

Paper Consumption in Germany during the 19th and 20th Century

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Summary

Since 1800, paper consumption in Germany has increased from 0,5 to about 250 kilogram per capita and year. The presentation describes details of this growth and summarises its reasons. The focus lies on the demand for more and new paper products rather than on the production of paper. Thus the paper highlights the close relationship between economic and social changes on one hand and paper consumption on the other. During the last two centuries, these changes were dramatic. Caused by the industrialisation, new products were launched and the demand for all products rose. The increase of paper consumption was the steepest from the 1950ies up until now – paper is another indicator of the consumers society which developed after World War 2.

Zusammenfassung

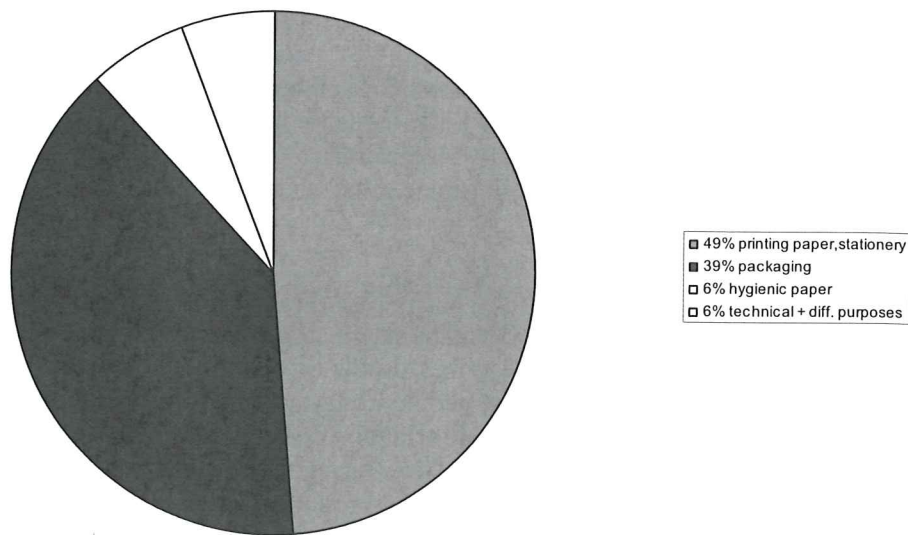
Seit 1800 ist der Papierverbrauch in Deutschland von 0,5 Kilogramm auf rund 250 Kilogramm pro Kopf und Jahr gestiegen. Der Vortrag beschreibt dieses Wachstum und fasst die Gründe dafür zusammen. Im Mittelpunkt steht nicht die Papierproduktion, sondern die Nachfrage nach mehr und neuen Erzeugnissen aus Papier. So wird die enge Beziehung zwischen wirtschaftlichem und sozialem Wandel einerseits und Papierverbrauch andererseits beleuchtet. Während der vergangenen zwei Jahrhunderte fand ein besonders tiefgreifender Wandel statt. Infolge der Industrialisierung kamen neue Produkte auf den Markt und die Nachfrage nach allen Produkten stieg. Der Anstieg des Papierverbrauchs war am stärksten seit den 1950er-Jahren – auch am Papierverbrauch ist die Entwicklung der Konsumgesellschaft nach dem Zweiten Weltkrieg abzulesen.

Résumé

Depuis 1800 la consommation de papier en Allemagne a augmenté de 0,5 kg à environ 250 kg par tête et par an. L'exposé décrit cette croissance et résume les raisons qui y ont conduit. Ce n'est pas la fabrication de papier qui est au centre, mais la demande pour d'avantage de produits en papier et de papiers plus nouveaux. Ainsi la relation étroite est éclaircie qui existe entre les changements économiques et sociaux d'un côté et la consommation de papier de l'autre. Au cours des deux derniers siècles un changement particulièrement profond s'était produit. Suite à l'industrialisation de nouveaux produits étaient apparus sur le marché et la demande pour tous les produits augmentait. La montée de la consommation de papier était la plus forte depuis les années 1950 – l'évolution de la société de consommation après la deuxième guerre mondiale peut être mesurée également à la consommation de papier.

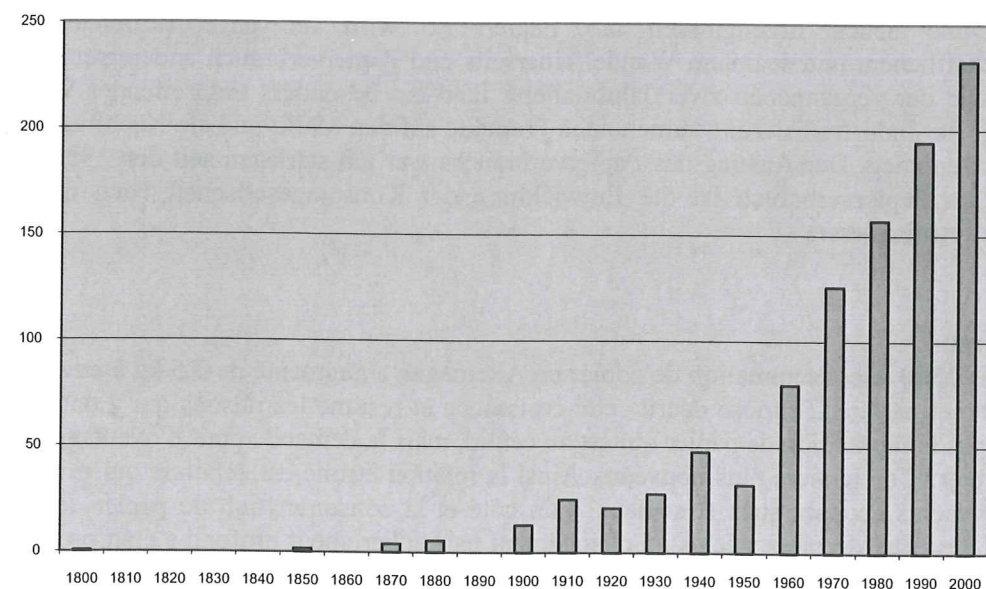
Introduction

Nowadays paper is used for a broad variety of purposes – for writing and printing, for packaging, as toilet paper and other hygienic products, as wallpaper, as decoration, for technical purposes, etc.



*Paper consumption in Germany, 2006*¹. The oldest function paper had – to write and to print on – is still the most important one with 49%. 39% of paper and cardboard are used for packaging, 6% for hygienic purposes, and another 6% for the rest.

Looking at the last 200 years, one can observe great changes in all these fields.



*Paper consumption per capita per year, Germany, 1800 – 2000 (kilogram)*²

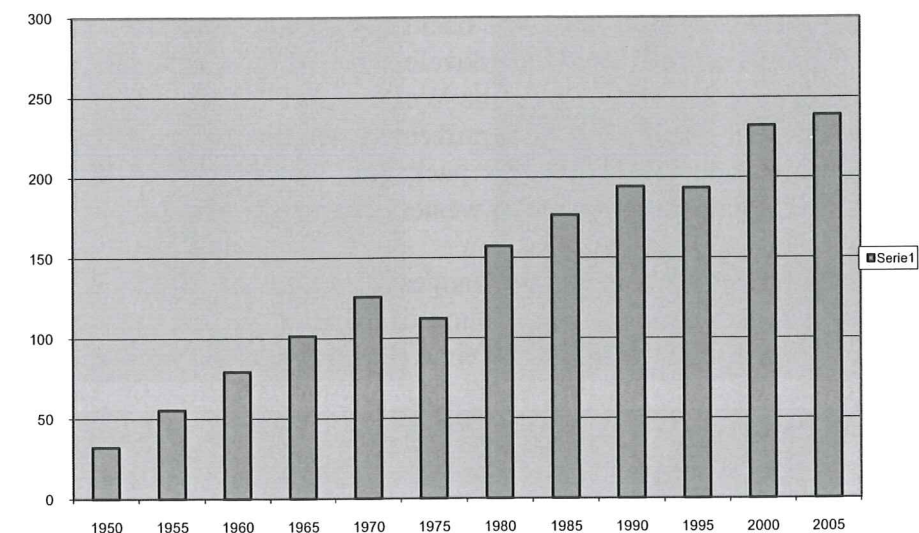
In 2006, one person in Germany needed about 250 kilogram of paper and cardboard. Compared to the half kilogram around 1800 and the one and a half in 1850, this was a huge increase. Of course the data cannot be exact particularly for the early decades of the 19th century, but I think one is safe to interpret them at least as a trend. A trend

which says: There was an increase of some hundred percent in paper consumption per capita during the last two hundred years.

As rough as they are – the figures reflect some historical developments and events. The first observation one can make is that the increase became steeper in the second half of the 19th century. Of course there is a correspondence with the beginning of the industrialization in the German paper industry. The new production methods enabled the mill owners to produce more paper and urged them to sell more. The second half of the 19th century was characterized by overproduction and falling prices. The second observation: One can find the declines which were caused by the two World Wars, after 1910 and after 1940.

And the last point: One can see that the increase was the steepest from the 1950s until now, which shows that paper is another indicator of the consumers' society which developed after the Second World War³.

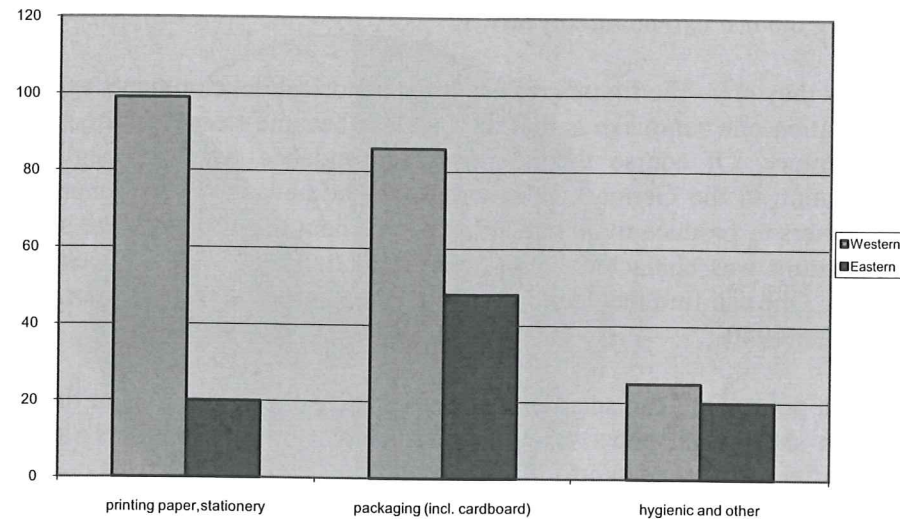
Nowadays paper economists often stress that the demand for paper follows the general economic ups and downs very closely. That can be seen by looking at figures for paper consumption from 1950 onward.



*Paper consumption per capita per year, Germany, 1950 – 2005 (kilogram)*⁴

The decline in the early 70s can be considered as the effect of the oil crisis in 1973/74.

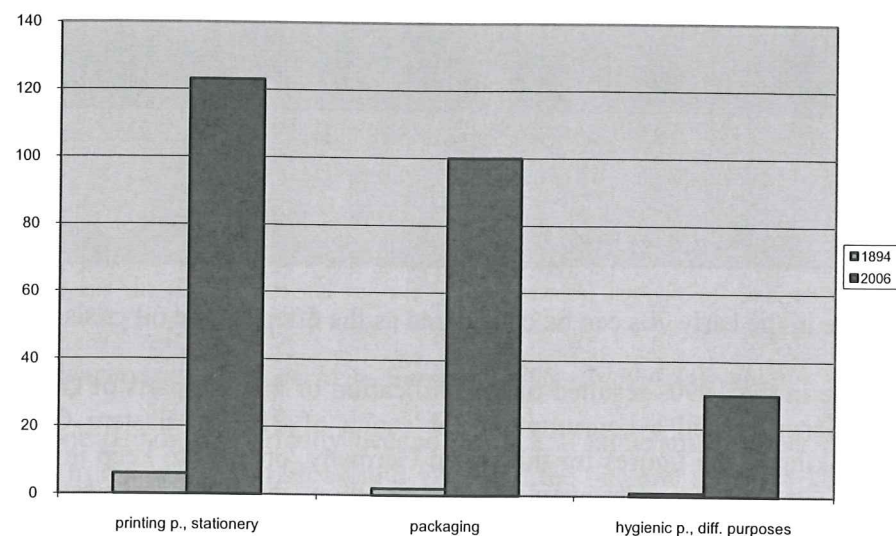
The decline in the 1990s resulted of the unification of the two parts of Germany. 1989 Western Germany had a consumption per capita of 210 kg, Eastern Germany only 86 kg. Looking at the figures for the united Germany, one has to keep in mind that the population in Western Germany was 63 million in 1989, in Eastern Germany 16 million. So it is obvious that the Western part was dominating the figures.



Paper consumption 1989 in Western (left columns) and Eastern Germany (right columns) per capita (kilogram) ⁵

The dimension of the difference between Western and Eastern Germany is really amazing as both countries have the same background of cultural history until 1945. But the steep increase which began with the development of the consumers society after the Second World War took only place in the Western part while in the Eastern regions a communist state was established and prevented people from developing such new patterns of consumption. Therefore less packaging was needed. And there were less newspapers and magazines, compared to western countries.

In the following I want to discuss the changes in the use of paper during the last two centuries. The earliest year of which I found data specifying the amount of paper used for the different purposes is 1894. At that time consumption was only 8 kg per capita.

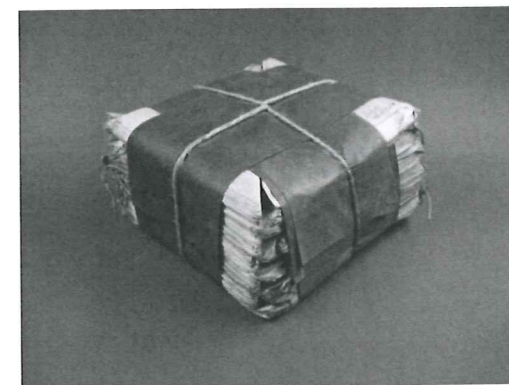


Paper consumption per capita, Germany, 1894 (left columns) and 2006 (right columns) (kilogram) ⁶

What a change from 1894 to 2006! The amount of packaging has multiplied by 50. This is even more amazing as the first steps of the great changes brought by the industrialization had already taken place. Before the industrialization, people grew much of their supply in their own gardens or bought it at the market carrying their purchases in baskets, pots, sacks and so on - paper was rarely used.

With the industrialization this practise came more and more to an end. The employees of the growing factories had no place and no time for gardening and for taking care of goats or chicken. They had to buy their daily supply in shops. So the number of grocer's shops in Germany multiplied nearly by three between 1875 and 1914 ⁷, the population only by one and a half. The producers of groceries and other goods needed packages, and so did the shops. Until today, paper is the most important material for packaging.

During the last decades of the 19th century a new branch of industry had come to life: the paper processing industry. Many factories were founded which produced bags of all sizes, boxes, and cardboard cans, and more and more machinery for the new industry was invented. New forms of packages came to the market, for example, the corrugated cardboard and the collapsable box, both invented in the 1870s.



From the collection of the LVR-Industriemuseum: bags from a grocer's shop, box for coffee surrogate

Consumption of printing paper and stationery has multiplied 'only' by 20 between 1894 and 2006. Consumption of these papers depends closely on the rate of alphabetization. Around 1900, the rate was about the same as it is today. Around 1800, only 25% of people in Germany could read and write ⁸. Great changes had been achieved during the 19th century, caused by compulsory school attendance and the laws against child labour. Maybe it was of even more importance that the ability to read and write at least a little became more and more necessary at the workplaces in the growing factories.

With the increasing number of people who could read, the demand for newspapers, cheap books and magazines grew. The "Groschen-Bibliothek" was a cheap edition of classical German authors in the 1850s. 1800 2.500 to 4.000 new books were brought to the market each year, 1913 there were around 35.000 ⁹.

Concerning paper consumption newspapers and magazines were even more important than books: Around 1850, the production of newspapers and magazines required three times as much paper as the production of books. The history of popular magazines in Germany had begun 1833 with the "Pfennig-Magazin". Around 1800 the number of newspaper copies was 300.000, around 1900 13 million ¹⁰. Today there are 26 million copies of newspapers each day in Germany and a total of 140 million copies of magazines each year.

The amount of paper used for hygienic and different purposes had multiplied by 30 between 1894 and 2006. Around 1890, the use of toilet paper just began, very slowly and only in the upper class houses. And with the rise of the paper processing industry, new applications of paper and cardboard were found. We have many objects of this kind in the collection of our museum, for example paper plates with typical art-nouveau-décor or cases covered with paper that fakes up leather or wood.



From the collection of the LVR-Industriemuseum: towel, soap, and toilet paper, neatly packed for travellers, about 1900.

So one can summarize the development on the paper market as follows: The process of industrialization caused great changes of the entire society – growing factories, growing cities, better education, better incomes (although on a very modest level in the 19th century). These changes increased the demand for all kinds of paper products (and – of course – for many other products as well). On the other hand, new production methods in the paper industry caused an increase in paper output, and prices were falling. The

paper mill owners desperately needed the increasing demand because they had to sell their growing paper output to keep their enterprises running.



Advertisement of Tetra Pak, Sweden, 1952

Until today we have a growing paper market with new products being launched. And still there is a permanent progress in production technology: machines are running faster and faster – the world record is 1.980 meters/minute for newsprint ¹¹ - and the paper mills produce more paper, needing less employees: On average one employee in a German paper mill produces more than 500 tons of paper each year.

At last I want to widen our field of vision to a more global perspective.

Paper consumption in the world (kilogram/capita/year), 2005:

- Sweden 255
- Great Britain 207
- Germany 239
- France 178
- Bulgaria 43

- Russia 36

- China 45
- Japan 247
- India 7
- Bangladesh 4

- USA 301
- Haiti 1

- Senegal 3
- Burkina Faso 1
- South Africa 48

The average consumption worldwide was 56 kilogram in 2005 ¹².

The differences between countries concerning paper consumption are as large as they were between pre-industrial and industrial Germany. In the case of printing paper and stationery, both needed for education and political participation, this problem is an urgent one. So one of the greatest challenges for the global paper industry is to ensure a sufficient paper supply also for poor countries while minimizing the ecological impact – one of the great challenges of our time.

References

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- ¹⁰ Axel Schildt: Das Jahrhundert der Massenmedien - Ansichten zu einer künftigen Geschichte der Öffentlichkeit, in: Geschichte und Gesellschaft 2001, issue 27, p.191
- ¹¹ Wochenblatt für Papierfabrikation 13/2008, p.790
- ¹² The German Pulp and Paper Association was very helpful providing these data.

Sabine Schachtner conducted studies of social and cultural history, took a Doctors degree in 1986, University of Münster, Germany. After that she was a museum's curator trainee for nearly two years in the Museum of German Folklore, Berlin.

Since 1987 she is head of the museum in the former paper mill Alte Dombach in Bergisch Gladbach, Germany, near Cologne. The museum opened 1999 and presents preindustrial and industrial paper making. It has a paper machine of 1889 on display.

Sabine Schachtner is an IPH-member since several years and secretary since 2006.