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THE STANDARD OF LIVING OF THE SILESIA POPULATION DURING THE PERIOD OF TRANSFORMATION IN POLAND

In the awareness of many Poles, Silesia is a coherent region with a clear cultural identity and a relatively high level of wealth. Furthermore, Silesia is generally considered to be socially and economically well-developed, one of the reasons for this being the closeness to Germany.

The existence of such opinions was the reason for examining the level of socio-economic development and the standard of living in Silesia. Consequently, the aim of this research was to compare the socio-economic development and the standard of living of households in Silesia with those in the rest of Poland and to assess differences within the region during the period of system transformation.

The level of the socio-economic development is a basic determinant of the standard of citizens¹ living, and significantly influences the economic situation and consumption possibilities of households.

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At the beginning of the system transformation in Poland, Silesia was made up of 8 relatively small provinces: Bielsko-Biała, Częstochowa, Jelenia Góra, Katowice, Legnica, Opole, Wałbrzych and Wrocław. These

¹The category of 'standard of living' and its conditioning, as well as possibilities of measuring it have been subject to a strong interest on the part of a number of economists for many years (compare A. Hodoly: *The Quality of Goods and Services versus Living Standards*, IFiS PAN, Warszawa 1973; A. Luszczewicz: *Social Statistics*, PWE, 1978; L. Zienkowski: *The Level of Living. Methods of Measuring and Evaluation*, Warszawa, 1979).

provinces covered 13.8% of the Polish territory, inhabited by 23% of the Polish population. After the territorial reforms of 1999 these provinces were merged into three new ones: Lower Silesia, Upper Silesia and Opole Silesia. Lower Silesia approximately occupies the territory of the provinces of Jelenia Góra, Legnica, Wałbrzych and Wrocław. Upper Silesia came into existence due to a merger of the provinces of Bielsko-Biała, Częstochowa and Katowice. Opole Silesia changed the least compared to the former territorial division.

Currently, Silesia covers 13.2% of the Polish territory, inhabited by 23% of the country's population. There are large differences in the population density. The highest population density, 394 people per km², can be found in Upper Silesia. This is three times higher than the average for Poland, and twice as big as the province with the second largest population density – Małopolska. The population density in Lower Silesia is above the national average, 149 people per km², and belongs to the highest in Poland, while the population density in Opole Silesia is below the national average, 115 people per km². It has to be mentioned that, compared with the beginning of the 1990s, the population density in Silesia has slightly declined.

Silesia is relatively well developed economically. However, the structure of the economy differs according to the individual provinces. In Lower Silesia 16.1% of all the people employed work in Sector 1, which consists of agriculture, hunting, forestry, fishery and fish farming. In Upper Silesia, 12.2% and in Opole Silesia 28.5% of all the people employed work in this sector. The employment share in industry and construction is above the national average in all the three provinces – 30.4% in Lower Silesia, 37.7% in Upper Silesia and 28.2% in Opole Silesia, respectively. However, as in the rest of Poland, in Silesia the share of employment is largest in the services sector – in Lower Silesia 53.5%, in Upper Silesia 50.1% and in Opole Silesia 43.3%. As shown in Table 1, the employment in industry in Upper Silesia is three times the employment in agriculture. In Lower Silesia employment in industry is twice the level in agriculture, while in Opole Silesia employment in both sectors remains at a similar level. It should be mentioned that during the transformation period the services sector significantly gained in importance, while at the national level the employment in this sector increased by almost 10%.

Summarising, it can be argued that Silesia is an industrialized region, where the services sector plays an important role. Opole Silesia distinguishes itself within this region, as industry and agriculture are of similar importance here.

The type of economy in the regions is reflected in the demographic characteristics of households. This is presented in Table 2. The average

Table 1. Structure of employment according to economic sectors in the Silesian provinces in the year 2000

Territory	Share in employment in%			
	sector I	sector II	sector III	sector IV
Poland	28.5	26.0	30.3	15.2
Upper Silesia	12.2	37.7	34.6	15.5
Lower Silesia	16.1	30.4	35.3	18.2
Opole Silsia	28.5	28.2	26.8	16.5

Source: *Rocznik Statystyczny Województw (Statistical Yearbook of Provinces)*, GUS, Warszawa 2001

size of households in Silesia is smaller than the national average. A decline in the average household size can be observed in Silesia, its three provinces and the whole country. The differences in the average household size may be influenced by the level of urbanization. The largest households can be found in the Opole region, where the largest part of the population live in the countryside.

In order to characterise the most important determinants of the standard of living, the Silesian population was researched with the aid of ar-

Table 2. Average number of household members in Poland in the period 1993–2001

Territory	1993	1994	1995	1996	1997	1998	1999	2000	2001
Poland	3.26	3.25	3.23	3.19	3.22	3.17	3.18	3.16	3.12
Silesia	3.07	3.05	3.06	3.01	3.02	2.98	3.00	2.97	2.96
Upper Silesia	3.02	3.01	3.02	2.95	2.98	2.94	3.01	2.93	2.91
Lower Silesia	3.07	3.05	3.08	3.04	3.08	3.01	2.96	2.97	3.01
Opole Silesia	3.35	3.33	3.23	3.25	3.12	3.05	3.08	3.08	3.10

Source: Authors' own elaboration based on data from GUS surveys on income and expenditure of Polish households in the years 1993–2001.

tificial measures differentiating of the level of socio-economic development of the region in a dynamic context and the economic situation of Silesian households was analysed. The spatial differentiation of socio-economic development in Poland and Silesia was investigated for the years 1990, the first year of transformation, 1994, 1998 and 2000 in order to compare the development of selected determinants of living standards during the transformation period.

The economy is the basis for the standard of living. For this reason, variables characterising the spatial differentiation of economic devel-

opment have been used to create an artificial measure of the standard of living. It was assumed that the following categories show the level of economic development:

1. the level of unemployment,
2. the value of investment expenditure per capita in thousands of Polish zlotys,
3. the value of gross fixed capital per capita in Poland in thousands of Polish zlotys,
4. the purchase of agricultural products per hectare of arable land,
5. the value of industrial output sold per capita in thousands of Polish zlotys.

The conditions for accessibility of social services are, among other things, created by the social infrastructure. The level of the social infrastructure may be presented with the aid of the following features:

1. the number of grammar school pupils per thousand inhabitants,
2. the number of hospital beds per ten thousand inhabitants,
3. the number of physicians per ten thousand inhabitants.

On the one hand, society's level of welfare is a direct determinant of the standard of living. However, on the other hand, it is a result of consumption that took place in the past. The level of wealth can be assessed on the basis of the following factors:

1. the sales of retail goods per capita in zlotys,
2. the number of rooms per thousand inhabitants,
3. the average monthly salary in zlotys,
4. the energy use in households in kWh,
5. the number of cars per thousand inhabitants.

The level of development of civilisation of regions is characterised by factors such as:

1. the percentage of the population living in cities,
2. infant mortality per thousand live births,
3. the net migration per thousand inhabitants,
4. the use of electricity in households in kWh.

On the basis of the factors mentioned above, a dynamic artificial measure of the socio-economic development was created for the years 1990, 1994 and 1998, using the Hellwig² method. This made it possible to ana-

²The taxonomic measure of development was proposed as a method classification of multi-dimensional objects by Z. Hellwig in his work under the title "An application of the taxonomic method in typological division of countries according to the level of their development and qualifications structure of human resources" published in 1968 in *Przegląd Statystyczny (Statistical Review) No. 4*. Compare also W. Pluta: *A Multi-dimensional Comparative Analysis in Economic Research*, PWE, Warszawa 1977, pp. 19-22.

lyse the spatial differentiation of the standard of living in the country, as well as changes over time. For each of the years considered the regions were divided into four classes describing the level of development. The values defining the borders of these classes were taken to be: 1) the mean minus the standard deviation, 2) the mean, 3) the mean plus the standard deviation. The results of the calculations are presented in Table 3. The division of Poland according to the level of socio-economic development in the years 1990–1998 is illustrated in Figure 1.

Table 3. Artificial measure of socio-economic development in Polish provinces in the years 1990, 1994 and 1998

Province	Value of the measure of development			Class		
	1990	1994	1998	1990	1994	1998
Warszawa	0.583	0.767	0.918	1	1	1
Białe Podlasie	0.152	0.146	0.298	3	3	3
Białystok	0.321	0.335	0.480	2	2	2
Bielsko Biala	0.318	0.357	0.486	2	2	2
Bydgoszcz	0.377	0.313	0.450	2	2	2
Chełm	0.195	0.128	0.304	3	3	3
Ciechanów	0.138	0.090	0.276	4	4	3
Częstochowa	0.237	0.232	0.375	3	3	3
Elbląg	0.252	0.216	0.388	3	3	3
Gdańsk	0.384	0.389	0.558	1	2	1
Gorzów	0.273	0.252	0.447	2	3	2
Jelenia Góra	0.270	0.289	0.462	2	2	2
Kalisz	0.262	0.251	0.412	2	3	2
Katowice	0.439	0.427	0.596	1	1	1
Kielce	0.185	0.203	0.342	3	3	3
Konin	0.249	0.215	0.360	3	3	3
Koszalin	0.280	0.264	0.381	2	2	3
Kraków	0.383	0.436	0.645	1	1	1
Krosno	0.107	0.115	0.220	4	3	4
Legnica	0.438	0.390	0.504	1	2	2
Leszno	0.281	0.241	0.435	2	3	2
Lublin	0.316	0.350	0.496	2	2	2
Łomża	0.111	0.069	0.207	4	4	4

Table 3. contd.

Łódź	0.433	0.483	0.612	1	1	1
Nowy Sącz	0.073	0.100	0.234	4	4	4
Olsztyn	0.317	0.229	0.409	2	3	2
Opole	0.358	0.362	0.471	2	2	2
Ostrołęka	0.100	0.087	0.252	4	4	4
Piła	0.242	0.213	0.336	3	3	3
Piotrków	0.252	0.341	0.423	3	2	2
Płock	0.395	0.394	0.566	1	2	1
Poznań	0.468	0.524	0.738	1	1	1
Przemysł	0.053	0.054	0.181	4	4	4
Radom	0.110	0.115	0.262	4	3	3
Rzeszów	0.192	0.181	0.369	3	3	3
Siedlce	0.099	0.112	0.234	4	4	4
Sieradz	0.182	0.215	0.297	3	3	3
Skiernewice	0.228	0.234	0.372	3	3	3
Słupsk	0.238	0.091	0.290	3	4	3
Suwałki	0.224	0.121	0.262	3	3	3
Szczecin	0.442	0.479	0.607	1	1	1
Tarnobrzeg	0.182	0.213	0.310	3	3	3
Tarnów	0.141	0.135	0.303	4	3	3
Toruń	0.277	0.256	0.451	2	3	2
Wałbrzych	0.286	0.212	0.341	2	3	3
Wrocław	0.210	0.159	0.285	3	3	3
Wrocław	0.425	0.453	0.644	1	1	1
Zamość	0.080	0.108	0.202	4	4	4
Zielona Góra	0.281	0.272	0.447	2	2	2

Source: *Rocznik Statystyczny (Statistical Yearbook)*, GUS, Warszawa 1991, 1995, 1999.

The distribution of the artificial variable in 1990, 1994 and 1998 suggests that the differences in the socio-economic development have increased. The provinces with large urban agglomerations developed faster than average.

On the basis of the artificial variable, the provinces have been divided into four groups with a similar level of the socio-economic development. The first group is made up of provinces with the highest level of socio-economic development. This small group contains the following nine

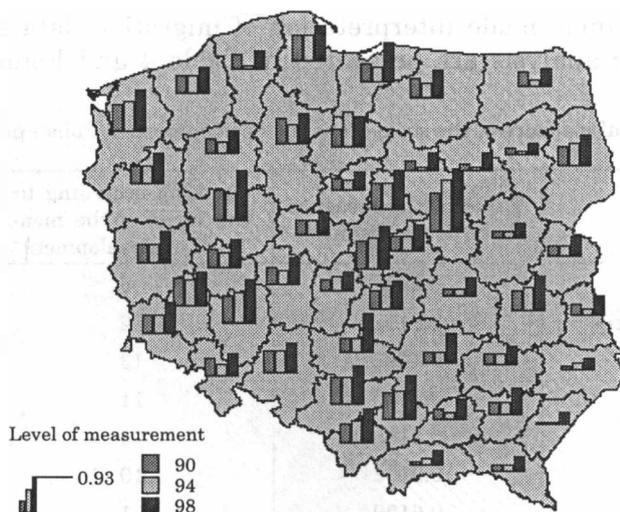


Fig. 1. Changes in the level of the socio-economic development in the Polish provinces in the years 1990, 1994 and 1998

regions: Warszawa, Gdańsk, Katowice, Kraków, Łódź, Płock, Poznań, Szczecin and Wrocław. The group with a good standard of living is larger, containing fourteen provinces with a reasonable high level of the socio-economic development. The third group contains nineteen provinces, characterised by a low level of the socio-economic development and, as a consequence, a worse standard of living. The fourth group, including the seven provinces with the lowest standard of living, consists of Krosno, Łomża, Nowy Sącz, Ostrołęka and Zamość. This group has the lowest level of the socio-economic development and also the lowest level of development of civilisation.

The Silesian provinces belong to the group of higher developed provinces, although there are differences between them. The highest developed Silesian provinces during the period researched were Wrocław and Katowice, while in 1990 Legnica also belonged to this class. The majority of the Silesian provinces, Bielsko Biała, Jelenia Góra, Opole, Legnica since 1994 and Wałbrzych in 1990, belonged to the second class of socio-economic development. Częstochowa belonged to class three during the whole period, while Wałbrzych joined this class in 1994.

Because of the administrative reforms, which changed the territorial division of Poland, the Hellwig method was applied for 2000 in a static context. Furthermore, migration was not taken into consideration in this year, because the creation of new provinces, which was accompanied by

territorial change, made interpretation of migration data difficult. The results of the analysis are presented in Table 4 and Figure 2.

Table 4. Artificial measure of the socio-economic development in Polish provinces in 2000

Province	Value of the measure of development	Ranking according to the value of the measure of development	Class
Lower Silesia	0.2972	6	2
South Pomerania	0.2112	12	3
Lublin	0.1792	13	3
Lubuskie	0.2130	11	3
Łódź	0.3186	4	1
Małopolska	0.2192	10	3
Mazovia	0.6129	1	1
Opole Silesia	0.2333	9	2
Podkarpackie	0.0458	16	4
Podlasie	0.2424	8	2
Pomerania	0.3075	5	2
Upper Silesia	0.3374	3	1
Świętokrzyskie	0.1696	14	3
Warmia and Mazury	0.0810	15	4
Wielkopolska	0.3447	2	1
West Pomerania	0.2720	7	2

Source: *Rocznik Statystyczny Województw (Statistical Yearbook of Provinces)*, GUS, Warszawa 2001.

The values of the artificial measure of the socio-economic development in the provinces after the administrative reforms suggest that there is a deepening of the difference in development between Mazovia, in particular Warsaw and its surroundings, and other Polish regions. Relatively high values can be found in the provinces whose capital is a large agglomeration. Very low values can be found in the provinces that were created in "traditionally lowly developed" territories. During the transformation period the disproportions in regional development have not become smaller.

The Silesian provinces can be found in class 1 – Upper Silesia, and class 2 – Lower Silesia and Opole Silesia. Lower Silesia takes the first place and Opole Silesia the last place among the provinces in the second class. The large urban agglomerations in Upper Silesia (e.g. Katowice) and Lower Silesia (Wrocław) contribute significantly to the high ranking

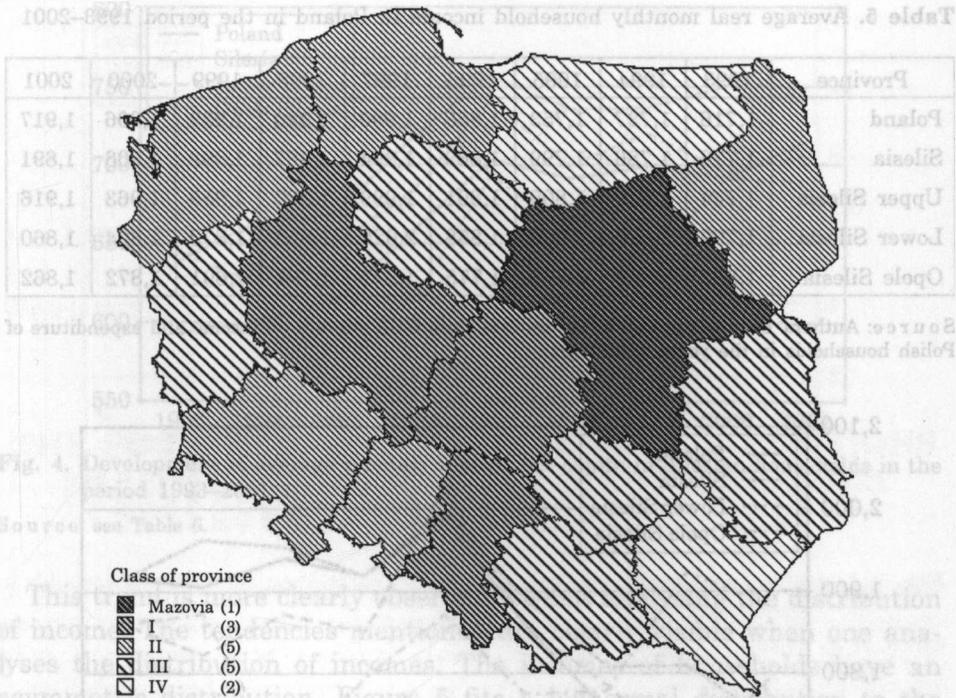


Fig. 2. Spatial differentiation of the level of the socio-economic development in Poland in 2000)

of those provinces. There are also areas where the socio-economic situation is quite bad in those provinces.

The economic situation of households is reflected in the level of household income, as this income can be used for satisfying needs in the form of consumption of goods and services and functioning in the social, natural and political environment. In other words, household income can be used as an indicator of the standard of living.

For this reason the incomes of households in Silesia have been analysed in detail for the years 1993–2001. Panel research on income and expenditures of households carried out by GUS (the Polish state statistical office) from 1993 until 2001 formed the empirical basis for the analysis.

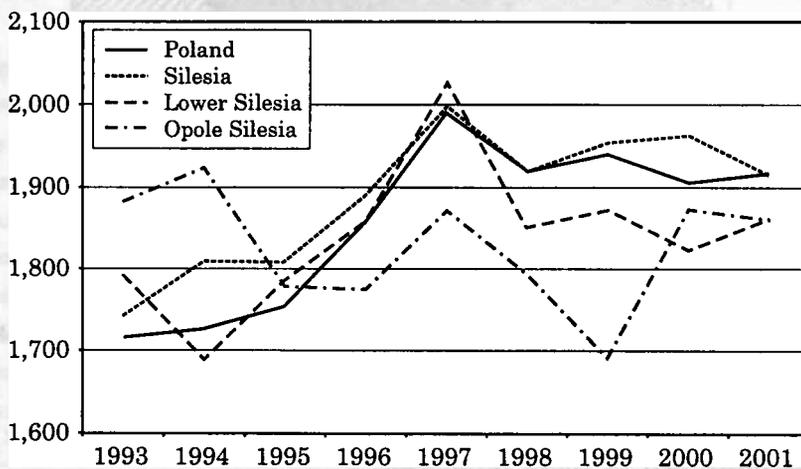
The changes in average household income in the examined period are presented in Table 5 and 6, as well as in Figure 3 and 4.

In the period 1993–2001, average real household income increased both in Silesia and Poland as a whole until 1997. In 1998 there was a clear fall, while during the following three years average real household income stagnated.

Table 5. Average real monthly household income in Poland in the period 1993–2001

Province	1993	1994	1995	1996	1997	1998	1999	2000	2001
Poland	1,716	1,727	1,753	1,858	1,990	1,920	1,939	1,906	1,917
Silesia	1,773	1,786	1,799	1,869	1,994	1,887	1,898	1,903	1,891
Upper Silesia	1,744	1,810	1,809	1,891	1,999	1,920	1,955	1,963	1,916
Lower Silesia	1,793	1,690	1,786	1,858	2,026	1,853	1,873	1,824	1,860
Opole Silesia	1,882	1,923	1,778	1,775	1,871	1,794	1,691	1,872	1,862

Source: Authors' own elaboration based on data from GUS surveys on income and expenditure of Polish households in the years 1993–2001.

**Fig. 3.** Average real monthly income per household in the Silesian provinces in the years 1993–2001

Source: see Table 5.

Table 6. Average real monthly income per capita in households in Poland in the period 1993–2001

Province	1993	1994	1995	1996	1997	1998	1999	2000	2001
Poland	593	601	613	658	703	691	699	691	714
Silesia	639	649	657	697	746	716	720	722	727
Upper Silesia	640	664	669	718	757	735	737	751	750
Lower Silesia	645	624	648	683	742	700	719	695	705
Opole Silesia	614	638	613	614	694	654	638	690	688

Source: Authors' own elaboration based on data from GUS surveys on income and expenditure of Polish households in the years 1993–2001.

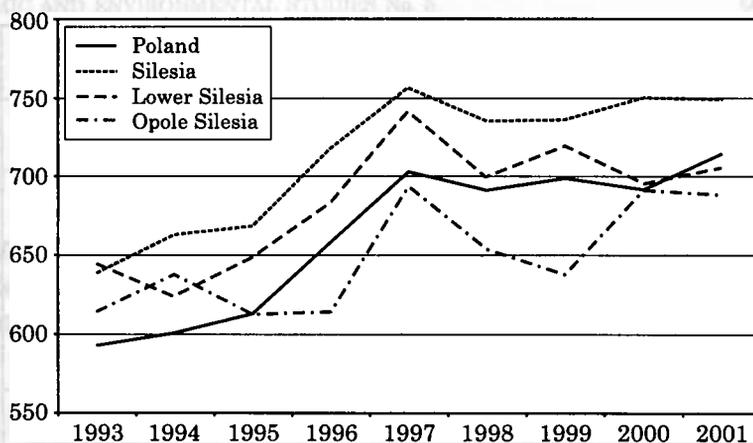


Fig. 4. Development of average monthly income per capita in Silesian households in the period 1993–2001

Source: see Table 6.

This trend is more clearly observable when analysing the distribution of income. The tendencies mentioned are clearly visible when one analyses the distribution of incomes. The incomes of households have an asymmetric distribution. Figure 5 fits a lognormal distribution to the household incomes observed in Silesia in the years 1993, 1997 and 2001. One can see a clear rise in the level of incomes in the period 1993–1997 from the graphs of the distribution of household income, and the proportion of affluent households increased. On the other hand, stagnation followed in the next period, and even a slight decrease in household incomes in Silesia, which can be observed from a decrease in the variation of incomes in 2001. Similar tendencies can be observed in the whole of Poland regarding the distribution of household incomes. [Hanusik and Łangowska-Szczyński, 2003a]

At the beginning of the period 1993–2001 the income per capita in households in all the Silesian provinces was above the national average. This was also the case in Upper Silesia and Lower Silesia in 2001. However, in 1996 income per capita in households in Opole Silesia was already significantly below the national average. This was mainly the result of decreasing income in agriculture, [Hanusik and Łangowska-Szczyński, 2003b], where more than 28% of all the people available for work were employed.

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The research presented clearly suggests that Silesia was a relatively highly developed region economically at the beginning of the transform-

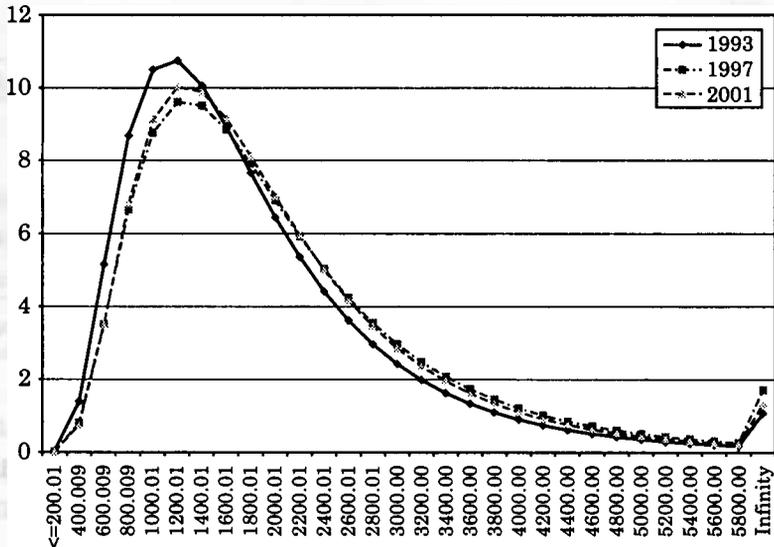


Fig. 5. Lognormal distribution of average real monthly income in Silesian households in the period 1993–2001

Source: see Table 5.

ation, implying good material conditions for households. During the transformation period Silesia kept its high position compared to the other regions in Poland. However, as was the case for all the regions, Silesia did not develop as rapidly as Mazovia.

Due to a deterioration in the profitability of agricultural production in the period 1993–2001, the income of people working in agriculture declined. As a result, the economic situation of households in the Opole region changed for the worse compared to all the other provinces in Poland

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