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22 to opt for a list price, varying in alternative output, inventories or both and keeping prices stable.  
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24 Generally, in this case the industry leader's list price also works as barometer, which other producers  
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26 follows in their quotations.<sup>28</sup>  
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29       Until the late 1980s, the concentration of the aluminium industry made it fits with producers'  
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31 list price, while its rigidities and periodical oversupplies made it reasonable to opt for futures trading.  
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33 Economists have also studied whether the aluminium trade at LME has been efficient or not since the  
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35 late 1980s, analysing either the consistency between LME prices and real market prices or their  
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37 effectiveness in forecasting.<sup>29</sup> However, these studies have analysed neither the efficiency of LME  
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39 prices at the launch of futures contracts, nor the working of former pricing system. Thus, we do not  
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41 know if LME was more efficient of the producers' list price when futures trade was started. According  
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43 to the general theory of industrial pricing, some factors can change pricing from list price to futures  
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45 trade, such as an increase in number of suppliers, a fall in vertical integration of producers, a  
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47 geographical increase of outlets and an increase of product standardisation. In particular, the arrival of  
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49 new suppliers can be detrimental for the effectiveness of producers' list price because this entry is  
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51 cause of asymmetries of information between producers and consumers. The entry of new players in  
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53 the game of pricing, such as brokers and speculators, is the main difference between a list price  
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55 situation and the context of an institutional market (such as an exchange): their role in providing  
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3 information alternative to the producers is often considered central to determine a price that the market  
4 can adopt as basis for the transactions.<sup>30</sup>  
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6 Official reports made in the late 1970s and during the 1980s, i.e. when aluminium was  
7 modifying its pricing policy, however, seem not confirm that these factors were clearly changing.  
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9 While global output was still concentrated in the hands of the six aluminium majors (ALCOA,  
10 ALCAN, Reynolds, Kaiser, Pechiney and Alusuisse), the level of the vertical integration of the  
11 industry was about the 80-85% (thus only the 15-20% of the metal produced was sold as an ingot in  
12 the market). Moreover, no relevant new entrant was yet come to the fore.<sup>31</sup> In the mid-1990, the  
13 picture was completely changed, as a result of the decline of the 'big six' market power and the  
14 emergence of new strategic groups with lower vertical integration that enlarged the market for ingot.<sup>32</sup>  
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16 Discussing the historical change of aluminium trade at the LME, Chalmin rightly pointed out that this  
17 metal would unlikely be back to list prices in the future, describing the start of futures as a great path  
18 dependency for the governance of this industry.<sup>33</sup> Nappi explained that the change in the pricing  
19 system was the outcome of the emergence of new strategic groups of firms, which were more aligned  
20 with a governance 'by the prices,' meaning that the fluctuation of prices influences the global output  
21 (when price rises, producers increases outputs and *viceversa*).<sup>34</sup> However, this turn was not taken for  
22 granted when the LME contracts were launched. In this article, it is argued that the efficiency of list  
23 prices in the aluminium market dropped after the launch of the LME contracts and not before. The  
24 economic approaches to futures can only partially explain this transition of pricing. Both the classic  
25 functions of a futures trade and its feasibility became evident after 1978 and not before.  
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42 This study also offers opportunities to discuss the links between business and antitrust. In  
43 particular, we wonder if antitrust helped the launch of futures trading. Surprisingly, even if aluminium  
44 is often considered a good case study to understand certain aspects of the global antitrust regulation,  
45 such as the meaning of oligopolistic competition or the extra-territorial reach of such policies, scholars  
46 have paid only little attention to the European competition policies. The evolution of this industry was  
47 very often linked only to the US antitrust policies, because of the weight that it had on ALCOA, the  
48 American giant firm. Actually, law and business historians very often studied the action against this  
49 firm that the US antitrust authorities started in 1937 and ended in 1945, considering it as a turning  
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3 point for the history of antitrust approaches.<sup>35</sup> This case marked the end of one of long lasting  
4 monopoly of ALCOA in the US aluminium industry after the World War II and imposed a series of  
5 remedies that brought new producers to the North American market, such as Reynolds Metals Co. and  
6 Kaiser Aluminum, and that made ALCAN an autonomous company from ALCOA.<sup>36</sup> This case  
7 represented a main change in the US antitrust attitude toward big business, opening a season in which  
8 monopoly *per se* was considered as contrary to antitrust law. In this respect, the ability of the US  
9 authorities in shaping the industrial structure of the main producing country during the 1950s is often  
10 used to confirm the idea of the US regulation as a global actor from the standpoint of antitrust  
11 policies.<sup>37</sup> Moreover, this US antitrust case had also a direct impact over the international cartelisation  
12 because, while the decision on ALCOA was still pending, the US authorities were able to induce  
13 ALCAN to ask for the termination of the cartel, thus providing partial solution to the complaints  
14 against the American company.<sup>38</sup>

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Even if the US antitrust case caused a global change, it did not unravel the anticompetitive  
behaviours of such as oligopolistic industry. Since the 1950s, the aluminium firms have continued to  
collude, and scholars have already debated about their pricing behaviour, trying to understand how  
firms were able to impose a global price to this industry, in this case the price that the Canadian firm  
Alcan practiced in its international sales ('Alcan export price'). Actually, this price served as list price  
by the aluminium industry as a whole and it was considered the general barometer in aluminium  
market, being the reference for all quotations till the eve of the 1980s.<sup>39</sup> In such as an oligopolistic  
markets as the aluminium one, it is not uncommon that list prices are used as barometer for both long-  
term contracts and spot trades.<sup>40</sup> But, in the specific case of aluminium, this attitude toward price was  
not perceived as a fraud against the public interest, because it was encouraged by governmental  
policies, such as the US administration, which surveyed the prices in the national market both to  
control ALCOA's attitude toward new entrants of this industry and to monitor the military  
expenditures linked to the Cold War.<sup>41</sup> It is also to be said that, while many intergovernmental  
commodity agreements were formed after 1945 in order to stabilise the prices of several commodities,  
the network of aluminium producers accomplished this task, without any need to form a public  
authority for the international governance of this metal.<sup>42</sup> Other researches about single national

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3 markets during the post-war period also showed that governmental controls and tariffs played a crucial  
4 role in providing order in the international aluminium trade and in defending national producers from  
5 an international competition that would be too harsh.<sup>43</sup> From this standpoint, it is also important to  
6 consider that the global market for commodities – especially the industrial ones – was not fully  
7 developed before the trade liberalisations that followed the European integration and GATT's rounds  
8 during the 1960s and the 1970s.<sup>44</sup> For its military and strategic importance, aluminium was often  
9 protected from excessive trade liberalisation during the 1960s.<sup>45</sup> This is an important factor for this  
10 research: a terminal market like the LME could work only with a certain degree of market openness.  
11 The governments' approaches to the LME appear important to understand its success; how the  
12 political level reacted to the proposal of a futures trade for aluminium could reveal causes for its  
13 success or demise.

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16 In fact, the vision of national and international authorities toward a speculative global market  
17 has still to be explained. Aluminium is not the only commodity that was affected by a transition from  
18 list prices to futures. In particular, coffee, tin and nickel have known similar paths. However, in none  
19 of these cases antitrust authorities played any role. The main reason of change in these other  
20 commodities was the incapacity of the list price to serve as referral for market quotations.<sup>46</sup> The case  
21 of aluminium is different: the 'Alugate,' as the producers nicknamed the antitrust procedure that  
22 interested the European aluminium industry for about a decade, is a clear sample of a change induced  
23 by the institutional action of an international authority, the European Commission. The 'Alugate'  
24 lasted about as long as the ALCOA case of the 1930s-40s: the first inspections of the DG IV started in  
25 1975 and the legal initiative ended in December 1984 with the publication of the accusations of all the  
26 European producers, which also included US firms that had invested in Europe since the 1960s.  
27 According to the existent literature about EU antitrust, this global impact of a European action seems  
28 rather unique and it anticipated more famous cases, such as the one against Microsoft and Coca-  
29 Cola.<sup>47</sup> In particular, according to Warlouzet, the Commission of the period analysed by this study was  
30 particularly weak to act effectiveness anti-cartel policies, while Ramirez-Perez described the tolerance  
31 of Commission toward other agreements contemporary to the aluminium case, such as in the  
32 automotive industry.<sup>48</sup> In spite of its seminal and global feature, this case has not yet enticed the

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3 curiosity of historians of the DG IV.<sup>49</sup> It seems on the contrary that it has to be analysed in detail,  
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5 wondering which were the goals of the European authorities behind this change.  
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7 Futures trade and produce markets have drawn only little attention among business and  
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9 economic historians, in spite of their central importance for the history of global trade.<sup>50</sup> In many  
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11 cases, studies only deal with the problem of their regulation and – or manipulation, with reference to  
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13 the US context of agro-industrial commodities, such as cotton or wheat.<sup>51</sup> Since the second half of the  
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15 nineteenth century, when the principal produce exchanges were established, there has not been a  
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17 common idea about their utility and desirability as tools for market governance.<sup>52</sup> About the specific  
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19 case of the LME, only poor information is available in the principal scholarly publications about UK  
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21 commodity markets, merchants and traders; often our knowledge is focused only on the beginnings  
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23 and initial development of this exchange.<sup>53</sup> The only exception to this state of the art is the seminal  
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25 publication of Rees, which dedicated about 40 pages to the LME from its creation to the 1970s, but  
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27 without taking aluminium in consideration.<sup>54</sup> The analysis of historical works about London financial  
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29 centre, such as the ones by Cassis and Michie, is no more useful to understand the interconnection  
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31 between the LME and City's haute finance, even though London metal traders are a great expression  
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33 of the financial capitalism with many ramifications to the British haute finance.<sup>55</sup>  
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35 The LME was created in 1877 to cope with the risks and prices fluctuations of tin, copper and  
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37 lead markets, when the ongoing globalisation of the market for these metals increased the imports in  
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39 the UK replacing local production as a result of the country depletion of mineral resources. For many  
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41 decades, these three metals represented the core business of the LME. In these metals, a producer  
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43 exchange is essential to hedge from the risk of harsh price fluctuations, which characterised their  
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45 history on the long run, and which were quintessential to the mining nature of these industries and to  
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47 the distance between production sites and terminal markets. In this context, the LME was able to  
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49 provide futures and forward prices, which became the basis for the spot trading. Even though  
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51 cartelisation is not excluded in the presence of a produce market such as the LME and is very common  
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53 to non-ferrous metals, cartels in these industries either failed to impose a 'list price' or had to cope  
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55 with the LME price, manipulating it.<sup>56</sup> When aluminium was 'invented' at the end of the nineteenth  
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57 century, the history of this metal and of LME took two parallel ways: aluminium producers, through  
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3 cartels and other cooperative strategies were able to impose a list price, which firms chose to keep as  
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5 stable as possible on the long run, while LME for long time disregarded this metal considering it not  
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7 interesting for a futures trade.<sup>57</sup> Neither the implication in aluminium trade of German metal traders  
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9 with ramifications into the pre-1914 London terminal markets, nor the direct involvement of a former  
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11 LME's president – Sir Cecill Budd – in an Anglo-Norwegian company formed in 1906, were  
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13 sufficient to challenge the producers vision at the very birth of this industry.<sup>58</sup> Yet, things started to  
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15 change during the 1960s and the 1970s. As we will see, many factors of uncertainty attempted the  
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17 ability of producers in controlling their industry through a list price.<sup>59</sup>

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19 In dealing with these three main topics, cartelisation and decartelisation, nexus between law  
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21 and business, and futures markets, this research relies on material found in a certain number of  
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23 archives. These are, first, the producers' archives, in particular the ones of Pechiney, ALCOA,  
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25 Alusuisse, British Aluminium Company (hereafter BACO) and Reynolds, which are crucial to  
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27 understand the nature of the producers' networks (cartel agreements, trade associations and other  
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29 forms of market governance) and their approach to the LME. In the case of Pechiney, also the  
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31 complete records of the 'Alugate,' which included also the correspondence with EEC commissioners  
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33 and the other producers, was disclosed to this research. Documents of the traders that were involved in  
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35 the settlement of aluminium future markets were found in the historical collection of the Institute for  
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37 the History of Aluminium, in Paris. In addition, this work has analysed the documents of the European  
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39 Primary Aluminium Association (hereafter EPAA) – the European association of aluminium  
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41 producers, which were important especially in relation to the 'Alugate.' These documents were seen in  
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43 association with those of the European Commission and of the Bank of England, which helped LME  
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45 to shape the aluminium futures contract during the 1970s. This research also makes use of material  
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47 kept at the National Archives, as far as the British authorities entered in the nexus of links between  
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49 aluminium producers and the LME over the decades analysed by this research. Those archives have  
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51 finally been complemented by the OECD documents, where a study group on aluminium worked  
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53 during the 1970s as last resort attempt to avoid alternative pricing system to the producers' one.  
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## 56 **2. The economics and politics of aluminium market governance during the 1960s.**

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3 After the World War II, the leading European actors (Alusuisse, BACO, Pechiney, Montecatini and  
4 Vereinigte Aluminium Werke (hereafter VAW)) were the founders of a new informal way of  
5 industrial cooperation, the Club, which was created in 1953. Afterward, it was extended to other  
6 companies from Austria, Norway, Spain, and Sweden during late 1950s and beginnings of 1960s. This  
7 larger ring of companies was consolidated during the 1960s and in 1969 its members created the  
8 European trade association of this industry, EPAA. Until the beginnings of the 1960s, the US  
9 producers were not very active outside the US, because the relative little openness of the international  
10 markets and, above all, the growing domestic military demand that made the American producers  
11 focusing on the US market. Only occasional meetings were organised to share information during the  
12 1950s between Europe and US. A notable exception to this sketch is Reynolds' takeover of BACO in  
13 1958.<sup>60</sup> Differently to the US firms, the Canadian ALCAN was a global firm already in the 1950s,  
14 with active sales both in the US and in the European markets, in particular the British one.<sup>61</sup> ALCAN  
15 had very frequent meetings with the European firms since the early 1950s; it became a stable member  
16 of the Club in 1966, attending every meeting with its European subsidiaries. In 1972, the international  
17 economic crisis led aluminium producers to create a global forum to link US and European firms: The  
18 International Primary Aluminium Institute (hereafter IPAI)<sup>62</sup>.

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During this period of frequent meetings, the chairmen of European firms have chosen ALCAN's export list price as the reference for market quotations, because the Canadian firm was the most important actor in the global market of this metal during the 1950s and the 1960s. This list price was also adopted by the specialist trade press, such as the Metal Bulletin or the American Metal Market, as the referral for market quotations. The effectiveness of the producers' list price was the outcome of the sharing of information within their network on a very refined basis: each month, they gathered data on production, capacities, dispatches and stocks. Data on stocks were judged essential to follow the evolution of the market situation, which made the producers aware of the global situation with very frequent updates. This mechanism was essential for the governance of the international situation and it became the kernel of EPAA and of IPAI.<sup>63</sup> Information about the supply/demand situation was central to the pricing policy of the producers: the oligopolistic structure of the industry, together with the ability in gathering reliable information that covered virtually the 100% of the

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3 aluminium, helped the pricing policy in being efficient during the 1950s and the 1960s, when market  
4 prices were strongly correlated to the list price. Actually, producers were able to adapt constantly the  
5 output to the increasing demand, making their price effective as a barometer for the global market.<sup>64</sup>  
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9 However, the global aluminium market was not free from concerns. During the 1960s, in spite  
10 of the control of the Club over the supplies was virtually full, two unexpected sources of metal risked  
11 to upset the global market for this metal. According to the economic literature resumed above about  
12 pricing, new sources of supply are a main possible cause of abandon of list. The interesting point is  
13 that, while during the 1960s there was no significant new producer that challenged the producers' list  
14 price, new sources of metal were linked to the economic struggle between the two blocs of the Cold  
15 War.<sup>65</sup> The aluminium trade was menaced by supplies, first, from the Soviet Block and, second, from  
16 the US strategic stockpile. The strategy of the cartel was to put under control both sources of supply,  
17 with the goal to avoid alternative pricing models for them. About the USSR risk, an increasing trade  
18 from the Eastern Europe threatened to destabilise the global aluminium market, because of some low  
19 quotations in the metal market in London. The Soviet exports, which were caused by the need for the  
20 Communist block to gather western currencies with which to import other goods, became a threat to  
21 the western markets at the end of the 1950s and turned out to be dramatic at the beginning of the  
22 1960s<sup>66</sup>. The impact of low quotation on the main terminal market of London also provoked a first  
23 reaction in the traders *milieux*, which started to publish a so-called 'free market price', sometimes  
24 referred to as 'other quotations' as alternative to the ALCAN's list price. This was the first time in  
25 which the referral price for aluminium was challenged by a price whose formation was not controlled  
26 by the producers but, instead, by the traders. The discrepancy during the initial flow of the Soviet  
27 metal into the UK market provoked a first proposal to open a futures trade at the LME, which was  
28 justified as functional to provide hedging facilities to cover buyers from the risk linked to the new  
29 fluctuations in the aluminium price.<sup>67</sup>  
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50 In the other champ of the Cold War, the US government announced several times its intention  
51 to put the US strategic stockpile to an end and to buffer its inventories on the market. The strategic  
52 stockpile was a policy that the US government had been accumulating since the Korean War in order  
53 to improve its military-industrial force in case of war.<sup>68</sup> At the beginnings of the 1960s, these stocks  
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3 represented about 3 years of the global production for this metal and their clearing on the market  
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5 would have threat the industry at the global level, causing a serious unbalance between demand and  
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7 supply, as the key US producers reported.<sup>69</sup> This happened at the same time when the western markets  
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9 were hit by the Russian metal. In order to handle the stockpile surplus, the American producers  
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11 proposed though their trade association to establish a global cartel scheme to the US Congress, but this  
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13 proposal was rejected in 1962 for antitrust reasons.<sup>70</sup> Since this rejection, the US government and the  
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15 American firms opposed different visions about how to manage the stockpile depletion, and the  
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17 Commodity Exchange of New York (COMEX), which were the US equivalent of the LME, tried to  
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19 exploit the situation announcing its intention to start a futures trade with the aluminium coming from  
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21 the governmental stockpile. However, this proposal was rejected both by the producers and the US  
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23 government, which were both aligned to the idea of preserving the price stability of the aluminium  
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25 market. Nevertheless, that was a serious attempt to change the pricing policy for this metal during the  
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27 1960s in the US market.<sup>71</sup>

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29 Two years after the starting of the stockpile incident, a special committee was formed in order  
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31 to define the way in which this metal would be cleared on the market.<sup>72</sup> The US firms prospected to  
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33 buy back the metal from the administration and to gradually buffer it on both the national and the  
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35 international markets. While this proposal was being discussed, the US government reckoned that the  
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37 list price was better than any other pricing policy because, while discussing the stockpile depletion, the  
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39 US government was able to hamper an augmentation from 24¢/lb to 26 in the list price that North  
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41 American firms proposed.<sup>73</sup> After having obtained the endorsement of their proposal about the re-  
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43 purchase of the stockpile from the US administration, the US producers negotiated a further agreement  
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45 with the European producers to find an outlet into the Old continent's market.<sup>74</sup> However, the US  
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47 strategic metal was not the most dangerous supply for the producers. The trade with the Soviets was  
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49 the cause of more anxieties for political reasons. This trade was embarrassing for some national  
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51 political powers in Europe, in particular West Germany, France, Italy and United Kingdom, which  
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53 were trying to build cordial economic relationships with Eastern Europe. National political actions  
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55 would have meant imposing either anti-dumping procedures or limitations to trade by licencing;  
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57 however, these actions were not achievable because, before the settlement of the European general  
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3 tariffs, some countries were big importers of aluminium and were not disposed to help the enactment  
4 of high tariffs. In particular, the Belgian authorities were against high protections for the European  
5 market. At the time the UK, which was the main target of the Russian metal, was not part of the  
6 European Community and in this case no action by the European authorities was practicable because,  
7 once introduced in the British market, the Soviet metal could have been re-exported with ease in the  
8 European Common Market.<sup>75</sup>

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15 According to internal archive documents of the Club, political powers aimed to avoid a  
16 political action to stop this trade, also because they were not willing to change the West-East  
17 diplomatic situation in a period in which the political tensions was balanced by a relative commercial  
18 peace between the two blocs. However, the availability on the market of metal from the USSR, which  
19 was not under the control of the Western producers, stimulated a growing interest of the LME toward  
20 aluminium. The producers used their political channels to avoid this outcome, in particular begging  
21 the authorities that could intervene with the most ease to stop LME action. Both BACO and ALCAN  
22 were able to find in the UK government, and in particular in the Board of Trade, an ally to prevent  
23 LME's action. Endorsing the producers' request, the Board of Trade blessed a gentlemen's agreement  
24 to take control over the metal from the USSR, claiming the desirability of a 'commercial action' – as  
25 UK officials called the agreement – to tame the concerns coming from an uncontrolled pricing of the  
26 Soviet metal in the UK market. The other producers also involved their own government in a general  
27 endorsement, which was considered the best solution to avoid both diplomatic issues between the East  
28 and the West and the disruption of the basic features of the international aluminium market.<sup>76</sup> The  
29 European firms and Raznoimports agreed on the quantity of metal and its price, which was referred to  
30 the ALCAN's export price, i.e. the official industry's list price. After four years, this agreement was  
31 renewed, and then it was renegotiated on yearly basis several times until 1976, modifying the quantity  
32 of metal but without contesting the producers' pricing policy. As regards this aspect, specific clauses  
33 were set to prevent any sale through the LME. During the 1970s, a 'spirit of agreement' clause was  
34 also added, which foresaw the broking of the agreement in the case of any trade of aluminium would  
35 have started at the LME. While the meetings with the Soviet traders were managed by Alusuisse in its  
36 headquarter in Zurich, the aluminium producers used as their middleman for the final settlement of the  
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3 agreements a London based metal trader, Brandeis Goldschmidt Ltd, which was also member of the  
4 ring of the LME. For that reason, the Eastern metal agreements were often quoted in the trading press  
5 as 'Brandeis agreements.' Brandeis was part of the Warburg Group, the leading financial supporter of  
6 the British Aluminium Company and a main agent during its takeover by Reynolds in 1958. Its direct  
7 involvement was also aimed to tame any further action by the LME.<sup>77</sup> Without entering into details,  
8 these agreements took the form of a bilateral agreement between Brandeis and Raznoimports. Each  
9 producer signed a different agreement with Brandeis in order to share the metal purchased from  
10 Raznoimports.<sup>78</sup>

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24 As shown in the table 1, which lists the participants into the Brandeis' agreements, also the  
25 North-American firms were part of it, in spite of the clearly uncomfortable political position behind  
26 this kind of agreement. They entered in the first agreement from 1963 and 1967, then they asked to be  
27 formally cancelled from the agreements in 1967 for political reasons but they continued to purchase  
28 the Soviet metal from the European companies, trading it with the engagement of the Europeans to  
29 buy the US metal from the stockpile disposal. Thus, both the US stockpile metal and the USSR metal  
30 were managed by the club as a reservoir of surplus to buffer on the market. At the end of the 1960s,  
31 the US companies officially entered again into the agreement through their European subsidiaries,  
32 such as Reynolds Deutschland, Preussag and Anglesey Aluminium (both controlled by Kaiser), and  
33 Mosal and Elkem (both linked to ALCOA). Also new entrants in the industry, such as Rio Tinto Zinc,  
34 became a partner to the agreement over the. Raznoimport, in turn, was the middleman for other metal  
35 traders from Eastern Europe, such as Metalimpex (of Romania), Impexmetals (of Poland) and others.<sup>79</sup>  
36 Several agreements were signed between Brandeis and Raznoimport from 1963 to 1976.<sup>80</sup> The  
37 outcome of the general governance of the aluminium market represented a balanced situation between  
38 demand and supply, which helped price stability during the whole 1960s (at a price of 24 ¢/lb), in  
39 which stocks from the US stockpile and the Soviet countries were used to avoid swings, filling  
40 temporary lacks of supply such as in specific situations, like in 1965, in 1968, in 1973 (see figure 1).  
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### 3. Legal issues for aluminium agreements. Brandeis and the other agreements of the 1970s

The political endorsement of national authorities was an important aspect of the agreements. In particular, the help offered by the British powers on the Brandeis agreement should not be surprising, even though the trade from Soviet countries to Western markets attracted less from the scholarly community than the export from the West to the East and their containment.<sup>81</sup> In a pioneering research about the oil trade between the East and the West, Jensen-Eriksen showed similar approaches adopted during the 1960s, when rising trade from the Soviet Union threatened to disrupt the Western market. In the specific context of the Cold War, private firms could play a unique role in business diplomacy that, in return, was politically covered by the national powers.<sup>82</sup> Generally speaking, aluminium could epitomise the West-East trade during Cold War, in which a certain dose of pragmatism was adopted by both political and business world.<sup>83</sup> The peculiar case of aluminium confirms the specific risk of the Soviet flow of commodity as a possible ‘upsetting’ factor in the global trade, to which Western political powers aimed to find a remedy, as Vernon claimed in a work almost contemporary to the facts described.<sup>84</sup> In this sketch, the German authorities also played a key role. The German firm – VAW – was a state-owned enterprise. As it was reported during the producers’ meetings, the German government was well informed about VAW participation into aluminium agreements. VAW has been one of the leading members of the Club since its creation and it contributed to craft the model of international governance of this industry after the WWII, prompting the creation of the EPAA during the 1960s. For instance, the EPAA and many meetings about the Brandeis negotiations were held in its general headquarters in Dusseldorf.<sup>85</sup>

As regard to the links between aluminium industry and EEC, these agreements were not notified to the DG IV during the 1960s, even though the regulation 17/62 was already working when the first Brandeis agreement was defined. As far as the political powers were informed about the agreements and, sometimes, acted as grey eminences during their negotiations, it was clear that the commercial approach of aluminium firms was considered aligned with the general welfare and not

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3 contrary to it, which implied that the legal protection coming from registration was not necessary.  
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5 However, the main reason why these agreements were not registered to the DG IV was the  
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7 impossibility define the Brandeis' agreement as a European affair, at least at the beginnings. This  
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9 agreement was based in the UK, where BACO and ALCAN received the help of the Board of Trade,  
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11 and it was operational in Switzerland, where Alusuisse carried out the negotiations with the Russians,  
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13 sometimes with the help of ALCAN. Instead of being fully European and in spite of being clearly  
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15 against the already enforced EEC legislation, at this agreement could be seen an Anglo-Swiss affaire  
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17 during the 1960s.<sup>86</sup> Nevertheless, the German firm notified the agreement to its national antitrust  
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19 authority – the Kartellamt, obtaining approval to proceed, and this fact was judged in the club as  
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21 sufficient in case of criticism from the legal authorities.<sup>87</sup> However, from the legal standpoint there  
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23 was no consensus whether the international antitrust authorities had priority over national ones in the  
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25 European framework. The legal literature claims that the evolution of the aluminium antitrust case  
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27 opened the door to a new interpretation of the while European law, which started to be considered as  
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29 hierarchically superior to the national ones.<sup>88</sup>

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31 In spite of these legal consideration, the UK antitrust authorities expressed some concerns  
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33 during the 1960s, requesting the registration of the Brandeis agreements. The registers of cartel  
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35 agreements have interested recent studies, which agree about the ambiguity of this regulation that  
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37 swung between survey and buoyancy of authorities in regards of collusion.<sup>89</sup> This fact resulted into a  
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39 confrontation between UK trade and antitrust authorities. While the Board of Trade blessed it, in 1966,  
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41 the British antitrust authorities started to investigate the Brandeis' agreement. The Board of Trade  
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43 played the role of middleman between the British antitrust authorities and the British firms implicated  
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45 in these agreements (BACO, ALCAN-UK and Brandeis), agreeing with their ideas. The producers  
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47 aimed not to register the agreement because they wanted to keep secret their agreement, since the  
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49 political concerns that such as a trade could have provoked if disclosed to the public opinion. A further  
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51 concern came from LME, that could have exploited the information to start a new attempt to lauch a  
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53 futures trade on aluminium.<sup>90</sup> The Board of Trade supported the idea to keep the confidentiality of the  
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55 whole dossier. Actually, BACO and ALCAN asked the Board of Trade to conceal the dossier, in the  
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57 case in which the antitrust authority requested registration. The Board of Trade shared the producers'

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3 fears about the negative consequences that public disclosure of the Brandeis agreement, recognising  
4 that this case ‘could lead to a clash between the executive and the judiciary,’ and it also proposed to  
5 producers to ‘redraw the agreement in such way that it would not be registrable.’<sup>91</sup> After some  
6 discussions between the Board of Trade and BACO, the agreement was finally registered in 1968, but  
7 asking to keep it confidential. Before registering it, the Board of Trade suggested to modify the  
8 agreements in the future, in order to avoid further concerns with the UK antitrust. In particular, the use  
9 of a non-UK firm for the operation was suggested: the producers then moved the management of the  
10 agreements to the Swiss subsidiary of Brandeis, which was established in the Warburg’s office in  
11 Zurich.<sup>92</sup>

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21 These discussions between the UK producers and the Board of Trade had some effects on the  
22 legal choices of the European producers. Actually, this first case reshaped the global legal strategy of  
23 the European aluminium producers, also in regard to the European authorities. In particular, VAW  
24 expressed some perplexities about the fact that these agreements had never been notified to the DG IV.  
25 According to VAW, the current European legislation in matter of antitrust could have helped the  
26 structuration of more stable agreements with the Soviets, and thus preventing any further action from  
27 LME, instead of working against them. To achieve this goal, VAW proposed to rewrite the Brandeis’  
28 agreements in order to align them with current European antitrust legislation and to register it in  
29 Brussels. A VAW’s legal expert was charged to re-write the agreement, Alexander Rudell. He also  
30 followed the idea to move the crux of the agreement from London to the Basle or Zurich, in order to  
31 stop any possible future action from the UK authorities. In a certain way, the European antitrust  
32 authority was considered safer than the UK one: consequently, Rudell transformed this agreement,  
33 which at first was essentially British, into a European one.<sup>93</sup> The European producers welcomed the  
34 possibility to have agreements designed to protect them from infringing to articles 85 and 86 of the  
35 Treaty of Rome. During 1968, Rudell approached the DG IV directors to found a pragmatic solution  
36 with them to make the agreement safe from a legal standpoint. Rudell claimed very good relationships  
37 with the higher officials of the DG IV, such as with Schumacher and Jaume, and also with the general  
38 director of the DG IV, Albrecht.<sup>94</sup>

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3 The Rudell's legal strategy was to ask for a negative clearance, which could have protected the  
4 firms during the wait for DG IV's decision, or, even better, for an exemption at the end of the  
5 examination. In any case, there was a good chance that it would take many years to make a decision,  
6 because of the congestion of the registrations on which the DG IV was working, and during this period  
7 the Brandeis agreement would be legally safe.<sup>95</sup> In particular, one of the key concerns expressed by  
8 Rudell to the Commission was his formal request for keeping this agreement confidential, following  
9 the same considerations that were expressed in negotiating the agreement registration in the UK.  
10 Rudell debated with the DG IV officials these matters while he was preparing the legal dossier  
11 submitted to the Commission.<sup>96</sup> In response to these concerns, the DG IV replied that 'it is possible  
12 that no publication will in fact be effected if the Commission does not intend to prepare for a  
13 decision,'<sup>97</sup> suggesting that the DG IV operated a 'deliberate non-action' – as Rudell called it – with  
14 the goal to help the producers in keeping the agreements secrets without any negative outcome from  
15 registering.<sup>98</sup> Once adopted for the Brandeis' agreements, this strategy was also adopted for other  
16 agreements that the producers enacted at the beginnings of the 1970s.

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30 The new legal approach of the European producers was concomitant with the emergence of the  
31 international economic crisis at the beginning of the 1970s: the registration of the Brandeis agreement  
32 was linked to other agreements and to the creation of a study-group of the OECD, which was  
33 considered as a further guarantee of immunity from a legal standpoint. At the beginning of the 1970s,  
34 the European producers were able to forecast a dramatic reduction of the global demand, which put on  
35 hold the 10% average growth per year that had characterised this industry since the early 1950s.  
36 Before this slump of the market, the main issue for the producers was to increment the global supply  
37 for a growing market; at the beginnings of the 1970s, a serious fear of output excess overcame.  
38 Inventory accumulation was a first outcome of this excess and the producers considered as urgent to  
39 prevent any possible operation from the merchants who may try to take over it for speculative goals.  
40 The producers explored the possibility of carrying out some joint actions to cope with the economic  
41 turmoil and tame the passing negative market trend. In particular, since a new upward trend in demand  
42 was forecasted for the period that followed 1973, the French and Swiss producers proposed at meeting  
43 of the EPAA in January 1971 to organise a collective stockpile to 'freeze' excessive inventories as an  
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3 alternative to severe reductions and to create a specific firm to handle this excess of metal,  
4 Alufinance.<sup>99</sup> The hint to stockpile inventories was crucial to the control market prices. Collective  
5 stockpiles had proliferated since the 1930s in order to keep prices stable in the commodities markets,  
6 and also political powers suggested their adoption as a key tool to fight inflation and  
7 unemployment.<sup>100</sup>

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12 Alufinance was a major action for two main reasons. The first relates to the technological  
13 level: the smelting technology of aluminium is very rigid and output restrictions have dramatic effects  
14 on producing costs. Heavy investments are required to reactivate the pots that were cut off from  
15 electricity supply in order to reduce output. The idea to use inventory management to avoid – or at  
16 least reduce – the impact of output restrictions aims to have a good impact over the productive  
17 efficiency more than in other commodities that have less rigid technologies. Secondly, Europeans  
18 were concerned about the risk that a huge quantity of inventories out of their control would have  
19 revitalised the eventuality of launch the aluminium futures at the LME. As a consequence, Alufinance  
20 was essential to hamper any action by the LME.<sup>101</sup> The Warburg bank was called again to play the role  
21 of the drafter in this scheme, after the first intervention of its trader (Brandeis) in reducing the Soviet  
22 exports. Warburg was, at that time, a leading actor in the Eurodollar capital market and an innovative  
23 institution in the creation of ‘flat rate’ financial facilities. BACO served as middleman to involve this  
24 bank in the settlement of the scheme that, accordingly with the original ideas expressed by European  
25 producers, should have solved all the troubles outlined above<sup>102</sup>.

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41 Since the British antitrust laws were considered stricter than the EEC’s ones (especially after  
42 the struggle for registering agreements at the mid-1960s), the aluminium producers decided not to  
43 register Alufinance in London and to opt for another location. The choice was addressed to Jersey,  
44 which was in the Sterling area, still provided good access to the euro-dollar markets, and was cheap in  
45 terms of fees of registrations and taxes.<sup>103</sup> The working of Alufinance was based on a purchasing of  
46 metal from the producers at a price equal to the ALCAN price minus 10% and a reselling of it at  
47 100%. By this way, the goal of Alufinance was to stabilise the price at a level around the ALCAN’s  
48 one.<sup>104</sup> Nevertheless, ALCAN’s price started to change with more frequency than in the past, losing its  
49 former stability. During the 1960s, the producers were able to keep it at the level of 24¢/lb, in a  
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3 context of monetary stability and of growth of demand. During the 1970s, the list price became itself  
4 more volatile because of the changing producing costs, linked to the first oil shock, and of the global  
5 inflation. As a consequence, during the 1970s, ALCAN's price was revisited about 20 times and each  
6 adjustment asked an alignment in the national markets, in a context of monetary instability that made  
7 this alignment more difficult. In spite of its instability, the producers' list price was still considered  
8 efficient until the mid-1970s, because the real market transactions recoded in the specialised press,  
9 such as the Metal Bulletin (spot prices and producers' delivery contract), kept a strong correlation with  
10 ALCAN's official price, as seen in figure 2. Things started to change after 1976, also as a  
11 consequence of the legal situation of the European producers.  
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20 From the legal standpoint, the producers followed the same considerations made for the  
21 Brandeis agreements. Alufinance was notified to the EEC competition authorities, asking for a  
22 negative clearance according to regulation 17/62. This was essential to protect the producers from  
23 accusations and fines from the Commission. As in the case of Brandeis, the choice to proceeding with  
24 the notification corresponded to the producers' need to launch the facilities as soon as possible,  
25 because of the dramatic situation of stocks, without risking legal concerns. However, the members of  
26 Alufinance also tried to show their scheme to the Commission as a tool to maintain production and, as  
27 a consequence, to save employment. The idea to tie self-regulation of producers with the social  
28 welfare of European countries represented an important aspect of the narration that the producers  
29 exposed to the Commission.<sup>105</sup> In order to improve Alufinance's efficiency and to its ability in keeping  
30 price stability, their members carried out other two initiatives. In 1972, they formed an Open Price  
31 System called International Fair Trade Practice Rules Administration for Primary Aluminium  
32 (IFTRA). IFTRA was based in Vaduz, Lichtenstein, and notified to the Commission following the  
33 same considerations of Alufinance. Its shareholders were, more than the members of Alufinance  
34 themselves, also ALCAN, Kaiser Preussag Aluminium GmbH, Metallgesellschaft, Alnord Aluminium  
35 Norway A/S, Ardal og Sundal A/S, Elkem Huset A/S, Empresa Nacional del Aluminio, RTZ, and  
36 Alluminio Sardo (Alsar). IFTRA was conceived to share information about producing costs and set  
37 private anti-dumping rules to cope with low prices provoked by the international slowdown of sales.  
38 The key idea behind the IFTRA was to obtain information about production, production costs, and  
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3 prices from those producers that were not member of Alufinance. As declared by Rudell to the  
4 Commission, which asked him in 1974 'which is the exact difference between a normal price  
5 declaration and a price list', by entering in a device such as IFTRA 'a producer declares he [sic] would  
6 not deviate from his price list.'<sup>106</sup> In other terms, these rules were essential to avoid the risk of  
7 inefficiency of the list price because, in a period of strong changes in the factors that generated their  
8 level, these rules enforced producers to avoid competitive sales, which were defined as 'dumping,'  
9 since the price list was declared linked to producing costs by the rules.<sup>107</sup>

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11 The idea of 'normal price,' as it proposed by the IFTRA rules, was source of concern for the  
12 producers. While the dumping was not still well defined from a legal standpoint at that time,  
13 aluminium producers aimed to spread their idea about what a dumping price was in order to provide  
14 justifications to both Alufinance and IFTRA. As a consequence, a further action was undertaken by  
15 the European producers in order to find political support. Thanks to a VAW's official *demarche* after  
16 the German government, they succeed in summoning a special study group on aluminium at the  
17 OECD in 1972, whose goals were to analyse the problems of the global aluminium industry: raising  
18 producing costs, dumping prices from new marginal producers (that in the meanwhile appeared), and  
19 the global crisis of demand for this metal. The study group aimed to coordinate the action of reducing  
20 output outside Europe, to define a common policy of growth for the future and to form an international  
21 body for the governance of this industry at the global level. The special study group on aluminium,  
22 controlled by the members of EPAA, was able to coordinate the action of the output restriction,  
23 exchanging information with North American and Japanese producers, which could enter in this  
24 official forum without fearing any antitrust concerns.<sup>108</sup> The OECD study group also commended and  
25 recommended the adoption of Alufinance as a model to cope with the crisis and save both labour and  
26 price stability. It also published indications about the normal market price, relating it to an 'average  
27 producing cost' of about 25 ¢/lb for old smelters, which confirmed the vision expressed by IFTRA<sup>109</sup>  
28 and by the board of EPAA, according to which 'toute offre inferieure à 23 ¢/lb est dumping'<sup>110</sup>.

#### 4. The 'Alugate': how DG IV responded to producers' legal strategies

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3 These agreements were notified to the DG IV of the EEC, in order to request a negative clearance: DG  
4 IV/26870 (Brandeis agreements, registered in December 1970); DG IV/26919 (Alufinance, registered  
5 in April 1971) and DG IV/27000 (IFTRA Rules, registered in March 1972). However, the legal  
6 strategy of the producers turned out to be not as safe as Rudell thought, because – while the Brandeis  
7 agreements have found the endorsement of the commissioners, at least at the beginning – the other two  
8 notifications arose some suspicion. The Commission put on hold the judgement about Alufinance and  
9 it decided to focalise its attention on IFTRA. In October 1973, DG IV sent its critical observations on  
10 the text of IFTRA and a first trial had begun in a general context of distrust toward the aluminium  
11 producers and their network. According to DG IV lawyers, the agreement was considered as a pretext  
12 for the producers to meet to discuss other matters, such as prices, quotas and so on.<sup>111</sup> The  
13 Commission was already investigating another ‘IFTRA,’ which Rudell had set out for the glass  
14 industry, another industry which was historically cartelised,<sup>112</sup> in the early 1960s and which served as  
15 a model for the open price system for aluminium. This distrust became open in December 1973, when  
16 the new Commissary of the DG IV, Albert Borschette, who had taken the place of Albrecht, openly  
17 criticised the aluminium agreements and its author during an interview about the general policy of the  
18 European antitrust. He publically spoke about the ambiguity of the legal creations of a German lawyer  
19 – who probably was Rudell himself – reporting IFTRA as an example of extremely dangerous  
20 organisations.<sup>113</sup>

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The distrust in the IFTRA paved the way for a broader enquiry of the Commission toward the  
whole market structure of the aluminium industry.<sup>114</sup> The Commission was not yet aware of the way in  
which the aluminium producers organised their market during the previous decades and every aspect  
of the connections among the aluminium firms came under focus. In order to recover the trust of DG  
IV, Rudell also invited the commissioners to take part in the meetings of producers. However, when  
the IFTRA rules of the glass industry were rejected by the Commission in 1974, it seemed impossible  
to reverse the situation for the same rules that Rudell set out for the aluminium industry.<sup>115</sup> In spite of  
Rudell’s effort to obtain an exemption, this request was eventually rejected in 1975 and producers  
were judged guilty of infringement of the European competition law.<sup>116</sup> As a last tentative, Rudell tried  
to defend the producers arguing that the German antitrust authority (the Kartellmat) had already

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3 accepted IFTRA, on the believe that a national legislation had greater value than the European one.<sup>117</sup>  
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5 In this respect, DG IV published its decision also emphasising the superiority of the EU law over  
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7 national legislation. A partial explanation of Rudell's *debacle* could be find into the fact that the  
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9 directors and officers with whom he negotiated the registration of the aluminium agreements were  
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11 substituted when Borschette became director of the DG IV. This change was a watershed for the legal  
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13 strategy of the producers that, once this first case ended against them, were in a situation more and  
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15 more precarious in respect of their credibility facing the Commission. Actually, after this first  
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17 decision, the Commission started to investigate the other agreements, disregarding the informal  
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19 agreements that Rudell claimed to have with the ancient officials. After having inspected the dossiers  
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21 in 1975, DG IV concluded that Alufinance only represented a secondary agreement (actually, the  
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23 notification of this agreement has never received a reply from the Commission) and concentrated on  
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25 the Brandeis. The inspection had a bad outcome for the continuation of this agreements: the producers  
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27 decided not to renew the agreements about the East metal after the summer of 1976, in order to show  
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29 to the Commission their *bonne foi*.<sup>118</sup>

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31 However, it became obvious that the DG IV did not aim to stop its legal action but to continue  
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33 till a final judgement on this case. Even though the aluminium producers have already ended the  
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35 Brandeis agreement and that, even if they were judged guilty according to the antitrust law, no fines  
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37 would be applicable because they were prescribed for the excessive delay, the DG IV wanted to  
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39 publish a final decision in any case.<sup>119</sup> According to the chronology of the Alugate, the aluminium  
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41 producers were warned about the unfriendly attitude of DG IV since the late 1975, when the decision  
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43 about IFTRA was published. That not only led them to end the Brandeis agreements in 1976, it also  
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45 put the producers under pressure. Actually, DG IV made other actions: in November 1975, DG IV  
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47 asked for information, to which producers replied collectively at the end of February 1976. Instead to  
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49 be satisfied of producers reply, in April 1976, DG IV asked for further information, while during the  
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51 Summer 1976, it contacted each European producer with specific questions. When the producers  
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53 replied also to further requests of information in October 1976, DG IV obtained a mandate of  
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55 inspection into the producers' documents, showing that its attitude was not conciliating. In January  
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57 1977, DG IV wrote also to the EPAA, asking about its implication into the Brandeis, thus presaging  
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3 that also the producers' association was under inspection.<sup>120</sup> After three years of inspections into the  
4 companies' archives and of strict monitoring, DG IV sent about 200 pages of accusation to all the  
5 European companies. These accusations arrived in August 1978, about a month before the official  
6 launch of the LME contracts and a couple of weeks after the official news about intention of LME to  
7 start a futures trade with aluminium. DG IV's core argument was that the aluminium producers used  
8 the Brandeis agreements to collude on prices, to take control over important supplies, and, above all,  
9 to have voluntarily boycotted LME, colluding on a collective action against it.<sup>121</sup>

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11 In other words, the DG IV tried to show the mechanism of LME as synonym with free market,  
12 warming the producers about the disapproval of other forms of pricing devices. The defensive strategy  
13 of the producers was to show the benefit of having stables prices to consumers, since it made the  
14 hedging operations of a futures markets in covering from the risk of price fluctuations unnecessary. To  
15 these efforts of defence, the DG IV replied with other 160 pages of objections, which were sent to  
16 producers at the end of May 1979, and with two weeks of interrogatories which were held in Brussels  
17 in November 1979.<sup>122</sup> If we compare these legal actions of DG IV with the figure 1 about the spread  
18 between the ALCAN list price and the real market price, we can notice that to each action of DG IV  
19 corresponded a lack of efficiency in producers pricing policy. We have not access to information to  
20 assess if DG IV deliberately provoked this outcome, but we can formulate the hypothesis that the  
21 inspection worked against the power of the producers in adapting their price to the very changing  
22 market conditions that characterised the second half of the 1970s, thus eroding the efficiency of the  
23 producers' list price. The greater inconsistencies between the ALCAN price and UK market  
24 quotations emerged in the key date of the process: when the producers received the letter of inspection  
25 from DG IV, when they received communication of the continuation of the process in the summer  
26 1977, when they received the objections in the autumn 1978 and in the spring 1979. Afterward,  
27 ALCAN list price was never changed, making it completely inefficient to govern the global market of  
28 this metal. In particular, the phases in which emerged a certain discrepancy between the list price and  
29 the actual market quotations are strongly correlated with the evolution of the legal action, as the  
30 following figures shows:

< here figure 2 >

In 10 events linked to the case, the DG IV action troubled the coordination of the producers' cooperation. This inefficiency became total in the autumn of 1979, when producers stopped to meet for fearing an aggravation of their legal situation. Archive documents show that DG IV and LME had links before the formulation of the accusations and while inspections were causing concerns to producers. Actually, between 1976 and 1978, the DG IV participated in a study group, organised by the Bank of England and LME, which drafted the terms of a possible contract on aluminium. DG IV was invited by the Bank of England to participate into the discussion about LME reform and new contract for obvious reasons (DG IV was the regulation authority for all EU markets and since 1973 also for the UK). Thus, DG IV had already chosen to help LME to start a contract, thus we can formulate the hypothesis that it deliberately acted to provide an advantage to the futures trade over the producers' list price. The London terminal market for the non-ferrous metals was considered a good way to curb the pricing system of the aluminium market that have characterised the aluminium business till then. During these meetings DG IV became familiar with scopes and working of LME and it helped this terminal market to opt for new features in contract that guaranteed more transparency in the price settlement.<sup>123</sup>

The support of DG IV and of the Bank of England led us to wonder what was the position of the Board of Trade. While during the 1960s, it helped the UK producers in both crafting the Brandeis agreements and in coping with antitrust concerns, in the second half of the 1970s, this support decreased. The Brandeis agreements and the policy of containing the risk of the imports from Soviet countries became less important than other political goals. When the situation with DG IV appeared particularly serious, BACO – like the other firms – asked for the help of its political powers. However, the Board of Trade showed to be particularly non-acting. Perchard's researches about the history of BACO showed an ambivalent nexus of relationships between BACO and the UK authorities, that swung between periods of defence and other of intolerance.<sup>124</sup> In the specific case of LME, BACO tried to find the protection of the Ministry of Industry, which replied that the Bank of England was alone responsible of this decision.<sup>125</sup> Analysing the document of the Bank of England and the UK

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3 Parliament papers, it results that the Board of Trade was adopting in these years a specific policy that  
4 aimed to make London the centre of the commodity markets again: as a consequence, unlike the past,  
5 it became an open ally of the institutional markets, such as LME, in providing global governance over  
6 trade. The idea to establish the aluminium contract at LME was concomitant with the idea to open  
7 gold, silver and nickel trades as well, which would have supported the creation of a World Commodity  
8 Centre in the City.<sup>126</sup> The preparation of this project led the Zinc and Lead Study Group, the  
9 intergovernmental commission that regulated the trade of these two metals, to move from New York  
10 to London. As a consequence, LME proposal for aluminium trade was probably a way to ‘steal’ the  
11 aluminium trade from the US dollar influence to place it within the British sphere.<sup>127</sup>

20 We need to add two elements to this sketch, which are important to understand the success of  
21 the LME in starting a trade with aluminium. The trader firm of the LME that proposed the launch of  
22 the contract, Rayner-Harwill, was aware that, still in 1977, the aluminium trade was fully in the hands  
23 of the old-established producers and that there were only few chances of success for the LME, due to  
24 the strong opposition that the dominant firm of this industry made to the launch of futures for this  
25 metal. However, compiling a report to the Board of LME, the trader was convinced about the decline  
26 in the next future of the majors in controlling the majority of the global output. Not only it was  
27 foreseen that the Soviet supply would pass through LME channels, but also that the global aluminium  
28 industry was next to a global change in its structures. The years of the crisis accumulated a huge delay  
29 in investments by the majors of the industry, which resulted in the emergence of new players.<sup>128</sup> This  
30 position was largely shared in the traders’ *milieux*, and the uprising prices of aluminium LME during  
31 its first contracts at the end of 1978 (see figure 2) were explained by the global lack of metal, due to  
32 inability of the historical producers to ‘follow the trend and invest to meet the demand.’<sup>129</sup> According  
33 to Rayner-Harwill, new producers, which were owned by governments of countries from Middle East  
34 and Latin America, would fulfill this lack. These new comers had not the same vertical integration of  
35 the old aluminium firms and they have different approaches to the pricing. They would come to the  
36 fore as powerful suppliers in the next years, asking for terminal markets for their metal. Rayner-  
37 Harwill calculated that, while in 1977 the big-six controlled the 72% of the global supply, after 1980  
38 this portion would have decreased to about 56%. The portion of the state-owned firms would have  
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3 increased from about the 28% to 44%. Taking into consideration also the Soviet exporters, the traders  
4 forecasted that their part into the global supply would have jumped to the 30%, while in 1977 was still  
5 the 15%.<sup>130</sup> Facing these prospects, the LME aimed to be the pioneer in aluminium futures trading,  
6 providing hedging facilities before the market needed it. LME was not yet a firmly settled market in  
7 1978 – and producers considered it as a meteor, like COMEX during the mid-1960s, but it was helped  
8 by the action of DG IV, which broke the ability of the producers in coordinate their actions especially  
9 in terms of pricing.  
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### 18 **Conclusions**

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20 The key argument of this article is that the inspection of DG IV helped to turn the producers pricing  
21 policy into an inefficient and obsolete method of governance for this industry. Producers continued to  
22 publish a list price during the 1980s, aiming to discontinue the futures trade in the London Metal  
23 Exchange, but the close scrutiny made this list price less consistent with this market quotation than it  
24 was in the past.<sup>131</sup> We conclude that legal actions, before disrupting the cartel, reduced the efficiency  
25 of the list price of the producers to work as a referral price for the global market. The LME became an  
26 alternative market regulator for aluminium as a consequence of this legal distress to producers'  
27 governance. This fact shows proves that the European Commission and the LME had mutual goals  
28 and their actions were supportive the one of the other. During its first years, LME used the aluminium  
29 coming from the Arabian region (Bahrain, Iran and Oman) and also from Eastern Europe to its daily  
30 trading operation because none of the historical producers supplied the produce exchange with any  
31 metal. During the early 1980s, as a consequence of the second oil shock and also of the falling market  
32 prices at LME, some of the historical producers passed through a severe turmoil, which led some of  
33 them to the nationalisation (such as Pechiney or the Italian producer), other to the failure (such as  
34 BACO or VAW). Differently to other branches, such as the steel, the European Commission did not  
35 help the settlement of a crisis-cartel, nor showed it a tolerant attitude toward big business collusion.<sup>132</sup>  
36 Instead, its antitrust division continued its inspection until it reached a decision, which was came in  
37 1984. After the publication of the DG IV decision, ALCAN ceased to publish its list price, which had  
38 served as a barometer for this industry since the 1950s, and ALCOA opted for LME.<sup>133</sup> Therefore, in  
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3 this critical phase for the launch of LME's futures trade for aluminium, the fact that the DG IV  
4 decision was still pending helped guide the change of pricing system. The final decision of DG IV,  
5 even though it did not issue fines because the terms of prescription were applicable, was the finishing  
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7 blow to the resilience of the producers to the LME: it condemned the whole experience of the  
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9 producers' list price, hampering its resurgence. Thus, the whole market governance of aluminium  
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11 industry was destroyed by a joint-action between DG IV and LME.  
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15 For its given features, LME was not merely a neutral commercial tool for trading  
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17 commodities. Its success in starting the aluminium contracts went along with a financial  
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19 transformation of international trade and with the sunset of the Bretton Woods order. The will to adopt  
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21 LME for a historically stable priced commodity, like aluminium, reflected a huge transformation in  
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23 the governance system of commodity trade. Both the reinforcements of European antitrust policies and  
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25 the financial reshaping of commodity trade during the 1970s and the 1980s affected the transformation  
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27 of aluminium trade. The current literature on commodity regulation often shows another scenario:  
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29 during the 1970s, many international institutions, such as UNCTAD, tried to establish new forms of  
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31 international trade regulation to help price stability, thanks to the introduction of buffer stocks  
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33 schemes and of a common fund to take control over them.<sup>134</sup> In that context, the aluminium industry  
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35 followed a different path. Actually, the inception of LME trade in aluminium created a radical  
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37 modification of the features of this industry. Since the start of the DG IV inspection and the launch of  
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39 LME's contracts, aluminium has lost its exceptional price stability and started to be affected by the  
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41 fluctuations that reflected the daily changes established into LME's ring by the traders. Recent news  
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43 about aluminium market manipulation at LME shows that even these devices are not immune to anti-  
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45 competitive actions<sup>135</sup>: as a consequence, this story could be thought as a path 'from cartels to futures'  
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47 instead of 'from monopoly to competition' as the history of ALCOA was labelled by George Smith.<sup>136</sup>  
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#### 50 51 References

52 Adler-Karlsson, Gunnar. *Western Economic Warfare 1947–1967. A Case Study in Foreign*  
53  
54 *Economic Policy*. Stockholm: Almqvist & Wiksell, 1968



- 1  
2  
3 Akiyama, Takamasa (ed.). *Commodity markets reforms. Lessons of two decades*. Washington  
4 DC: World Bank Publications, 2001.
- 5  
6 Andersen, Stine. *The Enforcement of EU Law. The role of the European Commission*. Oxford:  
7 Oxford University Press, 2012.
- 8  
9  
10 Atsé, David. *Commodity Futures Trading and International Market Stabilization*. Uppsala:  
11 Acta Universitatis Upsaliensis, 1986.
- 12  
13  
14 Attali, Jacques. *Un Homme d'Influence. Sir Siegmund G. Warburg, 1902-1982*. Paris: Fayard,  
15 1985.
- 16  
17  
18 Bachmann, Henri. *Aluminum as an export industry*. Geneva: UNCTAD, 1964 (doc. E/Conf.46).
- 19  
20 Baker, Bruce E. and Barbara Hahn, *The Cotton Kings. Capitalism and Corruption in the Turn-*  
21 *of-the-Century New York and New Orleans*. Oxford: Oxford University Press, 2016.
- 22  
23  
24 Ball, Simon, 'The German Octopus: The British Metal Corporation and the Next War, 1914–  
25 1939,' *Enterprise and Society*, vol. 5, no. 3, 2004, 451–489.
- 26  
27  
28 Ballande, Laurence. *Les Ententes économiques internationales. Étude monographique et*  
29 *statistique*. Paris: Librairie Technique et Economique, 1937.
- 30  
31  
32 Barham, Bradford L. *States, firms, and raw materials. The world economy and ecology of*  
33 *aluminum*. Madison: University of Wisconsin Press, 1994.
- 34  
35  
36 Barjot, Dominique. 'Introduction,' in *International cartels revisited. Vues nouvelles sur les*  
37 *cartels internationaux (1880-1980)*. Edited by Dominique Barjot. Caen: Editions diffusions du Lys,  
38 1994.
- 39  
40  
41 \_\_\_\_\_ . 'Performances, Strategies and Structures: Pechiney (1949-1970). The  
42 Lessons of the Accounting Analysis, first results,' in *Aluminium. From luxury metal to mass*  
43 *commodity – du métal de luxe au métal de masse (XIXe-XXe siècles)*. Edited by Dominique Barjot and  
44 Marco Bertilorenzi. Paris: Presses de l'Université Paris Sorbonne, 2014, 221-232.
- 45  
46  
47 \_\_\_\_\_ . 'ALCAN 1971-1989. Performances, strategies, structures, résultats  
48 préliminaires,' *Revue française d'histoire économique*, vol. I-II, 2015-2016, 46-64.
- 49  
50  
51 Barjot, Dominique and Marco Bertilorenzi, 'Création et Aluminium en perspective historique,'  
52 in *Aluminium. From luxury metal to mass commodity – du métal de luxe au métal de masse (XIXe-XXe*  
53  
54  
55  
56  
57  
58  
59  
60

1  
2  
3 siècles). Edited by Dominique Barjot and Marco Bertilorenzi. Paris: Presses de l'Université Paris  
4 Sorbonne, 2014, 11-27.

5  
6 Barro, Robert J. A theory of monopolistic price adjustment,' *The Review of Economic Studies*,  
7 vol. 39, no. 1 (1972), 17-26.

8  
9  
10 Becker, Susan. 'The German Metal Traders,' in *The Multinational Traders*. Edited by Geoffrey  
11 Jones. New York and London: Routledge, 1998, 66-85.

12  
13  
14 Bennet, Michael K. *International Commodity Stockpiling as an Economic Stabilizer*. New  
15 York: Stanford University Press, 1949.

16  
17  
18 Bertilorenzi, Marco. "Business, Finance and Politics: The rise and fall fo international  
19 aluminium cartels, 1914-45," *Business History*, vol. 56, no. 2, 2014, 236-269.

20  
21  
22 \_\_\_\_\_ . *The International Aluminium Cartel, 1886-1978. The Business and Politics*  
23 *of an industrial cooperative institution*. London: Routledge, 2016.

24  
25  
26 Born, Karl Erich. *Internationale Kartellierung einer Neuen Industrie: Die Aluminium-*  
27 *Association 1901–1915*. Munich: Berg, 1994.

28  
29  
30 Borkin, Joseph, and Charles A. Welsh. *Germany's Master Plan: The Story of Industrial Offen-*  
31 *sive*. New York: Sloan Long, 1943

32  
33  
34 Brault, Thierry. 'L'introduction de l'aluminium au London Metal Exchange (1978): cause ou  
35 effet de la transformation du marché mondial?' *Cahiers d'histoire de l'aluminium*, no. 40, 2008, 31-  
36 43.

37  
38  
39 Burns, Joseph M. 'Futures markets and market efficiency,' in *Futures Markets modelling,*  
40 *managing, and monitoring futures trading*. Edited by Manfred E. Streit. Oxford: Blackwell, 1983.

41  
42  
43 Bussière, Eric. 'La concurrence,' in *La Commission Européenne. Mémoires d'une institution*.  
44 Edited by European Commission. Brussels: European Commission, 2007, 315-329

45  
46  
47 Campbell, Duncan. *Mission globale. L'histoire d'ALCAN*, Montréal: Ontario Publishing, 3  
48 volumes, 1989-1994.

49  
50  
51 Cailluet, Ludovic. *Stratégies, Structures d'Organisation et Pratique de Gestion de Pechiney des*  
52 *années 1880 à 1971*. Unpublished PhD Thesis, Lyon III University, 1995.

- 1  
2  
3 \_\_\_\_\_, 'The British Aluminium Industry, 1945-1980s: Chronicles of a Death  
4 Foretold?' *Accounting Business and Financial History*, vol. 11, no. 1 (2001), 79-97.  
5  
6 Cairns, Robert D. 'Changing structure in the world nickel industry,' *The Antitrust Bulletin*, vol.  
7 29, 1984, 561-575.  
8  
9  
10 Cassis, Youssef. *Capitals of Capital. The Rise and Fall of International Financial Centres*  
11 *1780–2009*. Cambridge: Cambridge University Press, 2010.  
12  
13  
14 Cerretano, Valerio. 'European cartels, European multinationals and economic de-globalisation:  
15 Insights from the rayon industry, c. 1900–1939,' *Business History*, vol. 54, no. 4, 2012, 1-29.  
16  
17  
18 Chalmin, Philippe. 'Aluminium and the London Metal Exchange,' in *Aluminium. From luxury*  
19 *metal to mass commodity – du métal de luxe au métal de masse (XIXe-XXe siècles)*. Edited by  
20 Dominique Barjot and Marco Bertilorenzi. Paris: Presses de l'Université Paris Sorbonne, 2014, 189-  
21 196.  
22  
23  
24  
25  
26 Chapman, Stanley D. *Merchant Enterprise in Britain. From the Industrial Revolution to the*  
27 *World War I*. New York: Cambridge University Press, 1992.  
28  
29  
30 Charles River Associates, *An Economic Analysis of the Aluminum Industry*. Cambridge: Charles  
31 Rivers Ass., 1971.  
32  
33  
34 Coppolaro, Lucia. *The making of a world trading power the European economic community*  
35 *(EEC) in the GATT Kennedy round negotiations (1963-67)*. Farnham: Ashgate, 2013.  
36  
37  
38 Cottier, Thomas and Panagiotis Delimatsis, *The prospects of international trade regulation.*  
39 *From fragmentation to coherence*. Cambridge: Cambridge University press, 2011.  
40  
41  
42 Cuff, Robert D. 'Stockpile and Defense Escalation, 1965–1968,' *Public Historian*, vol. 9, no.4,  
43 1987, 44–64.  
44  
45  
46 Daviet, Jean-Pierre. 'Saint-Gobain et les ententes internationales,' in *International cartels*  
47 *revisited. Vues nouvelles sur les cartels internationaux (1880-1980)*. Edited by Dominique Barjot.  
48 Caen: Editions diffusions du Lys, 1994.  
49  
50  
51  
52 Delay, Annie. *L'Industrie mondiale de l'aluminium*. Paris: DAFSA, Collection 'Analyses des  
53 secteurs,' 1981.  
54  
55  
56  
57  
58  
59

- 1  
2  
3 European Economic Commission, *Aluminium. Raw Materials Dossiers. Research and*  
4 *Development*. Brussels: DG XII, Research, Science and Education (doc. XII/1133/78), 1978  
5  
6 Elliot, William Y., Alexander Skelton, and Donald H. Wallace (eds.), *International Control in*  
7 *nonferrous metals*. New York: Macmillan, 1937.  
8  
9  
10 Engel, Alexander. 'Futures and risk. The rise and demise of the hedger-speculator dichotomy,'  
11 *Socio-Economic Review*, vol. 11, no. 3, 2013, 553-576.  
12  
13  
14 Engle, Nathaniel H., Homer E. Gregory and Robert Mosse. *Aluminum: An Industrial Marketing*  
15 *Survey*. Chicago, Irwin, 1945.  
16  
17  
18 Fear, Jeffrey. 'Cartels and Competition. Neither Markets nor Hierarchies,' Harvard Business  
19 School, working paper 07-011, 2006.  
20  
21  
22 \_\_\_\_\_ . 'Cartels,' in *The Oxford Handbook of Business History*. Edited by Geoffrey Jones  
23 and Jonathan Zeitlin. London: Oxford University press, 2008.  
24  
25  
26 Fellman, Susanna and Martin Shanahan, 'Introduction. Regulating competition – the rise and  
27 fall of 'cartel registers' in the twentieth-century world,' in *Regulating Competition. Cartel registers in*  
28 *the twentieth-century world*. Edited by Susanna Fellman and Martin Shanahan. New York and  
29 London: Routledge, 2015, 1-13.  
30  
31  
32  
33  
34 Fergusson, Niall. *High Financier. The lives and time of Siegmund Warburg*. London: Penguin  
35 Press, 2010.  
36  
37  
38 Figuerola-Ferretti, Isabel and Christopher L. Gilbert, 'Price volatility and marketing methods in  
39 the non-ferrous metal industry,' *Journal of financial economy*, vol. 27, no. 3 (2001), 169-177  
40  
41  
42 \_\_\_\_\_ . "Price discovery in the aluminium market," *Journal of future*  
43 *markets*, vol. 25, n.10, 2005, p. 967-988.  
44  
45  
46 Fligstein, Neil. *The Architecture of Markets. An Economic Sociology of Twenty-First-Century*  
47 *Capitalist Society*. Princeton: Princeton University Press, 2002.  
48  
49  
50 Freyer, Tony A. *Antitrust and Global Capitalism*. London: Cambridge University Press, 2005  
51  
52 Friedman, Milton. 'Commodity-Reserve Currency,' *The Journal of Political Economy*, vol. 59,  
53 no. 3 (1951), 203-232.  
54  
55  
56 Frenz, Walter. *Handbook of EU Competition Law*. Berlin: Springer, 2016  
57  
58  
59

1  
2  
3 Frøland, Hans-Otto and Mats Ingulstad, 'An Age of Aluminium. The Political Economy of the  
4 Aluminium Industry in the Twentieth Century,' in *From Warfare to Welfare. Business-Government*  
5 *Relations in the Aluminium Industry*. Edited by Hans-Otto Frøland and Mats Ingulstad. Trondheim:  
6 Akademika Publishing, 2012, 15-32.

7  
8  
9  
10 Gerber, David J. *Global Competition. Law, Markets, and Globalisation*. Oxford: Oxford  
11 Univesity Press, 2012.

12  
13  
14 Gibson-Jarvie, Robert. *The London Metal Exchange. A Commodity Market*. London:  
15 Woodhead-Faulkner, 1989.

16  
17  
18 Gilbert, Christopher L. 'Modelling market fundamentals: a model of the aluminium market,'  
19 *Journal of applied econometrics*, vol. 10, no. 4 (1995), 385-410.

20  
21  
22 Graham, Margaret B.W., and Elisabeth H. Pruitt, *R&D for Industry: A Century of Technical*  
23 *Innovation at Alcoa*. Cambridge MA: University Press, 1990.

24  
25  
26 Greenstone, Wayne D. 'The Coffee Cartel: Manipulation in the Public Interest,' *The Journal of*  
27 *Futures Markets*, vol. 1, no. 1 (1981), 3-16.

28  
29  
30 Grinberg, Ivan. *Aluminum. Light at heart*. Paris: Gallimard, 2009.

31  
32 Goss, Barry A. *The Theory of Futures Trading*. New York, Routledge, 1972.

33  
34 \_\_\_\_\_ . 'The forward pricing function of the London Metal Exchange,' in *Futures*  
35 *Markets. Their establishment and performance*. Edited by Barry A. Goss. New York: Routledge, 2013  
36 (first edition 1986), 157-173.

37  
38  
39 Gross, Martin. 'A semi strong test of the efficiency of the aluminium and copper markets at the  
40 LME,' *Journal of futures markets*, vol. 8 no. 1 (1988), 67-77.

41  
42  
43 Hachez-Leroy, Florence. 'Le Cartel International de l'Aluminium du Point de Vue des Sociétés  
44 Françaises, 1901–1940,' in *International Cartels Revisited: Vues Nouvelles sur les Cartels*  
45 *Internationaux (1880s–1980s)*. Edited by Dominique Barjot. Caen: Editions du Lys, 1994, 153–162.

46  
47  
48 \_\_\_\_\_ . *L'Aluminium français: La Création d'un Marché, 1911–1981*. Paris:  
49 CNRS Editions, 1999.

1  
2  
3 \_\_\_\_\_ . 'Stratégie et Cartels Internationaux, 1901–1981', in *Industrialisation*  
4 *et Sociétés en Europe Occidentale de la Fin du XIXe Siècle à nos Jours: L'Âge de l'Aluminium*, edited  
5 by Ivan Grinberg, Florence Hachez-Leroy. Paris: Armand Colin, 1997, 164–174.

6  
7  
8 \_\_\_\_\_ . 'La construction européenne et ses conséquences sur l'industrie  
9 européenne de l'aluminium,' *Cahiers d'histoire de l'aluminium*, Special issue 1 (2003), 23-35.

10  
11  
12 Hart, Albert G., Nicholas Kaldor and Jan Tinbergen, *The Case for an International Commodity*  
13 *Reserve Currency*. Geneva: UNCTAD, 1963.

14  
15  
16 Hexner, Ervin. *International Cartels*. Chapel Hill: North Carolina University Press, 1946

17  
18 Hillman, John. *The International Tin Cartel*. New York and London: Routledge, 2010.

19  
20  
21 Holloway, Steven. *The Aluminium Multinationals and the Bauxite Cartel*. London: Macmillan,  
22 1988.

23  
24  
25 Huré, Valérie. *Les organisations européennes de l'aluminium: Premiers contacts avec des*  
26 *associations à la recherche de leur identité (1953-1984)*, Unpublished BA Thesis, Université d'Artois,  
27 1996.

28  
29  
30 Ingulstad, Mats. 'We want aluminium not excuses! Antitrust and business-government  
31 partnership in the American aluminium industry, 1917-1957,' in *From Warfare to Welfare: Business-*  
32 *Government Relations in the Aluminium Industry*. Edited by Hans Otto Frøland & Mats Ingulstad.  
33 Trondheim: Akademika, 2012, 33-68.

34  
35  
36 Ionescu, George. *The European Alternatives. An inquiry into the policies of the European*  
37 *Community*. London : Sijthoff & Noordhoff, 1979.

38  
39  
40 Jack, David S., 'Populists versus Theorists: Futures markets and the volatility of prices,'  
41 *Explorations in Economic History*, vol. 44 (2007), 342-362.

42  
43  
44 Jackson, Ian. *The Economic Cold War. America, Britain and East-West Trade, 1948-63*.  
45 London: Palgrave, 2001.

46  
47  
48 Jensen-Eriksen, Niklas. 'The Cold War in Energy Markets. British Efforts to Contain Soviet Oil  
49 Exports to Non-communist Countries 1950-1965,' in *Le Pétrole et la Guerre. Oil and War*. Edited by  
50 Alain Bertrand. Brussels: Peter Lang, 2012, 191-208

1  
2  
3 Jones, Geoffrey. *Merchants to Multinationals. British Trading Companies in the Nineteenth and*  
4  
5 *Twentieth Centuries*. Oxford: Oxford University Press, 2000.

6 Jones Geoffrey (ed), *The Multinational Traders*. New York and London: Routledge, 1998.

7  
8 Kipping, Mathias and Ludovic Caillaet. 'Mintzberg's Emergent and Deliberate Strategies:  
9  
10 Tracking Alcan's Activities in Europe, 1928–2007,' *Business History Review*, no 84 (2010), 79-104.

11  
12 Kostecki, Michel (ed.). *The Soviet Impact on Commodity Markets*. London: Macmillan, 1984.

13  
14 Knoepfli, Adrian. *From Dawn to Dusk. Alusuisse. Swiss Aluminium Pioneer from 1930 to 2010*.  
15  
16 Zurich: Jetz, 2010.

17  
18 Kronstein, Heinrich. *The Law of International Cartels*. Ithaca and London: Cornell University  
19  
20 Press, 1973.

21  
22 Lambert, Emily. *The Futures. The Rise of the Speculator and the origins of the World's Biggest*  
23  
24 *Markets*. New York: Basic Books, 2011.

25  
26 Lanthier, Pierre. 'Les stratégies financières d'ALCAN de 1940 à 1970: du soutien public aux  
27  
28 investissements privés,' *Revue française d'histoire économique*, vol. I-II, 2015-2016, 32-44.

29  
30 Lesclous, René. *Histoire des sites producteurs d'aluminium. Les choix stratégiques de Pechiney*  
31  
32 *1892-1992*. Paris: Presses des Mines, 2004.

33  
34 Levenstein, Margaret C. and Valerie Y. Suslow, 'What Determines Cartel Success?' *Journal of*  
35  
36 *Economic Literature*, vol. 44, no. 1, 2006, 43–95.

37  
38 \_\_\_\_\_ . 'Breaking Up is Hard to Do: Determinants of  
39  
40 Cartel Duration,' *Journal of Law and Economics*, vol. 54, no. 2 (2011), 455–494.

41  
42 Levy, Jonathan I., 'Contemplating Delivery. Futures Trading and the Problem of Commodity  
43  
44 Exchange in the United States, 1875–1905,' *The American Historical Review*, vol. 111, no. 2 (2006),  
45  
46 307-335.

47  
48 Litvak, Isaiah and Christopher Maule. 'Assessing industry concentration. The case of  
49  
50 aluminium,' *Journal of the industrial business studies*, vol. 15, no. 1 (1984), 97-104.

51  
52 Lopez-Morel, Miguel A., 'Rothschilds' strategies in international non-ferrous metals markets,  
53  
54 1830–1940,' *The Economic History Review*, vol. 67, no. 6 (2014), 720–749

- 1  
2  
3 Lopez-Morel, Miguel A., and Luciano R. Segreto, 'The International Mercury Cartel., 1928–  
4 1954: Controlling Global Supply,' *Business History Review*, vol. 89, no. 2 (2015), 255-280.  
5  
6 McGowan, Lee. *The Antitrust Revolution in Europe. Exploring the European Commission's*  
7 *Cartel Policy*. Cheltenham: Edward Elgar, 2010.  
8  
9  
10 Maizels, Alfred. *Commodities in Crisis. The Commodity Crisis of the 1980s and the Political*  
11 *Economy of International Commodity Policies*. Oxford: Clarendon Press, 1992.  
12  
13  
14 Marquet, Yannick. *Négoce international des matières premières*. Paris: Eyrolles, 1992.  
15  
16 Mason, Edward S. *Controlling World Trade: Cartels and Commodity Agreements*. New York:  
17 McGraw-Hill, 1946.  
18  
19  
20 Means, Gardiner C. *Pricing Power and the Public Interest. A study based on steel*. New York:  
21 Harper and Brothers, 1962.  
22  
23  
24 Michie, Ranald. *The London Stock Exchange. An history*. Oxford: Oxford University Press,  
25 1999.  
26  
27  
28 Mikdashi, Zuhayr. 'Aluminum,' in *Big Business and the State. Changing Relations in Western*  
29 *Europe*. Edited by Raymond Vernon. Cambridge: Harvard University Press, 1974, 170-195  
30  
31  
32 Mouak, Prosper. *Le marché de l'aluminium. Structuration et analyse du comportement des prix*  
33 *au comptant et à terme au London Metal Exchange*. Unpublished PHD Thesis, Université d'Orléans,  
34 2010.  
35  
36  
37  
38 Nappi, Carmine. *Commodity Market Controls. A historical review*. Toronto: Lexington Books,  
39 1979.  
40  
41  
42 \_\_\_\_\_ . *L'Aluminium*. Paris: Economica, 1994.  
43  
44 \_\_\_\_\_ . 'L'industrie internationale de l'aluminium. Changements structurels et  
45 perspectives, 1970-2010,' in *Aluminium. From luxury metal to mass commodity – du métal de luxe au*  
46 *métal de masse (XIXe-XXe siècles)*. Edited by Dominique Barjot and Marco Bertilorenzi. Paris:  
47 Presses de l'Université Paris Sorbonne, 2014, 149-169.  
48  
49  
50  
51  
52 Newbery, David M. and Joseph E. Stiglitz. *The Theory of Commodity Price Stabilization: A*  
53 *Study in the Economics of Risk*. Oxford: Oxford University Press, 1981  
54  
55  
56  
57  
58  
59



- 1  
2  
3 Newbery, David M. 'Commodity-price stabilization in imperfect or cartelized markets,'  
4  
5 *Econometrica*, vol. 52 (1984), 563-578.
- 6  
7 North, Douglass C. *Institutions, Institutional Change and Economic Performance*. Cambridge:  
8  
9 Cambridge University Press, 1990.
- 10  
11 Patel, Kiran and Heike Schweitzer, *The Historical Foundations of EU Competition Law*.  
12  
13 Oxford: Oxford University Press, 2013.
- 14  
15 Peck, Merton J. *Competition in the Aluminum Industry, 1945-1958*. Cambridge: Harvard  
16  
17 University Press, 1961.
- 18  
19 \_\_\_\_\_ (ed.). *The world aluminum industry in a changing energy era*. Washington DC:  
20  
21 John Hopkins University press, 1988.
- 22  
23 Perchard, Andrew. *Aluminiumville. Government, Global Business and the Scottish Highlands*.  
24  
25 Lancaster: Crucible Books, 2012.
- 26  
27 Pindyck, Robert S. 'Inventories and the Short-Run Dynamics of Commodity Prices,' *The RAND*  
28  
29 *Journal of Economics*, vol. 25, no 1 (1994), 141-159.
- 30  
31 Porter, Michael. *Competitive strategy. Techniques for analyzing industries and competitors*,  
32  
33 New York, Free Press, 1980.
- 34  
35 Ramirez, Sigfrido. 'La Politique de la concurrence de la CEE.' et l'industrie: l'exemple des  
36  
37 accords sur la distribution automobile (1972-1985),' *Histoire, économie et société*, vol. 27, no. 1  
38  
39 (2008), pp. 63-78.
- 40  
41 Rudell, Alexander. *Die Zulässigkeit horizontaler Empfehlungen nach deutschem und EWG-*  
42  
43 *Kartellrecht*, Dusseldorf: Carl Heymanns Verlag KG, 1973
- 44  
45 Scherer, Frederic M. *Industrial Pricing. Theory and Evidence*. Chicago: Rand McNally, 1970.
- 46  
47 Schröter, Harm. 'Cartelisation and Decartelisation in Europe, 1870-1995: Rise and Decline of  
48  
49 an Economic Institution,' *The Journal of European Economic History*, vol.25, no.1 (1996), 129-153.
- 50  
51 Segreto, Luciano R., 'East-West Trade in Cold War Europe: National Interests and Hypocrisy,'  
52  
53 in *Towards a New Europe. Identity, Economics, Institutions: Different Experiences*, Edited by Alberto  
54  
55 Tonini. Firenze: Polistampa, 2006.
- 56  
57  
58  
59  
60

1  
2  
3 Slade, Margaret E., 'The Two Pricing Systems for Non-Ferrous Metals,' *Resources Policy*, vol.  
4 15, no.3 (1989), 209-220.

5  
6 Smith, George David. *From Monopoly to Competition. The Transformation of Alcoa, 1888-*  
7 *1986*. Cambridge: Cambridge University Press, 1988.

8  
9 Spar, Debora. *The Cooperative Edge. The International Policies of International Cartels*.  
10 Ithaca: Cornell University Press, 1994.

11  
12 Stanziani, Alessandro. *Rules of Exchange. French Capitalism in Comparative Perspective,*  
13 *Eighteenth to Early Twentieth Centuries*. Cambridge: Cambridge University Press, 2010.

14  
15 Stein, Jerome L. *The Economics of Futures Markets*. Oxford: Basil Blackwell, 1986.

16  
17 Stigler, George J. 'A Theory of Oligopoly.' *The Journal of Political Economy*, vol. 72, no. 1,  
18 1964, 44-61.

19  
20 Stiglitz, Joseph E. *Globalisation and its Discontents*. New York: Norton & Co., 2002

21  
22 Stocking, George W. and Myron W. Watkins. *Cartels in Action: Cases Studies in International*  
23 *Business Diplomacy*. New York: Twentieth Century Fund, 1946.

24  
25 Storli, Espen. "Cartel theory and cartel practice. The Case of the International Aluminium  
26 Cartels, 1901-1940", *Business History Review*, vol. 88, no. 3 (2014), 445-467.

27  
28 Storli, Espen and David Brégaint, "The Ups and Downs of a family life: Det Norske  
29 Nitridaktienselskap, 1912-1976", *Enterprise and Society*, vol. 10, no. 4 (2009), 763-790.

30  
31 Streit, Manfred E. (ed). *Futures Markets modelling, managing, and monitoring futures trading*.  
32 Oxford: Blackwell, 1983

33  
34 Stuckey, John A. *Vertical integration and Joint Ventures in the Aluminum Industry*, London,  
35 Harvard University, 1983.

36  
37 Tarring, Trevor. *Corner! A Century of metal market manipulation*. London: Metal Bulletin  
38 Books, 1997.

39  
40 Tisdell, Clement A. *The Theory of price uncertainty, production, and profit*. Princeton:  
41 Princeton University Press, 1968.

42  
43 Tsokhas, Kosmas. 'The Rise and Decline of an International Zinc and Lead Cartel, 1945-1975,'  
44 *Australian Economic History Review*, vol. 40, no. 3 (2000), 262-286.

1  
2  
3 UNCTAD (United Nations Conference on Trade and Development), *Studies in the processing,*  
4 *marketing and distribution of commodities. The processing and marketing of bauxite, alumina and*  
5 *aluminium: areas for international co-operation.* Geneva: United Nations, document  
6  
7 TD/B/C.1/PSC/Rev.1, 1982.  
8  
9

10 UN (United Nations), *Les Sociétés transnationales dans l'industrie de production de*  
11 *l'aluminium à partir de la bauxite.* New York: United Nations (doc. ST/CTC/20), 1982.  
12  
13

14 Van Bael, Ivo and Jean-François Bellis, *Competition Law of the European Community.* The  
15 Hague and New York: Wolters Kluwer, 2010.  
16  
17

18 Vernon, Raymond. 'Soviet Commodity Power in International Economic Relations,' in *The*  
19 *Soviet Impact on Commodity Markets.* Edited by Michel Kostecki. London: Macmillan, 1984, 6-15.  
20  
21

22 Wallace, Donald H., *Market Control in Aluminum Industry.* Cambridge: Harvard University  
23 Press, 1937.  
24  
25

26 Waller, Spencer Weber. 'The Story of Alcoa: The Enduring Questions of Market Power,  
27 Conduct, and Remedy in Monopolization Cases,' in *Antitrust Stories.* Edited by Eleanor M. Fox and  
28 Daniel A. Crane. New York: Foundation Press, 2007, 121-143.  
29  
30  
31

32 Warlouzet, Laurent. 'Competition Policy in the European Economic Community (1957-1992).  
33 The Curse of Compulsory Registration?' in *Regulating Competition. Cartel registers in the twentieth-*  
34 *century world.* Edited by Susanna Fellman and Martin Shanahan. London: Routledge, 2015, 48-65  
35  
36  
37

38 Warlouzet, Laurent. 'The Centralization of EU Competition Policy. Historical Institutional  
39 Dynamics from Cartel Monitoring to Merger Control (1956-91),' *Journal of Common Market Studies,*  
40 vol. 54, no. 3, 2016, 725-741  
41  
42  
43

44 Watkins, Clinton and Michael McAleer, 'Pricing of non-ferrous metals futures on the London  
45 Metal Exchange,' *Applied Financial Economics,* vol. 16 (2006), 858-880.  
46  
47

48 Wells, Wyatt. *Antitrust and the Formation of the Postwar World.* New York: Columbia Uni-  
49 versity Press, 2002  
50  
51

52 Wolff, Rudolf. *The Wolff's guide to the London Metal Exchange.* London: Metal Bulletin  
53 books, 1980.  
54  
55  
56  
57  
58  
59

---

\* To be added after review

<sup>1</sup> Tarring, 'Twenty Years On', *Metal Bulletin*, no. 25.08.1978, 1–3. Tarring, 'The Man from Mars', *Metal Bulletin*, no. 5.09.1978, 1–2.

<sup>2</sup> According to the firms' correspondence, the dossier of accusation was received during August 1978. The news was reported on *The Financial Time* in September, the 15<sup>th</sup> while on the *Economist* published a report titled 'Aluminium. Probing the club' on the issue of September, the 23<sup>rd</sup>.

<sup>3</sup> *Official Journal of the European Communities*, No. L 92/1, 30.03.1985, Commission Decision of 19 December 1984 relating to a proceeding under Article 85 of the EEC Treaty, IV/26.870 – Aluminium imports from Eastern Europe, 85/206/EEC.

<sup>4</sup> Nappi, L'Aluminium. Lesclous, *Histoire des sites*. Litvak, Maule, 'Assessing industry concentration.' Peck, *The World Aluminum Industry*. Barham, States, Firms, and Raw Materials. Lesclous, *Histoire des sites*.

<sup>5</sup> About contemporary actors, For instance, Ian Forster, the chairman of LME committee, claimed at the annual round-table of the American Metal Market Forum of October 1978 that these two facts were 'pure coincidence.' University of Glasgow Documents (UGD), British Aluminium Company (BACO) Archives, 347/10/7/13, American Metal Market Forum, notes by J.S. Bridgeman (BACO), 30.10.1978. LME's in-house historical studies: Tarring, *Corner!* 43-54. Gibson-Jarvie, *The London Metal Exchange*, 199-204. Wolff, *The Wolff's guide*, 156-163. Trevor Tarring was chief editor of the *Metal Bulletin*, a key publication of the City's metal traders, when aluminium entered into LME trading. Robert Gibson-Jarvie was executive secretary of LME from 1970 to 1978. Rudolf Wolff & Co. was a trading firm that contributed to the creation of LME in 1877 and still in 1978 was amongst the main traders of this produce exchange.

<sup>6</sup> Fligstein, *The Architecture of Markets*. North, *Institutions*.

<sup>7</sup> Grinberg, *Aluminium*. Frøland, Ingulstad, 'An Age of Aluminium.' Barjot, Bertilorenzi, 'Création et Aluminium.'

<sup>8</sup> Wallace, *Market Control*. Smith, *From Monopoly to Competition*. Engle, Gregory, Mosse, *Aluminum*.

<sup>9</sup> Stuckey, *Vertical Integration*. Also monographs about aluminium firms confirm this point: Smith, *From Monopoly*. Perchard, *Aluminiumville*. Knoepfli, *From Dawn to Dusk*. Campbell, *Mission Globale*. Cailluet, *Stratégies, Structures*.

<sup>10</sup> Nappi, *L'Aluminium*. Hachez-Leroy, *L'Aluminium français*. Also users recognised the exception of aluminium price stability in relation to other more volatile metals, see Bertilorenzi, *The International Aluminium Cartel*, 8.

<sup>11</sup> Elliot, Skelton, Wallace, *International Control in nonferrous*. Ballande, *Les Ententes économiques*. Borkin, Welsh, *Germany's master plan*. Hexner, *International Cartels*. Stocking and Watkins, *Cartels in action*. Mason, *Controlling World Trade*.

<sup>12</sup> Barjot, 'Introduction'.

<sup>13</sup> Hachez-Leroy, 'Le Cartel International de l'Aluminium'. Bertilorenzi, 'Business, Politics, and Finance'. Storli, 'Cartel Theory and Cartel Practice'. Born, *Internationale Kartellierung*. See also former publications on this topic: Wallace, *Market Control in Aluminium Industry*. Muller, *Light Metals Monopoly*. Watkins, 'The Aluminum Alliance'. Marlio, *The Aluminum Cartel*.

<sup>14</sup> Schröter, 'Cartelisation and Decartelisation.' Fear, 'Cartels and Competition'. Fear, 'Cartels'.

<sup>15</sup> See for instance Cerretano, 'European Cartels.' Schröter, 'Cartelisation and decartelisation.'

<sup>16</sup> Stuckey, *Vertical Integration and Joint Ventures*. Holloway, *The Aluminium Multinationals*.

<sup>17</sup> Bertilorenzi, *The International Aluminium Cartel*. Hachez-Leroy, 'Cartel Strategies'.

<sup>18</sup> Stigler, 'A Theory of Oligopoly'. Levenstein, Suslow, 'What determines cartel success?'

Levenstein, Suslow, 'Breaking up is hard to do.'

<sup>19</sup> About commitment, its central role in cartels has been underlined by Spar, *The Cooperative Edge*.

Recently, Storli "Cartel theory and cartel practice" adopted this conceptual framework, but surprisingly without referring to pricing policy.

<sup>20</sup> Hachez-Leroy, *L'Aluminium français*, 299

<sup>21</sup> Bertilorenzi, *The International Aluminium Cartel*.

<sup>22</sup> Knoepfli, *From dawn to dusk*, 166-167. Smith, *From monopoly to competition*, 416-418.

- 1  
2  
3  
4 <sup>23</sup>Barjot, 'Performances, Strategies and Structures: Pechiney.' Lanthier, 'Les stratégies financières  
5  
6 d'ALCAN.'
- 7  
8 <sup>24</sup> About 1994, see Stiglitz, *Globalisation and its Discontents*, 173. More recent reports in 'Goldman  
9  
10 Sachs's Aluminum Pile,' *The New York Times*, 26.07.2013.
- 11  
12 <sup>25</sup> Slade, 'The Two Pricing Systems,' 212.
- 13  
14 <sup>26</sup> Goss, 'The forward pricing function'.
- 15  
16 <sup>27</sup> Stein, *The Economics of Futures Markets*. Streit, *Futures Markets*.
- 17  
18 <sup>28</sup> Slade, 'The Two Pricing Systems.' Barro, 'A theory of monopolistic price adjustment.' Newbery,  
19  
20 'Commodity-price stabilisation.'
- 21  
22 <sup>29</sup> (Not exhaustive) Christopher L. Gilbert, 'Modelling market fundamentals.' Gross, 'A semi strong  
23  
24 test.' Figuerola-Ferretti & Gilbert, 'Price volatility and marketing methods.' Figuerola-Ferretti &  
25  
26 Gilbert, 'Price discovery.' Watkins, McAleer, 'Pricing of non-ferrous metals futures.' Brault,  
27  
28 'L'Introduction de l'aluminium.' Mouak, *Le marché de l'aluminium*.
- 29  
30 <sup>30</sup> Slade, 'Two pricing systems.' Burns, 'Futures markets and market efficiency.'
- 31  
32 <sup>31</sup> OECD, *Problèmes et Perspectives de l'Industrie de l'Aluminium*. Delay, *L'Industrie mondiale de*  
33  
34 *l'aluminium*. UNCTAD, *Studies in the processing*. UN, *Les sociétés transnationales*. EEC,  
35  
36 *Aluminium*. Charles Rivers Associates, *An Economic Analysis*.
- 37  
38 <sup>32</sup> Nappi, *Aluminium*. Nappi, 'L'industrie internationale de l'aluminium.'
- 39  
40 <sup>33</sup> Chalmin, 'Aluminium and the London Metal Exchange.'
- 41  
42 <sup>34</sup> Nappi, *L'Aluminium*.
- 43  
44 <sup>35</sup> Waller, 'The Story of Alcoa.' Storli, 'Cartel practice.'
- 45  
46 <sup>36</sup> Peck, *Competition in the Aluminum Industry*. Smith, *From Monopoly to Competition*.
- 47  
48 <sup>37</sup> Kronstein, *The law of International Cartels*. Wells, *Antitrust*. Freyer, *Antitrust*.
- 49  
50 <sup>38</sup> Bertilorenzi, 'Business, finance, and politics.'
- 51  
52 <sup>39</sup> See for instance, Stuckey, *Vertical Integration and Joint Ventures*. Nappi, *Aluminium*.
- 53  
54 <sup>40</sup> Slace, 'The two pricing systems.' Means, *Pricing Power*. Scherer, *Industrial Pricing*. Tisdell, *The*  
55  
56 *theory of price uncertainty*.

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2  
3  
4 <sup>41</sup> Peck, Competition in the Aluminum Industry.

5  
6 <sup>42</sup> Bertilorenzi, *The International Aluminium Cartel*. On commodity agreements in post-1945 world,  
7  
8 see Nappi, *Commodity Market Controls*.

9  
10 <sup>43</sup> Hachez-Leroy, 'La construction européenne.'

11  
12 <sup>44</sup> Coppolaro, The making of a world trading power.

13  
14 <sup>45</sup> Hachez-Leroy, 'La construction européenne.'

15  
16 <sup>46</sup> See for instance, about zinc see Tsokhas, 'The Rise and Decline,' about nickel see Cairns,  
17  
18 'Changing structure,' and about tin see : Hillman, *The International Tin Cartel*. About coffee,  
19  
20 Greenstone, 'The Coffee Cartel.'

21  
22 <sup>47</sup> Gerber, Global Competition. MacGowan, The Antitrust Revolution.

23  
24 <sup>48</sup> Warlouzet, 'Competition Policy.' Ramirez, 'La Politique de la concurrence de la CEE.'

25  
26 <sup>49</sup> Compare with case studies contained in Patel and Schweitzer (eds.), *The Historical Foundations of*  
27  
28 *EU Competition Law*.

29  
30 <sup>50</sup> Compare with Jones (ed.), *The Multinational Trader*. Jones, Merchants to Multinationals.

31  
32 <sup>51</sup> Baker and Hahn, *The Cotton Kings*. Lambert, *The Futures*. Engel, 'Futures and risk.' Jacks,  
33  
34 'Populists versus theorists.' Levy, 'Contemplating Delivery.'

35  
36 <sup>52</sup> Stanziani, The Rules of the Exchange, 261-264.

37  
38 <sup>53</sup> Chapman, Merchant Enterprise in Britain. Jones, Merchants to Multinationals.

39  
40 <sup>54</sup> Rees, *Britain's Commodity Markets*, 342-382. In fact, it describes the key metals that were traded  
41  
42 into LME until the eve of the 1970s, such as copper, tin, lead, zinc and silver.

43  
44 <sup>55</sup> Compare with Michie, *The London Stock Exchange and Cassis, Capitals of Capital*. Ball, 'The  
45  
46 German Octopus.' Jones, *Merchants to Multinationals*.

47  
48 <sup>56</sup> Lopez-Morel, Segreto, 'The International Mercury Cartel.' Lopez-Morel, 'Rothschilds' strategies in  
49  
50 international non-ferrous metals.' Hillman, *The International Tin Cartel*.

51  
52 <sup>57</sup> Hachez-Leroy, *L'Aluminium français*, 43-46.

53  
54 <sup>58</sup> Becker, 'The German metal traders.'

55  
56 <sup>59</sup> Bertilorenzi, *The International Aluminium Cartel*, 65.

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<sup>60</sup> Perchard, Aluminiumville.

<sup>61</sup> Kipping, Cailluet, 'Minzberg s Emergent and Deliberate Strategies.'

<sup>62</sup> See Bertilorenzi, *The International Aluminium Cartel*. Huré, *Les organisations européennes de l'aluminium*, Holloway, *The Aluminium Multinationals*. About the international joint-ventures, see Stuckey, *Vertical integration* and Storli & Brégaint, 'The Ups and Downs.'

<sup>63</sup> Bertilorenzi, *The International Aluminium Cartel*, 305-307, 327-328.

<sup>64</sup> RiotTinto Paris Archives, Pechiney Documents (hereafter RPA), 201-6-56744, Rapport du groupe de travail réuni à Zurich', 21.05.1964; Archives European Aluminium Association. Fonds European Primary Aluminium Association (hereafter Archives EPAA), Minutes of the Foundation Meeting of the EPAA held in Dusseldorf, 11.11.1969. Institut pour l'Histoire de l'Aluminium, archives (hereafter Archives IHA), 051502BIZINFO66, Minutes of the Second Meeting of the Board of Directors held at Norfolk House, St. James's Square, London SW1, on Wednesday, 28.09. 1972; Constitution of IPAI, 3.07.1972.

<sup>65</sup> Mikdashi, 'Aluminum.'

<sup>66</sup> RPA, 201-001-8-20514. Direction générale, Ententes et réunions producteurs, Compte rendu de la réunion des producteurs européens, 4.07.1958; Compte rendu de la réunion des producteurs européens, 14.06.1961.

<sup>67</sup> Bachmann, Aluminum as an export industry.

<sup>68</sup> About the creation of the American strategic stockpile, see Ingulstad, 'We want aluminium.'

<sup>69</sup> Virginia Historical Society, Reynolds Metals Company Records, MSS#3395 (hereafter VHS-RMC), box 109, folder 3753, The stockpile story, 1964. Heinz History Center, ALCOA records, MSS# 282 (hereafter HHC-ALCOA), box 68, folder 2, The stockpile incident, 1962.

<sup>70</sup> VHS-RMC, box 96, folder 3394, Aluminum Association, Increasing Free World Production. An Aluminum Industry Report, 15.08.1961. RPA, 00-8-20514, Aluminium. Réunion des producteurs européens, 30.11.1961. Runions de producteurs européens, 15.02.1962.

<sup>71</sup> VHS-RMC, box fodler 1903, Irving Lipkowitz (RMC), Memorandum. Aluminum Futures, 18.01.1963. RPA, 502/1-8-51287, New York Mercantile Exchange, Aluminum Futures Markets,



1  
2  
3  
4 12.04.1965. Besso (Pechiney-USA) to Baudart (Pechiney France), Note. Mercantile Exchange,

5  
6 14.05.1965. 201-6-56740, Brandeis Goldschmidt to Bocquentin (Pechiney), 20.10.1966.

7  
8 <sup>72</sup> As it is recorded in the archive files. HHC-ALCOA, box 68, folder 2, The stockpile incident, 1962

9  
10 <sup>73</sup> Foreign Relations of the United States (FRUS), 1964–1968, volume IX, International development  
11 and economic defense policy, Commodities, doc. No. 296. Memorandum From the Chairman of the  
12 Council of Economic Advisers (Ackley) to President Johnson, 8.11.1965 and Editorial Note, doc. No.  
13 297. See also Cuff, ‘Stockpile and Defense Escalation.’

14  
15  
16  
17 <sup>74</sup> RPA, 502/1-8-51287, Réunion du Club de Zurich, 29 Sep. 1966. Note. ALCOA. Visite de M.  
18 Harrison (ALCOA), 11.08.1967.

19  
20  
21 <sup>75</sup> RPA, 502/1-8-51287, CR de la Réunion des producteurs d’aluminium à Zurich, le 16 Janvier 1964.

22  
23 <sup>76</sup> RPA, 201-6-56739, Pechiney, Note sur la protection des industries de l’Aluminium dans le cadre de  
24 la CEE, 21.02.1966. EPAA Archives, Note. Meeting the Board of Trade. Re: Eastern Metal,  
25 16.06.1967. BACO, The United Kingdom and the Eastern Metal Agreements, 9.11.1978.

26  
27  
28 <sup>77</sup> RPA, 201-6-56740, Compte Rendu de la réunion des producteurs à Bruxelles, 4.03.1964.

29  
30  
31  
32 <sup>79</sup> RPA, 201-6-56739, Pechiney, Protection douanière de l’aluminium dans la CEE. Note à Monsieur  
33 Bocquentin de G. Baudart, 25.02.1966.

34  
35  
36  
37 <sup>80</sup> RPA, 201-6-56739, Note. Accords Brandeis, 30 Oct. 1967. 201-6-56742, Castera (Pechiney),  
38 Accords Brandeis, 27.11.1978.

39  
40  
41 <sup>81</sup> See for instance Adler-Karlsson, *Western Economic Warfare*, Jackson, *The Economic Cold War*. A  
42 good exception is Kosteci, *The Soviet Impact*.

43  
44 <sup>82</sup> Jensen-Eriksen, ‘The Cold War in Energy Markets.’

45  
46 <sup>83</sup> Segreto, ‘East-West Trade.’

47  
48 <sup>84</sup> Vernon, ‘Soviet Commodity Power.’

49  
50 <sup>85</sup> Bertilorenzi, The International Aluminium Cartel.

51  
52 <sup>86</sup> EPAA Archives, BACO, The United Kingdom and the Eastern Metal Agreements, 9.11.1978.

53  
54 <sup>87</sup> RPA, 201-6-56740, Brandeis, Réunion des producteurs d’aluminium à l’Aluminium Centrale –  
55 Düsseldorf, 8.11.1966.  
56  
57  
58

<sup>88</sup> Compare with Frenz, *Handbook of EU Competition Law*, 335; Van Bael and Bellis, *Competition Law*, 49-50.

<sup>89</sup> Fellman, Shanahan, 'Introduction. Regulating competition.'

<sup>90</sup> The National Archives, BT 258/1745, Note no. 3, 23.08.1967; Note no. 13, The Import of Soviet Aluminium, 19.09.1967; Restrictive Trade Practices Act, 1956. Agreements to Limit United Kingdom Imports of Eastern Bloc Aluminium. Entry on Confidential Section of the Register, 1968.

<sup>91</sup> The National Archives, BT 258/1745, Note no. 9, 11.09.1967.

<sup>92</sup> The National Archives, BT 258/1745, Note of a meeting. Imports of Aluminium from the Soviet Bloc, 22.12.1967. RPA, 201-6-56739, Note. Accords Brandeis, 30.10.1967.

<sup>93</sup> RPA, 201-6-56739, Note confidentielle. Accords Brandeis, 1 Mar. 1968. Examen des questions par le renouvellement des accords Brandeis, réunion entre Escherich et Rudell (VAW) et Reuter, Matignon, Rey et Rossigneux (AF-Pechiney), 18.03.1968.

<sup>94</sup> RPA, 201-6-56739, Rudell to Pechiney and Montecatini, 27 Mat 1969. Rudell to Jaume, re. Importations de l'Est, 17.08.1970.

<sup>95</sup> RPA, 201-6-56739, Wonlich (Alusuisse) to Bès de Berc (Pechiney), 4.11.1970

<sup>96</sup> RPA, 90-5-55444, Rudell Files, Rudell to Jaume (DG IV), 2.11.1970

<sup>97</sup> RPA, 90-5-55444, Rudell Files, Jaume (DG IV) to Rudell, 7.12.1970.

<sup>98</sup> RPA, 90-5-55444, Rudell Files, Proceeding No. IV/26.870, Imports of Aluminium from East-Block, 30.11.1980.

<sup>99</sup> RPA, 020-1-4-46663, Alufinance, Note à M. Lefon, 14.01.1971. Riotinto Alcan Holding, Zurich (hereafter RHZ), Alusuisse documents, Ausschuss – Protokolle, Protokoll nr. 566, 5.12.1970.

<sup>100</sup> This was for instance the idea expressed by Keynes in the article already quoted and in other studies, such as Lovasy, *International Cartels*, Bennet, *International Commodity Stockpiling*, Friedman, 'Commodity-Reserve Currency,' and Hart et al. *The Case for an International*. About the debate on these inventory schemes, see also Maizels, *Commodity in crisis*. Atsé, *Commodity Futures Trading*. Pindyck, 'Inventories and the Short-Run Dynamics.'

<sup>101</sup> RPA, Pechiney documents, 90.1.020.DAF.156, Alufinance, Société internationale de stockage, 25.01.1971.

<sup>102</sup> About the links between SGW and aluminium industry, see Attali, *Un Homme d'Influence*, 377-378. Cailluet, 'The British Aluminium Industry.' Fergusson, *High Financier*, 183-199. Perchard, *Aluminiumville*.

<sup>103</sup> RPA, Pechiney documents, 90.1.020.DAF.17, Alufinance, 3.6.1971; Explanatory Note on Alufinance, 21.05.1971; 020-1-4-46663, Alufinance, Alufinance. Schéma de la vente suivie du rachat, 12.05.1971.

<sup>104</sup> RPA, Pechiney documents, 90.1.020.DAF.17, Alufinance, Alufinance – Loan agreement, s.d. but 1971; 020-1-4-46663, Alufinance, Alufinance – Schéma de la vente suivie de rachat, 12.05.1971.

<sup>105</sup> European Commission Archives, Brussels, BAC 383-1998-795, Alufinance DG IV 26919, Anlage zur Alufinance-Anmeldung bei der EWG-Kommission von 3.6.1971, 14.07.1971. RPA, Pechiney documents, 90.1.020.DAF.18, Alufinance. Operation relations publiques, 11.06.1971.

<sup>106</sup> EPAA Archive, Folder 13, EEC Commission files, Minutes of hearings, case No. IV/27000, IFTRA rules, 25.09.1974.

<sup>107</sup> Archive Pechiney, 200-8-31264, Aluminium. Note sur IFTRA 14.03.1972; CEE. Audiction du 25/9/1974 à Bruxelles. Réponse du Dr. Rudell, 30.09.1974.

<sup>108</sup> Archives IHA, 90-12-SOL-IHA-6, Entretien du 29 Octobre 1971 de Monsieur Culver (ALCAN), Monsieur Bès de Berc, Monsieur Bernanrd (Pechiney). Archives OCDE, AL 75(2), Compte rendu succinct de la première session du groupe de travail ad hoc sur les problèmes de l'industrie de l'aluminium, tenue au siège de l'OCDE le 24 et 25 avril 1972, 10.05.1972.

<sup>109</sup> Archives IHA, 051502BIZINFO66 John Wonhlich (Alusuisse), Assanissement du marché international de l'aluminium, note au Aluminium Working Party, OECD, 7.06.1972.

<sup>110</sup> RPA, 201-6-56739, Alugate III.3, Comité de Liaison, EPAA Exective Board, Compte-Rendu, 15.10.1971.

<sup>111</sup> Archives EEC, BAC 383/1998 n. 795, 1971-1975. IV-4 26919, Alufinance, Carisi, Note pour Monsieur le Directeur Jaume, 29.06.1971; Jaume, Affaire DG IV 26919, 19.08.1972. RPA, 200-8-

31264, Aluminium. Note sur IFTRA, 14 Mar. 1972. CEE. Audition du 25/9/1974 à Bruxelles.

Réponse du Dr. Rudell, 30.09.1974.

<sup>112</sup> Daviet, 'Saint-Gobain et les ententes internationales.'

<sup>113</sup> 'La Politique de Concurrence des neuf se raffermi. Une interview de M. Albert Borschette, membre de la Commission des Communautés européennes,' *Le Figaro*, 8-9.12.1973.

<sup>114</sup> RPA, 200-8-31264, CEE, Direction générale de la concurrence to Pechiney-Ugine-Kuhlman, 17.7.1974.

<sup>115</sup> Decision 74/292/EEC of 14.05.1974.

<sup>116</sup> Decision 75/497/EEC of 15.07.1975.

<sup>117</sup> RPA, 200-8-31264, Rudell, Translation of letter to the German Federal Producers, 11.10.1973.

IFTRA Aluminium. Compte-Rendu de l'Audition par la Commission des Communautés Européennes, 25.9.1974.

<sup>118</sup> RPA, 200-8-31264, IFTRA Aluminium. Compte-Rendu de l'Audition par la Commission des Communautés Européennes, 25.09.1974. EPAA archives, box 2, Minutes of the meeting held in Dusseldorf, 25.03.1976.

<sup>119</sup> RPA, 201-6-56739, Alugate III, Commission des Communautés Européennes, Utiger (BACO) to Castera (Pechiney), Note. Accords Brandeis v. Bruxelles, 23.06.1977.

<sup>120</sup> All the correspondence between DG IV, the Producers, the traders and EPAA is contained in RPA, 201-6-56739, Alugate III.1, EEC Documents: DG IV to Brandeis, 5.4.1976; DG IV to Pechiney, 1.8.1976. Mandat de vérification, 16 Nov. 1976. DG IV to EPAA, 26.1.1977. The chronology is also resumed in Arnaud (Pechiney), Les accord Brandeis. Note pour Castera, 24.6.1977.

<sup>121</sup> Decision 85/206/EEC of 19.12.1984.

<sup>122</sup> RPA, 201-6-56743, Alugate IV, Commission of the European Communities, Draft, Minute meeting of the hearings held in Manhattan Center, Brussels, on the 12, 13,14,15, 16, 19, 20, 21, 22, 23, 26 and 27 November 1979.

<sup>123</sup> Bank of England Archives, 10A324/4, Report of the Commodities Co-ordinating Group (Bank of England, LME, DG IV EEC), 4.03.1979. The various contacts between DG IV and LME are resumed in this document.

<sup>124</sup> Perchard, Aluminiumville.

<sup>125</sup> IHA, Documents about LME, Utiger (BACO and EPAA President) to M. D.C. Clark, Department of Industry, 25.8.1976. EPAA Archives, box 12, The United Kingdom and the Eastern Metal Agreements, 9.11.1978.

<sup>126</sup> Bank of England Archives, 10A324/4, Gold. Report by LME, 16.02.1978; Commons and Lords Hansard, Common sitting, Foreign and Commonwealth Affairs, World Commodities Centre, 26.04.1978, vo. 948, cc1361-3.

<sup>127</sup> Ionescu, The European Alternatives.

<sup>128</sup> IHA archives, Documents about LME, Rayner-Harwill LTD, 'Aluminium at the London Metal Exchange. A report on the decision of the LME to launch an aluminium contract. Report compiled by David Hargreaves,' October 1977

<sup>129</sup> 'LME brings confusion to Al,' *Metal Bulletin*, 30.10.1979

<sup>130</sup> IHA archives, Documents about LME, Rayner-Harwill LTD, 'Aluminium at the London Metal Exchange. A report on the decision of the LME to launch an aluminium contract. Report compiled by David Hargreaves,' October 1977.

<sup>131</sup> RPA, 001-1-3-62939, Pechiney, Developpement du négoce international, 30.12.1982.

<sup>132</sup> Ramirez, 'La Politique de la concurrence de la CEE.' Patel and Schweitzer (eds.), *The Historical Foundations of EU Competition Law*.

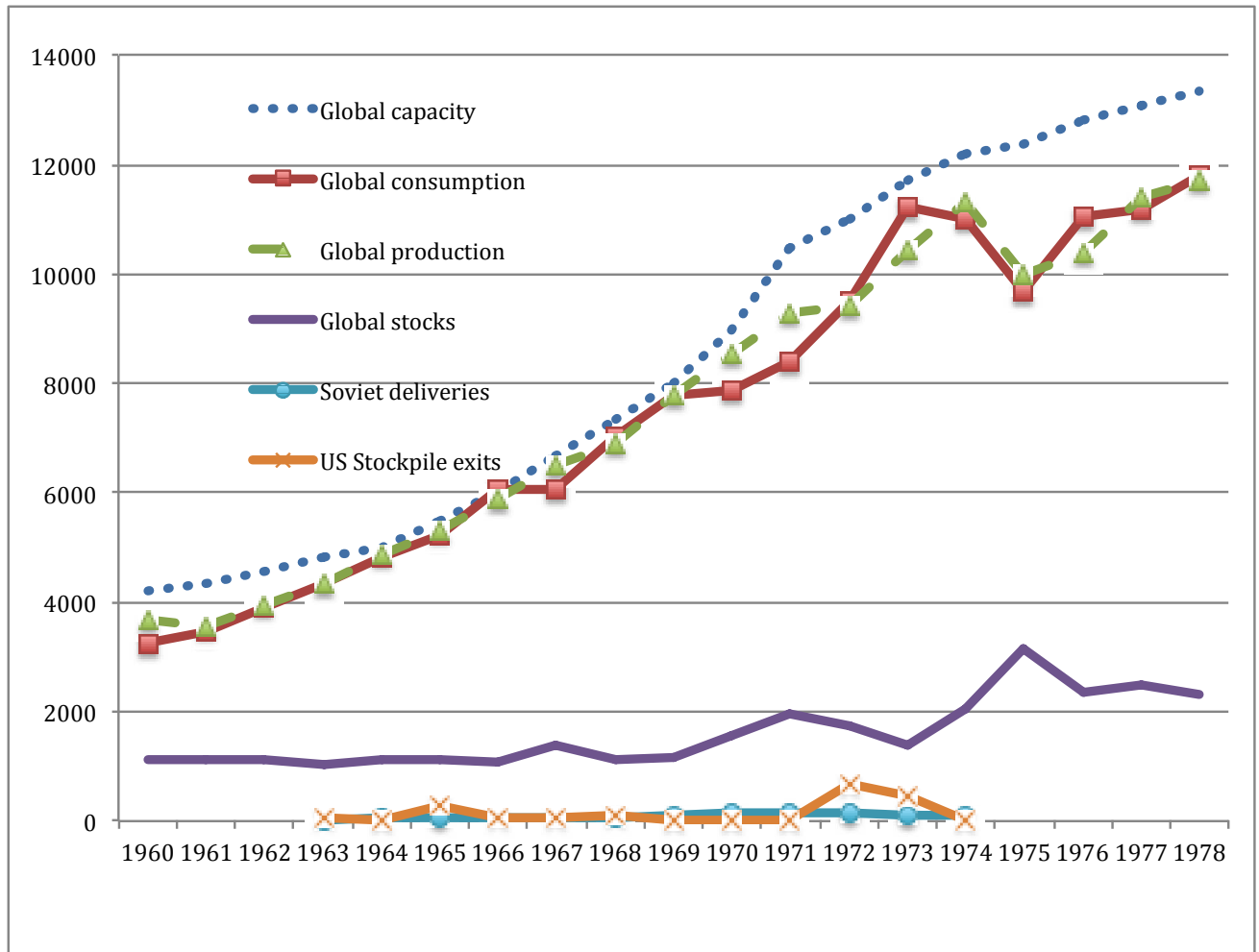
<sup>133</sup> Smith, From Monopoly to Competition, 416. Campbel, Mission globale, vol. III, 256.

<sup>134</sup> See for instance, Marquet, Négoces international. Maizels, Commodities in Crisis. Akiyama (ed.), Commodity markets reforms. Cottier & Delimatsis, The prospects of international trade regulation.

<sup>135</sup> Aluminum Warehousing Antitrust Litigation, case number 1:13-md-02481, in the U.S. District Court for the Southern District of New York.

<sup>136</sup> Smith, From Monopoly to Competition.

Figure 1. Global supply-demand balance of aluminium industry, 1950s-1970s.



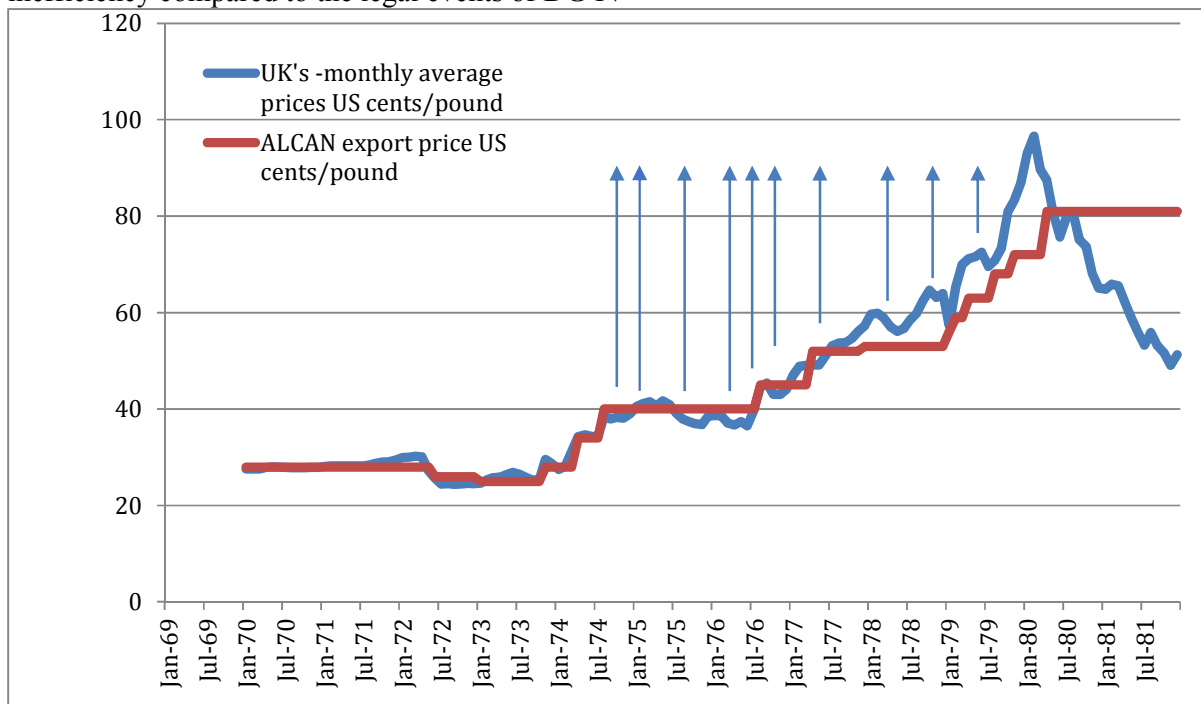
Notes. Stocks figure for 1971-1978 includes Alufinance's holdings.

Table 1, The evolution of the Brandeis Agreements, 1963-1976

	1963	1964-1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	#1976
ALCAN	3,200	6,750	7,595	10,440	11,044	13,204	^14,385	12,810	11,650	14,260	9,325	8,815	6,330
ALCOA <sup>o</sup>	300	670	780	1,070	-	-	-	-	-	-	-	-	-
Kaiser <sup>^</sup>	300	670	770	1,060	-	-	-	1,540	1,813	1,540	2,035	1,880	1,220
Reynolds <sup>^</sup>	300	670	770	1,060	-	-	-	-	-	-	2,495	2,320	-
Pechiney	3,500	7,300	8,440	11,590	17,675	17,651	18,785	19,670	16,780	21,595	14,145	10,095	7,320
Alusuisse	2,575	5,295	6,115	8,405	9,691	10,828	12,700	13,800	12,514	14,530	11,280	11,090	6,600
Årdal	665	1,385	1,605	2,220	3,712	5,649	4,825	6,300	5,205	7,340	4,565	4,755	3,040
BACO	1,500	3,100	3,590	4,920	8,409	10,054	6,695	5,490	5,605	6,080	2,765	3,040	2,830
Elkem	470	985	1,140	1,570	3,563	4,260	5,060	5,440	5,095	4,305	3,505	3,365	2,325
ENDASA	350	730	840	1,160	1,500	1,780	4,210	4,110	2,570	3,320	2,415	2,270	2,025
Alugasa	-	-	-	-	-	-	-	-	1,738	2,240	2,005	1,880	1,475
Montecatini-Alumetal	920	1,900	2,200	3,020	3,351	4,006	3,680	3,510	3,035	4,070	5,480	2,995	1,750
VMR	840	1,750	2,025	2,780	3,060	3,659	3,200	3,090	2,495	3,085	2,270	2,015	1,245
Svenska	350	365	420	585	1,140	1,364	2,775	2,870	2,170	2,945	2,035	1,970	1,230
VAW	2,500	5,110	5,910	8,120	8,621	9,345	9,180	8,870	7,665	9,385	6,420	5,685	3,970
Norsk Hydro	-	-	-	-	-	-	2,385	2,190	1,813	2,485	1,795	1,675	1,260
Holland Aluminium	-	-	-	-	-	-	1,580	2,140	1,695	2,100	2,120	2,415	1,870
Giulini	-	-	-	-	-	-	1,240	600	580	470	710	1,135	825
Metallgesellschaft	-	-	-	-	-	-	-	1,160	725	795	405	1,420	685
Nippon Light Metals	-	5,000	2,500	3,000	4,000	4,450	4,800	7,100	6,260	7,565	5,735	5,180	4,000
Total East Metal	17,700	41,500	44,700	61,000	76,340	86,250	95,200	100,690	89,408	108,110	81,505	74,000	50,000
US Stockpile disposal	50,000	30,000	300,000	60,000	50,000	120,000	22,000	-	5,000	663,000	463,000	1,000	-
Global demand	4,349,000	4,820,000	5,246,000	6,082,000	6,063,000	7,037,000	7,897,000	8,385,000	9,493,000	11,204,000	11,257,000	9,694,000	11,044,000
US Stockpile + East Metal	1.55%	1.48%	6.57%	1.98%	2.08%	2.93%	1.48%	1.19%	0.99%	6.88%	4.83%	0.77%	0.45%

Notes: ^ after 1967, included in BACO's quota. For Reynolds, after 1974 using Reynolds Europe. For Kaiser, after 1971 using Kaiser-Preussag; <sup>o</sup> after 1967, included in Elkem's quota; # 6 months;

Figure 2. Aluminium price list v. UK market price (1970-1981): the rise of the list-price inefficiency compared to the legal events of DG IV



Note: \* since 1979, the UK's monthly average prices is the LME's one.

Chronology of legal events:

1. DG IV accusation against IFTRA (July 1974)
2. DG IV objections about IFTRA to producers (Sept. 1974)
3. DG IV decision about IFTRA (July 1975)
4. DG IV first letter to producers about Brandeis (March 1976)  
In between, end of Brandeis' agreement
5. DG IV second letter to producers about Brandeis (August 1976)
6. DG IV Verifications and inspection into producers' archives (Nov. 1976)
7. DG IV third letter to producers about Brandeis (Jan. 1977)  
In between, negotiations between Rudell and DG IV
8. DG IV accusation against Brandeis (August 1978)
9. DG IV additional accusation against Brandeis (May 1979)
10. Hearings between DG IV and producers in Brussels (Nov. 1979)