MICHAŁ SZNAJDER, OLGA KRUSIŃSKA, ANNA WIELICKA

REVIEW OF DAIRY SECTOR IN POLAND

From Department of Food Management Economics
of The August Cieszkowski Agricultural University of Poznań

ABSTRACT. The paper presents general situation in Polish dairy. The sector thrives on concentration in milk production. Dairy farms increase herd-size, some ineffective dairy farms go out of business as milk production requires vast investments due to high hygiene standards and economies of scale. Changes result in rising effectiveness as milk yield grows, and on farm use decreases. After collapse in 1989 and downward trend in 90's production of basic products like milk, butter and fermented drinks increases. Situation on goods export market is highly affected by global prices. However the development of the production depends on milk quota, which will limit Polish dairy in future. Overall consumption is declining. On the upward trend is only cheese. These tendencies are consistent with the changes in Western Europe.

Key words: dairy, dairy industry, dairy farming, consumption, dairy products

Introduction

Being involved in daily problems of dairy industry we often overlook some general trends and broader aspects of changes, which would help us better understand individual decisions of farmers, consumers and processors in the past and in the future (**Sznajder** et **al.** 1998).

Purpose of this paper is to present the general situation of dairy industry, consumption and define some prospects for them. Review is divided into three following sections:

1) dairy farms and dairy cows,
2) production and prices,
3) consumption.

The data were collected from Central Statistical Office (**Roczniki...** 1950-2004).

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Dairy farms and dairy cows

Decline in overall farm numbers by 4% as an effect of shrinking profitability in small entities is observed. More serious drop by 33% appears in dairy farms as a result of rising cost of production: high-cost equipment and breeding connected with acute hygiene standards (**Jaździewski** 2001). A dairy farm, which makes profit, is no longer for everybody – it needs significant investments. Non dairy farms thrive- growth in numbers by 17% (Fig. 1).

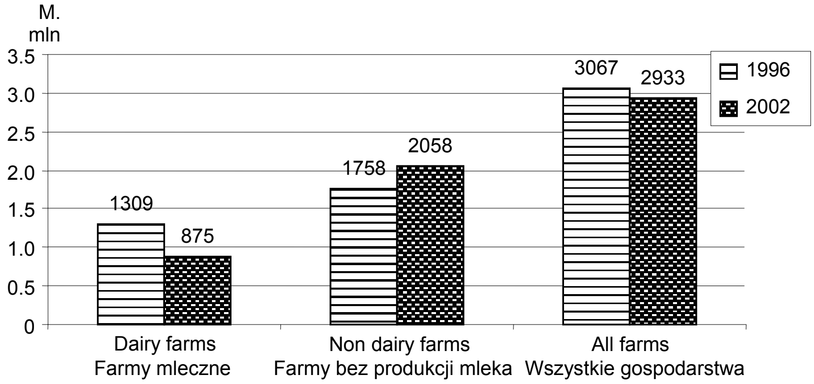

Fig.1. Number of dairy farms, non dairy farms and all farms
(based on data from CSO)
Ryc. 1. Liczba farm mlecznych, liczba farm nie zajmujących się produkcją mleka, ogólna liczba farm (na podstawie danych GUS)

Changes in structure – growing number of dairy farms (mainly specialized in another production) with one cow, dedicated to self-provisioning and exponential increase of large and mid-sized herds starting from 10 cows (**Szymańska** 2005). Polish milk production starts concentration process (Fig. 2).

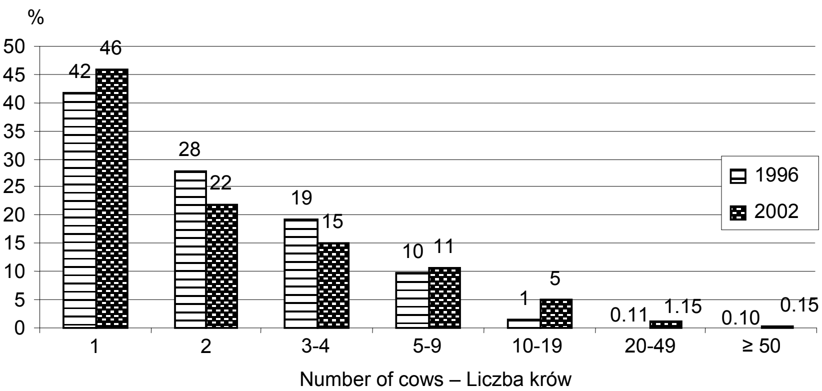

Fig. 2. Percentage of dairy farms according to cow numbers in a farm
(based on data from CSO)
Ryc. 2. Odsetek farm mlecznych w zależności od liczby krów
(na podstawie danych GUS)

Production and prices

In period 1989-2003 increase in milk production per cow by 22% did not offset the cow loss – drop by 42% – milk production fell down (Fig. 3).

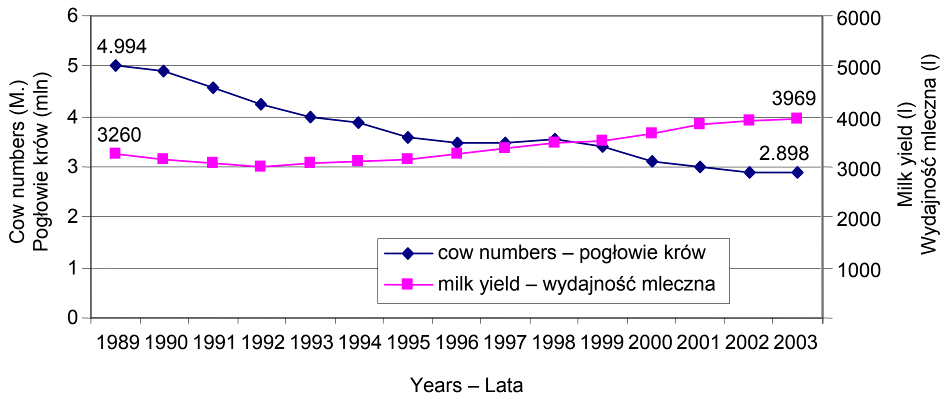

Fig. 3. Cow numbers and milk yield per cow (based on data from CSO)
Ryc. 3. Pogłowie krów i wydajność mleczna jednej krowy (na podstawie danych GUS)

The shrinkage of cow numbers resulted in overall drop in milk production by 3% during latest 10 years (1994-2003) but changes in the structure of dairy farms and growing per-cow production affected milk collection (**Sznajder** 1999), which went up by 17% in the same period (Fig. 4).

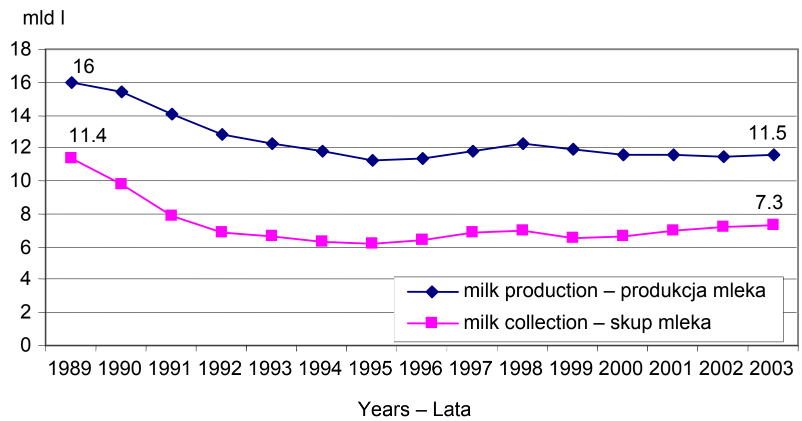

Fig. 4. Milk production and milk collection (based on data from CSO)
Ryc. 4. Produkcja i skup mleka (na podstawie danych GUS)

63% of milk production is delivered to processing plants and we project further growth thanks to specialization, profitability and falling number of small dairy farms producing milk for own purposes or local sales (Fig. 5).

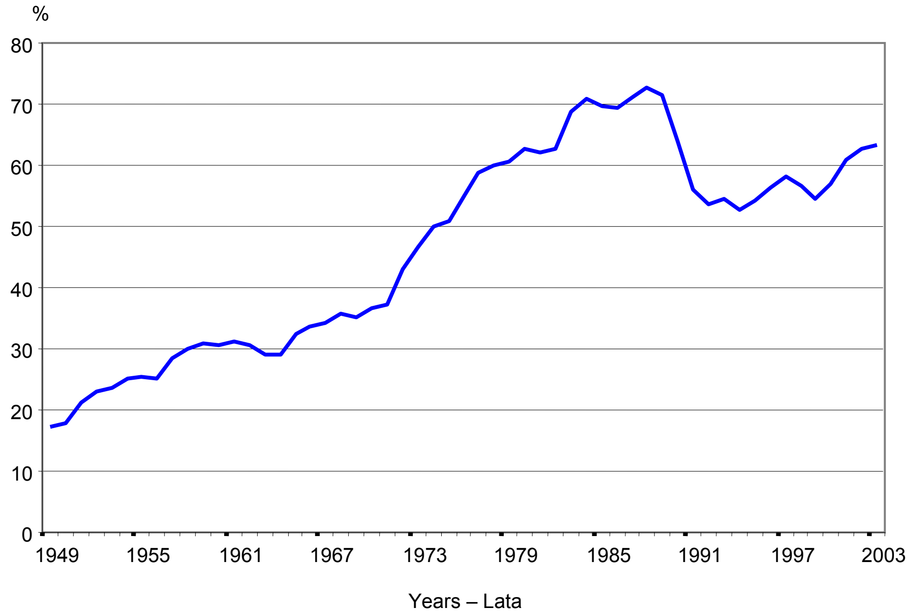

Fig. 5. Share of milk collection in milk production (1949-2003) (based on data from CSO)
Ryc. 5. Towarowość gospodarstw mlecznych (na podstawie danych GUS)

After "stable price period", entrance to EU became growth factor for farm gate milk prices, which went up to 86 PLN/hl in 2004. In comparison with year 1995 prices nearly doubled (95% growth), and probable scenario for 2005 was 100 PLN/hl and even more (Fig. 6).

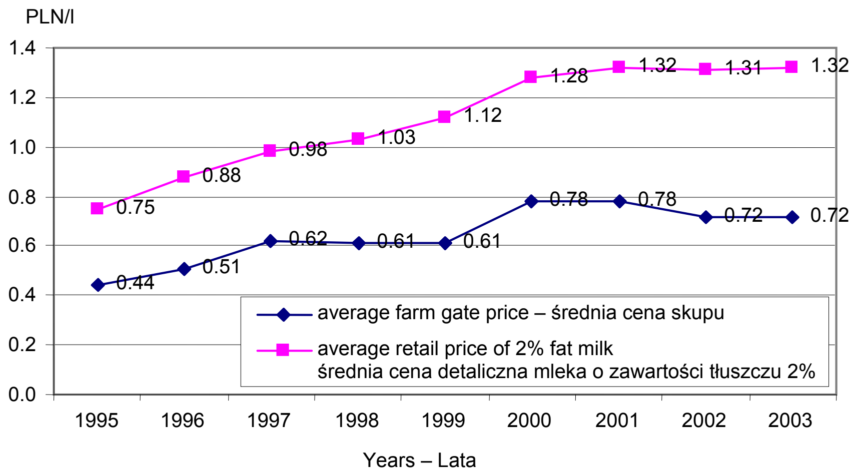

Fig. 6. Average farm gate price and retail price of 2% fat milk (based on data from CSO)
Ryc. 6. Średnia cena skupu i średnia cena detaliczna mleka o zawartości tłuszczu 2% (na podstawie danych GUS)

Polish economy survived the period of centrally planned prices. Gate milk price offered to farms between 1971-1989 excelled retail price, which was regulated to be stable from 1971 to 1981. You were allowed to produce as much as you could – state guaranteed sales. Since 1989 we have accepted liberalized economy and prices are at mercy of State Agencies (ARR) and open market (Fig. 7).

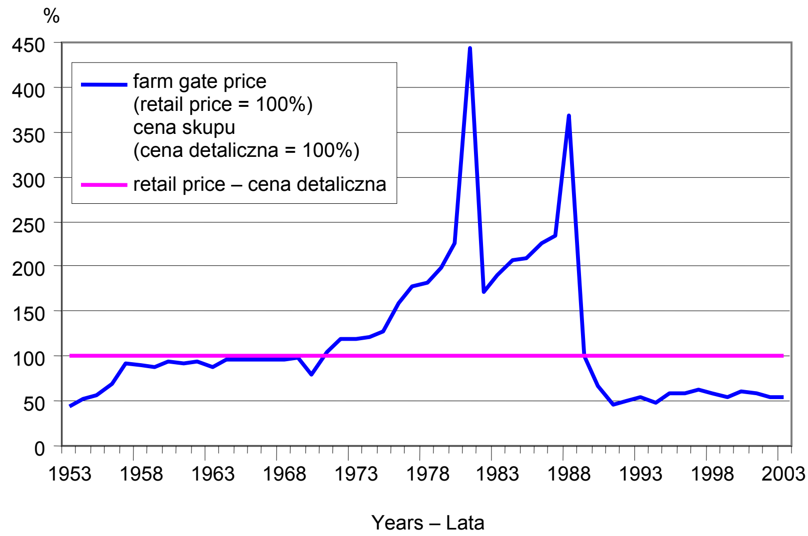

Fig. 7. Farm gate price vs retail price (retail price = 100%)
(based on data from CSO)
Ryc. 7. Relacja ceny skupu do ceny detalicznej (cena detaliczna = 100%)
(na podstawie danych GUS)

We observe stable ratio of farm gate and retail milk price – about 55%. Visible peaks are caused by enormous increase in farm gate prices as a result of transient prosperity in dairy industry (Fig. 8).

Breakthrough in milk production and cow numbers in 1989 caused by falling profitability (no guaranteed prices and markets) and huge imports from Western countries, which additionally subsidized exporters limited growth in recent years. Year 2003 started recovery in the sector (Fig. 9).

Shift in agricultural production and consumer preferences resulted in a sudden drop of fluid milk production in 1989. Slow recovery is visible in recent years (Fig. 10). Future depends on domestic consumption, which will not elevate if the state or dairy industry does not finance educational campaigns.

The available data reflect the change in consumer habits. Since 2000 we have increased yoghurt consumption by 37%. Marketing and wider, tasty assortment as well as recommendation from food scientists made us eat and drink more fermented products (Fig. 11).

Butter production got through the same process as milk production with one heavier storm in the 90's, when margarine lobby profited from information about harmful action of butter fat on blood tension (**Seremak-Bulge** et **al.** 2003). Now the production grows slowly as country demand rises (Fig. 12).

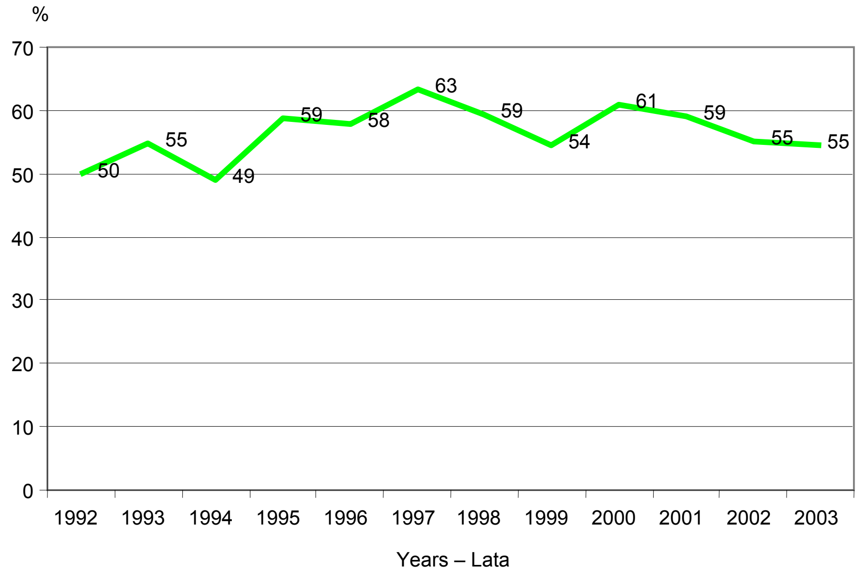

Fig. 8. Farm gate price in retail price of 2% fat milk (based on data from CSO)
Ryc. 8. Udział ceny skupu w cenie detalicznej mleka o zawartości tłuszczu 2% (na podstawie danych GUS)

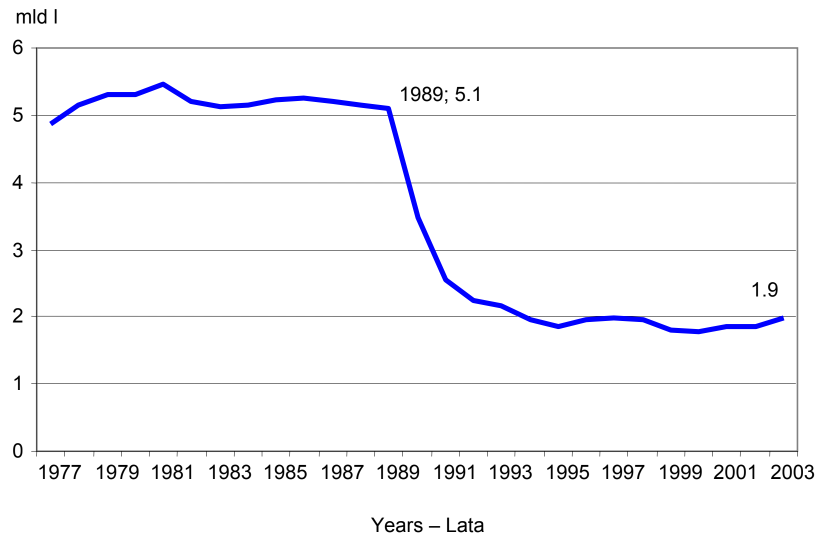

Fig. 9. Production of milk (normalized and defatted) (based on data from CSO)
Ryc. 9. Produkcja mleka (spożywcze i odtłuszczone) (na podstawie danych GUS)

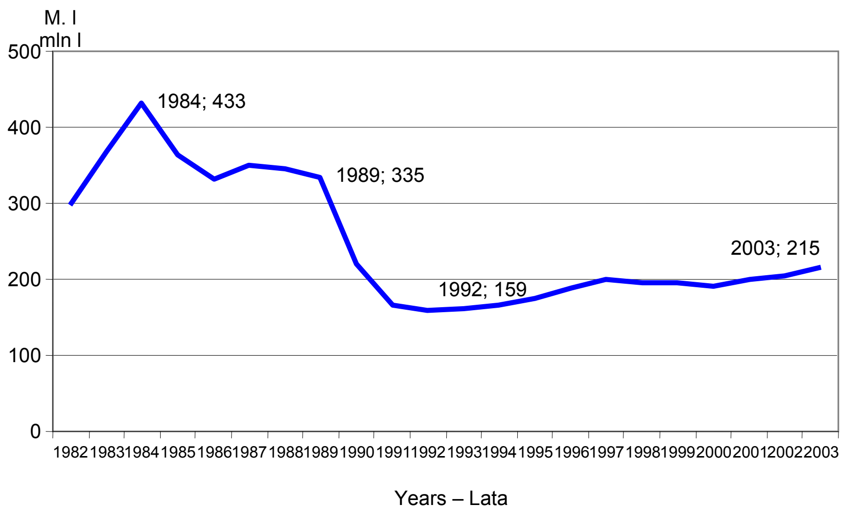

Fig. 10. Production of cream including homogenized cream (based on data from CSO)
Ryc. 10. Produkcja śmietany i śmietanki (na podstawie danych GUS)

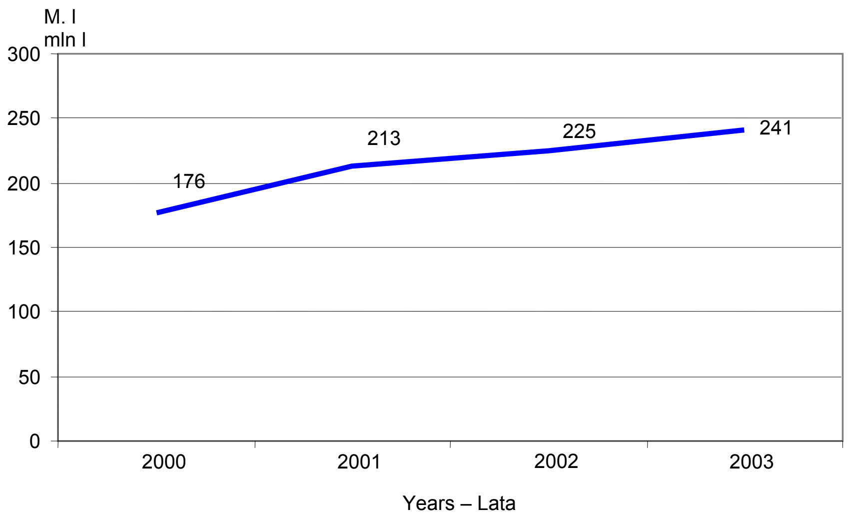

Fig. 11. Production of yoghurt (based on data from CSO)
Ryc. 11. Produkcja jogurtu (na podstawie danych GUS)

From 1988 to 1992 there was a decrease in cheese production which resulted from lower household incomes and initial lack of trade partners. From 1993 the industry enjoys growing production as an effect of rising popularity, affluence and open markets – EU and Russia. The highest growth is observed in hard cheeses (“industrial types”), which are eagerly used in food service (Fig. 13).

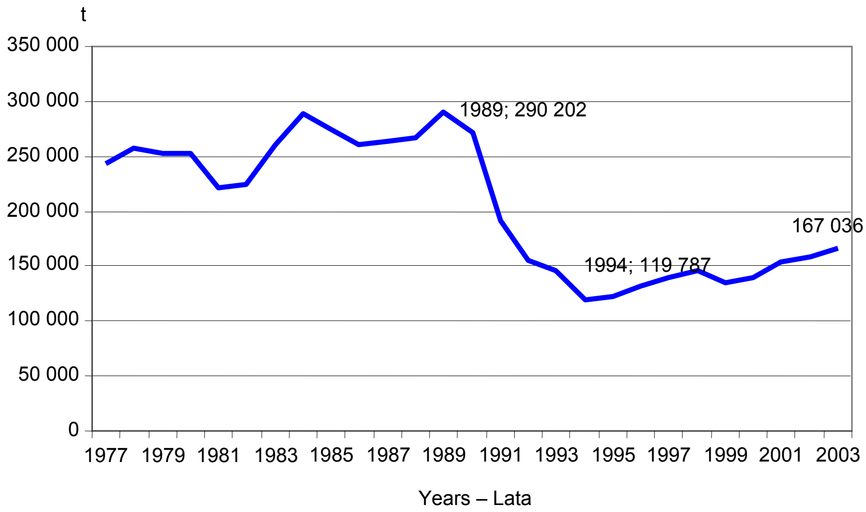

Fig. 12. Production of butter (based on data from CSO)
Ryc. 12. Produkcja masła (na podstawie danych GUS)

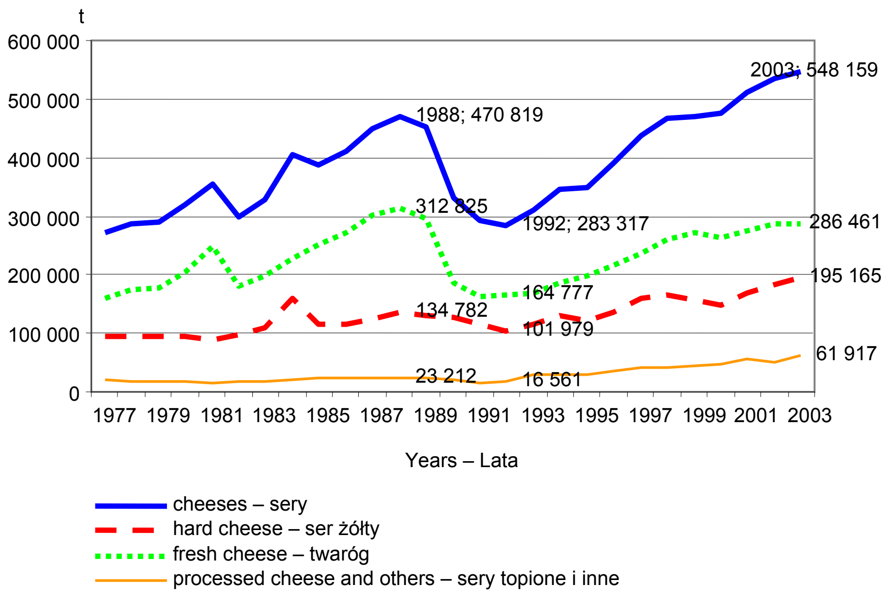

Fig. 13. Production of cheese (based on data from CSO)
Ryc. 13. Produkcja sera (na podstawie danych GUS)

Strong exporting position resulted in growing production of concentrated milk and whey – trend seems to be long lasting (Fig. 14).

Production strongly depends on export profitability, bloomed till 1989, later had to adapt to open market (Fig. 15).

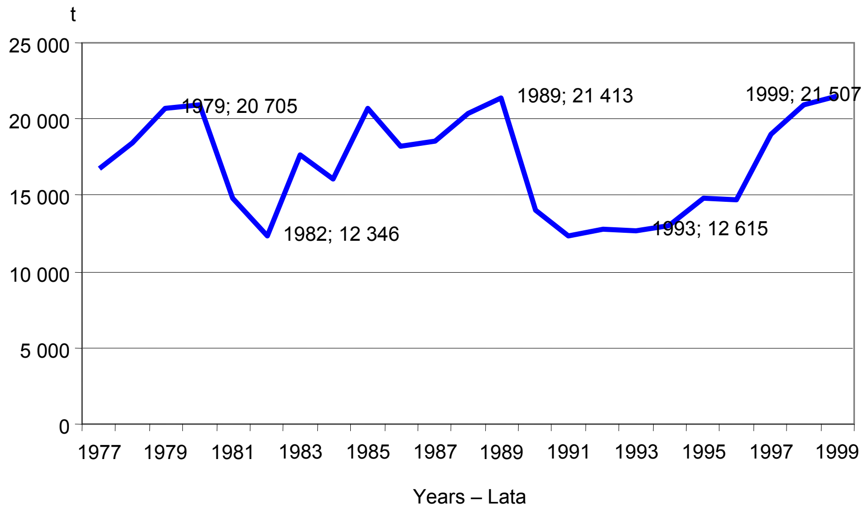

Fig. 14. Production of milk and concentrated whey (based on data from CSO)
Ryc. 14. Produkcja zagęszczonego mleka i serwatki (na podstawie danych GUS)

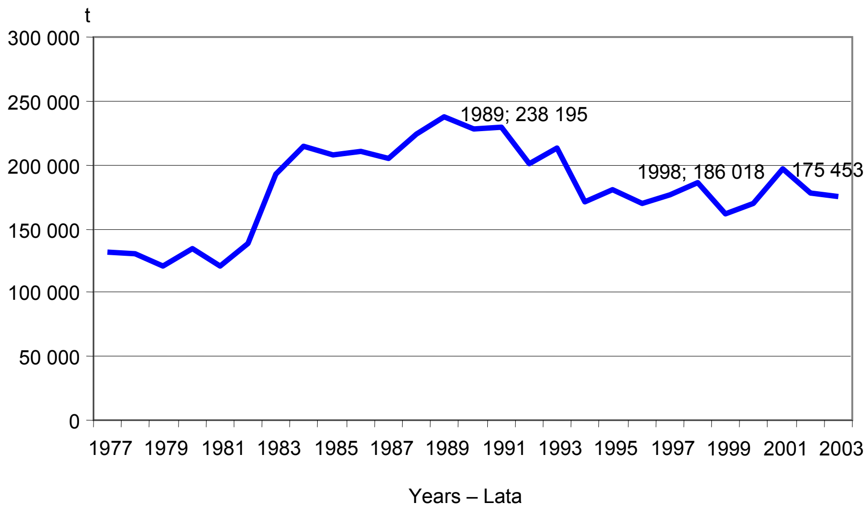

Fig. 15. Production of milk and cream powder (based on data from CSO)
Ryc. 15. Produkcja mleka i śmietany w postaci stałej (na podstawie danych GUS)

Decrease of subsidies to this good resulted in miserable competitiveness of Polish casein (**Richarts** 2003) on world market (Fig. 16).

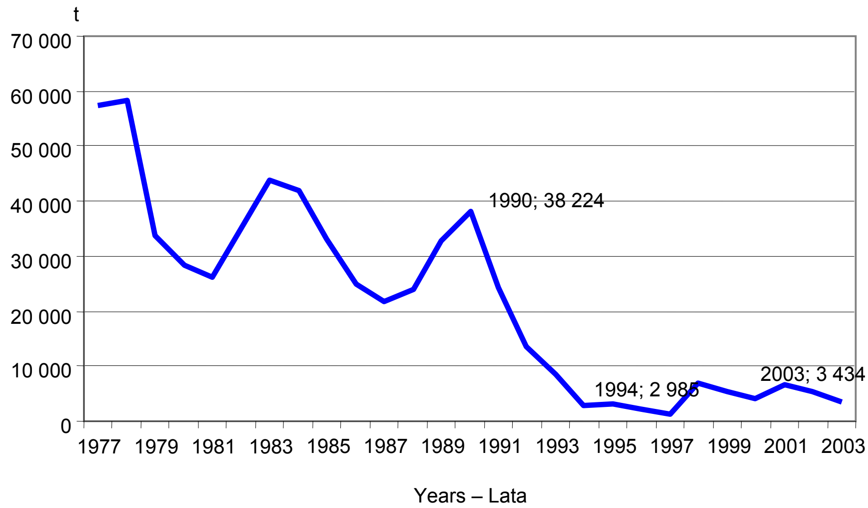

Fig. 16. Production of casein (based on data from CSO)
Ryc. 16. Produkcja kazeiny (na podstawie danych GUS)

Consumption

Milk loses to competitive drinks with heavy marketing behind (Fig. 17).

Reduction in fats consumption and artificial and plant substitutes limit cream consumption. Annual consumption of cream amounts to 5 kg per person (Fig. 18).

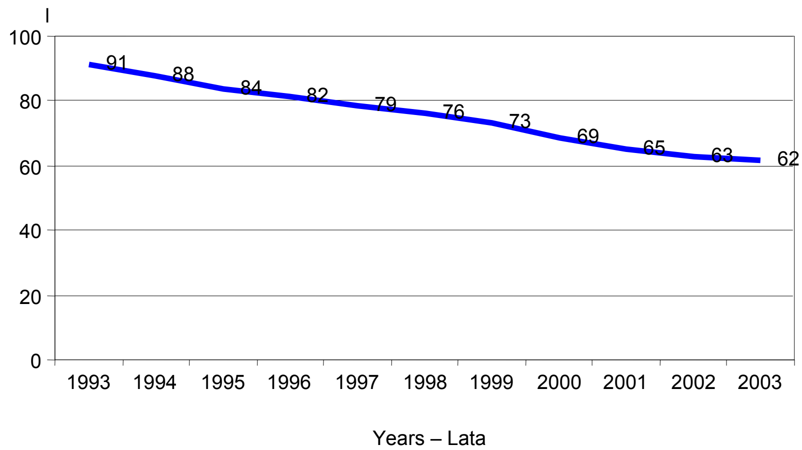

Fig. 17. Consumption of milk drinks per one person (based on data from CSO)
Ryc. 17. Konsumpcja napojów mlecznych na osobę (na podstawie danych GUS)

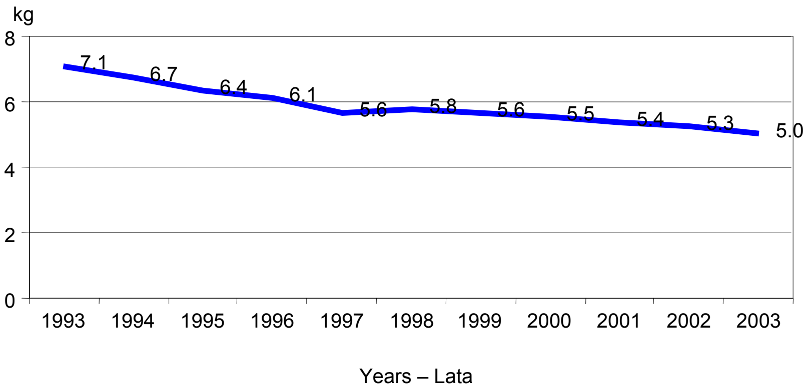

Fig. 18. Consumption of cream per one person (based on data from CSO)
Ryc. 18. Konsumpcja śmietany na osobę (na podstawie danych GUS)

Drop in the beginning of 90's caused by price factors and plant substitutes supported by information campaigns was stopped by growing popularity and fashion for butter, now associated with tasty, healthy diet when in reasonable quantities (Fig. 19).

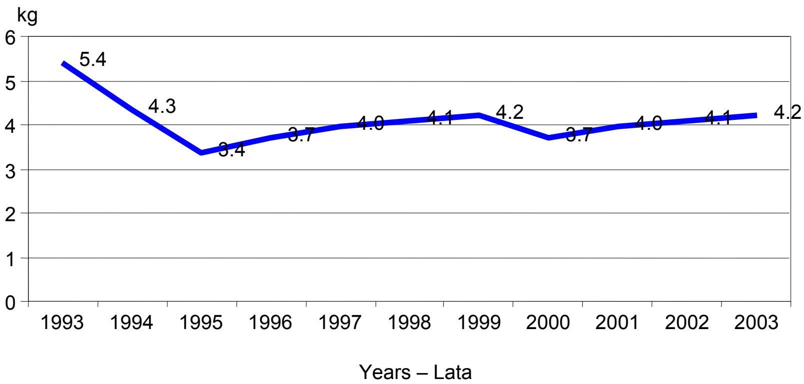

Fig. 19. Consumption of butter per one person (based on data from CSO)
Ryc. 19. Konsumpcja masła na osobę (na podstawie danych GUS)

After decline caused by dietary precautions and high price in the beginning of 90's consumption of cheeses started to grow till 1998. Later crisis in economy affected the consumption. Households started buying and eating more cheeses again in 2003 (Fig. 20).

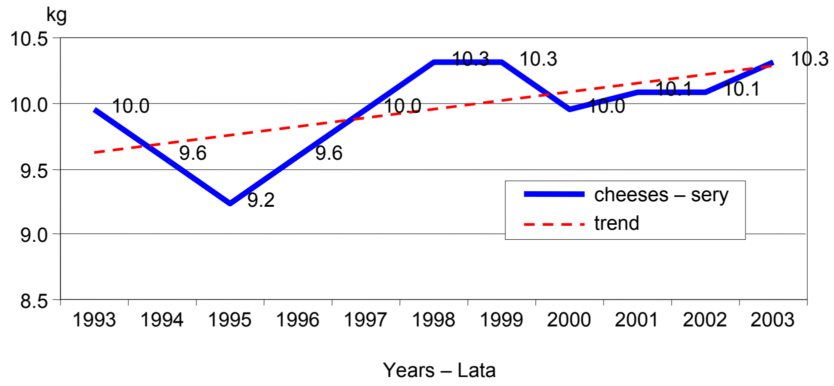

Fig. 20. Consumption of cheese per one person (based on data from CSO)
Ryc. 20. Konsumpcja sera na osobę (na podstawie danych GUS)

Conclusions

1. Decease of dairy farm numbers and overall farm numbers – low profitability if no economies to scale.
2. Structural changes in milk production sector are caused by fast growth of large herds and farms which own one cow for a their use.
3. In 2003 there is still a decline in cow stock but increase of milk yield per cow altered decreasing trend in milk production.
4. Steady increase of collected milk ratio connected with attractive prices and production specialization.
5. Production of basic dairy fresh products for local markets declined from 1989 to 2002 with serious collapse in 1999 and 2000 as a result of economic crisis. In latest years opening of foreign markets: EU (**Richarts** 2004) and Eastern countries and rising dietary conscience of Poles can elevate production but only up to the quota granted by EU.
6. More stable products are slightly affected by changes in domestic demand, but more sensitive to cyclical factors on world market, what is mirrored by temporary fluctuation.
7. Cheese production grows from 1992 thanks to domestic demand and export.
8. Drop in milk drinks (mainly milk) and cream consumption is caused by change of consumption habits and competition from other drinks and plant substitutes.
9. In 2000 a remarkable decline in cheese and butter consumption resulted from incomes reduction. Consumption and growing acceptance for cheeses and butter bounces back in recent years.

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TENDENCJE W POLSKIM MLECZARSTWIE

S t r e s z c z e n i e

Polskie mleczarstwo jako ważna cześć gospodarki żywnościowej jest sektorem, wewnątrz którego w ostatnich latach dokonały się bardzo istotne zmiany. Zaobserwowane tendencje mają charakter długookresowy i będą w najbliższym czasie kształtować oblicze branży. Podstawowymi tendencjami po stronie gospodarstw zajmujących się produkcją mleka są: koncentracja produkcji surowca, wzrastająca wydajność i towarowość. Z kolei w przetwórstwie w latach 1989-2002 obserwowaliśmy tendencję spadkową w większości kategorii i wzrost produkcji od 2003 roku. Jednakże konsumpcja produktów mlecznych wyrażona w ekwiwalencie mleka spada od 1989 roku (z wyjątkiem 1998 roku) i w 2003 roku osiągnęła rekordowo niski poziom 181 l na osobę.