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# The Consumption of Textiles

with special reference to Sweden

*A Summary of an Investigation by  
The Industrial Institute  
for Economic and Social Research*



STOCKHOLM 1958

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## SUMMARY IN ENGLISH

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### *Introduction*

The Industrial Revolution has passed through three stages with regard to textiles and clothing. The first stage began in the middle of the 18th century when production of yarns and fabrics moved from the homes and from the work shops of small artisans to the textile mills. The second stage began in the later part of the 19th century, when production of clothing moved into the factories of the ready-made garment industry, a stage that is quite completed only in a few countries. The third stage began when the consumers' purchasing power had increased so much that there appeared a definite demand for clothing of good shape and with a variety of design. At the same time technical improvements in the production of fabrics and their finishing had made it possible to produce new kinds of garments from old and new raw materials, and garments that demanded less care than the earlier ones. Competition was not, as in the earlier stages, centred only on prices but moved over to qualities and esthetical properties.

### *Chapter I: Production and Consumption*

This investigation concerns mainly Sweden and is necessarily restricted to broad categories of goods. In two respects, however, a differentiation has been maintained. In the last century the ultimate consumers bought yarns spun in a mill in order to weave or knit them at home. Later they bought fabrics which they made up at home, and to-day they buy ready-made garments to an increasing extent. This change in *structure* has to be shown. Further, consumption has to be

measured not only in *quantity* (kilograms, square meters, numbers, or pairs) but also in *quality*. Not only *between* the groups of goods mentioned do changes occur, but *inside* the groups as well. In *Diagram I:1* of the supply of textiles the study is limited to textiles that are sold to private consumers. Industrial textiles and textiles used by the Armed Forces are excluded. *Diagram I:2* shows supply of fabrics through the two channels: those sold to the ultimate consumers as piece-goods and those sold in the shape of ready-made clothing.

The annual statistics used apply to the quantity and the value of the consumers' purchases, not to their consumption. Some textiles are bought so often that the time difference between the purchase and the actual consumption is of small importance when a budget period of one year is used. Other textiles are bought at very long intervals and changes in the consumers' inventories cannot be left out of consideration. Here we are interested in the long-term changes, and we measure consumption by the purchases of the consumers.

## *Chapter II: Some Theoretical Starting-Points*

Even if the consumption of some textile goods can be connected with individual members of the household the majority of textile products are either purchased or used by the household. They are paid for out of one purse, common planning is done within the family, or one member of the family may be acting as purchasing agent for all the members. The suitable unit for studies of consumption is therefore, not the individual, but the household. The habits of the housewife as a purchasing agent are conditioned by her earlier experiences and even the teachings of earlier generations. In habitual situations she normally has stock solutions. She develops habits and traditions in the household which she may gradually change according to the trial-and-error method. But also in new situations she can find ready-made solutions from those around her, neighbours, acquaintances, advertising, etc. (See modern theory in footnote 5 Chapt. II.)

It is thus believed that the consumer makes his outlay either as habitual outlay or as outlay of choice. It is to be expected that habitual outlays show slow and gradual changes and are more directly dependent on such factors as income and prices, while outlays of choice show greater variations and greater dependence on psychological fac-

tors, such as price and income expectations. Decisions are taken in a different way if one buys a Persian carpet for the drawing room or a pair of nylon stockings. It is, however, impossible to make a sharp division into two categories. The textile articles are rather situated on a continuous scale where their position varies according to level of income and liquidity.

It is probable that individual deviations are cancelled out through the use of annual figures for big groups, particularly when the articles studied are purchased in great numbers or very often. But even for these articles deviation sometimes occurs systematically.

### *Chapter III: Some Factors in the Consumption Equation*

On the basis of two budget studies, a Swedish one for 1952 and an American one for 1950, a test of the following hypothesis has been made: differences in the consumption of clothes for different groups of people can be explained by differences in income. Income has been defined as the total family consumption per capita in the American investigation and per consumer unit in the Swedish investigation. As we now believe that income has a decisive influence on textile consumption, we have consequently to make comparisons at the same level of income. Average consumption figures for the groups have been adjusted with regard to the income elasticity shown. The results are shown in *Diagrams III: 1-6*. There actual consumption has been compared with our estimates of consumption as it should be at a certain level of income. This produces an equalization that is almost drastic, but certain deviations are noted. Differences between children and old people on one side and youngsters and middle-aged adults on the other do not depend on income alone. Differences between town and countryside remain after an adjustment of income, even if the difference here can be explained by different conceptions of income in town and countryside. It is also seen that some marginal social groups show deviations.

*Diagram III: 8* demonstrates how the consumption of textiles at different levels of income shows a very strict connection with income and hardly any tendency to deviate from "the straight line" either at low or high levels of income. Elasticities used are "constant", *i.e.*

equal for the whole scale of income. If a tendency to falling elasticity existed a systematic deviation would be obtained between the "theoretical" value and the "real" value at the same level of income. For the Swedish and the American material it is demonstrated that in the dominating income interval (average income *minus* 33 1/3 % and *plus* 50 %) those deviations are insignificant. (*Table p. 72.*)

In the last part of the chapter it is observed that "clothes" is a term covering a large number of different articles. It is demonstrated that if a division is made into smaller groups, such as suits and shirts, one gets wholly different income elasticities for different kinds of goods (negative and up to *plus* 2). Differences in total elasticity for clothes between different social or age groups need not be caused by these groups being differently income sensitive to a *certain* article. They may have arisen through different groups building up their consumption differently. In particular, there are differences between quantitative and qualitative changes (see *Diagram III: 9.*)

#### *Chapter IV: Income, Prices, and Consumption of Textiles*

Studies of budgets give snapshots of the consumption of textiles. It can be supposed that also over time consumption may change in a way that appears from those cross-section studies. But the budgets all reflect the same situation (the same price constellation, a certain assortment available, etc.). Over years those factors are changed. Our study of *time series* is based on the traditional economic model. The three fundamental factors (income, relative prices, and population) are presented in *Diagrams IV: 1-4.* As a measure of income, total consumption has been chosen as the most suitable unit.

The influence of substitution and speculation on price elasticity is discussed. Even within a comparatively small group of articles, for instance over-coats, great possibilities of substitution *within* the group exist. Generally we can expect a *high* price elasticity when consumption is measured in such a way that differences in manufacture value are included, but a *low* price elasticity when it is measured only in number of suits, etc. When, however, quality properties such as colour, design, or fashion may become decisive for the consumer one can expect a *lower* price elasticity.

## Chapter V: The Consumption of Textiles 1931-1955

*Diagram V: 1* shows the consumption of textiles in some countries during one pre-war and one post-war year. There is a certain correlation between consumption and income both inside each country and between the countries. The income elasticity seems to be about 0.6. Within the income interval in question we find hardly any systematic deviation from "the straight line". This method of measuring textile consumption in kilograms of raw materials is, however, of interest mainly to fibre producers. To the manufacturers of textiles an increase in consumption of 1 kilogram means considerably more if this kilogram falls on nylon than if it falls on wool. The different raw materials have been weighted corresponding to the approximate number of square meters produced from 1 kilogram. In that case we get a higher income elasticity (about 0.7).

In *Diagrams V: 2-3* the model is tested against the development in Sweden and the USA. The explanation is, however, unsatisfactory in two respects. This can be seen from the small diagrams. Changes between two successive years have not been well reflected in our estimates, and deviations are not due to chance, they show a systematic picture with periods of over- and underestimation. Income elasticities obtained are higher than those from the cross-section analysis above.

Now we know that the consumption of light articles has increased more rapidly than that of heavy ones. But change in weight (or change-over to lighter raw materials) is only *one* of the many ways in which consumption may have altered. We must look for a measure of textile consumption which also registers qualitative changes. This measure, called *volume*, has been obtained by reducing the turnover in actual prices with a suitable price index. *Diagram V: 4* shows that our model supplies reasonably good explanations for most countries when consumption is measured as volumes, but even now we get systematic deviations. A table showing the income and price elasticities obtained is to be found on *p. 112*. For both elasticities we find a good correspondence within Europe on one side and within America on the other. It is pointed out that the difference cannot be dismissed with a reference to the higher level of income in America. The values obtained for the income elasticity in Europe are high not only in relation to the American values, they are high also in relation to those

obtained from European budget studies. This suggests that in Europe there should be some powerful dynamic factor which in the USA is either wholly absent or has come into play so early that its effect has been on the decrease during the period studied. The role played by the industrialization process has been emphasized; here this fact has been left out of consideration. Therefore we proceed to treat the textile group divided into such smaller groups that the industrialization effect can be distinguished.

### *Chapter VI: Ready-made Clothing*

In Sweden the growth of the ready-made clothing industry has been considerable during the last 25 years, and to some extent this growth has taken place at the cost of imports (see *Diagram VI: 1*). Traditionally, however, clothes were made up by housewives or by tailors and seamstresses. The competitive position of the ready-made clothing industry should be investigated in relation to these earlier forms of production.

Particularly in its early stage, the ready-made clothing industry expanded mainly because it was able to offer articles at lower prices than the traditional manufacturers (tailors). This competitive advantage has increased as wages have gone up. In relation to home sewing the price relations are more complicated. The competition from home sewing is "unfair" as housewives take only the costs of material into account, their own work being "free". Here the industry's foremost means of competition is not "lower prices" but "better goods". This might be the explanation of the varying pace of break-through for different articles of ready-made clothing.

The development of consumption is demonstrated in *Diagram VI: 2*. In *Diagram VI: 4* an analysis with regard to income and prices is given. On the whole, the explanation is good; we get a rather high income elasticity for the period (about 1.90). This is considerably higher than what the budget material has shown (about 1.40). What has happened during the period is evidently not only an adjustment towards the consumption pattern of higher income groups; to an increasing extent everybody has got into the habit of buying ready-made clothes and clothes of a higher quality. As for price elasticity, we get a remarkably low one (-0.40).



From *Diagram VI:5* we find that in the 1930's the consumption measured as quantity of fabrics consumed increased almost in step with volume. On the other hand, we find that in the 1950's the quantity of fabrics consumed has hardly increased, while the increase in volume has continued. For the whole period we get an income elasticity for quantity of about 1.20 (as compared to 1.90 for volume). Thus volume has increased considerably in a "dimension" that has nothing to do with increased consumption of fabrics.

In *Diagram VI:6* consumption is measured in number of suits, etc. (weights approximately corresponding to the cost of making up). In contrast to the consumption of fabrics, we find here that the post-war level is considerably higher than the pre-war one. We get a higher income elasticity (= 1.75), and having found the elasticity of 1.90 for volume, this suggests that the growth of the consumption of ready-made clothing during the period has been mainly quantitative, *i.e.* an increase in number of suits, etc. With a further differentiation in *Diagram VI:7*, we find considerable differences between women's and men's wear. The quantitative expansion was on the side of men's wear in the 1930's; for women's wear it started only in the 1940's and continued in the 1950's. (See *Diagrams VI:8-9* for different groups of articles.)

With *Diagram VI:10* the analysis of quantity is moved to the consumer plane. It appears from the quantity index used that about  $\frac{3}{4}$  of the increase came on the 1930's and the remainder on the first post-war years. In the 1950's the increase in quantity has been insignificant. The measure of quality gives a different picture: in the 1930's only a small increase, but in the 1950's an important one. This puts the market of the 1950's in a strong contrast to that of the 1930's.

### *Chapter VII: Hosiery and Knitwear*

There is a direct competition between knitwear and woven and sewn articles only in the case of outerwear. For the knitwear industry competition came (for hosiery and underwear) and comes (for outerwear) from production in the homes. *Diagram VII:4* gives an analysis of the consumption of knitwear. We get an explanation that is satisfactory, but not as good as in the case of ready-made clothing:

an income elasticity of 1.10 and a price elasticity of  $-0.30$  (as compared to 1.90 and  $-0.40$  for ready-made clothing).

This comparison with ready-made clothing points to two factors of importance. For the ready-made clothing industry but not to the same extent for the knitwear industry, the last 25 years have been a period of introduction of new articles and new methods of production and distribution. For hosiery and underwear—the two large groups of knitwear—this change had taken place before the 1930's; the expansion in the 1930's has, however, been due to one such process of introduction, *viz.* for women's stockings of rayon. In connection with *Diagram VII: 5* on the consumption of rayon (nylon) stockings, the introduction of new articles and its mechanics are discussed.

The second factor of importance was the qualitative increase for ready-made clothing. For the dominating groups of knitwear possibilities of (and demand on) a differentiation of products are smaller than in the case of ready-made clothing. It is pointed out that the increase in volume of knitwear in the 1930's was based on quantity to a large extent (*Diagram VII: 7*). The increase after the war lies partly in a qualitative increase for underwear, which is counterbalanced by a quantitative decrease, and partly in an expansion of the outerwear group.

### *Chapter VIII: Hand-Knitting Yarns and Piece-Goods*

These are the old-fashion textile articles. Very few fabrics are now woven in the homes from yarns bought; much knitted goods is now bought ready-made, and home sewing is hardly increasing in comparison with the 1920's or 30's. *Diagram VIII: 4* shows that nearly the whole increase in fabric consumption has come about through the ready-made clothing industry. Retail sales of wool fabrics in the piece have almost vanished. The total consumption of fabrics bought by the consumers either as goods in the piece or as ready-made clothing shows an income elasticity of 0.80. Its price elasticity is around zero (see *Diagram VIII: 6*). If we consider only the part sold in the piece over the counter we get an income elasticity near zero (see *Diagram VIII: 7*). As furnishing textiles are included (with a comparatively high income elasticity) it may be supposed that during the period piece-goods used for clothing purposes have shown a negative income

elasticity with regard to quantity and thus may be labelled "inferior goods". But if volume is measured (*i.e.* changes in degree of manufacture being taken into consideration) the picture is different (see *Diagram VIII: 8*).

### *Chapter IX: Competition between Fibres*

As the groups have been composed in our study, there have been few reasons to speak about inter-fibre competition. From the consumer point of view a change in the fibre content is of secondary importance only, it is *one* of several roads towards a greater differentiation. This problem has, however, been brought up to discussion because of its structural importance: to a great extent it is a competition between different groups of manufacturers (and different techniques of production).

Like cotton in the 19th century, the introduction of rayon in the 1930's got under way as soon as the price relations were favourable (and then regardless of what was *said* about differences in quality). We have found the same feature in the introduction of ready-made clothing. The introduction of synthetics in the post-war period has, however, succeeded in spite of a higher price level. We have to look to the consumer for an explanation: higher wages for home work, housewives working out of home, etc., have put a "premium" on articles ready-for-use *and* free-of-care.

The analysis given in *Diagrams IX: 2-3* shows that the consumption of the new fibres has grown autonomously, while after the 30's that of the traditional ones has been strongly influenced by "other" factors than income and price.

### *Chapter X: A Total Picture of the Development*

In Chapters VI-IX the consumption of textiles has been treated in groups: in this chapter a summary is made, mainly as a background to the following discussion of the future.

We have found that *the 1930's* have stood out as a period of expansion, irrespectively of grouping or measure used. Our volume series showed an increase of nearly 40 % as compared to an income increase of about 20 % (food about 10 %, housing near 20 %). Two

main features are emphasized: the rapid growth of ready-made clothing and knitwear, and the fact that almost throughout it has been a question of quantitative increases. These two facts seem to be bound up with each other, for although the growth of ready-made clothing and knitwear took place at the cost of the traditional forms of consumption, it was not a matter of simple transfer. Work earlier performed outside the market (in the homes) was now done by the industry, and its value was consequently included in the consumption value. Furthermore, the marketing of ready-made articles gave a greater stimulus to consumption than buying piece-goods or going to the tailor. But the 1930's were also the period of introducing rayon. In the introduction of "new" goods, the price was the most important means of competition.

As for *the 1940's* the direct and indirect influence of the war is noted. The total "loss" in consumption during the war years is calculated to about one pre-war year's consumption. The first years after the war were a period of abnormally high textile "consumption" based on rapidly rising incomes, the need to rebuild stocks, etc. In contrast to many other categories of goods, the supply of textiles increased rapidly. The 1940's meant a definitive break-through for rayon. As for women's wear a rapid process of industrialization began, wholly corresponding to the one of men's wear in the 1930's.

As for *the 1950's* attention is concentrated on the small increase of consumption. Two opposite theories are discussed: the "saturation theory", and the "stock adjustment theory". It is pointed out that the saturation theory is hardly compatible with what has been demonstrated about both Swedish and foreign budget studies. The low income elasticity for the USA is a formal argument in favour of this theory, but the similarity of the post-war development in countries on different income levels argues against it. The coincidence as to time is easier to explain by means of the stock adjustment theory: all countries show an abnormally high "consumption" in the first years after the war (or rationing). But can this post-war effect extend into the 1950's? It is noted that there are goods for which stock problems after the war were more dominating than for textiles; for many of them losses in stocks could not be covered until considerably later. Until this had been done special claims were put on consumer income. The conclusion is that there is no tangible reason to suppose that

“something” should have happened in the 1950’s that radically broke the earlier trend in textile consumption.

Concerning the Swedish development it is noted that the quantitative increase during the post-war period has been lower than in the 1930’s. But in the 1950’s there has been a considerable qualitative rise on top of it. The relative decline in prices led to increased quality, not increased quantity. In the 1950’s the process of industrialization has been further strengthened for women’s and youths’ wear. In conclusion, the opinion is put forward that the difference in income elasticity for textiles between the USA and Europe is due to a difference in degree of industrialization. Consequently the “over-elasticity” in Europe will gradually decrease as the industrialization is completed, but that will take place gradually and not as a sudden break.

#### *Chapter XI: The Consumption of Textiles in the Future*

After a short discussion of the problems of projection the postulates are presented. As for income (here = total consumption) an increase of 2 % per capita and year has been *presumed*. In 1965 (which serves as target for the projection) income would have increased with 22 %. For textiles a decline in relative prices has been *presumed* (mainly caused by increase in prices of food and housing). The growth of population may be estimated at 3 %.

On the basis of these postulates projections are made. *Table p. 219* gives projections with regard to quantity: an increase in the consumption of 15–20 % may be expected. The results obtained on the basis of undifferentiated series for volume (function V:4) are rejected, since the introduction effect with regard to ready-made clothing has not been kept separate.

In *Table p. 222* a separate estimate for fabrics has been made. The result is given as follows: during the ten years’ period an increase of about 15 % may be expected, the greater part being fabrics for ready-made clothes. Other fabrics will not increase in quantity, but a strong shift will take place from fabrics for clothing to furnishing fabrics.

Corresponding estimates for ready-made clothing are shown in *Table p. 224*. The quantitative increase of consumption is estimated

at about 30 %, the total increase of volume at about 50 %; the difference indicates an important qualitative increase. A qualitative increase may dominate for men's wear, a quantitative one for women's wear.

The final results (in volume and value) are given in *Table p. 227*. Special estimates have been made for each of four groups: ready-made clothing, knitwear, hand-knitting yarns and piece-goods for clothing, and household textiles. The increase in total textile consumption is estimated at about 25 %, the share of total consumption remaining at about 12 %. A further shift to ready-made clothing (up 40 %) and a decrease for hand-knitting yarns and piece-goods (down 10 %) are anticipated. It is noted that the expected changes in quantity and quality occur within this frame-work.

The fundamental assumption is that production and distribution are so organized that they register and meet the consumers' demand. Rigidity in these respects may retard increases. That textiles should just keep their share of total consumption might be interpreted as stagnation. The analysis has, however, indicated that such considerable shifts may be expected between goods and qualities, between producers of raw materials, between textile factories, between manufacturers of ready-made goods, and probably also between distributors, that we have every reason to call it a third phase in the textile industrial revolution.

