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THE SWEDISH MATCH COMPANY IN THE INTERWAR YEARS.
AN INTERNATIONAL PERSPECTIVE

by

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Chapter 1
Market structure and market behaviour

In the following chapters an attempt will be made to summarise and interpret the market practices of the Swedish Match Group against the background of the changed conditions of competition between the wars. However, an analysis will have more meaning if these practices are placed in their historical and environmental contexts, and consequently a relatively long section will be devoted to establishing the fundamental conditions governing the Group’s policies on both the product and factor markets. In this chapter, the theoretical frame will be presented, and the weaknesses and limitations of the theory examined.

As starting point for the interpretation of the Group policies on the market, a method of analysis has been chosen which assumes a basic relationship between market structure and market behaviour. This assumption has both theoretical foundation and, in numerous instances, empirical support. As concerns foreign direct investment and international corporate growth, in this context two of the most important elements of market behaviour, the clear relationship between these and an oligopolistic market structure has been observed, and is also shown to have considerable empirical support.

The theory of industrial organisation assumes specific corporate behaviour in given market situations, and in fact the determination of the market structure characterising any given type of industry as often starts from corporate behaviour as from “structure variables”, such as the number of companies operating within the industry, or their respective sizes.

An important reason for this lies in the difficulty of defining different market situations with the use of objective criteria. If we choose two basic characteristics of different market structures, seller concentration and product differentiation for example, the
division between monopolistic competition, with many differentiated sellers, and oligopoly, must necessarily be arbitrary.

Normally, monopolistic competition is characterised by the presence of many producers. The commodities sold are not identical, and are regarded by the consumer as being to some extent different; in other words, the product is differentiated, but still interchangeable. An oligopolistic situation, on the other hand, prevails when seller concentration is high regardless of the degree of product homogeneity, and it is obviously impossible to draw a quantitative line separating one form of market from the other.

Similarly, it cannot be stated that differentiated and identical oligopolies are well-defined market structures. If the degree of product homogeneity is so high that every buyer regards the products of different companies as absolutely identical, a situation of identical oligopoly would be easily identifiable. In reality, however, complete interchangeability between standardised industrial products scarcely exists; such a situation would require a perfect market as regards information to the buyer concerning the product and the alternatives. Economic references are consequently content normally to define the identical oligopoly as a market in which a small number of sellers are active with "an almost identical product". To establish precisely the degree of homogeneity within each product group, or interchangeability against other products in similar or neighbouring product groups, is in practice very difficult.

The difficulty of precisely defining market structures starting from seller concentration and product differentiation has, in terms of the practical application of the theory, often led to the incorporation into the model, as a prerequisite of definition, of a given "market conduct"—the variable which should actually be explained by "industrial organisation". The basic relationship between market structure and market behaviour is however not disrupted as a result; it is in fact an expression of such a firmly established correlation between the perfect organisation structures and company practices, that the practice becomes axiomatic in the model.

Market behaviour in an oligopolistic market structure results from strong inter-dependence between existing companies. An
Market structure and market behaviour

oligopolistic market is defined as one in which "every seller supplies a large enough proportion of industry output, that his own changes in output or price will perceptibly affect the prices or sales volumes of the other firms in the industry". This means that a company's policies are decided, not by impersonal market forces, but by the immediate or anticipated actions of competitors on the product or factor markets.

An oligopoly may be looked upon as a complicated game between different companies, in which actions and counter-actions result from the companies' objectives. The theory generally assumes that the highest possible level of profitability is the basic objective, despite the fact that in recent times this assumption has been broadened by other requirements. The assumption of long-term profit maximisation has been accepted in this study; the assumption does not exclude other objectives governing company policies in the shorter term, by which the Company may deliberately accept short-term losses in anticipation of future profits.

But even with clear corporate objectives, universal patterns of behaviour cannot be established in the case of an oligopolistic market: the specific nature of the oligopoly must first be established. For instance, it is obvious that a Company will react differently to price decreases by a competitor, depending upon whether the products involved are highly differentiated or very similar. In the first instance, the company's market share and price will be protected by consumer preference, and the price reduction by the competitor will perhaps require no counter measures at all.

Numerous other examples can be cited of corporate behaviour conditioned by the specific nature of the oligopoly. An intensive advertisement and sales campaign by one of the companies operating in an oligopoly can perhaps be accepted by the others in a situation of increasing demand, whereas a similar campaign may result in vigorous counter measures in a situation of stagnating or declining demand. The price elasticity of demand, and the degree of buyer concentration, also play a significant role in company conduct. If the manufacturer sells direct to the retail trade, or to the consumer via his own marketing organisation,
different practices may be expected than in cases, for instance, where wholesale or retail profit margins bear more strongly upon consumer demand than do the manufacturer’s price. The actions of a Company operating in an oligopoly may thus be governed largely by the extent to which changes in the manufacturer’s price have a bearing upon the consumer price, and the extent to which changes in consumer price effect consumer demand.

Thus, it must be emphasised that the theory relating to the market conduct of the oligopolists presents no standard pattern applicable to all oligopoly situations. However, accepting that the aim of the oligopoly Company is the long-term maximisation of profits, the theory does provide a general framework, making possible a more systematic analysis.

The general pattern for oligopolistic market behaviour can be defined in the following way. The mutual dependency of companies operating in an oligopoly means that the established competitive equilibrium of the market is easily disrupted should one Company modify, for instance, its sales or investment policy. Every change bearing upon the competitive relationships tends to bring about reactions in defence by the other companies within the industry. The choice of counter measure depends upon the specific nature of the oligopolistic market, but common to all defensive reactions is the effort to restore the earlier balance, and prevent any worsening of relative position on the factor and product markets.6

During the period of instability before equilibrium is re-established, opportunities arise for all oligopolists to increase their market or profit shares at the cost of the other companies, and decisive to the question as to whether or not such a policy can be successful is relative strength; and financial resources and degree of horizontal and vertical integration are fundamental criteria in the relative strengths of the oligopoly companies.

Thus, through its choice of competitive methods, the oligopoly Company can influence and change the market. These possibilities raise the question as to whether or not it is realistic to utilise an explanatory model which assumes that Company behaviour is decided by market structure. Obviously, a company’s market practices at any given time are governed by the structure of the
Market structure and market behaviour

market, and in the short and middle-term the structure must be presumed to be stable; it is hardly likely, for instance, that product differentiation or barriers to entry fluctuate from one year to the next.

When looking at developments within a company or industry over a longer period, however, a stable market structure cannot be taken for granted. Fundamental market conditions change, even if slowly, and company practices are not only affected by the structure of the market, but also contribute to the changes that take place in that structure. In time-series studies of process change, the causal relationship between market structure and Company practice is in fact mutual, and considerably more complicated than in a cross-section analysis, referring to a single point of time.

The methodological benefit of utilising market structure--and changes in this-as a strategic explanatory variable for purposes of an investigation of developments within the match industry over a long period of time, is nevertheless clear. Although the actions of the individual match companies had an effect upon the structure of the international match market, they were not decisive to it; the changes in that structure were the result of the collective actions of match companies throughout the world. On the other hand, market decisions and the choice of market strategy by the individual match companies at different times were governed by the prevailing market structure, and the conduct of different companies served only to strengthen certain tendencies to change already existing in the market.

In this study, developments within the match industry are consequently regarded as a dynamic process, in which the structure of the market and the conduct of the companies stand in mutual dependence. The increasingly oligopolistic international match market, and the varying levels of competition which arose, are seen as the vital, long-term decisive force behind market behaviour. The difficulty of drawing a line with any degree of certainty between different market structures, together with the necessity of viewing changes in market structures as a continuing process, justifies discussion of the match market firstly and above all in relative terms, such as the degree of seller and buyer con-
Part III. The marker policy and market control

centration; the degree of product differentiation, and the degree of oligopoly.
Chapter 2
Seller concentration and corporate growth

Concentration and internationalisation were the obvious trends in the match industry in the years leading up to the second World War. Match production is one of the older forms of industry, one in which manufacturing methods evolved gradually from substantially handicraft to a high degree of mechanisation, and a study of developments over the longer-term is illustrative of how an oligopolistic structure arises from a process of concentration. A discussion of the conditions and causes underlying this development must be related to the more general question of the forces behind corporate growth, internationalisation and concentration in the economic system.

An important prerequisite for the growth of both national and international companies was the radical change that took place in the field of communications. The revolution in transport costs which resulted from the expansion of railways and steamships in the second half of the nineteenth century made accessible earlier isolated markets, and resulted in a significant national and international market expansion. Market growth, which was stimulated also by the general economic expansion, brought about specialisation and new manufacturing methods, and step by step these necessitated the concentration of production to larger manufacturing units.

The rapid development of transport also made possible faster and more efficient contact, both in person and by post. Cable and telephone systems improved, and helped make possible the coordination and management of geographically widespread operations. Improvements in communications were in this way an important factor in the structural changes that took place within the industry, among other things permitting the grouping of separate production units under common management.
Part III. The market policy and market control

Explanations for historical sequences such as corporate growth and internationalisation can be sought at different levels. However, it is important to stress that all investments of this kind are the result of decisions taken within the Company. In this study company behaviour has been related to changes in market structure, and the prevailing structure of the market is assumed to be the result of the collective actions of all companies selling in the market. However, the process must begin somewhere, and the question must be asked as to which inner forces in the economic system can be evidenced as “ultimate” or “final” causes. To be more exact, the question may be phrased in the following way: what was the nature of the combined forces—both within and outside the Company—which resulted in decisions that initiated and gradually stimulated the process of concentration?

There exist no generally accepted theory relating to Company or corporate growth. A variety of explanations have however been put forward, and if from these an attempt is made to isolate a single, common “driving force”, competition stands out.

The market integration that took place in the second half of the nineteenth century clearly tended to stimulate competition. Monopoly markets, earlier protected by high transport costs, distance and lack of information, were broken up, and shortcomings in the factor and product markets were moderated. Increased competition led to counter measures by Company managements to protect profit levels, and safeguard future existence.

Growth represented one such safeguard. Vertical and horizontal integration meant a significant minimising of risk, and dependence upon the fluctuations of the market gave way to internal planning. If growth resulted in seller concentration, this created, in the long term, possibilities of influencing selling prices—although the initial effect of concentration was often intensified competition.

In competition with other companies, corporate growth could be a profitable proposition, even if selling prices of the manufactured articles could not be influenced. Increased effectivity of planning and production led to economies of scale, giving, within limits, lower unit costs with increasing Company size. In the case of the mechanised production of a standard product in long
Seller concentration and corporate growth

series, there arose the technical benefits of production on a large scale, with fixed costs spread over a greater number of manufactured units. Moreover, horizontal integration permitted the spreading of such overhead costs as product development, marketing and information; not least were the benefits of size on the credit market, with the growing company's better possibilities of raising capital. Credit-worthiness improved, and the costs of raising capital tended to decrease relative to the costs to competing companies.4

Vertical and horizontal integration must thus be seen as a consequence of competition. Corporate growth, and the emergence of multi-plant firms, means that dependence upon the mechanism of the market is deliberately replaced by planning as a more effective way for the Company to attain its objectives. As has been stated earlier in this study, the long-term maximising of profits has been taken as a basic objective of Company behaviour, with the obvious inference of every effort to reduce the uncertainties and risks of the market.

From this point, the emergence of international or “multi-national” companies was an inevitable outcome of expansion on the national level. Market integration, the accumulation of capital, and competition, resulted first in the development of national companies, whereupon the establishment of foreign sales and manufacturing subsidiaries followed as a natural consequence of the internationalisation of the product and factor markets. The distinction between a direct investment in a manufacturing subsidiary abroad and the home market is, in fact, small and lies above all in the fact that national frontiers are frequently synonymous with language and cultural barriers, and either can be an obstacle rendering the investment step a little less easy to take.5

Studies of industrial structures in different countries reveal that seller concentration at any given time varies very considerably from industry to industry. It thus follows that, in addition to the general conditions and “driving forces” discussed above and applicable to all branches of industry, there are particular market and manufacturing conditions applicable to specific industries, and these govern when and whether concentration tendencies break through. Current production methods, the development of
Part III. The market policy and market control

demand for the product, the possibility of product substitution and the competition situation within the industry in general, are some of the key variables in this context.

By the middle of the nineteenth century match production was an established industry in a number of European countries. The invention of the match dates from the 1830s, and commercial development of the new product was rapid, the result of both brisk demand and simple manufacturing methods. Production could be started and continued with a very small capital investment, and for many years cottage work and handicraft methods formed an important part of production operations.6

The innovation period in the development of the match industry can be dated to the decades around the year 1850. Demand was on the increase, and progressive product standardisation took place. This opened up the technical possibilities of increasing the scale of production, and in the industrially more advanced countries of Europe and in the U.S.A the match arrived as an article of mass consumption in the 1870s and 1880s.

This breakthrough was characterised by a lively increase in demand, a result of both generally increasing usage of "lights" as well as the trend to switch to friction matches in place of older and less convenient methods of creating fire. More effective transport and communications led to a geographical expansion of the market, a fact which considerably increased sales possibilities although at the same time national and international competition increased as a result. The breakthrough of Swedish match exports took place in the 1870s, with early sales efforts directed above all at the nearby, large markets of Germany and Britain. The rapid development of international communications made possible continued growth on new markets overseas when protectionist trade policies gained strength in Europe during the 1880s and 1890s, hitting by no means least at match imports. A very important reason for the success of the Swedish match manufacturers was government intervention in the match industry before the first World War; official control of phosphorus match production was a powerful stimulus on the sale of the speciality of the Swedish manufacturers, the safety match.

Increased demand, the expansion of the international match
Seller concentration and corporate growth

trade and intensifying competition between different manufacturers resulted in numerous improvements in production techniques within the industry, and in a relatively short period of years towards the end of the nineteenth century there took place a comprehensive mechanisation of the manufacturing process in both western Europe and in the United States. The 1890s saw the introduction of the first continuous machines, which integrated several stages of production to bring match manufacture to an almost automatic process.

These developments brought about very much lower consumer prices for matches, which in turn stimulated market growth and development to a true mass consumption product. However, the advanced level of mechanisation of the production process reached in the industrially developed countries as early as the first World War meant that the continued lowering of production costs became more difficult; future gains in productivity could be achieved only within the limits of basically unchanged production methods.7

The more general diffusion of the continuous machine in the European match industry came in the decade before the first World War, although it was not until the middle of the 1920s before the relatively highly mechanised Swedish match industry was using the continuous machine throughout. Handicraftstyle methods of production did not become obsolete overnight with the introduction of continuous machines, and in low wage countries, both in Europe and elsewhere, it was possible to manufacture matches in the years between the wars with minimal capital investment, and yet remain competitive with the mechanised production of the industrially more advanced countries.

It can be argued that the expansion phase of the match “product cycle” was concluded by the outbreak of the first World War, and in the industrialised areas of the world the rapid increase in demand of the break-through period was followed by a decline in the rate of growth. In several of the larger European markets demand for matches stagnated and even declined between the wars, contributory causes being increasing industrialisation, which lessened the need for “lights”, and the arrival of a substitute product—the mechanical lighter, the use of which
Part III. The marker policy and market control

spread widely after 1918. At the same time, the European match industry suffered from considerable excess manufacturing capacity, a result of the mechanisation of the manufacturing process that had taken place.

In this situation, optimism within the industry concerning the development of new markets overseas was not realised. Before 1914 a number of South American export markets disappeared, protected either by government match monopolies or prohibitive import duties. Between the wars a number of Asian markets were similarly closed to imports, and the international match market, which immediately before the first World War consumed more than 1,6 million cases, declined very considerably, by the end of the 1930s reaching no more than 5-600,000 cases.

A weak, s-shaped logistic growth curve illustrates the development of the European match industry in the long-term. The period of establishment in the 1850s and 1860s was followed by very rapid growth from 1870 until about 1900, when heavy market demand resulted in a rapid expansion of sales. Gradually many European and South American markets were then closed to match imports, at the same time as demand began to level off in industrially developed countries. Signs of over-capacity became apparent, and the European match companies were forced to look to new markets overseas for continued expansion. International competition stiffened, and in the closing years before the first World War the European manufacturers were forced to intensify their marketing operations, and to safeguard market shares.

It was in these conditions that there took place a distinct concentration of production and of companies, and as early as the turn of the century the market was showing a clear tendency to move towards a more oligopolistic structure. In those countries in which a high degree of mechanisation of the production process had taken place, the new techniques required a certain minimum factory size for production to be profitable. The pressure of harder competition, and the attraction of other economies of scale—particularly on the market and sales sides—brought about a number of mergers and Company acquisitions. Several large, horizontally integrated groups developed in the years before the
Seller concentration and corporate growth

First World War, including Diamond Match in the United States of America, Bryant & May in Great Britain, Solo in Austria-Hungary, Union Allumettière in Belgium, and Jönköping & Vulcan and AB Förenade Svenska Tändsticksfabriker in Sweden.

The tendency towards internationalisation was already apparent at that time. Diamond Match carried through a series of challenging foreign investments in the last five years of the nineteenth century, entering into competition in Europe with the local industry. However, this American challenge, which in Germany resulted in a sharp price war, was quickly neutralised by the home match industries, and Diamond Match soon wound up their European interests. Following in the Diamond Match tracks, but with greater long-term success, Bryant & May from Great Britain developed into an important international match group between 1900 and 1913, with manufacturing subsidiaries in Australia, New Zealand, Brazil and South Africa.

An attempt to estimate the actual seller concentration in the match industry at about the beginning of the first World War and at the end of the 1930s has been made in Tables 16 and 17. In Table 16, the eight largest groups in the industry have been placed according to total sales volume. However, although the individual figures of quantity shown in the tables may not be entirely reliable, in all probability they do reflect a true picture of the relative sizes and share of world sales of the different groups.

This cautious estimate of the concentration ratios of the match industry shows that around 1913 the four largest groups were responsible for approximately one-quarter, and the eight largest sellers for more than one-third of total match deliveries throughout the world. The degree of concentration increased considerably until the end of the 1930s, and by 1938 the four largest companies were responsible for half, and the eight largest for almost 63% of total sales.

In one important respect the information in Table 16 understates the seller concentration and related situation as regards competition. The world is not an integrated, uniform market, and customs duties and other trading obstacles created distinct national markets even before the first World War, and on these markets several of the larger groups had the benefit of protected
Table 16. Changes in seller concentration in the match industry, 1913—1938. The eight largest groups, placed in order of sales volume (Cases of 50 gross)

<table>
<thead>
<tr>
<th>1913</th>
<th>1938</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Company</strong></td>
<td><strong>Sales</strong></td>
</tr>
<tr>
<td>&quot;Solo&quot; AG/&quot;Helios&quot; AG (Austria/Hungary)</td>
<td>421,000</td>
</tr>
<tr>
<td>The Diamond Match Company (USA)</td>
<td>399,000</td>
</tr>
<tr>
<td>Jönköpings &amp; Vulcans Tändsticks-fabriks AB (Sweden)</td>
<td>354,000</td>
</tr>
<tr>
<td>Bryant &amp; May Ltd. (Great Britain)</td>
<td>c. 225,000</td>
</tr>
<tr>
<td>Toyo Match Company (Japan)</td>
<td>166,000</td>
</tr>
<tr>
<td>Nippon Match Company (Japan)</td>
<td>162,000</td>
</tr>
<tr>
<td>French Match Monopoly Authority (France)</td>
<td>130,000</td>
</tr>
<tr>
<td>AB Förenade Svenska Tändsticks-fabriker (Sweden)</td>
<td>100,000</td>
</tr>
<tr>
<td>Total world sales (T)</td>
<td>5,500,000</td>
</tr>
</tbody>
</table>
Seller concentration and corporate growth

Notes to Table 16.
1 Union Allumettière, the group that was formed in Belgium in 1912, is not included in this list. The sales of this group in 1913 are estimated at about 95 000 cases.
2 The figure relates to 1914.
3 The figure refers to export sales in 1920.
* The figure of total world match sales in 1913 should be regarded as an approximation, arrived at on the assumption that match consumption throughout the world between 1913 and 1938 increased at the same rate as consumption in the countries shown in Table 1 (p. 36).
4 The figure relates to 1933

Sources to Table 16:


sales. Solo sales on the domestic, duty-protected Austro-Hungarian market is one example, and sales by the French Monopoly Company in France another.

To illustrate the concentration ratio between sellers competing directly on the same market, another measure of concentration can be used, estimating the export volume of the group in question in relation to the collective export sales figure for the whole world (Table 17). However, this method also has obvious weaknesses. Competition arose not only between the exporting companies, but also between the exporting company and local manufacturers who were producing largely for sale on their home markets. If concentration is seen as a result of competition, there must also be a place in the analysis for consideration of the situation between match companies exporting, for instance to Great Britain and U.S.A., and the local Bryant & May and Diamond Match groups respectively.
Table 17. Changes in seller concentration on the international match market, 1913—1938. The six largest export companies, placed in order according to total export sales (Cases of 50 gross)

<table>
<thead>
<tr>
<th>Company</th>
<th>Export sales</th>
<th>Cumulative % of (T)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jönköpings &amp; Vulcan Tändsticksfabriks AB</td>
<td>336000</td>
<td>21</td>
</tr>
<tr>
<td>Toyo Match Company (Japan)</td>
<td>166000(^1)</td>
<td>31</td>
</tr>
<tr>
<td>Nippon Match Company (Japan)</td>
<td>162000(^2)</td>
<td>41</td>
</tr>
<tr>
<td>“Solo” AG/“Helios” AG (Austria/Hungary)</td>
<td>97000</td>
<td>48</td>
</tr>
<tr>
<td>AB Förenade Svenska Tändsticksfabriker (Sweden)</td>
<td>91000(^3)</td>
<td>53</td>
</tr>
<tr>
<td>Union Allumettière S.A., (Belgium)</td>
<td>c. 73000</td>
<td>58</td>
</tr>
<tr>
<td>Total export sales, world-wide (T)</td>
<td>1600000</td>
<td>100</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Company</th>
<th>Export sales</th>
<th>Cumulative % of (T)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Svenska Täntsticks Aktiebolaget (Sweden)</td>
<td>113000</td>
<td>60</td>
</tr>
<tr>
<td>Daido Match Company Ltd. (Japan)</td>
<td>73000(^1)</td>
<td>74</td>
</tr>
<tr>
<td>All-Union Export and Import Corp. Rasnoexport (Soviet Union)</td>
<td>63000</td>
<td>87</td>
</tr>
<tr>
<td>“Solo” AG-Vienna/“Solo” AG Prague (Austria/Czechoslovakia)</td>
<td>12000</td>
<td>89</td>
</tr>
<tr>
<td>Tulitikku O/Y Jokela (Finland)</td>
<td>12000</td>
<td>91</td>
</tr>
<tr>
<td>S.A. Finanzia Fiammiferi ed Affini /SAFFA/ (Italy)</td>
<td>7000</td>
<td>92</td>
</tr>
<tr>
<td>Total export sales, world-wide (T)</td>
<td>519000</td>
<td>100</td>
</tr>
</tbody>
</table>

\(^1\) The figure relates to 1914, and for the Jönköping group includes exports from the Barking factory.
\(^2\) The figure relates to 1920.
\(^3\) The figure refers to Group exports excluding Korea and Formosa in 1933, and is an estimate based upon the assumption that approximately 38% of total sales were exported (= the 1931 share of exports).

Sources: Sep. 289, and Comparative tables of STAB deliveries of Matches 1938, Stat. Dept. Shipments of Solo Matches 1938, vol. S—205; PM ang STABs verksamhet i Finland March April 1942, Stig Wijkström, vol. FIJ—9, and the official trade statistics of the respective countries, shown in Figure 3, p. 84.
Seller concentration and corporare growth

The ranking of the six largest exporting companies based on their international sales, as shown in Table 17, consequently overstates seller concentration. The actual degree of concentration on the market where different sellers were active at the same time should in reality lie somewhere between the concentration ratios shown in the two tables (Tables 16 and 17). Of total exports at the beginning of World War I, the four largest groups were responsible for almost half and the six largest for almost 60%. Measured in this way, seller concentration increased very significantly between the wars, and in 1938 the corresponding concentration ratios were, respectively, just short of 90% and slightly over 92%. Despite the weaknesses of the methods employed, the trend is clear: between 1913 and 1939 the match industry throughout the world reached a high degree of concentration.8

The direct foreign investments made by the Swedish match industry between 1900 and 1939 were very largely market-oriented, but there was also a significant degree of integration backwards along the production chain. It is typical of the internationalisation of the Swedish match industry that the three foreign investments made by Jönköping & Vulcan before the beginning of World War I consisted of (1) a direct investment in a sales company in Great Britain, the most important export market; (2) a defensive direct investment in production—the factory at Barking, and (3) an investment aimed at safeguarding supplies of the most important raw material—the splint factory at Seltso, in Russia. The investment at Barking, which took place in 1910, was actually intended to safeguard the Australian market interests of the Jönköping group, and is a good illustration of the combined importance of geographical distance, and national and cultural frontiers as obstacles to corporate growth on the international level.9

The establishment of the factory in Britain in 1910 anticipated the constant furtherance of export interests which clearly showed throughout the Swedish Match Company's international expansion. The factory at Barking was to be an "assembly plant" for semi-products exported from Sweden so as to take advantage of the preferential duties on British matches entering Australia;
Part III. The market policy and market control

Concern for the export of Swedish-made matches, even in semi-product form, was to become a guiding factor behind the Swedish Match foreign investment policy throughout the period between the wars.\(^{10}\)

The stated objective of the international expansion of the Swedish Match Group of the Kreuger years was to attain a position of such control over total world match supplies that market prices—and thus profit levels—could be increased. The policy drawn up to reach this goal was a mixture of company acquisitions, agreements limiting competition, monopoly concessions, product differentiation, and control of the sales of the more advanced types of match-manufacturing equipment.
Chapter 3
Mutual interdependence and oligopolistic reactions

The preceding chapter summarised the fundamental market and manufacturing conditions faced by the match industry, and which formed the background to the growth and internationalisation of the Swedish Match Group. In this and the following chapters, it is intended to describe and summarise the specific nature of the oligopolistic market structure, this being necessary to enable an understanding of the market policies of the Group in the shorter term. A suitable starting point is the relations between the larger match companies, and the changes in those relations that took place between the wars.

To understand the development towards closer collaboration between the larger groups it is first necessary to recall some of the basic market conditions. Taken as a whole, the match market between the wars was not expansive; increase in demand was slowing, and competition from lighters intensified simultaneously with a very considerable expansion of match production capacity, not least in the independent, new nations of eastern Europe and a number of overseas countries. In a detailed, worldwide survey of the match industry carried out by the Swedish Group in 1933 and 1934, production capacity in operating factories throughout the world was estimated at more than 12.2 million cases, while total production was put at about 6.6 million; the utilisation of global production capacity at that time was consequently not a lot more than 50%.

In this situation collaboration between manufacturers was no more than to be expected, as a means both of eliminating excess production and of preventing market prices from dropping below the profitability level. The practice of entering into agreements to regulate prices and divide markets existed even before World War 1, but was followed even more assiduously between
the war as a means of stabilising relations between Swedish Match and local producers even on smaller markets such as Syria, Siam, Burma and Ceylon (see Appendix 1). Of greater interest, however, is the increased level of co-operation between the world’s leading match groups. Bryant & May in Great Britain, Diamond Match in U.S.A., and Swedish Match—companies that were technically and commercially comparable.

There was a long history of co-operation between the three groups, and the general trend of the relationships reflected the gradual changes of the market structure. Since 1901, Bryant & May (Brymay) and Diamond Match had been associated through American shareholdings in the British group, which for a time was actually controlled by Diamond. The greater part of the American-owned shares were successively re-purchased back to Great Britain, but as late as 1920 Diamond still owned 12.5% of the voting rights in Bryant & May, and through their president, W. A. Fairburn, were represented on the Brymay Board.

The 1901 agreement between Diamond and Brymay was a step in the American group’s withdrawal from Europe following a flurry of overseas investment in the closing years of the nineteenth century. The sale to Bryant & May of the large Diamond factory in Liverpool in December 1901 was accompanied by an agreement recording mutual recognition of each company’s territorial sphere of interest. The agreement ensured Brymay sole production and sales rights in the British Commonwealth, with the exception of “British Colonies and Dependencies in North America or the West Indian Islands”; Diamond was given similar rights as regards North America and in certain Caribbean areas.

To avoid direct competition on the American safety match market, Diamond entered into an agency agreement in 1904 with Jönköping & Vulcan. Diamond were to buy matches from the Swedish group at fixed prices and to a certain minimum annual value, the matches to be distributed in the United States through the Diamond sales organisation. The commitment was increased when the agreement was renewed in 1913, and thereafter Jönköping & Vulcan exported almost 30,000 cases annually under the Diamond contract.

There was an even lengthier collaboration on the British mar-
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ket between the Swedish match industry and the growing Bryant & May. Since 1854 Bryant & May had been sole agents in Great Britain for exports from the old Jönköping factory, and following the formation of Jönköping & Vulcan in 1903 a Brymay subsidiary was for a number of years exclusive agent in Britain for the new group. Before the general ban on match imports to Great Britain in June 1916, Bryant & May and the leading match import agencies collaborated in pricing policies on the British market.

However, the biggest incentive to a post-war broadening of exchanges between Brymay, Diamond and Swedish Match was the changed conditions on the world’s match market as a result of the war. The problems of exporting from Europe during the second half of the war had not only stimulated the establishment of new factories and the expansion of production capacity in such overseas markets as India and Australia, but had also left the market free for Japanese matches. At the end of the war the large Asian markets were almost totally dominated by the Japanese, who had also made impressive progress in the Middle East and in the Americas. In the United States, the Diamond Match home market, the import of Japanese matches had increased particularly steeply, and from an annual average of about 500 cases before the war had jumped to an average of almost 20,000 cases in 1917–1919.4

During the war changes also took place in relations between Bryant & May and Diamond on the one hand and the Swedish match industry on the other. Prompted by the prohibition of match imports into Great Britain and the United States, and by optimistic hopes of a prolongation of those restrictions, both Bryant & May and Diamond Match enlarged their production capacities in the closing stages of the war, and were then ready, more effectively than earlier, to meet the threat of competition from imports when war-time regulations were withdrawn.

At the end of 1917 the Swedish Match Company was formed, with the entire Swedish match industry thereafter grouped under one management. By the beginning of 1919 the new Group, backed by increased resources, was ready to try to regain market positions lost during the war, and as Great Britain and the United States were historically very important markets—in the case of
Great Britain the most important—the danger of open competition with the British and American match groups was obvious.

A conflict of this type could be in the interest of none of the parties concerned. But when the war finished there existed no basis for an immediate improvement of relations between the groups. Market developments, even in the very short-term, were very difficult to foresee, and both Brymay and Diamond cherished hopes of an extension of the import restrictions applicable to their respective home markets. Discussions in London concerning future relations in February and March 1919 were fruitless, and the immediate result was that the three groups continued to try to improve their relative positions before any renewal of negotiations.

In April 1919 Bryant & May opened their newly-built match factory in Glasgow, an installation with capacity large enough to supply the whole of Scotland. The Swedish group concentrated on reinforcing its British sales company, J. John Masters & Co., with a considerable increase in share capital; the factory at Barking was transferred to Masters, and an expansion of production capacity rapidly carried out. Masters then acquired a small match factory near Manchester, and purchased land outside Glasgow for a large factory planned for Scotland.

At the negotiations in London in 1919, Ivar Kreuger was unable to accept the conditions laid down by Diamond Match for a renewal of the agency agreement for the United States’ market. The business association was accordingly discontinued in March 1919, and there followed a period of brisk competition between the American and Swedish groups. During that time Diamond completed the construction of a new factory for the production of safety matches in Savannah, Georgia, and also installed machines for safety matches in other factories.

In this unstable market situation, Swedish Match adopted the same policies as on the British market in order to strengthen their position against Diamond Match. The sales organisation was reorganised at the beginning of 1920, when Föренade’s sales company in New York was placed under direct Swedish Match administration, renamed Vulcan Match Co, and strengthened by means of an important increase in share capital. Efforts were also
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made by Swedish Match to acquire manufacturing companies in the United States, and in the first six months of 1920 negotiations took place aimed at a possible purchase of the Minnesota Match Co., the owners of a newly-built factory in Duluth with an annual production capacity as high as 70,000 cases. The acquisition of this factory did not come about, but the likelihood of a Swedish Match manufacturing presence in the United States, as well as a Swedish threat to start the export of strike-anywhere matches from Belgium to the United States, probably eased the way to a new agreement with Diamond Match in the autumn of the same year.5

The 1920 Agreements with Diamond Match consisted partly of a conventional agency agreement, partly of a memorandum in which the principles for long-term relations between the two groups was laid down. The agency agreement appointed Diamond to be the “sole and exclusive Agent for the sale in the United States and its dependencies”—Puerto Rico, the Panama Canal Zone, Hawaii and the Philippines—for a period of ten years from 1921. The quantities to be sold by Diamond were very loosely defined, and from 1922 the annual purchase by Diamond from Swedish Match and its associates in Europe was “estimated” at 70,000 cases.

As an expression of the nature of corporate relations in the match industry, the memorandum attached to the agency agreement is of considerable interest. In this, Diamond Match made a string of concessions, including an undertaking to discontinue the manufacture of all machines for the production of safety matches, successively to reduce the output of safety matches to 20% of production capacity at the time, and to discontinue completely the manufacture of safety matches in the new factory in Savannah. In return, Ivar Kreuger accepted that neither Swedish Match “nor its European associates” would acquire or establish match factories on the north American continent, unless in agreement with Diamond Match.6

The unstable situation on the British market was also brought to an end in 1920. When import controls were progressively withdrawn through 1919, the Belgian match industry was quick to see the opportunity presented by its increased competitiveness,
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the result of currency depreciation during and after the war. The sale of cheap Belgian matches increased rapidly, and threatened to disrupt the high-price structure built upon the British marker during the prohibition period. The threat of a ruinous price war brought Brymaw and Swedish Match closer to each other, and in the late summer of 1920 a seven-year agreement was signed, fixing prices and establishing sales quotas on the British marker. The British match manufacturers agreed to reduce their production by about 20% relative to sales in 1920, while the Swedish side undertook responsibility to limit imports.

The development of relations between the three leading match groups from the end of the war until the conclusion of the collaboration agreements in 1920 is an almost classical picture of company behaviour and company reactions in an oligopolistic market, showing a pronounced mutual dependence. During the first World War the oligopolistic equilibrium was upset in several ways; on both the American and British markets, the respective local groups had strengthened their own position, and afterwards neither was prepared to forgo advantages already won.

The Swedish side carried through a consolidation in the United States and Great Britain by means of an expansion of the sales organisation, and with preparations for the acquisition of manufacturing companies—in some cases actually completed—showing thereby that attempts to recover war-time market losses were to be taken seriously. When the immediately post-war very unstable market situation eventually started to settle, and when it became apparent that Brymaw and Diamond were to be disappointed in their hopes that import controls would continue, the way was open for compromise and co-operation through agreement. The foundation was laid for a more stable relationship.

However, neither the British nor the American agreement of 1920 was to bring about a stable, oligopolistic equilibrium. There were several reasons. The Swedish Match Company, under the direction of Ivar Kreuger, was intent upon gaining such a level of control over the match industries of the world that a very clear risk of conflict of interest between the groups arose on a number of markets outside Great Britain and the United States, although even on the American and British markets the co-operation was
not free of all friction. The arrival upon the scene of several new factories, above all in Europe in the first five years of the 1920s, was to show that market agreements and collaboration between the leading match groups was no guarantee of price stability, steady sales or freedom from competition.

The rapid expansion of the Swedish Group in the first five years of the 1920s clashed particularly with Bryant & May interests in Australia, and with the Bryant & May and Diamond joint interests in Canada and South America. Brymay regarded Australia as its own, traditional sphere of interest, and as early as 1909 had established a manufacturing subsidiary in Melbourne, Bryant & May Pty. Ltd. In 1919, when Swedish Match purchased control in the growing Federal Match Co. in Sydney, it was with the purpose of actively combating Bryant & May efforts to persuade the Australian authorities to increase match import duties.

This open conflict of interest on the Australian market was settled in February 1922, when Bryant & May acquired the share majority in Federal Match in exchange for acceptance of a 40% share of the market for imported matches. Even though this agreement marked recognition of the respective interests in Australia, the continuing co-operation, again, was not friction-free, and open lobbying by Brymay Australia for an increase of import duties on matches in 1925 and again in 192911930 was a source of considerable irritation to the Swedish Match management.

As early as the signing of the 1920 Agreement between Swedish Match and Diamond Match, the question as to whether or not Canada should form part of the area closed to Swedish Match manufacturing investment was cause for debate. Diamond demanded that the restriction should be applicable to the entire north American continent, not only to "USA and its dependencies", and the claim was put forward as Diamond had an investment in Canada in mind. It was accepted in the final text for the agreement.

The Canadian investment was made in the autumn of 1921 in collaboration with the two British groups, Brymay and Macguire, when a new Company, Canadian Match Co. was founded with a factory in Ontario. The Swedish Match management had had eyes on Canada for a considerable time, seeing it both as a
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potential competitor and as a potential market—although as a market only provided the Canadian method of levying excise could be changed. In the autumn of 1923, Ivar Kreuger acquired the shares of a small Canadian match company, World Match Corporation, with a factory in Berthierville, thereby obtaining an inside seat for a closer observation of developments on the Canadian market.

The British and American match groups regarded this Swedish Match acquisition in Canada—which was routed via the newly-founded subsidiary in U.S.A., International Match Corporation—as an encroachment into their established area of interest. An open price war broke out, and the Swedish subsidiary became allied with the largest Canadian manufacturer, the old family-owned Eddy Match Company, which thought itself threatened by the operations of the new Brynley/Diamond-owned Canadian Match Co.

Acceptance that cut-throat competition benefitted neither of the groups quickly brought them closer together, and a preliminary agreement to amalgamate the competing companies was reached in the autumn of 1924. The merger was not finalised until 1528, however, when Swedish Match finally withdrew from Canada, selling its shares in World Match Corporation to Bryant & May in connection with the formation of British Match Corporation in 1927.

It was not only the clash of interests on the Canadian market that brought about the strained relationship between Diamond and Swedish Match from the autumn of 1923. The birth of International Match Corporation, the important American subsidiary to which a great part of the foreign interests of Swedish Match was transferred, was regarded by Diamond as being a very much more serious threat to their own United States home market. The Swedish Match annual report for 1923 added to Diamond’s suspicions, as it stated that the IMCO resources were among other things “intended for investment in North and South America, and East Asia”, and in the Diamond Match Report for the same year there appeared a very critical statement concerning the expansion plans of the Swedish Match Group in the western hemisphere.
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Increased activity by Swedish Match in South America during 1924 brought about a direct clash with Diamond. A preliminary agreement with the Peruvian Government in May 1924 gave Swedish Match the monopoly on match imports, although the final agreement was not to be signed before November 1925. The preliminary agreement required existing match factories in the country to be bought by the Peruvian Government and closed, a program that would hit directly at Diamond Match as owners of a controlling interest in the larger of the two manufacturing companies in the country.

Diamond actively and openly opposed this Swedish infiltration in Peru, involving even the State Department, but ultimately was obliged to accept the forced sale of its subsidiary. The total compensation Diamond received for the loss of its Peru interests was not insignificant, however, as in addition to the compensation paid by the Peruvian State, Diamond also received payment direct from Swedish Match.*

There were other reasons for increasing tension in the Diamond-Swedish Match association in the middle of the 1920s. In Swedish Match circles there was very considerable discontent with the way in which Diamond Match was operating the sales agency in the U.S.A. for imported Group matches, and Diamond's inability to sell the quantities specified in the 1920 Agreement was taken as proof that the Americans preferred to sell their own safety matches, particularly book matches, which gave them larger profits than did the sale of imported matches.9

The foundation of British Match Corporation (BMC) in 1927, and the division of markets that was part of the settlement between Bryant & May and Swedish Match, brought about a real consolidation of relations. The amalgamation of the British and Swedish match interests in the jointly-owned BMC provided the basis, and market agreements gave the guide lines, to show how rival interests could in future be unified through negotiation and compromise. After the Kreuger crash the co-operation between the British and Swedish match industries became even closer, involving not only purely commercial issues but extending into the technical field, and the development of new and better machines.
The 1527 Agreement meant that the British group in principle strengthened its position in the British Dominions and Colonies, while the Swedes were accorded the dominant status on other international markets. The Brymay investments in South America, in some cases owned jointly with Diamond Match, and the Swedish Match investments in India, were held to be exceptions to the basic principle. The whole of Asia was defined as being within the Swedish sphere of interest, while certain South American markets—Brazil, Columbia and Argentina—were placed in the British sphere. Swedish Match withdrew entirely from the Canadian and Australian match industries, and undertook not to acquire or establish match factories anywhere within the British area. Sweden however retained the right to export matches to those British Dominions or Colonies that remained open to imports, although in such cases against payment of a certain royalty to British Match Corporation.

The Swedish Match undertaking to abstain from investments in match factories in areas dominated by the British industry was given with some reservation. "Should during the term of this Agreement a protective duty be put on matches in any British Colony or Dominion (other than Canada and those situated in Asia) which in the opinion of the Swedish Company renders it inadvisable to export matches to such countries", ran the wording of the Agreement on the British Colonies and Dominions, Swedish Match would be entitled, following discussions with BMC, to "acquire or erect factories in the countries concerned".¹⁰

This Swedish Match entitlement to safeguard its interests through manufacture in areas dominated by the British match industry became a live issue following increases in Australian match duties in November 1529 and April 1930. A plan published in the Directors' Report on Swedish Match for 1929, to start the production of matches in Australia, was no empty threat. Definite arrangements were made, and in the autumn of 1930 Bryant & May were forced to negotiate a solution. The result was that Swedish Match acquired 40% of the shares in both Australian companies, foregoing the entitlement to imports stipulated in the earlier agreements.

The arrangements concluded in 1930 between BMC and Swed-
ish Match included an agreement whereby the two companies were to collaborate on a 50-50 basis in a monopoly Company in Colombia, assuming the successful conclusion of negotiations to be held with the Colombian Government. The Colombian monopoly plans came to nothing, but the agreement exemplifies the close collaboration that developed in South America following the formation of BMC. While Diamond disposed of its remaining investments in South America, including holdings in the Colombian match industry in 1928, Swedish Match was simultaneously increasing its interests, in collaboration with Bryant & May, in both Argentina and in Colombia.

This consolidation of British-Swedish relations eliminated some of the problems that had arisen between Diamond Match and Swedish Match at the middle of the 1920s. Canada was defined as closed territory to Swedish Match, and Diamond withdrew from South America. It became the official policy of Diamond Match, with some variations reiterated in the Company's Annual Report for a number of years, "to maintain the prestige of the Company on the Continent of North America, and, without any aggressive or imperialistic intentions with respect to markets and territories abroad, to defend its business and long-held position of leadership in the United States against all inroads, foreign or domestic, separate or combined. ..."!

The differences of opinion concerning the Diamond sole agency for the sale of Swedish Group safety matches in the United States increased towards the end of the ten-year period of validity. The agreement was to come to an end at the close of 1930, but Swedish Match gave notice of termination as early as the autumn of 1928. At that time there was considerable uncertainty concerning future developments on the U.S. match market, which meant that negotiations relating to possible renewal of the agency agreement were prolonged. There existed bitter price competition between local manufacturers; cheap Russian matches had made significant inroads, and it was impossible to forecast import possibilities until the new levels of customs duties had been published. Diamond lobbied for increased protective duties, and pleaded for the enforcement of the Anti-Dumping Act of 1921 — actions which caused considerable irritation to...
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Swedish Match, both at the Stockholm head office and in the American subsidiaries.

At the end of 1979, the Diamond exclusive agency was prolonged for a further four-year period from the beginning of 1931. At the same time, in the Directors’ Report for 1929, Swedish Match referred to the anticipated increase of duties in the U.S.A., and stated “as a result of these increased tariffs it will be necessary to manufacture locally at least part of the quantity of matches up to now exported from Europe. The International Match Corporation has therefore, for some time now, been making arrangements to manufacture matches in the United States.” When this was written, Managing Director Ivar Kreuger had in fact in the greatest of secrecy reached understanding with the management of Diamond Match as regards co-operation in other directions, and, in doing so, had secured a foothold in the American match industry.

On different occasions and in the closest confidence, Ivar Kreuger asserted before a number of his colleagues that at the beginning of 1920 he had purchased 60,000 shares in Diamond, corresponding to more than 35% of the total outstanding capital stock at that time. The purchase was surrounded by complete secrecy, necessitated by the strict anti-trust legislation in the United States. Kreuger had at the same time received an option on the purchase of a further 30,000 shares before the end of 1923, an option which if exercised would give the absolute share majority in Diamond.

It is interesting to note that totally different sources, which however have in common the fact that their information can be traced back to Ivar Kreuger in person, from quite different times in the 1920s corroborate each other on numerous points concerning this early acquisition of Diamond shares—for instance the purchase price, expressed in different currencies, the circumstances of the acquisition, and the reasons for the complete secrecy. Because of the anti-trust legislation in the United States, and close watch by the Federal Trade Commission, ownership of a large minority shareholding in Diamond could never give direct authority in the form of official board representation, but it could give indirect or concealed influence. Diamond made relatively
large concessions in the collaboration agreement concluded with Swedish Match late in 1920, and an acquisition by Swedish Match of more than one-third of the Diamond share capital earlier in the same year would make those concessions more plausible.\textsuperscript{13}

Numerous references relating to the take-over by Ivar Kreuger of 350,000 Diamond shares—one-third of the outstanding share capital—at the end of 1930 and the beginning of 1931 shows very clearly, however, that this transaction had nothing to do with some earlier-acquired shareholding. In fact it can be said with certainty that, in 1930, Ivar Kreuger did not possess Diamond shares purchased at some earlier date.\textsuperscript{14}

Co-operation on other levels between Diamond Match and Swedish Match commenced in 1928, and apparently developed irrespective of the increasing commercial differences—differences which were expressed not least in the attitude of the management of the American Company in the customs and dumping issues of 1929 and 1930. In the summer of 1928, Mr. W.A. Fairburn, the President of Diamond Match, travelled to Paris for a personal meeting with Ivar Kreuger, and the two Directors then reached agreement on co-operation as regards the purchase of Ohio Match Co., the most important Diamond competitor on the U.S. market, with an annual production in 1927 and 1928 of about 240,000 cases. This purchase, which was concluded in the autumn of 1928, meant that Diamond and Kreuger interests became the joint owners of Ohio Match, with the new ownership carefully camouflaged from the eyes of the American anti-trust authorities.\textsuperscript{15}

At the Paris meeting in July 1928, Fairburn painted a picture of forthcoming developments in the American match industry which generally included a more active part for Swedish Match. Quite apart from anything Fairburn was planning, Ivar Kreuger had intended later that year to acquire Federal Match Corporation, an independent Company with factories in Bellefonte, Pa., and Duluth, Minn., entirely for his own account, but his plan was frustrated by Fairburn’s initiatives. Kreuger was extremely displeased.

Fairburn’s main intention at the Paris meeting was to discuss
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a financial re-construction of Diamond Match, and this was carried through at the end of 1930 and the beginning of 1931. As part of the reconstruction, Ivar Kreuger paid U.S.$13 million to purchase newly-issued shares corresponding to one-third of the outstanding common shares of the reconstructed company. It is not insignificant that Fairburn asked for and received guarantees that Kreuger's influence in the management of Diamond would be limited in various ways, and would not result in changes in the company's policies.16

There is no evidence to suggest that, before his death in March 1932, Ivar Kreuger tried to use the large minority holding to direct the policies followed by the Diamond Match Co. The situation with Diamond is strongly reminiscent of the Swedish Match Company's relationship with the Solo companies in both Austria and Czechoslovakia: despite ownership of the majority of the shares in Solo-Vienna from the autumn of 1919 and, including the Solo-Vienna shareholding, in Solo-Prague some years later, Swedish Match never formalised its control over these companies by means of board representation, or by appointments to management. The wish to maintain secrecy around the share-ownership was an obvious reason to avoid any such formalised, direct control over the affairs of the Solo companies; the influence that Swedish Match regarded as being necessary, as far as Solo was concerned, was limited to the companies' export sales, and this could be ensured through agreements on the subject of prices and the division of markets.17

The acquisition of interests in the American match industry by Swedish Match continued in the last year of Ivar Kreuger's life, although without the co-operation of Diamond Match. The earlier planned purchase of the majority of the shares of Federal Match Corporation was carried through in 1931, at the same time as control was gained over several smaller manufacturers of matches and match raw materials. At the time of Ivar Kreuger's death, Swedish Match had secured a position of considerable influence in the American match industry.18

Notwithstanding financial co-operation, relationships were tense between Diamond Match and Swedish Match at the end of the Kreuger era. The initiative taken by Diamond to bring about
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collaboration in the purchase of Ohio Match in 1928, and in the
reconstruction of Diamond itself in 1930, is more easily under-
standable if it is recalled that the fresh capital was to be given no
say in the management affairs of the companies. The fact that
ownership interests could not be made public because of Ameri-
can anti-trust laws further limited any possibility for Swedish
Match and Ivar Kreuger to wield any real influence.

The Swedish Match purchase of manufacturing companies in
the United States during 1931 constituted a clear challenge to
Diamond’s traditional hegemony in the American match indus-
try. The purchase of Federal Match was preceded by well-
advanced plans for the erection of a large new match factory in
Natchez, Miss., these moves being an immediate reaction by
Swedish Match to the problems for imports created by increases
of duty and anti-dumping orders. On both issues the domestic
industry, headed by Diamond, had lobbied actively to bring
pressure to bear on the authorities.

Anti-dumping legislation was launched against Swedish
matches, amongst others, in March 1931, and under the prevail-
ing market conditions the agency agreement with Diamond
Match yielded very little benefit to Swedish Match. The agree-
ment required Sweden to deliver stipulated quantities at prices
that permitted sale in competition with Diamond’s own safety
matches; there was consequently no lower price limit. On the
other hand, Swedish Match could not lower their prices without
being hit by the dumping duties, and as a result Diamond could
in principle reduce the sale of imports by reducing the prices of
their own safety matches. The formal responsibility for any de-
cline in the sales of imports would however lie with Swedish
Match, who in failing to deliver at competitive prices would not
have fulfilled their obligations under the agency agreement.

The step-by-step sale of Swedish Match interests in the United
States following the Kreuger crash is explained by the American
anti-trust legislation, and the fact that ownership of the Diamond
shares was contested between Swedish Match, the bankrupt AB
Kreuger & Toll and International Match Corporation. The shares
in Diamond Match were sold on June 1st 1932 at public auction,
aith Swedish Match retaining one-third of the proceeds of the
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sale. The shareholding in Ohio Match formed part of the Kreuger & Toll bankruptcy estate in America, and was later sold to American interests. The majority shareholding in Federal Match remained under the jurisdiction of the IMCO trustees.

If the Swedish Match of the Kreuger period, with its widespread foreign investments, was a disruptive factor to the oligopolistic balance of the world's match industries, the international relations of the Group from 1932 were characterised by a policy of co-operation and compromise. The explanation lies partly in the fact that the conditions for expansion through acquisition no longer existed, a result both of the relatively weakened position of the Group and the changed international climate for foreign investments in general. Another reason was the vigorous export offensive launched by the Soviet match industry, an offensive which demanded that the established oligopolists should cooperate in the defence of their markets. But a third cause for the less aggressive attitude of Swedish Match during the 1930s was certainly the negative experiences of earlier policies.

The necessity for co-operation with the home match industry in Great Britain, to protect imports against protectionism and possible Government intervention, was accepted very early on, and in fact was one of the basic reasons that brought about the close association between the British and Swedish match industries through the jointly-owned British Match Corporation. The experiences of the duties and dumping issue in the United States at the beginning of the 1930s led the post-Kreuger Swedish Match management to the same conclusion as regards relationships with Diamond Match and the United States; the best protection for Swedish match exports lay in establishing such a close level of collaboration with the American match industry that the local manufacturers would have no reason to claim protective or anti-dumping duties.19

Recognition of the advantages of collaboration, and the necessity for an understanding of each others' interests, were apparent in the new agreement reached between Diamond and Swedish Match in 1934. The existing agency arrangement was prolonged, but more important, agreement was reached on basic principles for a longer-term relationship. Diamond undertook to refrain
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from the acquisition or establishment of match factories in Europe, while Swedish Match similarly promised not to obtain control over any part of the American match industry during the validity of the agreement. The Swedish Match undertaking included Federal Match Corporation, which at the time of the subsequent settlement with the IMCO trustees consequently could not be acquired by the Swedish Group.70

In summary, it can be stated that relations between Swedish Match and the two other industry leaders between the wars, Bryant & May and Diamond Match, showed strong, mutual dependence. Market behaviour and reactions were clearly oligopolistic, and company conduct was governed not by market forces, but by inter-dependence. Practices which might be regarded as aggressive, or which might eventually threaten the interests of the rivals, resulted in immediate counter moves.

The formation of British Match Corporation in 1927 created the stable framework necessary for mutual understanding and compromise between the British and Swedish match groups. Commercial tensions between Diamond and Swedish Match came to a head in 1931, when several years of hardening differences of opinion over tariff and dumping matters culminated in the final step into match production in America by Swedish Match. The 1931 acquisition of United States factories over which the Swedes had independent control constituted a threat to Diamond Match that earlier had been avoided through contacts arising from the joint investments and commercial collaboration between the two groups.

The Kreuger crash brought about a fundamental re-direction of the Swedish Match policy as regards Diamond, and the agreement of 1934 between the American and Swedish groups completed the division of the world's match markets into spheres of interest. Diamond was conceded a leading position in the United States and, with Bryant & May, in Canada, while the influence of the British group was to predominate in the British Colonies and Dominions other than in Asia, including Australia and South Africa as well as in certain South American countries, above all in Brazil. Swedish Match, finally, was to take the leading position in the rest of the world, although with the emphasis on the
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continent of Europe.

The absence of open oligopolistic rivalry between the match groups in Great Britain, the United States and Sweden following the Kreuger crash was partly the result of the appearance of a new force, the Soviet match industry. The Russian challenge tended to drive the three groups closer together in defence of market positions won, and after a period of vigorous competition the Soviet export authorities apparently came to the conclusion reached earlier by the three groups: co-operation backed by agreements was necessary, not as a means of removing oligopolistic rivalry, but to prevent any move towards the open competition that was so destructive for everybody concerned.
Chapter 4
Product differentiation, entry barriers and effective market control

A common effort to reduce market uncertainties, and attain increased control over prices and sales volumes, can be seen behind the market policies of the leading match companies between the wars. Increased co-operation between the groups contributed to the attainment of these objectives, despite the fact that the sensitive equilibrium was disturbed at regular intervals by clashes of interest between the oligopolists. In fact, because of its expansionist policies during the 1920s, the Swedish Match Group can fairly be described as a disturbing factor in the global oligopolistic market structure.

If the expression "market control" is defined as including all production other than that of competing, totally independent match manufacturers, the Swedish Match Group controlled about 62% of world match production at the end of the Kreuger era. Despite the sale of a number of important foreign assets during the reconstruction period that followed Kreuger’s death, Swedish Match control, using the same definition, can be put at about half of total world production at the outbreak of World War II.

A quantitative assessment of a qualitative concept such as "control", is unsatisfactory in many respects. As was shown in the preceding chapter, for instance, the influence of Swedish Match in both Solo companies was definitely limited, despite the ownership of a share majority. Similarly in the case of Diamond Match, where the influence of the Swedish Group was quite insignificant, despite the acquisition of a large minority shareholding at the end of 1930 and beginning of 1931. In order more precisely to define the meaning of market control, and the specific nature of the oligopoly, the main elements of the structure of the match market — product differentiation, the elasticity of demand, buyer con-
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centration, and barriers to entry to the industry -- will be summarised in this chapter. It is hoped that the analysis will show the actual market influence of the Swedish Match Group, and establish the possibilities that existed of reaching the objective control within the structure of the industry as it was.¹

Co-operation with other producers was one way of protecting the sales of one's own product, as regards both price and quantity, and another was to try to influence patterns of demand in different ways. Matches were, and still are, a relatively identical and standardised consumer product, although quality differences do exist as regards such things as humidity resistance, wearing strength of the friction surfaces, and strength of the wooden match stick.

Quality differences between the products of different manufacturers were probably of less consequence to the consumer than they were to the quality-control chemists in the laboratory, but in competition with other manufacturers it was necessary to try to create and maintain consumer preferences for one's own product. With Britain leading the way, a more uniform level of trademark laws slowly came into being towards the end of the nineteenth century, making it possible for the match manufacturers to register their labels as legally protected trademarks.

In this way, label and packing began to play an increasingly important role in influencing patterns of demand and consumer preference. More intensive marketing activities, frequently directed at particular consumer groups or areas, with widespread publicischemes and discount systems, helped magnify quality differences and divide the match market into separate segments, with differentiated prices.

A division of the market into several different strata can be seen very clearly in the example of Britain, but the same effect as regards wholesale prices and different retail categories and consumers can be seen in many other markets and areas. Two quite separate market segments can usually be distinguished on overseas export markets, one comprising the higher-cost European matches bought by the upper social groups, the other consisting of cheaper matches from Japan, Russia and occasionally China, normally used by the poorer levels of the population.²
In the more industrialised countries, where match production existed side by side with imports, there existed a more finely graded market segmentation. In the United States and Great Britain, where both paraffin and safety matches were consumed, there were at least three quite distinct price groups. The highest included paraffin matches and locally-manufactured safeties while the middle consisted of the better quality imported safety matches, including standard brands from the Scandinavian countries and Belgium. The lowest price group consisted of other imported safety matches, including those from the Baltic States, Japan and the Soviet Union. This group also included the “fighting brands”, used by Swedish Match to compete with low-price imports from such countries as Japan and Russia.

Price stratification on the British market was complemented by a clear tendency to further division into regional markets, a division which became more pronounced between the wars as a result of the selective marketing policy followed by BMC and Swedish Match. Strike-anywhere matches were the popular sellers in north-west England, Scotland and Wales, while the London area was the large safety match market. Because of a normally higher price for strike-anywheres this resulted in regional variations, which were frequently inflated by the regionally differentiated price-policy, even on identical labels, pursued by the Anglo-Swedish group in the later years of the 1930s. This was designed to hinder competition by holding down prices in the London area, earlier the first battlefield in the competitive struggle with imports from outside match manufacturers.

There was also a social stratification of the match market in Great Britain, interesting in several ways. Locally made matches, both strike-anywheres and safeties, enjoyed a better reputation with consumers than foreign matches, and this was particularly noticeable in the upper social classes and in the “better” shops. Imported safety matches in the lower price ranges were stocked only by cheaper chain stores and the more popular tobacconists, where according to a Swedish Match Observer, consumers were “not so deeply concerned by their patriotic consciences”.

The division of the match market into different price, regional and social segments does not mean that clear distinctions can be
drawn. In the border areas between market segments a considerable degree of interchangeability existed between the different match labels, and this tended to reduce the marker protection gained through product differentiation. The British match market, where differentiation policies were pursued throughout the years between the wars, was characterised by very fragile price relations between the different market segments, and a price change on one brand tended to affect the sale of other brands, not only within the same market stratum but also within adjacent strata.

A good example of the mutual dependence of these segments can be seen from the British market, where there existed a sensitive price balance between the top-price imported matches in the "upper middle" class and British match, in the highest price class. Every relative change of wholesale prices—frequently combined with changes of discount systems and incentive schemes to wholesalers, retailers and consumers— influenced the sale of Norwegian and Swedish safety matches relative to the sale of the British production. The effects of changes in relative prices on sales volumes were particularly noticeable after price increases in 1927/1928, and reductions on imported safety matches in 1932/1933 (cf. p. 214, p. 239).

The strike-anywhere marker in Great Britain was regarded as being particularly sensitive to changes in relative prices between different brands. The market was dominated by local production, and only one Belgian and a few Swedish strike-anywhere labels succeeded in maintaining a fairly constant level of sales. All the strike-anywhere labels were amongst the higher-priced brands, but Belgian and Swedish labels were nevertheless priced below the local production.

A standing claim by Swedish Match throughout the market policy discussions with BMC in the 1930s was that the sale of Swedish and Norwegian matches should be increased through price reductions on the Swedish strike-anywhere brands, or by the introduction of a new Swedish strike-anywhere label in the middle-price class. However, the dominant British interests in BMC rejected every proposal to change wholesale price relationships between imported Swedish and British-manufactured
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strike-anywhere matches; the likelihood of substitution between the imported and local labels was so great that the sales of local strike-anywheres, the speciality of the British Company, could be jeopardised. Moreover, basic changes in the relative prices between strike-anywheres and safeties could lead to the breakdown of the established high-price structure on the strike-anywhere market, a structure maintained-and perhaps even created-by deliberate price differentiation.

The conclusion to be drawn from the British example must be that total market protection could not be achieved through product differentiation. The fundamentally homogeneous character of the match meant that “substitutability” between different labels was considerable, both within and between different market and price segments. However, if an analysis is made of the relationship between brands more widely separated on the differentiation scale, it becomes clear that product differentiation, and the establishment of trademarks, contributed in no small way to reduce the damaging effect of aggressive price competition.

Price warfare existed in Great Britain for two lengthy periods between the wars, 1923—1926 and again from 1934 to 1937, but the strike-anywhere market, concentrated to the north and north-western parts of the country, was scarcely affected by the violent competition. The main battlefield was the safety match market in southern England, centered particularly on the London area. Although low price competition in the form of outsider matches and the fighting brands of the Swedish Group accounted for almost one quarter of total sales in Great Britain at the conclusion of the price-war with the Russian matches in 1937, both the price and sales volume of strike-anywheres, more than half the total market, remained unaffected by the intensive struggle for supremacy on the safety market.

That the strike-anywhere market remained undisturbed by the price-war is perhaps less surprising than the fact that differentiation also provided rather good protection for the high-price safety matches, both locally-manufactured and imported from Sweden and Norway. The average prices of Norwegian and Swedish matches sank only insignificantly during the price-war between 1934 and 1937, and total sales remained almost constant.
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However, the vigorous price competition of 1923—1926, which was caused largely by the Belgian outsiders, did have an effect on the higher-price safeties, and the average price for Swedish safeties dropped very considerably — one result of the increasing market share for the newly-introduced "Ship" low-price label. In fact, even in the 1923—1926 period, the highest price Bryant & May and Swedish Group safeties remained largely unaffected by the competition.

The very high sales and distribution costs for matches, in relation to sales prices, emphasises the protective value of product differentiation and brand competition on free, non-monopoly markets; as far as Great Britain is concerned, it has been estimated that, in the middle of the 1930s, total sales and distribution costs represented almost 40% of the final consumer price for imported matches. The manufacturers' share was about 16%, the balance consisting of import duties. As Ulla Wikander suggests in her study of match monopolies, the reduction of sales costs to be achieved by operating under a state-guaranteed monopoly must certainly have been a weighty factor in Swedish Match efforts to secure monopolies during the Kreuger regime.5

In Britain, advertisement and marketing costs co-varied to a striking degree with the wholesale prices of the different labels: the higher the wholesale price, the higher the advertising and marketing costs. Advertising schemes, quantity and cash rebates, with give-away schemes, clearly played an important role in supporting the established price structure. These sales methods helped create and maintain the consumer preference that made marker segmentation possible, and which gave the standard brands a certain protection against the regular assaults of competition in the lower-price safety match market.

It has been stated that Swedish Match attempted to protect their sales and reduce market uncertainties by controlling levels of supply, and through various product or price differentiation measures. However, the British case study shows quite clearly that market control could never be absolute in the absence of Government support — for instance, in the shape of a ban on the establishment of new match factories, measures prohibiting or discriminating against imports, or giving protection againstcom-
petition from lighters, or, the ultimate support, the creation of a national match monopoly. After the formation of British Match Corporation, Brymay and Swedish Match controlled from about 84% of all match sales in Great Britain in 1934 up to 96-97% in 1937-1939, but even so the degree of real control over the market was far from total. This was ultimately because some of the main elements of the market structure in themselves stimulated competition - or, in other words, because of the way in which the match market itself functioned.

In this context, it is important to emphasise that a manufacturer cannot achieve complete control over prices and sales volumes if demand cannot be guided or controlled. This is true in general, and particularly when a competitive product is available. Changing consumer demand resulting from movements of relative prices and incomes can be difficult both to foresee and influence; above all, the level of buyer concentration at the wholesale stage of the distribution chain has considerable bearing on the manufacturer’s possibility of influencing his sales.

It is quite clear that the Swedish Match management, and not least Ivar Kreuger, tended to underestimate the sensitivity of demand for matches to changes in prices and incomes during the almost hectic period of Company acquisition in the 1920s. Both words and actions made clear the assumption that matches were a cheap article of mass consumption, with a very inelastic demand; in other words, speaking generally, prices could be increased with no noticeable effect upon sales. Surprisingly, the development of lighters to a point where they became a real alternative to matches went unnoticed by the Swedish Match management until relatively late, and it is significant that the first monopoly agreements concluded by the Group with Poland in 1925 and with Greece in 1926 contained no provision for controlling competition from lighters.6

The development of consumption on different markets examined in this study shows throughout that demand for matches was responsive to changes in relative prices and, any way in less industrially developed economies, to changes in income as well. Particularly noticeable is the responsiveness to changes in the price ratio to lighters; generally, the life-length and efficiency of
lighters improved between the wars, and when this coincided with ever-increasing taxes on matches, dramatic shifts in consumption resulted.

This happened in Austria, for instance, where between 1926 and 1937 match consumption dropped from about 48,500 cases to barely 21,000 cases annually. An even more remarkable decline took place in the Dutch East Indies, where match sales fell from an annual average of about 116,000 cases between 1916 and 1920 to barely 25,000 cases per year between 1934 and 1938. The drop was a result of a combination of gradually increasing match excise duties, falling per capita income, and the development of local manufacture of simple and cheap lighters.7

The correlation between higher retail match prices and declining match consumption, during the 1930s depression sometimes combined with lower per capita incomes, stands out particularly clearly in countries where there existed a national match monopoly. In many countries the monopoly resulted in heavily increased retail box prices, and this invariably meant lower match consumption.

In Peru, for example, annual match consumption at the inception of the monopoly in 1925 probably lay between 4,500 and 5,500 cases of 50 gross, 50-stick contents, but the figure fell considerably in the following years as a result of consumer resistance to extreme retail price increases. In the period to 1932, while Swedish Match operated the monopoly concession, the average annual consumption remained at about 3,500 cases, increasing again after 1933 when the high retail price was cut by half.8

In Poland the monopoly charges underwent a considerable increase in the second monopoly agreement in 1930, resulting in an increase of almost 50% in retail prices in 1931, and a 33% decline in consumption. Although a special tax on lighters was also introduced, the use of lighters continued to increase during the 1930s, not least due to smuggling from Germany and Czechoslovakia. The annual consumption of matches during 1936 and 1937 was only slightly more than 46,000 cases of 50 gross, 50-stick contents, against an average of about 106,000 cases per year in 1929 and 1930. A reduction of the retail price in the middle of 1937 had a positive impact, and in 1938 sales recovered to almost...
52,000 cases.\textsuperscript{9}

Even in a more highly developed economy such as the British, with a relatively high per capita income, it is possible to trace co-variations between economic fluctuations, match prices, and sales of lighters and matches, and in some of the worst of the depression years between the wars, 1921—1922, and 1932, the sale of matches in Great Britain declined very considerably. During periods of keen price competition with higher sales of cheap matches, for example 1923—1926, and 1934—1937, consumption tended to increase, whereas the opposite was the case during periods such as 1927—1928 and 1938, when the quantity of low-price imports was down and the average price level considerably higher.

Higher match consumption in Great Britain between 1923 and 1926 coincided with increased sales of lighters, the result of a shift in relative prices in favour of lighters. Falling average match prices, with an even more marked decline in the price of lighters, resulted in a clear increase in the total “lights” market, an illustration of the price elasticity of demand.

The increase in lighter sales on the British market was particularly striking during 1927, when tax on matches was increased while lighters remained exempt. Tax on lighters from April 1928 improved the “terms of trade” for matches, with a considerable reduction in lighter sales in the following years as a result. The development of the market following adjustments of excise and customs duties in April 1933 gives further evidence of the tendency to substitution between the two products following changes in relative prices — although after 1933 a pattern of consumption changed in favour of matches. This was a result of the growing quantity of low-price imports and falling average prices following the price war with Russian matches between 1934 and 1937.

The British case study also shows that variations in profit margins in the distribution chain played a significant role in changes in the volume of match sales. The profit margin an importer or manufacturer can offer the wholesaler is obviously a weighty sales argument on a consumer-goods market, where the number of wholesale buyers is generally very large. The absence of buyer concentration brought about a situation in which com-
petition between sellers in Great Britain very largely took place at the wholesale level, and as a result advertising efforts and promotional offers were directed mainly at wholesalers.

Although buyer concentration is generally low for consumer goods of the match type, the degree of concentration at the wholesale stage can nevertheless vary considerably from market to market, and buyer concentration is in fact an important aspect of our understanding of the problem of the varying competitive propensities of different match markets.

As a contrast to the British pattern, with low buyer concentration, Finland illustrates a greater market protection from the producer's point of view, as a result of stronger buyer concentration and the integration of manufacture and distribution. From 1933 Jokela's Finnish sales started to compete directly with the Swedish Match (IMCO) factories in Finland for the same group of buyers, the independent wholesalers who regularly were responsible for something more than 40% of match sales in the country during the 1930s. The other Finnish match producers, the S.O.K. and O.T.K. co-operatives, and the wholesaler-owned K.T.O. in Lahtis, were barely touched by the vigorous competition between Jokela and Swedish Match, due to the captive wholesaler market within their own organisations.

The difficulty of reaching an effective level of control over market prices, and protecting sales, was not lessened by the fact that cost barriers to the entry of new firms to the industry were very low between the wars, and during the 1920s in particular a considerable number of new manufacturing companies were established. The new states of eastern Europe were dedicated to building up export industries, at the same time as the international competitiveness of other match-manufacturing countries improved as a result of continuous currency depreciation.

Belgium provides a good example of a country in which the conditions of the match industry at the beginning of the 1920s came close to the economic theory model of "free entry" as a condition for perfect competition. By means of the quick acquisition of several independent factories, and through co-operation with the leading Belgium match manufacturer, Union Allumettière, Swedish Match succeeded in eliminating low-price Belgian
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competition. Before long, however, new competition arose, and by 1925 no fewer than thirteen new, independent factories had been established in Belgium. The pattern was repeated, although on a smaller scale, when Swedish Match again neutralised Belgian competition by means of factory purchases in 1926 and 1927; three new competitors arrived during 1928, and two of these remained troublesome for the Swedish Group until 1937.10

The generally low barriers to the entry of new companies to the match industry derived partly from the basically simple production techniques involved. Although a far-reaching mechanisation of match production had started early on, particularly in western Europe and north America, it was still possible between the wars to establish competitive match production in less industrially developed economies. The handicraft match-production methods employed in a number of overseas countries between 1918 and 1939, however, required not only access to cheap labour but frequently customs protection as well, in order to survive against competition from the more effective European manufacturers.

To start the production of matches in countries with relatively low wage-levels thus required little capital investment, and between the two extremes of entirely handicraft methods such as the Indian "cottage industry", and the almost completely automated production of American, British and Swedish factories, there existed many factories with varying degrees of mechanisation.

Despite efforts made by Swedish Match to control the availability of match machinery, there were still numerous independent machine manufacturers willing and able to supply competing and new match factories with modern equipment. There was also a brisk market for used match machines, with a constant flow of older, but entirely useable equipment. This steady supply of second-hand machines was both the result of the world-wide over-capacity within the industry, inevitably leading to the closure of factories, and of the successive shift to the use of continuous machines by the larger companies. In 1926, however, after Swedish Match acquired complete control of the sales of Roller and Badische, the two leading German machine manufacturers, the Swedes had a stranglehold on the market for continuous machines of the European type, and with very few, short-lived
exceptions, no machines competitive with those manufactured by the Swedish Match Group were produced during the 1930s.

A comparative analysis of a number of investment-cost calculations for the construction of match factories in different economic environments gives some indication of the required total amount of capital to build a match factory of a certain capacity—the variations of capital requirements above all due to differences in the degree of mechanisation. Expressed in pounds sterling at the average exchange rate at the time, the construction of a new match factory with an annual capacity of about 10,000 cases would have cost about £35,000 in the United States in 1933/1934, somewhat more than the corresponding investment in Sweden at barely £31,000. The cost of the production equipment required in the case of the American factory was about £15,500, or half the total cost of the investment.

These calculations related to factories with modern production equipment, including a continuous machine, and it is most interesting to note that, some years earlier, a total of £10,000 was regarded as quite sufficient in the Baltic area to establish a competitive match factory, simply equipped but with the same production capacity.

In 1934 Swedish Match analysed the cost for different manufacturing alternatives in the Dutch East Indies, and for a factory with a production capacity of about 24,000 cases per year, using cottage methods for box production and box filling, the total investment needed was put at SKr 450,000, or barely £10,000 for each 10,000 cases of production capacity. In this figure there is no provision for machinery purchase, as the simple equipment that was to be used—mainly old German machines—was in stock in India with value written right off. If cost provision is made for simple machines of this type according to the then current Swedish "catalogue price", the total calculated investment in the factory planned for the Dutch East Indies would anyway not have exceeded £11,000.1

Despite the global over-capacity that existed, newcomers were tempted into the industry just as quickly as the differences between the market price for matches and local production costs became sufficiently attractive. The conditions of entry were such
that established manufacturers needed at all times to apply pricing policies with extreme care and a sharp eye to potential competition, even when in a dominant market position.

Several instances of this are revealed in the market policy followed by the British and Swedish match grottps in Britain. The consolidation of the market in 1927, for example, was followed by uniformly-applied price increases at the end of the year and during 1928; all sales incentive schemes to wholesalers, retailers and consumers were withdrawn, and the wholesale prices of a number of labels were increased quite considerably and without regard to incipient competition from the Soviet Union and from the newly-established Belgian outsiders.

In comparison, the increase of prices carried through after the next over-all consolidation of the market, in 1937, was notably more cautious and subtle. Increases were avoided on the standard brands in the middle and highest price classes, and increases on the lower-price labels- which included the now-controlled imports of Russian matches, as well as the earlier fighting labels. were both moderate and progressive rather than abrupt. The price of a number of the Swedish Group low-price labels was left at a competitive level, providing a direct disincentive to potential newcomers.

The British and Swedish Match Groups controlled between 96 and 97 per cent of total match sales on the “stabilised” British market of 1938, but despite this impressive figure the market policy followed suggests a rather unstable level of control in the longer-term. The risk that general increases of price would again attract newcomers, leading to an upswing in outsider sales, severely limited the freedom of the Anglo-Swedish Group to pursue an unrestricted pricing policy. A return to the generally higher price level of the years before 1934, before the start of the competitive clash with Russian matches, was thought to be impossible. The profile of the low-price safety match market did not change as a result of the price adjustments following the market consolidation of 1937, clearly proven by the fact that more than half of all safety matches sold in Great Britain in 1938 were in the lowest price group, i.e. under seven shillings per gross to the wholesaler.
In summary, it may be asserted that control over the international match market was clearly difficult to attain, despite the gradual concentration of supply to fewer sellers, and efforts by the manufacturers to protect markets by means of brand competition and product and price differentiation. The generally low concentration ratio at the wholesale level, typical for a mass-consumer product such as matches, made it difficult to gain control over prices and sales volumes; low entry barriers to the industry similarly hindered full control. Production techniques were basically simple, and in countries with relatively low wage levels competitive manufacture could be established at little cost and using rather simple techniques. New independent factories were established very frequently, particularly in the first five years of the 1920s, and this further frustrated the Swedish Match management in its efforts to gain control by means of the acquisition of factories.

Most fundamentally, perhaps, was the fact that even in cases where government support was available for the regulation of the match market, neither prices nor sales volumes could be guaranteed. Although the match is regarded as a relatively cheap necessity, consumption between the wars was by no means inflexible in the face of changes in relative price and, in those countries with lower per capita incomes, to changes in disposable incomes. In many of the match monopoly concession countries Swedish Match experienced falling sales as a result of increased match prices, declining per capita income particularly during the depression of the 1930s, and competition, legal or otherwise, from lighters.

The consumption of matches was particularly sensitive to changes in relative prices between matches and lighters. Effective control of the match market in fact required corresponding control of the market for substitute products, but as lighter production between the wars was widespread, and the number of sellers vast, the step from control of the match market to control of the total “lights” market was in practice impossible.

Against the background of the findings of this survey of the structure of the match market, and the nature of the competition, Ivar Kreuger’s stated ambition of attaining control over the entire
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match industry. so as to be able to direct prices and sales volumes, must be regarded with considerable scepticism. It can even be questioned if he was serious when he made his many allusions to the fact that sufficient control would “soon” be reached-or “must” be reached—to permit a general increase of prices. If the acquisition policy followed by the Swedish Match under Ivar Kreuger is considered only in terms of this ambitious objective, then clearly the policy was founded on faulty knowledge of the structure and evolution of the market, and it failed as a result. The goal of total control of a global market remained Utopian, although this is not to say that other, shorter-term and more realistic objectives were not fulfilled as a result of the expansion and growth policies of the Swedish Match Group.
Chapter 5
The policy of expansion, and match exports from Sweden

The absence of any real entry barriers, and the existence of substitute products, combined to give the match industry a built-in disposition to competition, which in the longer-term made possible effective market control; the structure of the market itself thus countered Swedish Match efforts to minimise market dependence, and to integrate the mechanism of the market with the internal planning of the Company. These restrictions on effective market control by the Group stand out clearly in the case study of the British market, where the very close co-operation between BMC and Swedish Match was expressed in constant adaption to changing and new market situations. The many agreements provided above all a framework within which divergent interests could be accommodated, facilitating a joint response to market changes and the threat of competition.

The impossibility of controlling the global match market, or of exerting decisive influence on sales volumes or prices in the way visualised by Ivar Kreuger, is one of the principal findings of this study.¹ In this concluding chapter, another factor of the expansionist policy of Swedish Match will be discussed, the bearing it had upon the activities of the match industry within Sweden. This in turn touches upon another aspect, the general conduct and attitudes of the Swedish Match Company as regards its international operations in the years between the wars.

Structural problems within the Swedish match industry

In considering the importance of the export of matches from Sweden as a factor influencing the market policy of the Swedish
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Match Company, it is necessary to remember that the growing problems of the industry in Sweden towards the end of the first World War were the reason behind the formation of the Company in December 1917. At the end of the war the Swedish match industry faced very serious problems of over-capacity and of marketing; a number of the more important traditional export markets had been deprived of Swedish supplies for shorter or longer periods, and a recovery of lost markets became top priority for the newly-formed Company.

However, peace did not bring about a restoration of the pre-war market and production situation. New problems arose, and the arrival of a number of new match manufacturers, particularly in Europe in the first five years of the 1920s, resulted in a further stiffening of competition internationally. The utilisation of production capacity in the Swedish factories remained low, and in the recession year 1922 was estimated to have reached no more than about 46%.

During the same period, stocks of ready matches at factories in Sweden rose from about 110,000 cases at the beginning of 1918 to about 230,000 cases at the beginning of 1920, and to 315,000 cases at the beginning of 1921. At the end of 1922 stocks were still in excess of 212,000 cases, 165,000 at the end of 1923, and almost 143,000 at the end of 1924, and these are figures to be compared with a more normal level of barely 55,000 cases at the end of each year from 1925 to 1930.²

The seriousness of this protracted over-capacity problem was shown in widespread cutbacks in production, which took the form of shorter working weeks almost throughout the period from 1919 to 1924; in fact during these years production was at full scale for only twelve months, from the autumn of 1919 to autumn of 1920. In September 1920 short-time working was introduced at all factories, with a reduction from 48 to 40 working hours per week. In January 1921 this was further reduced to 34 hours, and to 25% hours—three working days—in the middle of April 1921. Three-day working then continued throughout 1922, and not until April 1st 1923 was there a return to a forty-hour working week. The full 48-hour week was not resumed until 1925.³
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This almost general recourse to a short working week as the solution to over-production indicates that the market difficulties were regarded as no more than temporary, a problem that could be overcome by an expansive sales and acquisition policy. However, at the same time measures were taken to bring production capacity and delivery levels into better long-term balance, and of 18 factories in Sweden at the end of the war, five were closed down between 1919 and 1924. These were Grantorpet match factory, which closed in 1919; the factory in Malmö, closed in 1920, Växjö, closed after a fire in 1922, and the Junebro and Fredriksdahl factories, which closed in 1924. The working force was correspondingly reduced, and the average annual number of workers, about 7,400 in 1919, was down to about 5,400 in 1922.4

Following a period of increased exports in the second five years of the 1920s, the Swedish Match industry ran into a serious new crisis at the beginning of the 1930s. International match trading dropped during the depression, protectionism was spreading, and the use of lighters was on the increase in many markets. Exports of Swedish matches, which from 1924 until 1929 had increased from barely 400,000 to more than 640,000 cases, dropped by more than half in just a few years, stabilising at something more than 200,000 cases per year from 1934.

Production was reduced at about the same rate as the decline in total sales. The number of workers engaged in the industry dropped from a top of 5,800 in 1929 to about 2,500 in the middle of the 1930s, and the disastrous increase in stocks of the 1920s was avoided. At the worst, there was a stock increase from the average of about 55,000 cases of the years between 1925 and 1930 to something more than 80,000 cases at the end of 1931 and 1932, but thereafter the level fell to about 30,000 cases in 1933, remaining fairly constant for the rest of the decade.

Capacity utilisation remained low throughout the 1930s, despite the closure of more factories. Production ceased at the Gothenburg factory during 1931, at Vänersborg in 1932, and at Anneberg in 1934. In the middle of the 1930s, the total installed capacity at the factories remaining in production was put at about 585,000 cases, which with an approximate annual production of
The policy of expansion, and match exports from Sweden about 255,000 cases meant a utilisation of manufacturing capacity lower even than the level during the difficult years at the beginning of the 1920s—despite the closure of so many factories.\(^5\)

The problems created by this overcapacity resulted in a series of investigations within the Company to consider the possibilities of finding alternative products for the match factories, and as one outcome of an investigation launched during the reconstruction years a proposal was made to discontinue match production at the Jönköping factory, and instead start the manufacture of artificial silk. The proposal was discussed by the Board of Swedish Match, but a decision was shelved.\(^6\)

Against this background of a deep and chronic structural problem within the industry—and certainly not hindered by the fact that several of the more influential managers of the Swedish factories were members of the Swedish Match board during the Kreuger years—match exports not surprisingly became an important factor in the expansion plans of the Swedish Match Group, both as driving force and objective. For this reason, paradoxically, the international expansion of the Group can be defined as basically defensive, with expansion a reaction to the growing uncertainties of the market during and after the war; an oligopolistic reaction to safeguard the international position of the Swedish match industry. However, the expansion then took place with a breadth and intensity that can be explained only with reference to the personal ambitions of Ivar Kreuger, helped by the nature of the economy of the world in the 1920s, and particularly the easy capital market in the United States.

Foreign direct investments and Swedish match exports

This study has shown that the foreign investments made by the Swedish Match Group between the wars were above all market-oriented. Vertical growth, shown in increased involvement in the
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distribution companies, and the establishment of the Company’s own sales subsidiaries, indicate recognition of the need to safeguard Swedish match exports as a vital element in the policy of expansion. The conscious efforts that were made towards the integration of marketing activities in the first five years of the Kreuger era marked a clear departure from the earlier, passive sales activities through independent agents and traders.

At the same time it is particularly interesting to note that the need to safeguard export markets can also be seen behind the horizontal expansion of the Group. Horizontal direct investments outside Sweden were totally dominated by the acquisition of established manufacturing companies, and there are only few instances of the establishment of new factories on traditional export markets. New factories were constructed only where the Group’s match export possibilities were curtailed by prohibitive duty increases, the biggest investment of this type taking place in India between the wars, where Swedish Match built up production to a level which by the end of the 1930s almost equalled the Swedish.

The few new manufacturing companies that were established abroad all had in common the fact that they came into being to protect the Group market interests. It was sometimes a question of a protective measure against a growing local match industry, perhaps enjoying market advantages behind a customs barrier, and sometimes a safeguard against competitive foreign investment on the same market, as for instance was the case with the Japanese threat to start production in Iran. Another important motive for Swedish Match was to minimise the likelihood of future exports of locally-produced matches, and also to try to bring influence to bear from within the host country, not least in efforts to reopen the market to imports.

An extreme illustration of attitude to the choice between fresh foreign investment and match exports from Sweden is shown in events in Egypt in the first five years of the 1930s. Throughout the 1920s this was an important market particularly for the Group’s Swedish matches, and in 1927 the Group founded its own sales Company in Alexandria, Egyptian Match Company. In February 1930 a prohibitive customs duty was introduced, overnight doub-
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ling the price of imported matches. As a result, the Group management in Sweden decided to establish a manufacturing subsidiary in Egypt, and The Swedish Egyptian Match Factory L. Kreuger & Co., with a capacity of about 8,500 cases per year was rapidly constructed in Alexandria.

Barely had production started in the new factory when a general match excise duty was introduced, levied on locally-manufactured matches as well as on imports. The special import duty was simultaneously reduced, the import of matches again became possible, and the factory in Alexandria was closed, the machines being transferred to the Swedish Match-owned factory in Palestine. In April 1933 the match import duty was again increased, this time permanently. Protected by the new level of duty local manufacturers increased their production, a new competing factory was established, and the market was again virtually closed to imports. The management in Sweden then decided to re-start the Alexandria factory, to be able to use the status of local manufacturer to influence the market and the authorities.7

It is quite clear that the wish to eliminate competition on international markets was the main motive behind the many acquisitions of existing manufacturing companies carried out by the Swedish Match Group during the years of expansion under Ivar Kreuger. The same policy lay behind most of the monopoly concessions acquired by the Group, including those in the Baltic States and in Poland. It shows clearly in the protracted negotiations concerning monopolies in Belgium and in the Soviet Union, just as it motivated the many export and market agreements which Swedish Match entered into both with independent companies and with companies in which minority interests had been acquired.

A most significant fact then emerges, in that in many cases a degree of Swedish Match control meant that deliveries by the local industry to international markets declined, and/or was successively pushed over to less profitable markets. There are many instances of this; Swedish Match efforts to ensure substantial and profitable match exports from Sweden -and incidentally, from Norway as well-stand out all through the study of events on the British market. An increase in deliveries of
Part III. The market policy and market control

Swedish-made matches to Great Britain was a startling claim in the well-documented negotiations with British Match in the 1930s.

Developments on the British market during the difficult years at the beginning of the 1920s provide a good example of a manoeuvre designed to increase Swedish sales. As part of the outcome of negotiations at the time, the Swedish Match-controlled Barking factory was awarded an important share of the market in the British agreements of 1920 and 1923, and the intention was to make use of this Barking quota to increase the sales of Swedish-made matches. This policy was followed in the first year of the agreement, after which a heavy increase in imports of competing matches made it impossible to continue a policy that involved further increases of Swedish sales, simultaneously with a decrease in the sales of imports by co-operating factories.

In the first half of the 1920s there was a substantial increase in exports from the new states of Eastern Europe, not least from Estonia, Lithuania and Poland. The acquisition of monopoly concessions in these countries by Swedish Match in each case involved a stagnation and gradual decline in export sales, a trend that only partially can be explained by the generally decreasing international match market during the 1930s.

The monopoly agreement with Poland in 1925 included a clause relating to exports, and this clause was removed from the subsequent agreement in 1930. The monopoly Company was committed to an annual export of Polish matches to an amount corresponding to one-third of domestic consumption, and these matches went mainly to China at unprofitable prices, although the level of exports never reached the quantities stipulated in the 1925 agreement. The losses incurred had a definite effect upon the share of the Polish State in the profits of the monopoly Company, and this certainly made it easier to have the export liability clause removed from the new agreement in 1930.

The growing level of match exports from Estonia in the first five years of the 1920s resulted almost entirely from sales to the British market, but due to the secret acquisition of the London companies engaged in the import of competing matches—J. Franses & Co. in 1923, and Stavers & Anderson in 1925, amongst
The policy of expansion, and match exports from Sweden

others, Swedish Match was able to direct price levels and sales volumes. In 1924 the Group started to purchase match factories in Estonia, and from 1927 the entire Estonian match industry was under Swedish control.

The Estonian monopoly agreement of 1928 prevented the establishment of competing factories, but it also required Swedish Match to export 12,500 cases of matches annually from Estonia during the first three years of the monopoly period. From 1931 this liability was reduced to a little more than 9,000 cases per year, averaged over five years. In the earlier years Swedish Match fulfilled its commitments, although only by shifting exports from the profitable British market to the less profitable United States.

When the American market virtually closed to imports in 1930, exports from Estonia fell away very considerably, and in 1932 Swedish Match succeeded in negotiating a settlement with the Estonian authorities, whereby compensation would be payable by Swedish Match should the export liability remain unfulfilled. The result was that Estonian match exports sank to insignificance, from an average of 17,000 cases a year between 1925 and 1927 to no more than 3,000 cases annually ten years later.

Lithuanian exports underwent a similar metamorphosis following the Swedish Match acquisition of the monopoly in 1928; in fact from an annual average of 15,000 cases between 1924 and 1926, the figure was immediately taken down to the 11,000-case obligation imposed upon Swedish Match by the agreement. Exports to Great Britain ceased almost completely immediately thereafter, with the United States market then becoming the most important.

When the anti-dumping duties closed the U.S. market, the stipulated level of exports could no longer be reached. In February 1935, after difficult and protracted negotiations, Swedish Match succeeded in having the export liability reduced, against payment of compensation, and a fresh agreement gave the option of substituting the export of finished matches with the export of splints. The export of matches from Lithuania consequently came to an end from the middle of 1935.8
Part III. The market policy and market control

The relative strengthening of market positions

The directing of exports in this manner, and the tendency towards stagnation and market reverses which stand out so clearly in Swedish Match relations with the exporting monopoly-countries of north eastern Europe, can be seen in many other instances where the Group acted as agents, or otherwise accepted responsibility for match exports. It was the case following the important agreement with the Finnish manufacturers in 1927; as regards exports by the Solo companies of Czechoslovakia and Austria, and with F.R.F. in Italy.

From the end of 1926 until 1928 the Swedish Match Group operated at a tremendous pace, and succeeded in gaining some level of influence over a very large part of the match industry throughout the world. If an examination is made of the level of exports from various countries, starting in 1925/1926 and comparing with figures firstly at the end of the boom period in 1929/1930 and then again with the corresponding figures a decade later, it is possible to see the change that took place in the position of Swedish Match exports (see Table 18). The division into two periods is necessitated by the fact that conditions changed radically as a result of protectionism and the drastic decline in world match trade that took place in the first five years of the 1930s.

In order to assess the effect of the Swedish Match market policy, Table 18 includes only countries the match exports of which, in one way or another, were under Swedish Match influence—either through ownership control, where ownership was occasionally combined with a monopoly concession, or by means of an agreement which placed responsibility for match exports with the Swedish Match sales organisation. For this reason the export of Russian matches has not been included, as these were not totally under Swedish control until 1939.

However, it is interesting to see that the development of Russian match exports in the later years of the 1930s followed the same pattern of stagnation and decline as was the case in other
Table 18. The relative change in the international market position of the Swedish match industry, 1925/1926—1929/1930, and 1925/1926—1937/1938. Deliveries by a number of the more important exporting countries (1925/1926 = 100)

<table>
<thead>
<tr>
<th>Country</th>
<th>Cases of 50 gross</th>
<th>Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sweden</td>
<td>488 151</td>
<td>601 622</td>
</tr>
<tr>
<td>Norway</td>
<td>25 180</td>
<td>21590</td>
</tr>
<tr>
<td>Finland</td>
<td>55 540</td>
<td>41 088</td>
</tr>
<tr>
<td>Holland</td>
<td>7 669</td>
<td>7711</td>
</tr>
<tr>
<td>Belgium</td>
<td>205 026</td>
<td>128 967</td>
</tr>
<tr>
<td>Czechoslovakia/Austria</td>
<td>83 738</td>
<td>63 547</td>
</tr>
<tr>
<td>Italy</td>
<td>26 226</td>
<td>16 171</td>
</tr>
<tr>
<td>Estonia/Latvia/Lithuania</td>
<td>32 997</td>
<td>29 789</td>
</tr>
<tr>
<td>Japan</td>
<td>220 912</td>
<td>100 719</td>
</tr>
</tbody>
</table>

Sources: See Figure 3 p.84.

countries as soon as Swedish Match succeeded in gaining partial control.

The 1937 agreement with Rasnoexport covering Russian sales on the British market, which required the Swedes to accept responsibility for about 40% of total Soviet exports, included a provision granting the right to reduce this liability against a compensation payment. The Swedes regularly exercised this option, and also accepted Russian offers of extra reductions against additional payments. As a result, match deliveries to Great Britain from Sweden increased heavily in 1939, largely at the cost of the Russians.

Of the other match exporting countries at the beginning of the 1920s, only Poland and Denmark have been omitted from the table. As far as Denmark is concerned the reason is the insignificance of exports at the time of investigation, and in the case of Poland the fact that exports came to an end during the 1930s. Exports from both were controlled by Swedish Match as early as
1925, from Poland as a result of the monopoly agreement of that year, and from Denmark as a result of ownership control from as early as 1919. A description of the development of exports from Poland appeared earlier in this study; despite the existence of exceptionally good natural resources and conditions for the production of matches, notably in the form of abundant good quality aspen wood and relatively low wages (cf. Table 19 p. 344), exports from Poland finished with the signature of the monopoly agreement in 1930. In 1925 and 1926 exports from Denmark were very small, averaging a little more than 1,600 cases per year, and the quantity fell away to almost nothing during the 1930s. By 1937—1938 no more than a few hundred cases were exported, the greater part of which went to the Faroe Islands and Greenland.

Table 18 clearly shows that in the period of expansion of the international match trade at the end of the 1920s, exports from Sweden were permitted to increase very considerably relative to controlled exports from other countries. In actual fact deliveries from countries with Swedish Match-controlled exports declined sharply, with resulting smaller market shares. The drop in exports by Finland, Czechoslovakia/Austria and Italy was particularly marked after the signature of the 1927 export agreements, but despite the vigorous export offensive by the Soviet Union, which resulted in an increased Russian market share from about the 1 % level of 1925/1926 to about 14 % in 192911930, the Swedish match industry over the same years succeeded in increasing its own share of total world exports from about 42 % to about 49 %.

In the longer perspective, which is to say when the situation at the end of the 1930s is compared with the middle of the 1920s, it can be seen that the Swedish industry well succeeded in maintaining its relative position. From a number of countries the decline in exports was considerably greater than it was from Sweden, not least in the case of the monopoly countries around the Baltic, from Czechoslovakia, Austria and Italy; Dutch exports virtually came to an end, and even from Belgium, losses were greater than they were from Sweden. In fact of all exports controlled by the Swedish Match Company at the end of the 1930s, only the Norwegian and Finnish managed to hold the rate of decline at about the same level as the Swedish.
In the case of both Norway and Finland, however, there were exceptional circumstances that help explain the less negative trend. Swedish influence resulted in a considerable reduction of Norwegian match exports from as early as the middle of the 1920s; Ivar Kreuger had acquired one of the Norwegian match manufacturers, Bryn & Halden, in 1916, and from 1923 he concluded annual agreements with the other Company, Nitedals, limiting exports and specifying divisions of the market. Nitedals were then acquired in 1926, and from 1930 Norwegian exports were concentrated entirely to Great Britain, where a stable and highly profitable market was established for the “Blue Cross” label.

The relative export successes of the Finns throughout the 1930s was the result of factors that were largely outside the control of the Swedish Match Group. The establishment of the factory at Jokela in 1933 signalled the start of vigorous competition, both with Swedish Match and other Finnish manufacturers, and in the years that followed Jokela succeeded in winning an important part of total Finnish sales, both home market and export. In 1937 Swedish Match succeeded in reaching an understanding with Jokela, in an agreement which included a liberal export quota for the Finnish factory, but it was not until 1939 that the Swedish Group gained complete control over Jokela’s export sales.10

The Tai Tung Agreement, and the market policy in East Asia

Table 18 shows that Japanese match exports suffered a near collapse between 1925/1926 and 1929/1930, and this is of particular interest. Exports from Japan declined throughout the 1920s (cf. Figure 3, p. 84), and thus the setback from 1927 was a continuation of the trend. However, a closer examination of developments in Japan shows that the policy followed by Swedish Match made a significant contribution to the very rapid loss of exports in the closing years of the 1920s; conversely, the
Part III. The marker policy and market control

improvement during the 1930s was a result of the divestment by Swedish Match of its Japanese interests following the Kreuger crash, and after which the Japanese match industry re-emerged in open competition with the Swedish.

In September 1924 the Swedish Match Company acquired all shares in the second largest match-manufacturing Company in Japan, Nippon Match Co. This was the outcome of an option agreement entered into in January of the same year with a trading Company named Mitsui Bussan Kaisha (MBK), which controlled the greater part of the Japanese match exports. In April 1925 Swedish Match purchased share majorities in more Japanese match companies, including Kobayashi Match Manufacturing Co., and following these acquisitions one-third of all Japanese match exports came under the control of the Swedish Group.

Negotiations with the largest of the Japanese manufacturers, Toyo Match Co., led to a major amalgamation and the formation of Daido Match Co., which united the Japanese interests of the Swedish Match Company with Toyo Match from October 1927; majority share ownership, direct and via Japanese subsidiaries, gave the Swedes control of Daido Match.

There followed the purchase of a number of small factories, and by the end of 1927 the Swedish Match Group controlled more than 73% of Japanese exports, and more than 81% of sales on the home market.11

In the years that followed Swedish-controlled Japanese exports fell very much more rapidly than did exports by the independent companies; in 1931, “Swedish” exports reached barely one-quarter of the 1928 level, while those of the independents fell by “only” half. The rapid reduction in controlled exports was the outcome of attempts made in the later Kreuger years to build up a huge reserve market in the Far East—particularly in Siam, Indo-China and China—for surplus production from the European match factories.

From the middle of the 1920s Swedish Match was committed by a variety of monopoly and export agreements to the sale of considerable quantities of matches on world markets. If obligations arising only from monopoly agreements with Poland, Estonia and Latvia are added to undertakings given through
The policy of expansion, and match exports from Sweden

agreements in 1927 to Finnish manufacturers, to the Solo companies and to F.R.F., a total of more than 140,000 cases was to be placed on export markets via the Swedish Match sales organisation. There was also the moral requirement to export from subsidiary companies in several countries that had traditional match exports; obviously the management in Sweden had to respect local opinion and ambitions in host countries.

The Group’s market policy in East Asia eventually resulted in the formation of a new sales Company, Tai Tung Co., in Hong Kong in 1928. In the same year the new Company concluded a 15-year agreement with the two Japanese subsidiaries, Daido and Asahi. The Tai Tung Agreement transferred the agency for certain Asian markets to the new Hong Kong sales Company: the arrangement involved annual compensation payments by Tai Tung based upon the Daido-Asahi sales during 1927, but required no commitment by Tai Tung as concerns the future sale of Japanese matches. The agreement thus permitted the large-scale replacement of Japanese matches by European throughout the Far East, and by 1932, when the Tai Tung Agreement was rescinded, almost all the specified markets in Asia had been taken over; the only exceptions were Amoy in southern China, and Penang and Singapore on the peninsula of Malaya.

One of the benefits of the “Tai Tung policy” was the fact that surplus European production was directed to markets which permitted only very low prices. This made it possible for Swedish Match in principle to reserve the more profitable markets for “high quality Swedish matches”, and to be able to demonstrate to co-operating manufacturers, and the authorities of monopoly countries, that the export of matches was by no means a lucrative business. The same purpose lay behind the internal transfer pricing practised within the Group relative to the British market in the closing years of the Kreuger era; as was shown in the British case study, exporting subsidiaries in Finland, Estonia and Norway under-invoiced their deliveries to Great Britain, permitting the accumulation of considerable extra profits by the British selling companies. These profits were then transferred direct to the parent Company in Sweden.

The enormous variation in the profitability of different mar-
Part III. The marker policy and marker control

kets at the end of the 1920s can be seen in the span of prices fob Sweden. Averaged over 1929 and 1930, fob prices for converted 50-gross cases were SKr 105 to Great Britain, SKr 74.45 to the United States, SKr 69.35 to the Dutch East Indies, SKr 43.50 to Siam and Indo-China, but no more than SKr 34.25 to China. Production costs at the Swedish factories at the same time, including depreciation and factory overheads, were about SKr 50.45 per case, and this puts into clear perspective the importance of the British market, on grounds not only of size but also of profitability.\(^{12}\)

The fact that the interests of local subsidiaries took second place to the efforts by the Group management to create a large and profitable market for Swedish-made matches can be seen particularly well in the relationship with the subsidiary in Belgium, Union Allumettière (UNAL). Belgium possessed all the prerequisites for the production of matches, and the country had an important tradition as both manufacturer and exporter. During the first five years of the 1920s a very brisk level of competition developed between Swedish Match and newly-established Belgian outsiders, and this competition was particularly intensive in Britain. It continued until early in 1927, when Swedish Match—at least for a while—gained control over the entire Belgian production of matches.

In 1927 came the foundation of British Match Corporation, followed by a wide-ranging Swedish Match plan for imports to Britain. The Belgian quota was fixed at a maximum of 62,000 cases per year, a drastic loss relative to earlier levels of exports from Belgium to Britain, which in 1926 for instance were in the region of 120,000 cases. The motivation for the immediate reduction of Belgian exports was the need for a rapid increase of Swedish sales, which, it was planned, would almost double from the 1926 level of 40,000 cases, to 70,000 cases. Part of the reasoning behind these quotas, according to the Group management, was that “our Belgian Company has hitherto enjoyed a particularly favourable situation as regards deliveries to both home and export markets, whereas the Swedish factories, as is well known, have for a considerable time worked for only three days each week, and even so our stocks have been increasing”.\(^{13}\)
Comparative cost advantages and disadvantages

Other interesting aspects of the "Swedish" market policy of the Group management can be seen if the analysis is expanded to include a comparison of labour productivity and production costs in different countries, and in Figure 16 and Table 19 an attempt has been made to summarise information relating to hourly production per employee and production costs per case. For the comparison of production costs, numerous factors were decisive in the choice of both country and time of comparison, not least the difficulty in establishing comparable levels of information and the need to see the effect of the linking of the Swedish currency to the sterling block following the collapse of the gold standard in the autumn of 1931.

The productivity differences shown in Figure 16 are striking. At the newly-established factory in Turkey, for instance, productivity in 1933 was no more than one-fifth of the level at Swedish factories at the same time, and in fact the effectiveness of the Swedish match industry was probably exceeded only by the American. In many of the surveys that formed the basis for Swedish Match purchase or establishment plans in the United States early in the 1930s, reference was made to the rational, labour-saving nature of the production apparatus of the American factories; calculations based upon admittedly sketchy information from the Bellefonte, Pa. factory of Federal Match, which was a quite normal American unit with an annual production capacity of about 56,000 cases, suggests a level of productivity in 1930 corresponding to more than 700 boxes per hour and employee.14

It is also interesting to see that in this respect the Norwegian and Belgian match industries were not far behind the Swedish at the time the comparison is made (19331'34). Between 1927 and 1931 the Belgian industry went through a period of rapid structural change, and the closure of a number of smaller and unprofitable factories, when production was concentrated to the remainder, certainly contributed to balance the rather considerable difference in productivity that had existed between the Belgian
Part III. The marker policy and marker control

Number of boxes, 50 stick contents, produced per hour and employee (direct production workers and supervisors only)

<table>
<thead>
<tr>
<th>Country</th>
<th>1933</th>
<th>1934</th>
<th>Weighted average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sweden</td>
<td>591</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Norway</td>
<td>5</td>
<td>2</td>
<td>8</td>
</tr>
<tr>
<td>Belgium</td>
<td></td>
<td></td>
<td>503</td>
</tr>
<tr>
<td>Germany¹</td>
<td></td>
<td></td>
<td>496</td>
</tr>
<tr>
<td>Austria²</td>
<td>8</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>Poland</td>
<td>3</td>
<td>7</td>
<td>5</td>
</tr>
<tr>
<td>Denmark</td>
<td>6</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>Barking Factory</td>
<td></td>
<td></td>
<td>338 (1928)</td>
</tr>
<tr>
<td>England</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Netherlands</td>
<td>290</td>
<td></td>
<td></td>
</tr>
<tr>
<td>India³</td>
<td>6</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Finland</td>
<td></td>
<td>262</td>
<td></td>
</tr>
<tr>
<td>Estonia</td>
<td>4</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>Latvia</td>
<td></td>
<td>212</td>
<td></td>
</tr>
<tr>
<td>Manila Factory</td>
<td>9</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Philippine</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Buyukdere Factory</td>
<td>122</td>
<td></td>
<td>122 (started July 1932)</td>
</tr>
</tbody>
</table>

¹ Weighted average for the Zanow, Ahaus and Lauenburg factories
² Weighted average for the Deutschlandsberg and Linz factories
³ Weighted average for the Ambernath, Calcutta and Dhubri factories

*Figure* 16. Operating efficiency of Swedish Match Group factories in certain countries, 1933—1934. Number of boxes, 50-stick contents, produced per hour and employee (direct production workers and supervisors only). Unless references indicate otherwise, the quantities shown are based upon weighted average according to production volume of every Group factory in the country concerned.

Sources: Samtliga fabriker: Statistiska uppgifter om tillverkning, försäljning m.m. 1932—1933, Reconstruction Files.

and Swedish match industries in the first five years of the 1920s. The low level of productivity at the Barking factory requires comment, but it must be stressed that information from Barking refers only to 1928. The figures for the other countries relate to
The policy of expansion, and match exports from Sweden

193311934, and consequently a comparison with Barking can be misleading as an increase of labour productivity can be observed during these years in all factories from which information is available. If it is assumed that the development of productivity at Barking1928—1933/1934 corresponded to the average for the Swedish, Norwegian, Belgian, German and Dutch factories, then in 1933/1934 the level at Barking lay somewhere between the Austrian and German. Even so, bearing in mind the high degree of mechanisation within the British match industry, the low Barking level is surprising. Probably the explanation lies at least partially in the policy followed by Swedish Match, and the deliberate restriction of Barking production.15

The information concerning production costs and average hourly wages in Table 19 also relates to different periods, although in fact this has little effect upon the validity of comparisons in what was a time of relatively uneventful cost and wage development. With the exception of wage information from the Finnish match industry, the figures in the table show comparative costs after the changes in exchange rates that followed the abandonment of the gold standard by Great Britain, followed by the Nordic countries, in the autumn of 1931. Approximate costs in the months before the collapse of the gold standard have been obtained by converting wages and total costs to Swedish kronor at the average exchange rate for 1930, and these figures are shown in Table 19 in parenthesis.

The low hourly wage figures for the Finnish, Belgian and German match industries before 1931 are also supported by other sources, and the extremely low comparative wage costs in developing countries are illustrated by the Indian figures, with an average hourly wage of about SKr 0.18 -0.19, compared to SKr 0.87 in the Swedish factories.16 However, lower productivity and higher matchwood prices took the total Indian production cost to about the same level as the Swedish, and this was the case even in Indian factories when local species of match wood were used.

Changes in exchange rates at the beginning of the 1930s resulted in a somewhat higher depreciation of the Norwegian and Finnish currencies than of the Swedish kronor, and this gave the match industries of these two countries cost advantages relative
Table 19. Factory manufacturing cost per case of 50 gross (ske 5 E) in selected countries 1932-1934. Costs in local currency converted to SKr at the average exchange rate in 1932 (1930)

<table>
<thead>
<tr>
<th></th>
<th>Sweden</th>
<th>Norway</th>
<th>Finland</th>
<th>Poland</th>
<th>Belgium¹</th>
<th>Germany¹</th>
<th>India²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raw materials (wood, chemicals, paper, labels &amp; packing)</td>
<td>25.05</td>
<td>21.07</td>
<td>23.61</td>
<td>23.25</td>
<td>23.66</td>
<td>22.89</td>
<td>34.20</td>
</tr>
<tr>
<td>Productive wages (workmen)</td>
<td>10.41</td>
<td>11.52</td>
<td>5.17</td>
<td>5.96</td>
<td>8.86</td>
<td>9.74</td>
<td>4.93</td>
</tr>
<tr>
<td>Repairs and maintenance (machinery &amp; buildings)</td>
<td>2.52</td>
<td>2.44</td>
<td>1.57</td>
<td>1.65</td>
<td>1.43</td>
<td>3.19</td>
<td>1.97</td>
</tr>
<tr>
<td>Depreciation (machinery &amp; buildings)</td>
<td>3.85</td>
<td>6.23</td>
<td>3.97</td>
<td>9.49</td>
<td>3.11</td>
<td>9.21</td>
<td>4.76</td>
</tr>
<tr>
<td>Sundry factory expenses (power, light &amp; heat, supervision etc.)</td>
<td>7.33</td>
<td>7.68</td>
<td>5.87</td>
<td>7.29</td>
<td>3.93</td>
<td>4.39</td>
<td>3.80</td>
</tr>
<tr>
<td>Factory overhead (incl. pensions etc.)</td>
<td>2.85</td>
<td>4.56</td>
<td>4.56</td>
<td>7.68</td>
<td>3.38</td>
<td>18.18</td>
<td>6.10</td>
</tr>
<tr>
<td><strong>Total cost</strong></td>
<td>52.01</td>
<td>53.50</td>
<td>44.75</td>
<td>55.32</td>
<td>44.37</td>
<td>67.60</td>
<td>55.81</td>
</tr>
<tr>
<td>(54.49)</td>
<td>(49.43)</td>
<td>(37.51)</td>
<td></td>
<td></td>
<td>(25.54)</td>
<td>(40.26)</td>
<td>(51.02)</td>
</tr>
<tr>
<td>Average wages per working hour¹</td>
<td>0.87</td>
<td>.</td>
<td>0.32</td>
<td>.</td>
<td>0.62</td>
<td>0.74</td>
<td>0.19</td>
</tr>
<tr>
<td>(0.36)</td>
<td>(0.44)</td>
<td>(0.18)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

¹ Relates to the period 1.1. - 30.6.1934, converted to SKr at the rate as on 30.6.1934 (at the average exchange rate 1930). The figures from Germany are weighted averages for the factories in Zanow, Ahaus and Lauenburg.

² Relates to the period 1.1. - 31.10.1933, converted to SKr, as above. The figures are weighted averages for the factories in Ambemath, Calcutta and Dhubri. It may be noted that the matchwood costs at Ambemath were higher than at the other Indian factories, as Ambemath used imported aspen for splints, rather than local species.

³ The figure of average hourly wage in Finnish match factories relates to 1927.

The policy of expansion, and match exports from Sweden
to the Swedish. Expressed in Swedish currency, however, the
relative costs of production in Belgium, Germany and Poland
increased very considerably, the result of these three countries
retaining the old gold parity of their currencies. The Belgian franc
was devalued in April 1935, whereupon the Belgian match industry once again enjoyed the benefit of very low production costs in relation to the other, important exporting countries. In the later half of the 1930s—the average for the years 1935—1939—production costs at Group factories in Belgium where as little as 65 % of the corresponding costs at the factories in Sweden.”

Information from Federal Match Corp. and Ohio Match Co. show that hourly wages in the American match industry were extremely high. Expressed in Swedish currency converted at the average exchange rate, the mean hourly wage at the end of the 1920s in the United States was about Kr 1.40—1.50, thus exceeding the corresponding Swedish wage by 60 to 70 %. Because of the impossibility of making a true cost comparison of the American box, which contained 100 matches, with the 50-stick European box, an accurate comparison of production costs in the United States and Europe cannot be made. However, figures from the Federal factories in Duluth and Bellefonte in 1929, and from the Ohio Match factory in Wadsworth in 1928 and 1929, show that the high hourly wage level was very largely compensated by high productivity. At the same exchange rate conversion, production costs for paraffin matches were just short of SKr 100, and SKr 106 respectively, per case of 7,200 boxes, contents 100 matches.18

The British match industry suffered from both relatively high hourly wage costs and generally low productivity, and several independent sources confirm that production costs in Great Britain were in fact extremely high. In 1938, for instance, when the same costs in Sweden were SKr 52.50 per case, they were calculated to be SKr 98.13 at the Barking factory, and for the same year another source put the average production costs at the Bryant & May British factories as high as SKr 114.60 per 50-gross case, 50-stick box contents.19

The high production costs in Great Britain make for an easier understanding of the willingness of Bryant & May and the British match industry to co-operate with the Swedish Match Group. To
Part III. *The market policy and market control*

ensure the profitability of domestic match production price levels had to be kept high, and this virtually necessitated price and product differentiation, and co-operation with the larger manufacturers abroad, exporting to the British Isles. A general price war in Britain, perhaps involving matches in the higher price categories, could well have been catastrophic for all local manufacturers, including Bryant & May.

The analysis of productivity and production cost figures in different countries reveals that, from the cost aspect at least, there existed little reason for the Swedish Match management to favour the sale of matches produced by the Swedish factories. Disregarding factories in the United States, which were owned only for a short time towards the end of the Kreuger era, the factories in Sweden were certainly the most productive within the Group, but costs per produced unit were not significantly lower than those of many of the factories outside Sweden. Prior to the changes in exchange rates in 1931, in fact, production costs in Sweden were considerably higher than in Poland, Belgium and Germany, for example.

Even during the period from the autumn of 1931 to the spring of 1935, during which the Belgian franc appreciated very considerably in relation to currencies linked to sterling, the Belgian match factories enjoyed a definite cost advantage over the Swedish. In 1934, when the rate for the franc was at the highest, the difference in production costs was about 15%, and at the end of the 1920s, as well as later in the 1930s, the difference was very much larger. At the same time the Belgian match industry was modernised, and the productivity gap between the Swedish Match Belgian and Swedish factories narrowed, although not until after the second World War, when the super-modern Grammont factory in Belgium went into production, did any question of a choice between the benefits of Belgian versus Swedish match production become an issue debated within the Group.20

The process of growth within the Swedish Match Group between the wars was aimed at establishing a position of such dominance over the world’s match industry that some level of control over prices and sales volumes could be ensured. However, production and market conditions within the industry,
The policy of expansion, and match exports from Sweden

above all the increasing competition from lighters and absence of real entry barriers, made unrealistic any thoughts of global market control. Short of this longer-term, wider objective, the Swedish Match management entertained the more realistic ambition of safeguarding and strengthening Swedish match exports through growth on the international market.

It would serve little purpose to speculate how the Swedish match industry might have developed had the course of history been different — for instance if the Swedish Match Company had not come into being in 1917, or if a Kreuger-style growth policy had not been followed. The relatively high cost situation in Sweden, which in general could not have been balanced by productivity or technical superiority over other countries, would surely have created difficult problems in any uncontrolled, competitive market. Even if it would be exaggerating to state that expansion was the “salvation” of the Swedish match industry, it is certain that the policy followed did contribute to a strengthening of its relative market position.

The share of the global match trade taken by Swedish exports remained fairly constant between the wars, despite the arrival of a new exporter-nation, the Soviet Union, which in direct competition succeeded in taking over an important part of the market. Put another way, relative to other, older, competing match exporters, the position of Swedish deliveries improved considerably.

The connection between the growth of the Swedish Match Group and efforts to stimulate Swedish match exports is a clear expression of the fact that the purpose behind the formation of the Swedish Match Company, and of the expansion, was defensive, to regain and safeguard the international market position of the Swedish industry after the war. After the formation, the managers of the larger Swedish factories were members of the Swedish Match board, and it is no more than to be expected that the problems of over-capacity in the Swedish factories quite simply were regarded by the Group management as more immediate, more apparent, than the problems of the subsidiaries abroad, and as a result sales from Sweden were favoured whenever possible.

Despite the absence of any obvious cost advantages for match
Part III. The marker policy and market control

production in Sweden, — in fact, if anything the Swedish factories probably suffered from cost disadvantages in comparison with other important exporting countries—the “Swedish” policy followed by the Group may well have been economically the most profitable, thus in no way contradicting the assumption made earlier in this study, long-term profit maximisation being the basic objective of Company behaviour. Profitability calculations, even if, as here, made in a rather vague, counter-factual way, have a debit side as well. Product differentiation brought about significant priced differences, between trademarks and from manufacturer to manufacturer, and generally speaking Swedish-made matches were amongst those commanding higher prices. Another factor, the political risks inherent in investments in production abroad, must also be included in any longer-term assessment of the economic advantages and disadvantages of the Group’s “national” market policy between the wars.

In discussions on patterns of conduct and attitudes on the part of international companies or groups, the degree of “internationalism” has frequently been defined as the propensity for taking decisions without regard to national loyalties due to the country of origin. That part of this research project in which the activities of the Swedish Match Company in India are studied, in many instances shows that Swedish Match made every effort to be a good citizen, to shape the activities of local subsidiaries to the conditions and requirements of opinion and authority in the host country. But in attempting to summarise the global policy of the Group it is not a disposition to form decision-making in the light of the local requirements or opinion in host countries that leaves the deepest impression; the rapid growth of Swedish Match between 1919 and 1939 had a clear national rooting, with the ethnocentric leaning unmistakable. An appropriate description of the Company at that time might perhaps be that it was a “national”, international organisation.

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Chapter VI
Swedish Match’s Industrial Expansion in India

Swedish Match’s match production and its Indian subsidiary companies

The decision of Swedish Match in 1923 to build its first experimental factory in Ambernath, with a capacity of only 25 cases a day, was rapidly overtaken by events. Even before the factory was in production a decision had been made to increase its capacity and to start a new factory in Calcutta. The basic reason for this was the high match tariff introduced the previous year. This encouraged domestic production at the cost of imports and led to a swift growth of domestic factories mainly employed in dipping imported splints, which were then placed into imported boxes. To begin with, Swedish Match’s production programme was also aimed at this procedure. However, a duty on veneers and splints was introduced in March 1924 and therefore the whole of the production process was transferred to India. But the wood problem was serious. Swedish Match solved this problem, to begin with, by the import of aspen from the Baltic states and, later on, from the Soviet Union, China and Japan. Gradually, domestic wood came to be used increasingly for match production.

Swedish Match’s strategy, as outlined by its first manager in Irrdia, Bierman, was to produce as fast as possible such a volume of matches that Swedish Match could influence competitors, both presumptive and actual, and also the authorities, so that the fiscal tariff on matches would be lowered or removed. In practice, this meant that match factories were planned for the largest markets and their environs, namely Bombay, Calcutta, Madras and Karachi, and also Rangoon in Burma (see Chapter III).

Swedish Match’s Indian production increased at a rapid pace
Diagram 11. Swedish Match’s match production at Indian factories, 1924—1938, in cases of 50 gross (not converted)
Swedish Match’s industrial expansion in India

Diagram 12. Swedish Match’s export sales of British India and sales of matches produced at Swedish Match Indian factories in 1,000 cases of 50 gross 1920—1938
Swedish Match’s sales of locally produced matches:
Swedish Match's industrial expansion in India
during the 1920s. In five years, from 1924 to 1929, production at Swedish Match’s Indian factories increased from 4,600 cases annually to 152,000 cases. The factory in Ambernath, in the Bombay area, and the Calcutta factory were responsible for the major part of this production (see Diagram II). In addition, there was some production at the factories in Dhubri, Assam, and at the two factories Swedish Match had bought in Burma, Kanaung (Rangoon) and Mandalay.\textsuperscript{1} The export of matches from Sweden to India decreased in step with the increased production at Swedish Match’s Indian factories. By 1927, that is to say somewhat over three years after a start was made at producing Swedish matches at factories in India, Swedish Match’s domestic production in India was as large as the match exports from Sweden to British India (see Diagram 12). The rapid expansion in production reached its highest point in 1931 when Swedish Match, for the first year, ran a further two Indian factories at full capacity. These were the newly-erected factory in Madras and the factory originally considered for Karachi that was finally localised at Bareilly in the neighbourhood of Delhi (see Diagram 11).

If the 1920s can be described as Swedish Match’s expansion period in India, the 1930s can be characterised as its period of consolidation. As a result of the depression of 1930s and the excise duty introduced in India in 1934 on matches sold, the demand declined or stagnated. In the severe competitive situation obtaining, Swedish Match’s aim was to keep as high a production volume as possible in order to hold or reduce costs. In comparison with other factories, those owned by Swedish Match had essentially higher overhead costs and these, spread over a greater volume, were naturally felt to be less burdensome. Not least expensive was the cost of European personnel. No new factories were planned or erected during the 1930s. Periodically there were, however, agreements about a division of the market with one of the chief competitors, Adjamee Dawood & Co. in Burma, in order to avoid destructive competition.\textsuperscript{2}

In spite of doubtful information, it can be seen that Swedish Match’s share of the Indian market grew very rapidly during the 1920s. This share increased from 24 per cent in 1922 to about 45 per cent during the latter part of the 1920s. This took place at the
**Swedish Match's industrial expansion in India**

**Table 8.** Swedish Match’s percentage share of the market in British India during the interwar years

Calculations are made in cases of 50 gross. Swedish Match’s quantities refer to the sales of exported cases to British India and Burma, and also those made at Swedish Match’s Indian factories.

<table>
<thead>
<tr>
<th>Year</th>
<th>Total consumption in 1,000 cases</th>
<th>Swedish Match’s sales</th>
<th>Of which imports, percentage of (B)</th>
<th>As a percentage of (A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1922</td>
<td>225 (a)</td>
<td>53</td>
<td>100</td>
<td>24</td>
</tr>
<tr>
<td>1926</td>
<td>340 (a)</td>
<td>161</td>
<td>60</td>
<td>47</td>
</tr>
<tr>
<td>1928</td>
<td>360 (b)</td>
<td>158</td>
<td>24</td>
<td>44</td>
</tr>
<tr>
<td>1932</td>
<td>377 (c)</td>
<td>217</td>
<td>4 (e)</td>
<td>58</td>
</tr>
<tr>
<td>1933</td>
<td>362 (c)</td>
<td>207</td>
<td>1</td>
<td>58</td>
</tr>
<tr>
<td>1934</td>
<td>330 (d)</td>
<td>150</td>
<td>- (f)</td>
<td>45</td>
</tr>
<tr>
<td>1935</td>
<td>415 (d)</td>
<td>195</td>
<td></td>
<td>47</td>
</tr>
<tr>
<td>1936</td>
<td>422 (d)</td>
<td>210</td>
<td></td>
<td>50</td>
</tr>
<tr>
<td>1937</td>
<td>431 (d)</td>
<td>242</td>
<td></td>
<td>56</td>
</tr>
<tr>
<td>1938</td>
<td>421 (d)</td>
<td>250</td>
<td></td>
<td>59</td>
</tr>
</tbody>
</table>

(a) Refers only to imports  
(b) Estimated by S. Sundgren  
(c) Estimates from official statistics  
(d) Based on excise revenue  
(e) Includes Swedish Match’s sales from Sweden to Ceylon  
(f) Imports ceased from Sweden

Sources: ITB: Match India, Report, pp. 7 and 141. S. Sundgren, Annual Consumption of Matches in India, 26.11.1929, 103/357. Statistical Abstracts for British India and Certain Indian States, 1927/8 to 1936/7, p. 540. 1936/7 to 1940/1, p. 435 (see Diagram 12). It is pointed out that estimation of consumption is rather doubtful.

The same time as Swedish Match’s exports to India declined both relatively and in actual figures.

About 1930, Swedish Match’s factories in Madras and Berilly, and the new one in Calcutta, were completed, which can explain the high share of the market in 1932 and 1933 of 58 per cent. In all probability, the total consumption for these two years is underestimated, as it is based on information from the factories submitted voluntarily. In 1934 a high match excise tax was introduced, this leading to a drop in total consumption as well as in Swedish Match’s sales. But why Swedish Match’s sales decreased
Swedish Match’s industrial expansion in India

relatively more than the total consumption is difficult to explain. During the latter part of the 1930s Swedish Match’s share of the market increased to a good 50 per cent. The export of Swedish Match’s matches to British India during the 1930s had had its day.3

A powerful contributory reason for Swedish Match’s increased share of the market was presumably the active sales policy and organisation introduced during the earlier half of the 1920s and consequently carried out during the interwar years (see Chapter II). Earlier, Swedish match exports had been shipped via a trading house in London (Trummer’s) to British importers in India (Forbes, Forbes, Campbell & Co. and Gordon Woodroffe & Co.) who, in their turn, used Indian wholesalers as distributors: thus, an indirect sales system. When exports to India declined the role of the British trading houses and importers also declined. Since, to begin with, Swedish Match had mainly built-in its sales organisation in the firm of Forbes, Forbes, Campbell & Co., this firm also same to play some part in the sale of matches manufactured by Swedish Match in India. From Swedish Match’s point of view, however, Forbes’ support became of decreasing interest and, accordingly, the agreement with this firm was terminated (1930; see Chapters III and V).

Briefly, it can be said that Swedish Match’s sales policy in India was to set up an active organisation of ‘canvassers’ who each received a district which they travelled for the purpose of increasing the volume of orders in hand. The task of these canvassers was to be the intermediary links between the market and Swedish Match’s sales office. Canvassers, who were always Indians, first of all called on retailers and obtained orders. Then, with these orders, they called on the wholesaler in the district. With these orders, the wholesaler was persuaded that there were chances of match business. In this way, Swedish Match obtained wholesalers who came to form the distribution channels for the sale of matches. When the collaboration became more established, the wholesaler could be offered the sole right to a label or a special rebate if, from Swedish Match’s angle, this was regarded as suitable or necessary.

Canvassers’ work was usually planned so that they travelled
Swedish Match's industrial expansion in India

their district for twenty-five days, after which they returned to the sales office and wrote a report on the market position and received a couple of days off. In this way, the sales office had a monthly check of what was happening on the market.

The system with canvassers was built up gradually and was not fully developed before the beginning of the 1930s. In 1932 Swedish Match had in its Indian organisation, including Burma, sixty canvassers employed.

The problem for the management was to make the wholesalers as loyal as possible and the canvassers as active as possible. One way to obtain the loyalty of the wholesalers was, as mentioned, to offer the sola right to a label or to give rebates on condition that the wholesaler agreed to take a certain quota of matches from Swedish Match each month. Canvassers could be stimulated by a system of commission. Such a system had been introduced but was done away with in the middle of the 1930s, since it did not operate especially well.

Bertil Thorstenson, who was responsible for sales in India during the 1930s, recommended, after his circular tour to all sales regions during 1936, that canvassers should be activated by exchanging districts now and again: this required that information material was available so that canvassers were able to put themselves in the picture in regard to a new district as quickly as possible.

Further, personnel at the sales office, as he himself had done, should make surprise visits to the canvassers in the field at irregular intervals. Thorstenson was not prepared, however, to issue central regulations as to how things should be run in the various regions, since the conditions were so different. The aim of the sales policy was to get as close to the retailers as possible. This was direct selling, which meant a by-passing of the middlemen, as the ultimate target. A step in this direction was made during the 1930s when WIMCO started a system with its own match depots. These depots had a European sales manager and canvassers. Since the sales personnel were spread out from the four big sales offices, it was calculated that contact with the market would be further improved.4

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87

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167
Production

Production units

As was earlier mentioned, production at Swedish Match’s Indian factories was increased very rapidly. From a modest start with twenty-five cases daily in 1923, production by 1938 had increased to a level that was only 10 per cent less than the production at Swedish Match’s Swedish factories.

The greatest part of Swedish Match’s Indian production during the whole of the interwar years came from the oldest factory, Ambernath, in the Bombay area. Following this came the factory in Calcutta, which had started in rented premises in 1924, and for which a new factory was built in 1929. The factories in Bareilly, in northern India, and in Madras in the south were about the same size, but smaller than the two first mentioned. They started their production in 1930. The factories in Dhubri, Assam, and the factories purchased in Kanaung (Rangoon) and Mandalay in Burma produced more modest quantities (see Diagram 12).

Abernath

About the turn of the year 1922/1923 Gustaf Ohlsson, who was Swedish Match’s consultant for the establishment of factories abroad and earlier manager of the Barking factory in England, was sent to India to investigate the possibilities of establishing a factory, primarily in the Bombay area, and also to investigate other suitable areas for the erection of a factory. He summed up his experiences in January 1924, when there were factories under construction in Ambernath and Calcutta. In his report, Gustaf Ohlsson put the emphasis on the Ambernath factory and the investments in it.

As the motto for his proposal Ohlsson had ‘oriental pattern, Swedish tradition’. The model was part Swedish and part Japanese. It was a matter of utilising Swedish and Japanese techniques together with the cheap labour available in India, and building factories suitable for the Indian climate. Ohlsson stated in his report that the factory in Ambernath had been enormously ex-
**Swedish Match’s industrial expansion in India**

expensive in comparison with what he had thought round about the end of 1922. Inclusive of ground and bungalows for Swedish personnel, costs for the Ambernath plant amounted to 332,000 rupees (or 400,000 crowns). The costs were specified in the following way:

*Table 9. Costs of constructing the match factory in Ambernath according to G. Ohlsson’s calculations*

<table>
<thead>
<tr>
<th>Costs</th>
<th>Crowns</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buildings site, etc.</td>
<td>47 000</td>
</tr>
<tr>
<td>Factory buildings, etc.</td>
<td>155 000</td>
</tr>
<tr>
<td>Machinery, etc.</td>
<td>125 500</td>
</tr>
<tr>
<td>Bungalows</td>
<td>48 000</td>
</tr>
<tr>
<td>Freight, etc.</td>
<td>24 500</td>
</tr>
<tr>
<td></td>
<td>400 000</td>
</tr>
</tbody>
</table>

Source: G. Ohlsson, *Match factories in India*, 9.1.1924, India, Folder 56: Ambernath and Parel Factories, Swedish Match

The production capacity at this factory was only twenty cases daily, or 6,000 cases annually.

By spring of the same year, 1924, Bierman wanted to increase production capacity. The reason for this was, of course, the change in the situation that had occurred on the match market, where it was a matter of utilising the vacuum caused by the increased import duty. It was a question of who should be first, the Swedes, the Japanese or the Indians. Bierman wanted to increase capacity in Ambernath from twenty to a hundred cases daily. In fact, the production capacity was not expanded so rapidly, as is shown by the Table below.

The cost of the factory, as calculated by G. Ohlsson, lies a great deal below that given by Swedish Match at the Tariff Board’s hearing in 1927. This was partly because the investments that took place during 1924 were not included in Ohlsson’s calculations, for example box-filling machines, and because the book value was higher than that calculated by Ohlsson. The cost of the factory includes the site, buildings, machines and housing.

The machine park in Ambernath was to be suited to Indian conditions, which meant that continuous machines were not in-
Table 10. Daily production capacity at Ambemath in cases of 50 gross and cost of factory before depreciation

<table>
<thead>
<tr>
<th>Year</th>
<th>Production capacity</th>
<th>Cost of factory (1,000 rupees)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1924 (Dec.)</td>
<td>20—25 cases daily</td>
<td>954</td>
</tr>
<tr>
<td>1925</td>
<td>75</td>
<td>1,700</td>
</tr>
<tr>
<td>1931</td>
<td>180</td>
<td></td>
</tr>
<tr>
<td>1930</td>
<td>190</td>
<td>3,500</td>
</tr>
</tbody>
</table>


Stalled to start with. Instead, machines were installed for a more labour-intensive manufacture. In the original plan for the Ambernath factory, it was even suggested that the boxes should be filled by hand. But at a very early stage the machine park was completed with three box-filling machines. By September 1926 there were thirty-two such machines at the factory.

The cost of the machine park at Ambernath up to January 1924 amounted to 125,500 crowns. However, this amount is based on the cost of new machines. In actual fact, machines were installed at the Ambernath factory from Sweden, these being discarded machines which were replaced in Sweden by for example, continuous machines. The actual cost of the machines to Swedish Match was thus lower.

The important differences between an Indian-Japanese factory and the Swedish one planned for India were that the Swedish factory was equipped with power, heat and box-filling machines. One of the greatest advantages with this, in Swedish Match eyes, was that fewer personnel were required because of the higher efficiency and better quality mechanical manufacture was presumed to give.

The factory in Ambernath became a relatively large factory. In December 1929, when capacity had almost reached its final level, there were about 1,400 employees, thirteen of these being Europeans. Production was concentrated on the production of safety matches (half-size). This concentration was maintained until the
Swedish Match's industrial expansion in India

Excise duty on matches was introduced in 1934, when production was changed to the production of boxes with forty sticks per box. Continuous machines were installed in Ambernath in 1929. The reason for this was not so much a desire to increase the degree of mechanisation but to be able to increase production in a pressed situation. Following the report of the Tariff Board in 1928, Swedish Match was only allowed to increase production capacity with the approval of the authorities and for special reasons. Such a reason was to test continuous machines in Indian surroundings, and this is what happened.

For a shorter period at the middle of the 1920s, Swedish Match set up a further factory in the Bombay area. This factory lay in Parel, a suburb of Bombay, and was actually considered to be a demonstration and experimental factory. Production took place in rented premises and the total production over two years was limited to 670 cases.

Calcutta

The match factory in Calcutta came into being under quite different conditions from the factory in Ambernath. In Ambernath a new factory was built in the countryside from the ground up. The Calcutta factory was installed in rented premises in the town. This was a case of starting 'on the same lines as the Indians do' and meant that manufacture, insofar as it was possible, should be manual. It was, however, necessary for it to be planned so that manufacture could be largely mechanical, if need be. The intention behind this plan was to gain time so that production could be started quickly. The disadvantage was that potential plans for expansion were limited by the size of the premises rented. Also, the organisation of production was limited by the premises available.

The factory area was situated in the neighbourhood of a railway station with access to a canal, thus facilitating transport. The rent of the factory was 1,500 rupees per month. To start with, it was equipped for a capacity of twenty cases daily, which already, towards the end of 1925, was increased to forty-five cases and, towards the end of 1926, to ninety cases daily. About 250 workers
Swedish Match’s industrial expansion in India

were employed initially and in December 1927 there were approximately 750 employees, including eight Europeans. It was stated to the Tariff Board in 1927 that the establishment value of the Calcutta factory was around 800,000 rupees. Production was aimed almost entirely at the production of full-size matches.11

The factory in Calcutta was regarded as provisional. Not least, it should be regarded as an expression of the sales policy pursued at that time by Swedish Match in India. The main purpose was to restrain any great expansion from other factories, or potential factories in the area. Further, at that time the ultimate purpose was to try to increase imports. The greatest barrier to this was, naturally, the import duty. If this were to be removed, Swedish Match was prepared to reconsider its Indian production. From this point of view, it was naturally an advantage to rent premises. When the Tariff Board’s hearing was held in 1927/1928 it then became clear to Swedish Match that they were in India to stay. The result was that the original building program was taken up for consideration once again. This involved the building of new factories in Calcutta, Madras and Karachi, at the same time. The Karachi factory was relocated in the Deihi region (see Chapter V).

Land was bought north of Calcutta on the Hooghly river, with access to the Eastern Bengal Railway, at a price of 228,000 rupees. The factory was equipped with five continuous machines and for a capacity of some 130 cases daily. It started up in the spring of 1930. By 1936 capacity had increased to 175 cases daily.12

Assam Match Company, Dhubri

One of the greatest problems associated with match production in India was the wood question. One way to solve it, at least for a factory, was to site the factory in a richly-timbered region. This was the strongest reason behind the siting of the match factory in Dhubri, Assam, on the Brahmmaputra river. It was thought that the match factory in Dhubri, directed at the production of half-size, would complement the factory in Calcutta and thus aim its sales at Bengal. The factory in Dhubri was built on land leased from the Rajah of Gauripur. This was a comparatively small factory.
Swedish Match's industrial expansion in India

It was planned to have a capacity of twentyfive cases daily and in 1936 had doubled its capacity to fifty cases daily. The factory was mainly built of galvanised sheeting on a steel construction. It came to form two buildings only since the original plan was that the boxes should be made by hand and thereafter, presumably, a 'putting-out' system would be used. However, a shortage of labour caused by the seasonal competition from the tea and jute plantations in the area caused the Company to introduce mechanical box-manufacture. Thus, another building was required. Six months prior to the start of the Dhubri factory, its cost was estimated at approximately 300,000 rupees.

The great advantage of a factory in Dhubri was considered to be its proximity to forests, which could be used to provide wood for matches and boxes. The intention was that tugs should be floated down the Brahmaputra to a place in the neighbourhood of the factory. The company had made sure of the availability of timber by means of a concession from the government authorities. In this way, the company controlled a large area of forest to be worked under its own management. But Swedish Match soon gave this up because of the difficulties it met. It was hard to obtain responsible personnel and forestry workers. More as a curiosity, it can also be mentioned that Swedish Match lost a large number of buffalos through tiger attacks. From then on, Swedish Match used local forestry companies.

The factory in Dhubri, as was mentioned earlier, came to be a separate unit financially and legally. A special Company, The Assam Match Company, was established in 1925 and was, from the start, established as a public company with three-fifths of the share capital controlled by Swedish Match.

The personnel in Dhubri amounted to about 400 during the 1920s, five of these being Europeans. The factory was damaged by an earthquake in 1930, this causing a brief interruption in manufacture.13

Burma

At the commencement of the 1920s, Swedish Match activities in India were concentrated in the Indian continent, mostly in the
Swedish Match’s industrial expansion in India

Bombay region. One reason was the great distances. The primary effect of this was that Bruma, which at that time belonged to British India, was rather forgotten. It took seven days to travel from Bombay to Rangoon. However, things happened during 1924 that made the Burmese market interesting.

The high revenue duty introduced in 1922 and 1923 also applied to Burma. Rut control of the importation of matches, especially from Siam, had not been at all great. Further, in Burma there were only four match factories, of which one had a special position, that owned by Adamjee Dhowd. It had comparatively modern equipment and a capacity of 100 cases daily. When, in 1924, the customs control in Burma was improved, there was an increased demand for indigenous matches.

In order to enter the market quickly it was decided, in conjunction with Krister Littorin’s third Indian journey in 1925, to make an approach to Dawood, which Dawood refused. The alternative was then to buy one or some of the other factories or to build on one’s own account. Swedish Match selected the former alternative and two factories were bought. One of these was situated in the neighbourhood of Rangoon but could only be reached by water at high tide. The other was in Mandalay. Both factories were small, although the factory in Mandalay was smaller than that in Rangoon. At the time of purchase both factories were *ready to go*. The one in Mandalay was in bad shape and was run during 1925 and 1926, when a total of approximately 2,000 cases were manufactured. Production was taken up again on a somewhat larger scale in 1930 and the factory ran for the whole of the 1930s. It is reasonable to say, however, that this factory had the character of a reserve factory. About 200 were employed, including three Europeans. The value of the factory at the start was a good 300,000 rupees.

The factory at Kanaung, Rangoon, was approximately the same size as the factory in Dhubri at the middle of the 1920s. Later, it was extended to have a production capacity of 100 cases daily. The value of this plant at the middle of the 1920s was estimated to be about 600,000 rupees. There were live Europeans employed in 1921 out of a total of somewhat over 400 employees.
Swedish Match’s industrial expansion in India

There were only four Europeans in December 1929, when the number of employees had increased to about 670.\textsuperscript{14}

Madras

The plans to build a match factory in the Madras area were taken up for reconsideration in 1928. In Sune Schéle’s suggestion of 1928 to form the General Match Company of India was included a newly-built factory in Madras at a calculated cost of 600,000 rupees. The production capacity was not stated. Prior to this, measures had been taken to investigate the possibilities of obtaining land in Madras. Through Swedish Match’s sales agent, Gordon Woodroffe & Co., land was purchased from Rajah Sir Annamalai Chettiar of Chettinad about ten miles from Fom St George. The land was paid in part with WIMCO shares and the Rajah of Chettinad was elected in 1929 as a member of the board in WIMCO. Initially, the factory was equipped with four continuous machines. Its capacity can be estimated to a good 100 cases daily. The factory was supplied with imported aspen wood and was started in July 1929. In December of the same year there were ten Europeans out of a total of 805 employees. The value of the plant was stated in 1936 to be 3.3 million rupees and the production capacity at that time 140 cases daily.\textsuperscript{15}

Bareilly

The factory at Bareilly, or Clutterbuckanj, was the last of the three new factories built by Swedish Match in British India during the last years of the 1920s. Originally, this factory had been planned for construction in Karachi. The final decision was made in favour of Bareilly in view of freight costs and supply of timber. A further advantage was that the property bought in Bareilly contained dwelling for workers and office personnel. The Bareilly factory was intended to produce matches for the northern part of India, the Punjab and the United Provinces, where the Delhi region was the most important market.

There was one disadvantage with Bareilly: there was already a small match factory there. It produced thirty cases daily, had a
Swedish Match's industrial expansion in India

German technical manager, and was owned by a Hindu family (see Chapter V). The new factory in Bareilly, built during 1929 and equipped for a capacity of 100 cases daily and with continuous machines, thus meant competition really on its own doorstep. In addition, Bareilly was a relatively small and isolated district, situated about 150 miles east of Delhi.

The Bareilly Match Factory, the competitor, although small, was able to cause trouble. The Singh family, who owned the factory, had, in fact, certain ways, through its own contacts and contracts, of hindering supplies of timber to Swedish Match's factory. Following approaches, this led to negotiations resulting in Swedish Match, or formally WIMCO, also buying the Bareilly Match Factory in April 1930 at a total price, inclusive stock, of 745,000 rupees, of which 300,000 rupees was paid in WIMCO shares. The head of the family, Rai Bahadur Sardar Narain Singh, also became a member of WIMCO's board and chief supplier of timber to the Bareilly factory. WIMCO's production came to be concentrated in the newly-built factory and Singh's factory was closed down.

From the beginning, WIMCO's factory had a capacity of about 100 cases daily. By 1936 the capacity had increased to 140 cases daily and the value of the plant was then 2.5 million rupees. Production in Bareilly was based almost completely on indigenous wood. Up to 1934 the greater part of production consisted of half-size but also three-quarter, full-size and some sulphur matches were produced too. After the introduction of the excise duty in 1934 production came to be dominated by boxes containing forty matches.16

Raw Materials

Chemicals

The chemicals required for the production of matches at Swedish Match's Indian factories were imported to India. Deliveries were
undertaken by Exportaktiebolaget Norden, a subsidiary company of Swedish Match. The imports included paper and, at the beginning, also fables. The cost of these imported materials has been estimated to amount to about 20 per cent of the variable cost (works cost) per case in match manufacture in India, or approximately 15 per cent of the total costs per case. Ordering of the products was carried out by the purchasing department at Swedish Match in Jönköping, which, in fact, had a monopoly of these. This caused a conflict between the management in India and the purchasing department during the middle of the 1930s. At that time, WIMCO was running at a loss. The company’s management tried to reduce their costs and found on investigation that certain cost reductions could be achieved if WIMCO itself arranged the purchase of chemicals and paper, preferably from Japan. But this was not to be, especially in view of the purchasing department’s arguments that the profit WIMCO thought it could obtain through its own purchases must be weighed against greater fluctuations in price and the uncertain quality of goods obtained on the open market.

Wood

That wood was a problem has been illustrated in the case of Dhubri, Assam. Wood costs formed an important proportion of the total manufacturing costs of matches. In the mid-1920s the cost of timber amounted to about 35 per cent of the total manufacturing costs, according to the Information from the Indian Tariff Board. The timber question was not only one of business economics but also of government economic policy. As far as Swedish Match was concerned the aspect of business economics dominated, but for the Indian authorities the economic-political aspect was uppermost. Experience had shown that aspen provided the best wood for matches as regards both quality and economy. But aspen did not grow in India. How was aspen to be obtained? Of course, the answer was through imports, and these came from the Baltic States, Siberia and China via Japan. This might seem expensive in view of the long distances and the problem of aspen wood in Europe during the interwar years.
Swedish Match maintained tenaciously that aspen was the most desirable wood as regards both quality and economy in India also. This did not, however, prevent efforts being made to discover indigenous wood that could be used in match manufacture, initially for cases and box veneers, but later for splints.18

The trouble with Indian wood, in Swedish Match’s opinion, was that it consisted of softwood, which meant that the waste in match manufacture was markedly higher than if aspen was used. In addition, species that could be considered were spread among other species, so that felling was expensive. Furthermore, the timber soon rotted after felling, especially during the monsoon period. Finally, it was stated by Swedish Match that the splints did not keep so well, or so white, as when aspen was used.

In the Tariff Board’s investigation of the match industry in 1926–1928 the problem of wood was a key question. The reason for this was one of the three principles that had to be fulfilled before a protective tariff for an industry could be considered (see Chapter IV). India had to have the natural potential to develop the branch in question. In view of this, it was natural that the Tariff Board gave a great deal of weight to an investigation of the supply of timber and the cost of using domestic wood, in relation to the cost of that imported. Similarly, it was natural for Swedish Match to emphasise that the advantage of imported wood (aspen), compared to indigenous wood, was not only a matter of quality, but also of economics, since Swedish Match’s primary interest at the time of the Tariff Board’s hearing was to increase the export of matches from Sweden and thus argue that the existing fiscal tariff should not be made permanent as a protective tariff (see Chapter IV).

The Tariff Board maintained in its final report that India had the natural potentials for a match industry because of: (1) the availability of a large amount of cheap labour and timber supplies, and (2) the existence of a sizable domestic market. However, the conclusion was somewhat ambiguous since the Board had also stated that the supply of indigenous wood for matches, especially in the Bombay region, was much too scanty. The Board agreed that, in any case during a transitory period, the supply of indigenous wood would only cover half the requirements of the
match industry. Thus, a half of match manufacture should be based on imported wood. The Board considered that, in the long term, tree plantations should satisfy the total requirements of wood for the match industry.

The Board also stated, assisted by statistical material from Swedish Match, that it was then (1927) profitable to manufacture match boxes from domestic wood, whilst the production of splints from domestic wood was less profitable than from imported aspen, although the waste in boxmaking was higher than the waste in splint manufacture. One important reason for this was that matches made from aspen fetched a higher price on the match market than matches made from domestic wood. The species of wood used for the box produced no equivalent price difference.

In its analysis of wood costs, the Tariff Board found that while there was a price for aspen of 120 rupees per ton, which was the strictly market price (free factory) in 1927, there was a price for indigenous wood of about 40 rupees, i.e. at a price of 40 rupees per ton for indigenous wood (free factory), aspen could be substituted by indigenous wood. This applied to Calcutta, Bombay and Rangoon. It should also be noted that the price of indigenous wood suitable for the production of matches was 40 rupees in certain parts of the country and in other parts higher (the Bombay region). The reason why aspen fetched a much higher price, relatively, than indigenous wood was that the waste when aspen was used was so much less.19

The problem of wood was a central one for all of Swedish Match’s factories in India, but in spite of everything varied in extent depending on the location of the factory. The factories in Dhubri, Assam, and the factory in Bareilly were largely located with reference mainly to the wood problem. They were to utilise local wood. The factories in Ambernath, Madras, Calcutta and Rangoon were, however, located at the market, and also at ports, so that the import of wood was an attractive alternative. These factories also came to use aspen completely or partly for the production of splints, whilst the boxes to an increasingly large degree were manufactured from indigenous wood.

As with other Indian match factories, Swedish Match imported
Swedish Match’s industrial expansion in India

aspen from the Baltic states, Poland, Siberia and northern China. For Swedish Match Russian aspen was a source of trouble and difficulties. The quality varied and it was comparatively expensive. In addition, there was uncertainty in deliveries so that Swedish Match ceased its purchases in 1932. At the same time, a number of investigations were made into the possibilities of using American or Canadian aspen. However, these investigations were never followed up. The main source of supply was thus Baltic aspen. The Indian demand, however, meant that there was a boom in Baltic aspen on the European market, which Swedish Match’s home office really wished to avoid.²⁰

In the Indian ocean there is, however, a group of islands, the Andaman islands, on which two species of trees grew, papita and dhup, and these showed themselves to be suitable as match wood. Sune Schéle had been in contact with the forestry authorities on the islands as early as May 1925 but did not succeed then in obtaining any deliveries. At the end of the 1920s new efforts were made. One of the greater problems associated with timber from the Andamans was that of transport. The steamboats calling at the islands trafficked them relatively seldom. Further, it was difficult to carry match timber, which should not be dry and, in addition, was cylindrical, thus making the transport bulky. In view of this, and also since the fiercest competitor in Burma, Adjamee Dawood obtained timber from the Andamans at favourable prices compared with those Swedish Match could obtain, Swedish Match decided to erect a splint factory on the Andamans. This started in primitive conditions in 1929 with Franzén, a foreman from Tidaholm in Sweden, as production supervisor. Veneers of dhup and splints of papita were then delivered direct to Madras, Calcutta and Ambernath. Deliveries of box veneers were especially important, since dhup was a species of wood of good quality and price. Papita was suitable for splints but Swedish Match was afraid that the match market for aspen would be destroyed if Swedish Match itself used more indigenous domestic wood for splints.

At the beginning of the 1930s an inventory of the standing timber on the Andamans was made by the forestry expert Stig Wijkström. The idea behind this was that it might be possible to
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discover other kinds of wood suitable for match manufacture, and alternative species important for other purposes, so that more rational felling could be carried out. But Wijkström’s commission was not limited to the Andamans. He also carried out a timber inventory in the whole of southern India in order to discover suitable wood, especially for the factory in Ambernath. Unfortunately, the kinds of timber required were relatively difficult to get at.

Towards the end of the 1930s the efforts of Swedish Match to utilise local wood had advanced so far that, surprisingly enough, it was possible to consider advocating that a duty should be introduced on aspen wood. This was because Swedish Match’s Indian competitors were causing a boom on the European market through their purchases of Baltic aspen. By using a lower quality, their costs for aspen became lower than, for example, W1MCO’s. Since Swedish Match’s Indian companies were able to satisfy their wood requirements largely from indigenous wood in India, the situation for the Indian competitors would be more difficult if a duty was introduced on aspen. For Swedish Match as a concern, such a duty would mean that the pressure on the European aspen market would ease. Such a duty on aspen would thus provide a double advantage for Swedish Match.21

Labour

Recruitment of workers

During the interwar years the idea was established in public investigations that the cheap Indian labour was not only dear because of the low productivity but also because it was scarce in relation to the needs of industry, although only 1 per cent of the population was engaged in industry. The latter paradox appears to have its basis in a combination of factors. There was certainly a seasonal shortage of labour in certain parts of India, as can be seen from the regional variations in pay and the migration. In Assam and Bengal during the harvest and sowing seasons, wages
### Table II. Number of Indians employed at Swedish Match's Indian match factories, 1926—1938

<table>
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<tr>
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<th>Ambernath</th>
<th>Calcutta</th>
<th>Rangoon</th>
<th>Mandalay</th>
<th>Dhubri</th>
<th>Madras</th>
<th>Bareilly</th>
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<td>761</td>
<td>489</td>
<td>3</td>
<td>370</td>
<td></td>
<td>2 895</td>
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<td>396</td>
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<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
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</tr>
<tr>
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<td>753</td>
<td>586</td>
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<td>393</td>
<td>627</td>
<td>1 015</td>
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<tr>
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<td>1 484 (b)</td>
<td>502</td>
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<td>370</td>
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<td>315</td>
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</tr>
</tbody>
</table>

- Factory not **started**
- Information not available

Sources: **Staff in India, 1926—1929, 089/222.** Swedish Match Chairman’s address, 30.IV. 1931. WIMCO. Swedish Match, Bombay. C. Hallen to S. Sundgren, 14.IV.1934, Folder: Personal and **confidential/factory** manager. WIMCO, Ambernath, Irrdia, Burma & Ceylon — **Staff. ‘A’ statistics,** p 201. Swedish Match

(a) Indians employed includes **office** personnel and foremen at the factories. In addition to the figures given, there were 200-300 employed at the head office and sales offices. Information is no! available for 1931—1933 and 1938.

(b) Double shifts
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are comparatively high compared to other parts of the country. The labour force poured in from the neighbouring provinces such as the United Provinces and Bihar. Also, there was a sluggishness in the labour market, here as elsewhere, so that a temporary scarcity of labour could appear. Through the system of private employment agents (surdars) existing, it was even possible for an artificial shortage to be created temporarily. Furthermore, it was quite possible for the shortage of labour in the short term to be combined with a surplus in the long term. But in spite of everything, an increased demand for labour was met, as is shown by the internal migration that took place, which was made easier by the comparatively quite extensive railway network.

Within Swedish Match also it was held that the cheap labour was expensive and that the shortage of labour was a fact, in spite of the large population. The latter statement, however, would appear to be connected with a combination of circumstances in the long and short term without regard to regional differences and the type of labour demanded.

Swedish Match's factories in Ambernath, Dhubri and Bareilly lay relatively isolated from centres of population. To begin with, the newly-started factories in Ambernath and Dhubri had difficulties in recruiting labour. At the Tariff Board's hearing in 1927 Sune Schéle said that only 10 per cent of the workforce in Ambernath consisted of local labour, since Ambernath was 'a lonely place'. The other 90 per cent were recruited, said the factory management: in Ambernath, from practically the whole of India.

The recruiting situation in Bombay was different. Representatives from match factories here have testified that they had no recruitment problems. Applicants for work came to the factory gate in the morning in the hope of getting a job.

In Dhubri, production was mechanised to a higher degree than had been originally intended with the object of reducing labour requirements in view of the competition for labour existing there. It was even necessary to recruit labour from Calcutta. Bareilly, too, was a remotely situated place, but the bulk of the labour there was recruited locally for the factory. Bareilly lay in an agricultural district with, presumably, a surplus of labour, since the workers from this province travelled to Assam and Bengal for seasonal
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work. The type of labour to be found round Bareilly was, in part, industrial and partly agricultural labour, i.e. workers of a part-time nature. One consequence of this was that absenteeism in the factory was periodically very high. In Calcutta, Madras and Rangoon the recruitment of labour caused few serious problems. Most of the workers were local inhabitants.23

The number of workers employed at Swedish Match’s Indian factories varied between 2,800 and a good 5,500. However, information is missing for certain years during the 1930s. The number of employees at the various factories could vary a great deal if a further shift was introduced, as was the case in Ambernath at the beginning of 1926 and in Calcutta during 1936.

Workers’ cash wages

Interesting questions could be asked regarding the wages of workers at Swedish Match’s Indian subsidiary companies, such as the wage level and its development in relation to the wage level at comparable Indian factories or in relation to the general wage level and its development at Swedish Match’s Swedish factories. This requires access to both general statistical wage material for the interwar years, as well as Swedish Match’s internal wage material. Unfortunately, satisfactory sources are lacking at all levels.

Some attempts have been made to analyse the general development of wages in India during the interwar years. These attempts have, however, always had limited results, since no uniformly representative wage material has been available. In addition, in most cases it has been pointed out that the wage differentials in the same factory for different categories of workers, and for the same category in different factories even within one and the same district, has been considerable. In addition, since the source material is but sparsely kept, scientific analysis of wage trends appears to be practically impossible. This applies to the nominal wage trends.

The task is complicated still further, of course, if the real wages are to be investigated. The Royal Commission on Labour, which
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published its report in 1931, had intended to carry out an investigation into the standards of living, but discovered that this was impossible because of the lack of data, time and resources. 'But a quantitative analysis is impossible. Even to such an elementary question as the extent to which the workers' earnings suffice to provide for their necessities no precise answer can be given.'

The internal wage material for Swedish Match's Indian subsidiary companies embraces references sprinkled in correspondence, the information by Swedish Match presented on wage levels and their trends to the Tariff Board in 1927, and Certificates of Service kept for the factory in Ambernath for the period 1927-1931. How well kept the latter are, and how representative the information is for the whole of the working force, is quite impossible to check. The Certificates of Service supply information on name, job, pay when the person concerned finished, and the date. But pay is not stated for those paid at piecework rates.

In addition to Swedish Match's internal material, there is to be found in the documents of the Tariff Board information about wages at Indian match factories for a definite year, 1927. When this information was provided, Swedish Match had factories in Ambernath, Calcutta and Burma.

The Tariff Board's information on wages and Swedish Match's internal pay material formed the basis of the estimate below of the pay level and development at Swedish Match's Indian factories, in comparison with other Indian factories. The comparison applies to adult male workers.

The match factories in Bombay stated daily wages within the interval 0-13-0 rupees to 1-8-0 rupees, but for Ambernath was stated 0-13-0 rupees to 2-10-0 rupees. The highest wage paid in Ambernath thus lay clearly above the highest noted for the match factories in Bombay. That the pay level was probably somewhat higher in Ambernath in comparison with Bombay may be possible and explicable in view of the recruitment problems Swedish Match had for the factory in Ambernath.

It should, however, be clear that the wages at the match factories in the Calcutta area were lower than in Bombay. The highest wage stated for WIMCO workers in Calcutta was 2-1-0 rupees
against 2-10-0 rupees in Ambernath (Bombay). In both cases the lowest wage was said to be the same. Among Swedish Match’s competitors in the Calcutta area, lower wages were noted than among the competitors in Bombay. That the wage level in Calcutta was lower than in Bombay is also confirmed in the literature. It appears to be most probable that Swedish Match adjusted its wages in line with this.

For the factories in Burma, Swedish Match gave daily wages for 1927, these being in the interval 0-11-0 t-pees to 1-8-0 rupees, i.e. lower than in Calcutta and Bombay. The wage level of the strongest competitor, Adjamee Dawood, stated to the Tariff Board, was within the same interval. This does not, however, agree with the observation made by the Royal Commission on Labour in 1930. The commission considered that the wage level in Burma was above that for Bombay.

There is conflicting information as to whether the wage level at Swedish Match’s Indian factories exceeded that of other branches of industry. For the largest industrial branch in the Bombay area, the textile industry, one source states that the average wage at the end of the 1920s was approximately 35 rupees per month, or approximately 1-5-0 t-pees per day. Swedish Match’s internal wage material suggests that the typical amount for a worker in Ambernath was about 1 rupee per day. A government investigation from 1946 states, however, that the lowest wage in the Bombay cotton Industry in 1929 was as low as 12 rupees per month, which clearly falls below all wage information from the factory in Ambernath. One possible reason that the wage level was higher in the textile industry in Bombay than in Swedish Match’s factory at Ambernath might be that the textile workers in Bombay had early been comparatively well organised. Another reason may be that Swedish Match apparently did not recruit its personnel from the Bombay region to any great extent (10 per cent). That the wages at the factory in Ambernath were comparatively low is contradicted by the fact that the turnover in personnel there was considered to be lower than at factories in Bombay.

The nominal wage trend at Swedish Match’s Indian factories appears, in line with the general wage trend, to have been declin-
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ing, or, for certain categories, stable at the end of the 1920s and the beginning of the 1930s. This coincided with the general fall in prices lasting until the middle of the 1930s. A, for Swedish Match, quite special wage cut for all employees of 10 per cent took place in connection with the Kreuger crash. During the period, the fall in prices was faster than the wage reductions noted, so that a real improvement in wages was the actual result.

During the latter part of the 1930s the price level increased slightly. The wage level at Swedish Match's Indian factories also appears to have been increasing slightly. 26

Workers' conditions and payments in kind

The normal working day at Swedish Match's Indian factories during the interwar years was nine to nine and a half hours daily. Work started at half past six in the morning and finished at half past four in the afternoon, with one hour's break for a meal, for six days a week. Sometimes there was shift work. The second shift then started at half past four in the afternoon and carried on to midnight, with a half-hour break, i.e., a seven-hour shift.

The working hours at WIMCO lay somewhat under the maximum times laid down by law in 1926. There it was prescribed that the normal working hours for adult male workers should be less than sixty hours weekly, or eleven hours daily. This law was tightened in 1934 so that working hours per week might not exceed fifty-four hours, or eleven hours daily, if the work was seasonal. 27

Many of Swedish Match's Indian factories lay in relatively isolated positions. Therefore, around these, new communities grew up with features reminiscent of a Swedish ironworks community where the Company was responsible for community services. First of all, dwellings were required and these were found at all of Swedish Match's factories. The proportion of the workforce living in the company's dwellings varied, depending on the location of the factory. At the factories in Ambernath and Dhubri, which were relatively isolated, there was a greater reason for building workers' dwellings than, for example, in Calcutta where in every case the old factory lay near to a housing area.
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The conditions in workers’ dwellings can be illustrated by the conditions in Ambernath. The populated area lying nearest to Ambernath was Kalyan. It lay about 6-7 km away. When the factory opened the workers had to get from Kalyan to the factory on foot. However, most of the labour at Ambernath was not recruited locally. For the labour coming from outside, dwellings had to be arranged. So, close to the factory in Ambernath, in conjunction with the erection of the factory, workers’ dwellings were built for about 280 workers. These dwellings consisted of a small number in brick, but most were built of corrugated-iron sheeting. They were inspected by the public health department and found to be satisfactory.

Information from 1928 shows that approximately 30 per cent of the workforce lived in the company’s workers’ dwellings in Ambernath, a figure that is in accordance with conditions today (1973). The rent towards the end of the 1920s for the cheapest dwellings, the most usual, was 2-4-0 rupees per month. A normal day’s pay at that time was 1 rupee daily or somewhat above, this giving a monthly income of 22-25 rupees. Thus, the proportion of the wage taken for rent was approximately 10 per cent. WIMCO calculated on a return on capital invested in workers’ dwellings of 5 per cent.28

At the factory in Ambernath a shop was also set up for the company’s employees. Purchases were usually made at wholesalers in Bombay, who were paid in cash. Sales from the shop were then arranged so that the pay section of WIMCO made a note in the worker’s pass book about his pay. Purchase was then made on credit up to 50 per cent of the wage. Purchases were paid next pay day by a deduction from the wage. The credit was not subject to interest. Prices in the shop were fixed at Swedish Match’s cost price. WIMCO presumed there would be no profit from this activity.29

At the factory in Ambernath there was a doctor’s office and a doctor was employed. A report from 1937 says the doctor had, on average, 150 patients daily. The report also says that the most frequent illnesses were malaria and lung trouble. During the autumn of 1937 somewhat under 200 new malaria cases were reported monthly. The doctor, Dr Chayya, who worked for
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WIMCO for thirty-five years, started, among other things, a recreation club for the workers in 1936. A school was set up in Ambernath for the workers’ children by WIMCO, who appointed and paid a teacher. During the 1930s the school had five standards. At the beginning of the 1930s the number of pupils was about a hundred and at the end about fifty. The school was inspected at WIMCO’s request by the local school board, who also annually carried out some kind of examination. Each year the school made a report to the factory manager, in which the examination results and attendances were given. The local school board presented its view of the standard of the pupils at the school in a critical report in 1938.

Children were clean and neat, but were not taught good manners. Most of them were of the backward and depressed classes. Their parents and guardians are workers in the Western India Match Factory of this place. It is understood that no better progress could be made here as the children do not get class-books, being too poor.

The teacher’s presentation of the same problem was, however, more to the point. In his report in 1925 the teacher wrote:

As for the school children here, their mother tongue not being Maharati, it is quite hard to bring them into Maharati language. As for the local board school almost all children being high caste and from Maharati districts, the teachers have not such troubles to teach as we have. As per the circumstances and minds of the people is quite against the school.

Since most of the workers were recruited from different parts of India there were serious language problems, which not least affected the school work. In other areas, too, measures were taken with the object of personnel care. For example, an outdoor theatre was built. Sports competitions were also arranged and encouraged. The reason that Swedish Match accepted the costs for this community service
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must be seen in the light of the isolated position of the Ambernath factory. The factory, with its personnel, came to form a community in itself in the same way as the Swedish ironworks communities, and the Company responded to this.32

The isolated position and the welfare arrangements described above did not, however, exclude conflicts between the workers and the Company.

Trade union activity

The trade union movement had its breakthrough in India during the 1920s. Parallel to this, the number of conflicts on the labour market increased. The climate for workers' demands was also comparatively favourable since industry had the wind in its sails at that time. The number of strikes reached a peak in 1928. The centre for the trade union movement was the Bombay region. The first strike at Ambernath in 1928 should be seen in relation to this. It started through sixty workers in the box-filling department stopping work. In the report from the factory management it was said that the strikers were 'encouraged by agitators from Bombay where in the beginning of March of the same year there were extensive strikes'. The strike led to the formation of a trade union in Ambernath on 4 May 1928, which, after representations from the workers in a special letter, was acknowledged by the company.

In a circular during the strike the factory management regretted the way the workers had gone about things. It was maintained that the workers should have presented their demands for discussion during non-working hours before they went on strike. The strike lasted for fourteen days. Already in July of the same year there was a new strike lasting a week. This conflict was solved by negotiations between the factory manager and the newly-formed trade union.

There were smaller strikes in Ambernath in 1929, 1931 and 1934. Together, these amounted to a total of two weeks and involved up to 200 workers. There were more serious strikes in 1935 and 1936. In 1935 the strike lasted a month and in 1936 for
three months. These strikes included nearly all workers and were noticed far beyond Ambernath.

The strike of 1935 was caused by dissatisfaction about pay among the machine-men, women and coolies. At an early stage the workers turned to an organisation in Bombay called The Servants of India Society. This organisation sent a representative, a Mr Parulekar, to Ambernath to negotiate on behalf of the workers. In spite of lengthy discussions, no result was achieved, which the Company management blamed on the workers' negotiator Mr Parulekar. However, during 1934 a new law had been introduced in the Bombay Presidency, the Bombay Trade Disputes Conciliation Act, which meant that the authorities could appoint an arbitrator. The authorities further appointed labour officers whose job was to look after the workers' interests. During the strike in Ambernath the trade union and management agreed that an impartial investigation should be carried out by such officials and, following this, a proposal for a settlement was presented which was accepted by both parties. The authorities had thus introduced an instrument for negotiations. The reason for this was essentially the many strikes that had taken place in the textile industry. The settlement at Ambernath meant, among other things, that rents for workers' dwellings were reduced by 20 per cent, that 75 per cent of earlier pay would be paid for seven days to those involved in accidents, that workers would be guaranteed a wage of 0-12-0 rupees per day for a stoppage caused by a breakdown of machinery and that the strikers would be taken on again. Pay adjustments were also made.

There was a further strike in the very next year, which was to be the longest during the interwar years at the Ambernath factory. It lasted a good three months. The cause of the strike was dissatisfaction with the new piecework rates in one of the departments. The previous settlement had meant a certain nominal drop in pay for this department. The workers therefore ceased work. The company's reply was to employ new personnel, so the strike spread and became total. The Company decided to take a tough stand and conceded no demands. Above all, it was desired from the company's side to 'win' the strike in order to get rid of the workers' negotiator, Mr Parulekar, who was regarded by the