

PRICE-ANALYSIS OF HOGS, YOUNG PIGS, SLAUGHTER CATTLE,
CALVES AND RYE

Summary of Report No 80
by Ermond H. Hartmans

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1. This study aims at the analysis of a number of price-making forces with respect to hogs, young pigs, slaughter cattle, calves and rye (as a representative of the feeding grains), paying particular attention to constant price movements, in order to assist the government, the extension-service and the farmers in taking market and price political decisions.

The data, being used, are obtained for the most part from the reports of the Rotterdam livestock market and from the Central Bureau of Statistics at the Hague.

Monthly prices from 1922-1940 were adjusted on the one hand for general price level (index wholesale prices), seasonal movements and accidental movements, on the other hand for price cycles, price trends and accidental movements. These adjusted prices were used to compute price cycles and average seasonal variations respectively.

In order to give a measure of the variation in the price from the average seasonal pattern, also the zone of irregularity was calculated. One standard deviation includes approximately 73% of the cases or roughly seven years out of ten.

2. During the period 1923-1940 prices of hogs and slaughter cattle have been subject to strong movements, which were partly due to movements in the general price level. Prices of 1st quality hogs were generally 10-20% below those of 1st quality cattle. During 1948-1949 the price of cattle was approximately 15% below the price of hogs due to artificial influences of rationing and government measures which disturbed the normal relationship between supply and demand.

After abolishing meat rationing and forced marketings, November 6th 1949, prewar conditions started to prevail again and in 1950 the price of slaughter cattle was again 15% above the price of hogs (see graph 1 and 7).

1) For those interested in reading the Dutch text the complete report of 38 pages may be obtained at the Landbouw-Economisch Instituut, van Stolkweg 29, Den Haag.

3. The real moving averages of the prices of hogs and young pigs show a cyclical movement, the length of which appears to be $3\frac{1}{2}$ years from 1923-1930 and $2\frac{1}{2}$ years thereafter. This shortening of the cycle was due to a switch from heavy weight hogs to the bacon type after England closed its frontiers for the import of fresh meat. Due to the many governmental interferences during the thirties, the hog cycle is less accentuated in the period 1930-1940 (see graph 2). Before 1930 similar cycles appeared in the countries to which the Netherlands exported or which were its competitors in the export market (see graph 3).

The young pig cycle presents a similar view as the one of hogs, though the amplitude of the first is about three times as large (see graph 4). During the years 1934-1940 young pig prices appeared to be exceptionally high, relative to hog prices, but this was due to the very short supply as only a limited number of young pigs were permitted to be bred per farm.

During normal years the hog cycle reaches a peak when the price of 1 kg (= 2,2 lbs) mixed feed, f.o.b. farm (consisting of 19% rye, 22% corn, 26% wheat and 11% cocus and 26% animal proteins) and 1 kg hog meat (dead weight) reaches a ratio of 1 : 8 or in other words when the hog-feed ratio is approximately 8. The hog cycle reaches a low when the hog-feed ratio is approximately 6.

In view of the present ratio, (6,3) and the probable position of the hog and young pig cycle, one may expect that hog prices will increase (relative to wholesale prices) before long and may reach a high at the latter part of 1952.

At the present price of mixed feed (37.50 guilders per kg¹⁾) the hog price should be around f.2.62 in order to prevent a further decrease in the number of hogs (i.e. at a ratio of 7). During 1951 the hog price however is rather closely fixed to the English contract price of f.2.38 for bacon hogs. The government therefore has to consider a decrease of the feed price, in order not to endanger the export of hogs and not to get in conflict with the agricultural policy of stimulating labor intensive products.

¹⁾ 1 dollar = 380 Dutch cents = 3.80 guilders or f.3,80.

- . A further decrease in the number of hogs can be prevented by decreasing the price of mixed feed from f.37.50 to f.34.00.
4. Also slaughter cattle show a cyclical movement with a length of approximately $3\frac{1}{2}$ year during the period 1930-1940 (see graph 9). This length differs greatly with the length of the beef-cattle cycle found in the U.S.A. of approximately 15 years. However one has to consider that no real beef-cattle are bred in the Netherlands. Usually bulls and undesired milkcows, unfit for breeding purposes are marketed as slaughter cattle for the meat production. Hence the meat production in the Netherlands is a sideline of the dairy industry. Before 1930 no apparent cycle is found; the Netherlands were a free trade nation at that time and price conditions were strongly influenced by the world market. It is possible that cattle prices at that time showed a 10-15 years cycle; the period 1923-1930 therefor may be part of one cycle. The probability of this hypothesis is strengthened by the fact that a high in the prices of slaughter cattle in the Netherlands was reached in the same year in which all important beef producing countries, having a 10-15 years beef cycle, reached their high (1930), however no data are available to further investigate this problem.

The cyclical movements in the prices of calves are more accentuated as those of cattle, analogous to the young pig prices (see graph 10). Calves follow the prices of slaughter cattle however in their up- or downward movement with an interval of approximately 4 months. Since the end of the war calves were in great demand, due to the efforts of farmers to regain their prewar number of cows; this resulting in high prices. However at present normal conditions have been reached again and a decrease in the prices of calves may be expected shortly especially while prices of slaughter cattle are on the decline already. The latter will probably continue to decline until the second half of 1952 after which a revival will follow which reaches its peak around the spring of 1954.

The trendlines of 1st, 2nd and 3rd quality cattle do not run parallel. During periods of high prices, the absolute difference is greater than during periods of normal or low prices; these absolute differences are shown in graph 8a. The price difference between 1st and 3rd quality amounted to approximately

40 Dutch cts during the period 1920-1930. This amount was reduced to about 20 cts during the years 1930-1935. However the trend ratio between 1st and 2nd and 1st and 3rd quality (see graph 8 B) shows that during periods of declining prices, the lower qualities relatively decrease more in price than the higher qualities in spite of the smaller absolute differences. This observation is an argument in favour of the production of high quality slaughter cattle.

5. All products, mentioned above with regard to cyclical price movements, are subject to seasonal price variations. Each of them has its own specific seasonal pattern. Prices of hogs reach a low in July (graph 5), slaughter cattle however reach in that month their seasonal peak (graph 11 and 12). Prices of hogs reach the seasonal peak in October, while prices of slaughter cattle are at a rather low level during this month. These opposite price movements indicate little or no substitution in the short run between hogs and slaughter cattle within certain limits.

On the average, prices of young pigs were lowest during the winter-months and highest during the summer-months (graph 6).

The variation between the high and the low months of young pigs was 22 points, of hogs 13 points, of 3rd quality slaughter cattle 10 points of 2nd quality 7 points and of 1st quality 6 points. The seasonal variation in the prices of calves is quite similar to the one of slaughter cattle except for a second peak in the months December and January (graph 12).

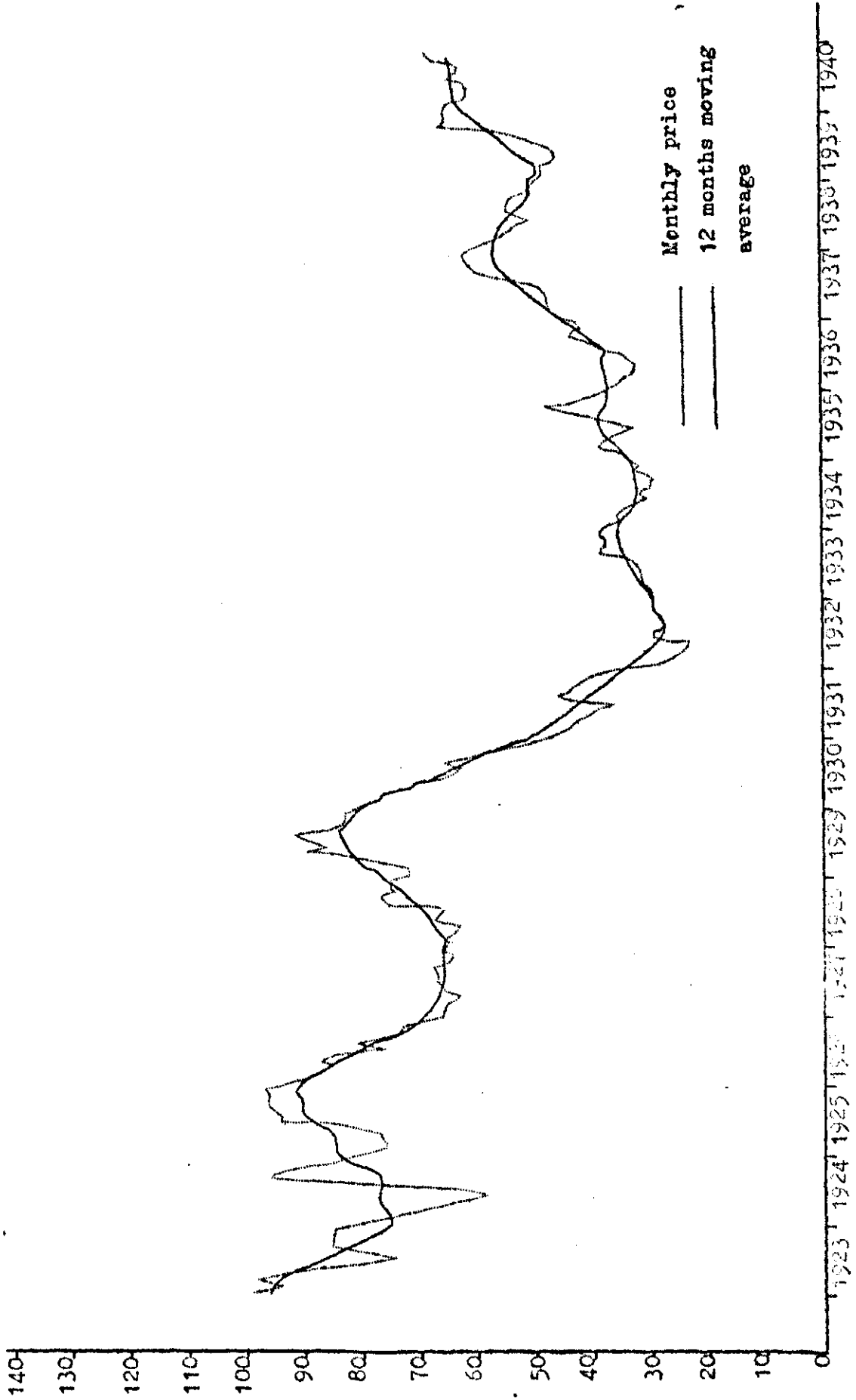
Rye, as all other grains, does not have a regular cyclical price movement (graph 13). It also has a rather small amount of seasonal price variation because it can be relatively easily and inexpensively stored (graph 14). This is particularly true for the period 1935-1940 when prices of grain were subject to many government measures. The zone of irregularity also was rather narrow in those five years, contrary to the period 1923-1935.

Finally it should be mentioned that the here observed seasonal patterns do not always mean a change in production methods or storage practices in order to get the highest price. Such shifts may cost too much to be profitable. Also before applying average seasonal price figures, allowances have to be made for possible future price trends in view of international events, crop prospects etc.

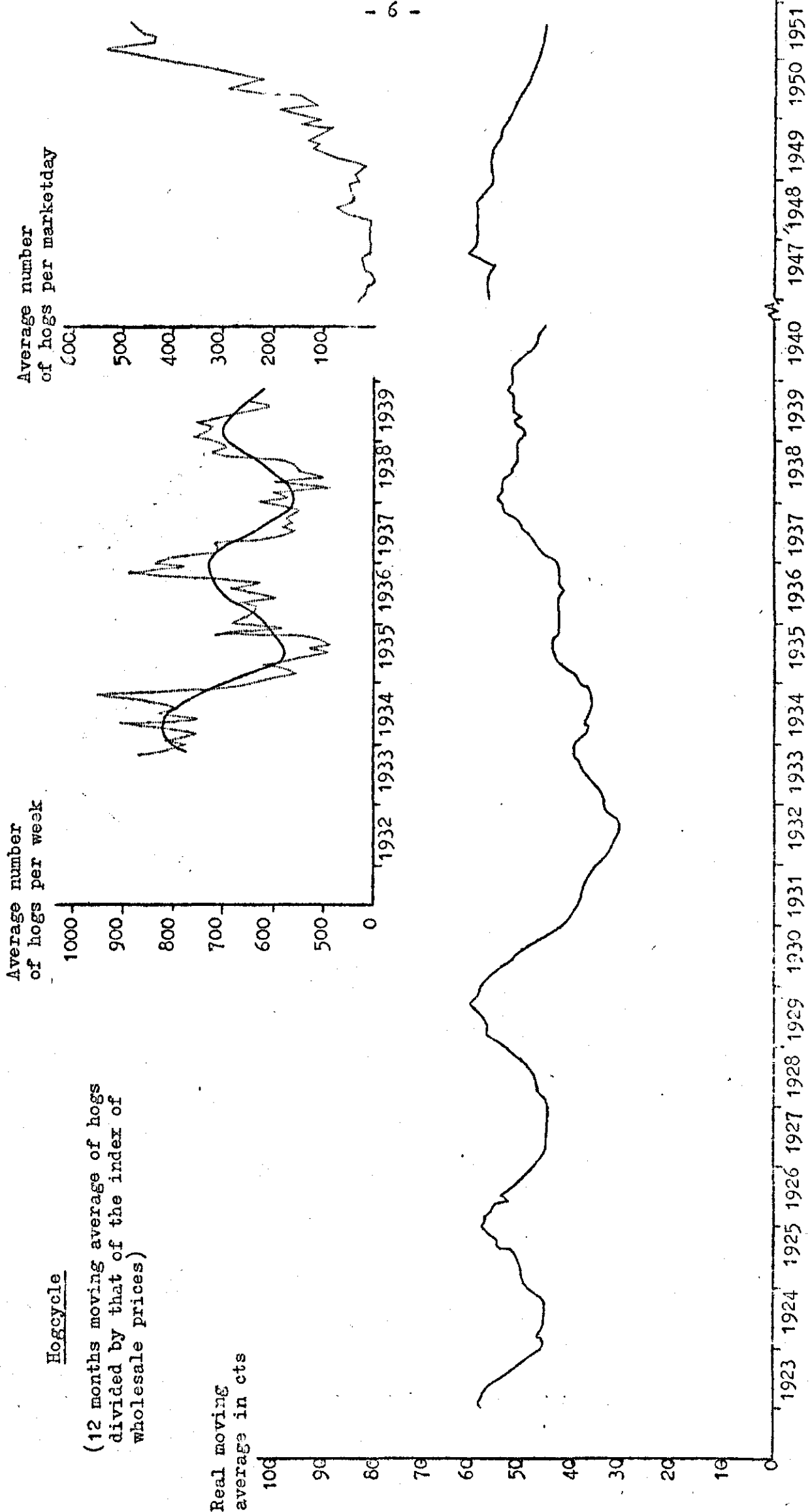
Graph 1

PRICE OF HOGS PER KG LIFE WEIGHT

Price in cts per kg
life weight



SUPPLY OF HOGS AT THE ROTTERDAM HOG MARKET



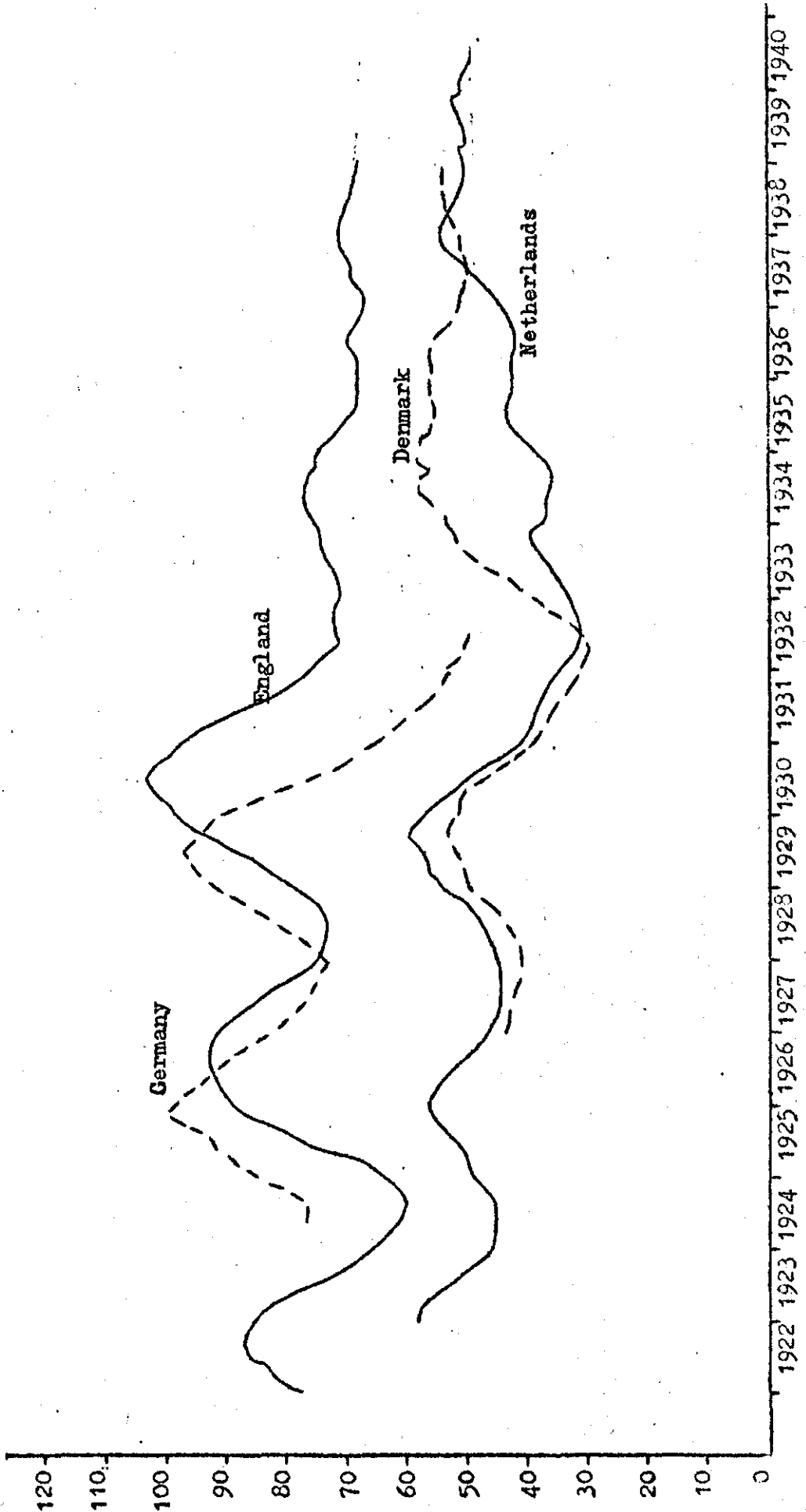
Hogcycle

(12 months moving average of hogs divided by that of the index of wholesale prices)

Real moving average in cts

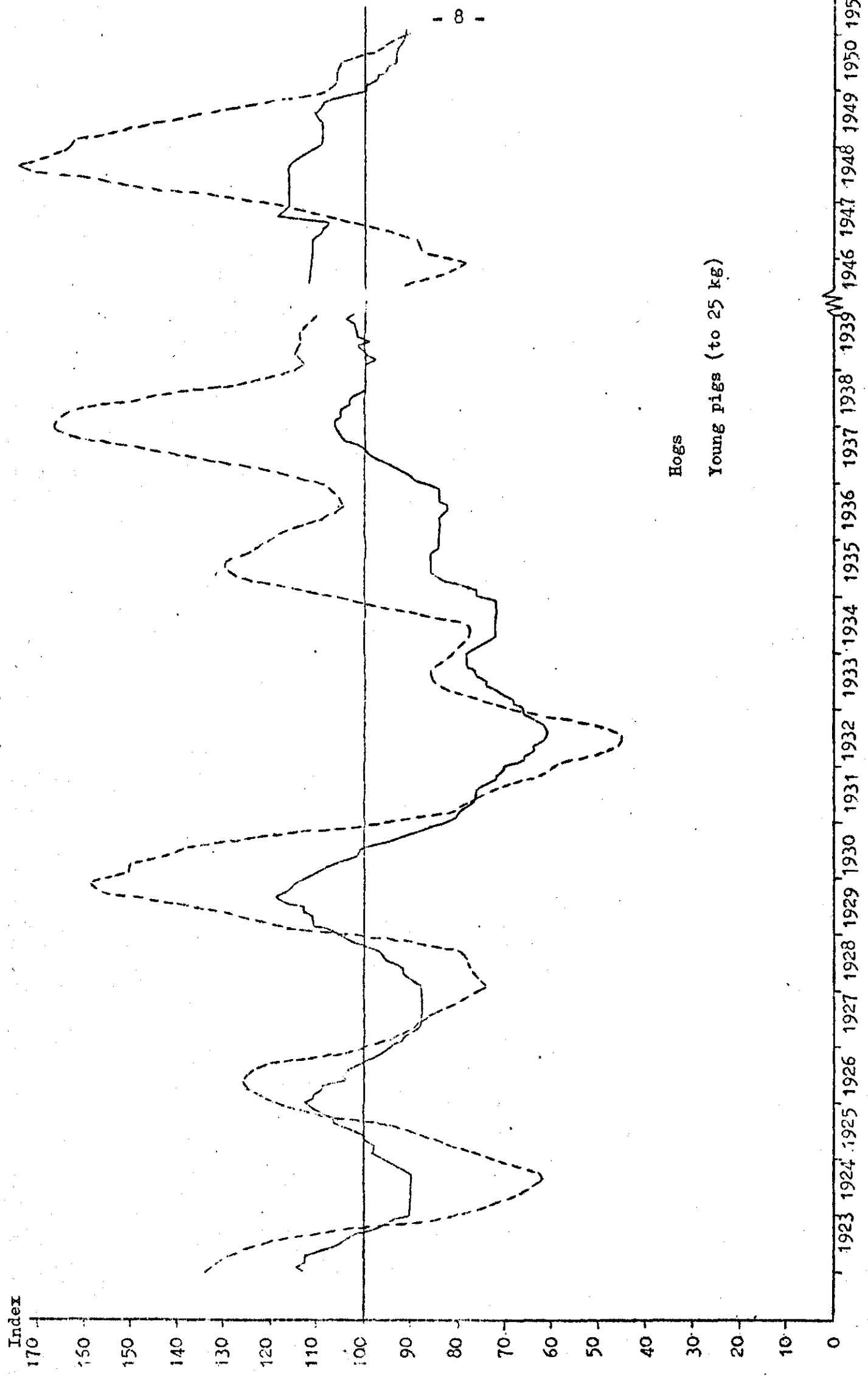
HOGCYCLES IN THE NETHERLANDS, ENGLAND, DENMARK AND GERMANY
(12 months moving average of hogs divided by that of the
index of wholesale prices)

Real moving
average in cts



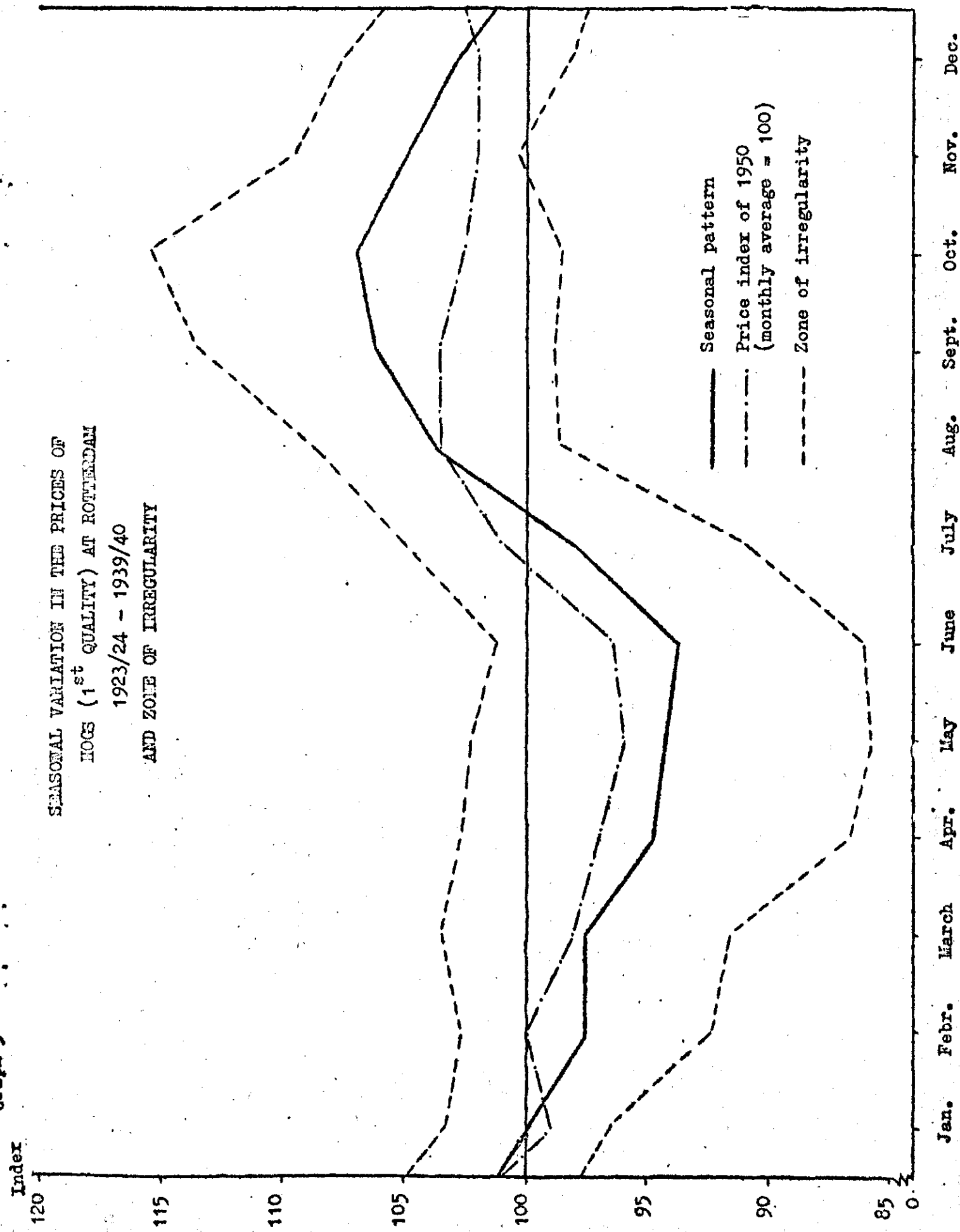
Graph 3

HOG- AND YOUNG PIG (TO 25 KG) CYCLE-INDEX (BASEPERIOD 1923 t/m 1929 = 100)



Graph 5

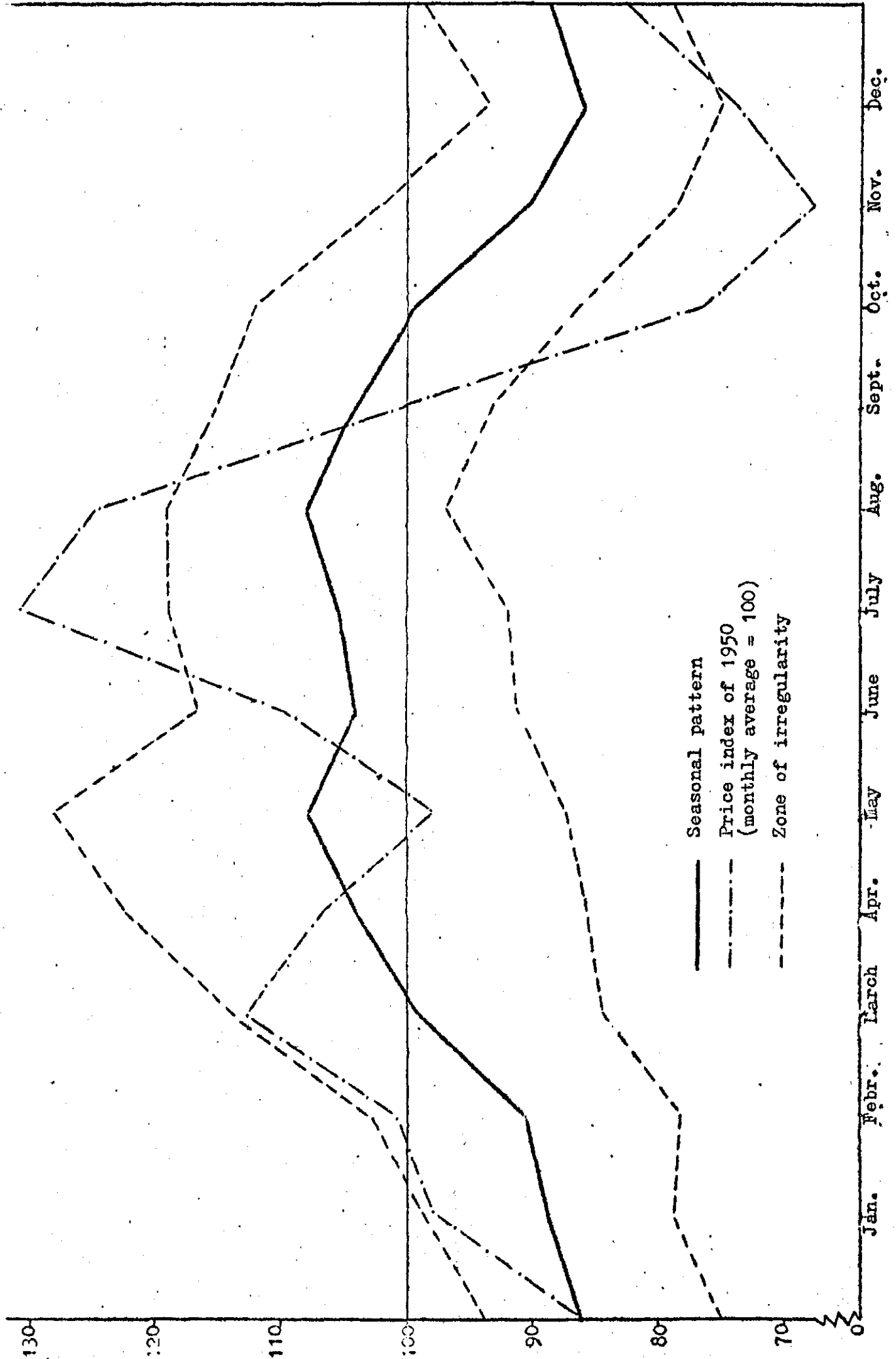
SEASONAL VARIATION IN THE PRICES OF
 HOGS (1st QUALITY) AT ROTTERDAM
 1923/24 - 1939/40
 AND ZONE OF IRREGULARITY



Graph 6

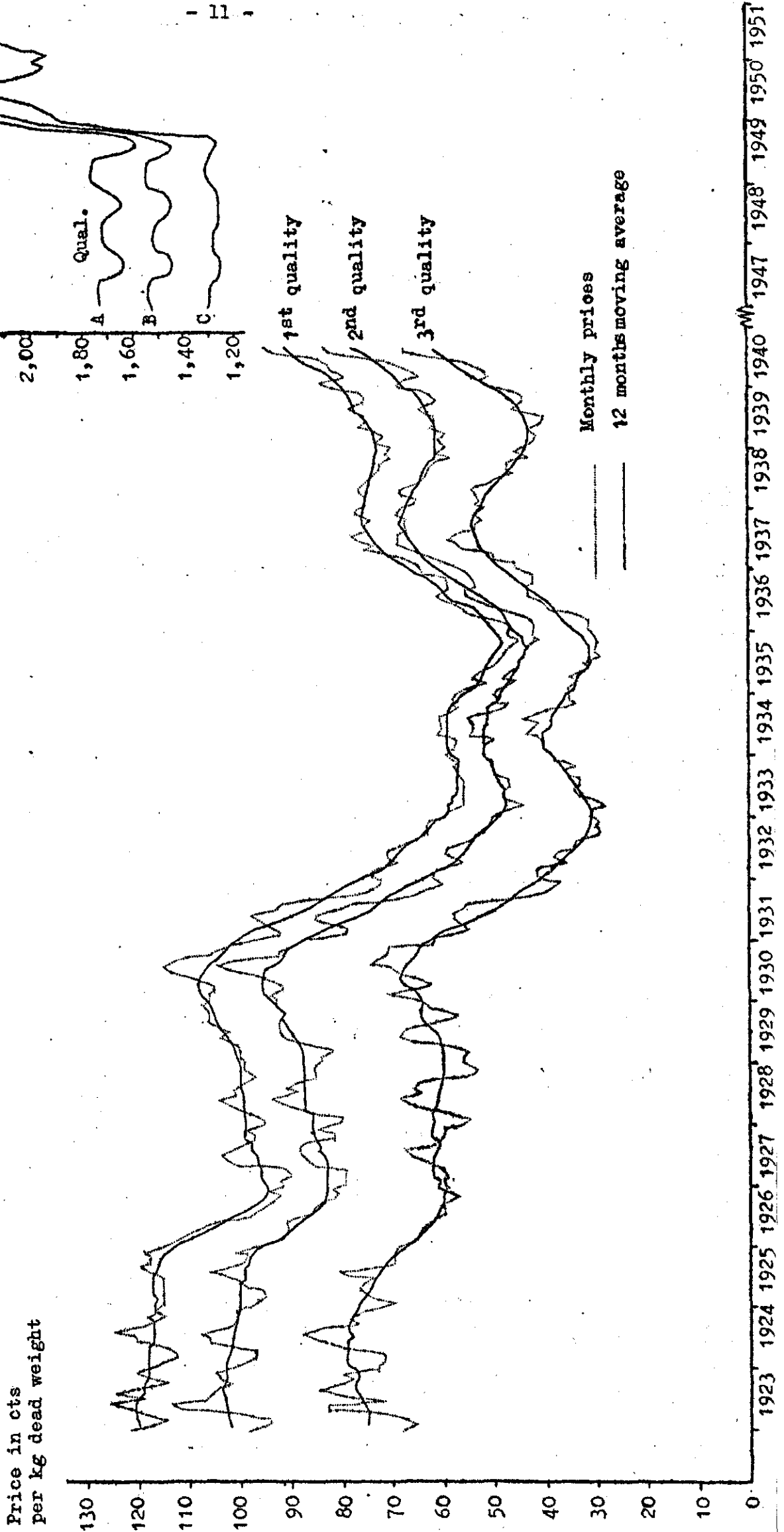
SEASONAL VARIATION IN THE PRICE OF YOUNG PIGS (MARKET AT GOUDA, 1923 T/M 1939)

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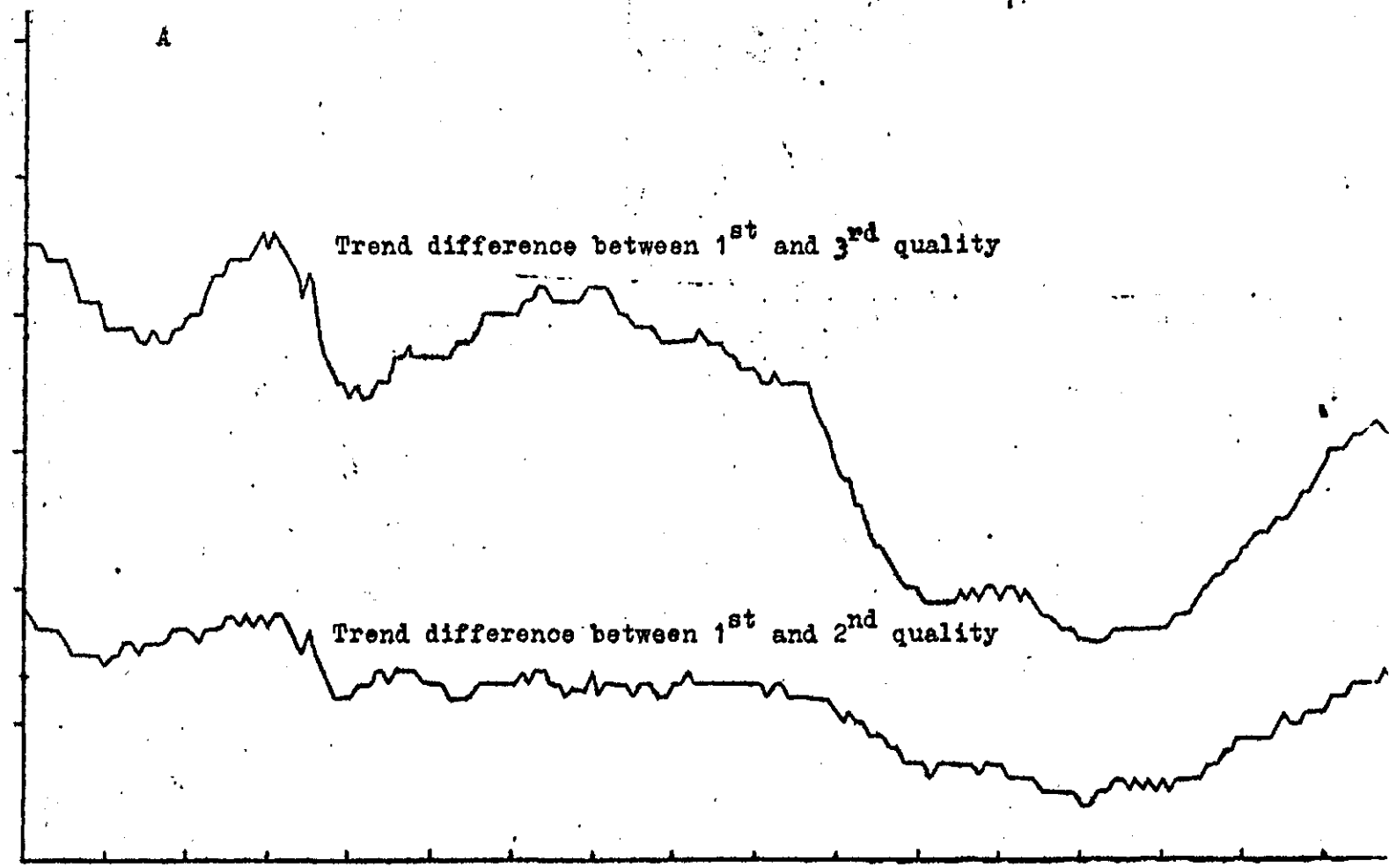
Graph 7

PRICES OF SLAUGHTER CATTLE AT THE MARKET OF ROTTERDAM

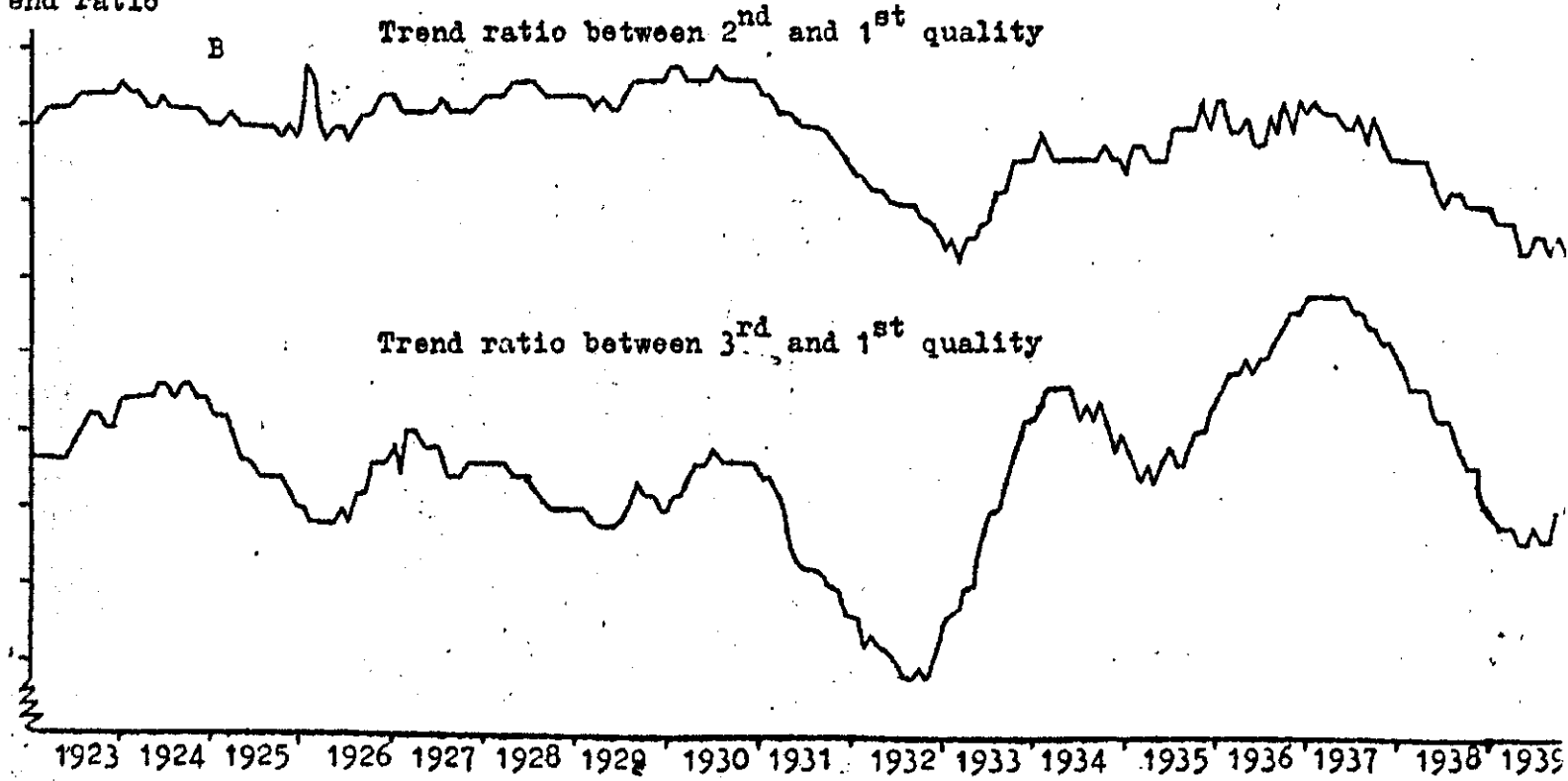


RELATIONSHIP BETWEEN TRENDLINES OF THE THREE QUALITIES OF SLAUGHTER CATTLE

end difference



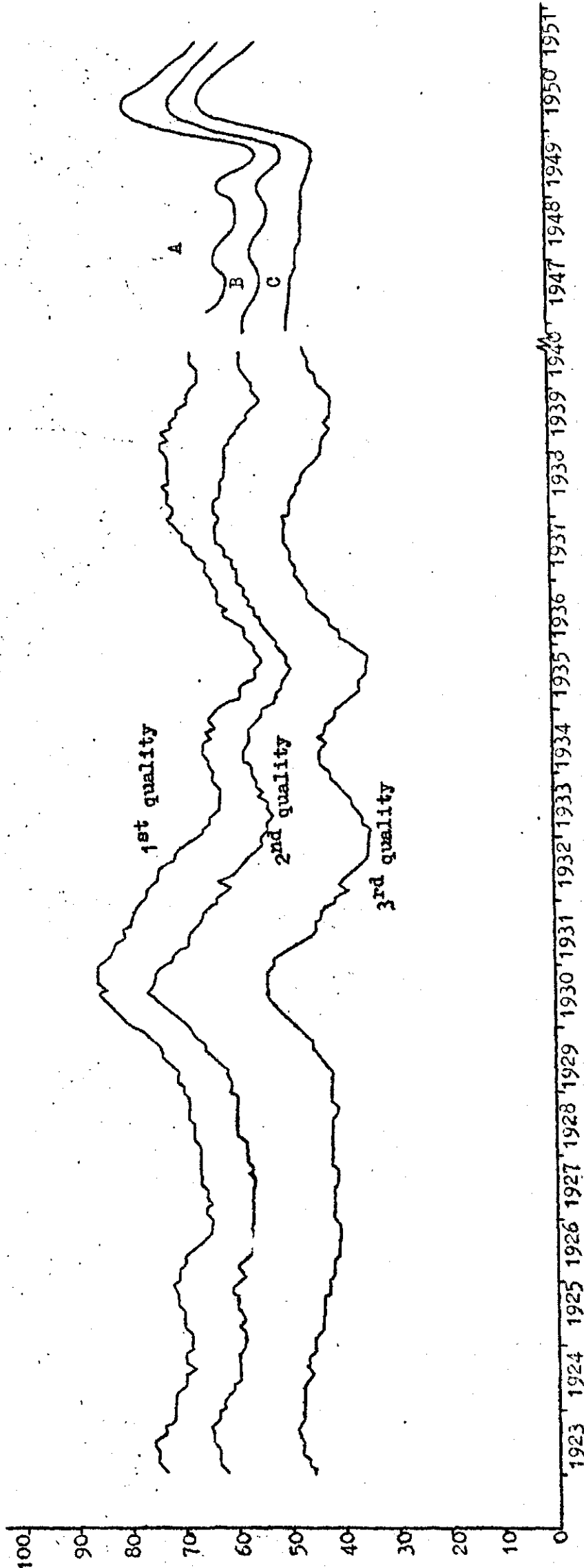
end ratio



CATTLE CYCLE

Graph 9

Real moving
average in cts



A

B

C

1st quality

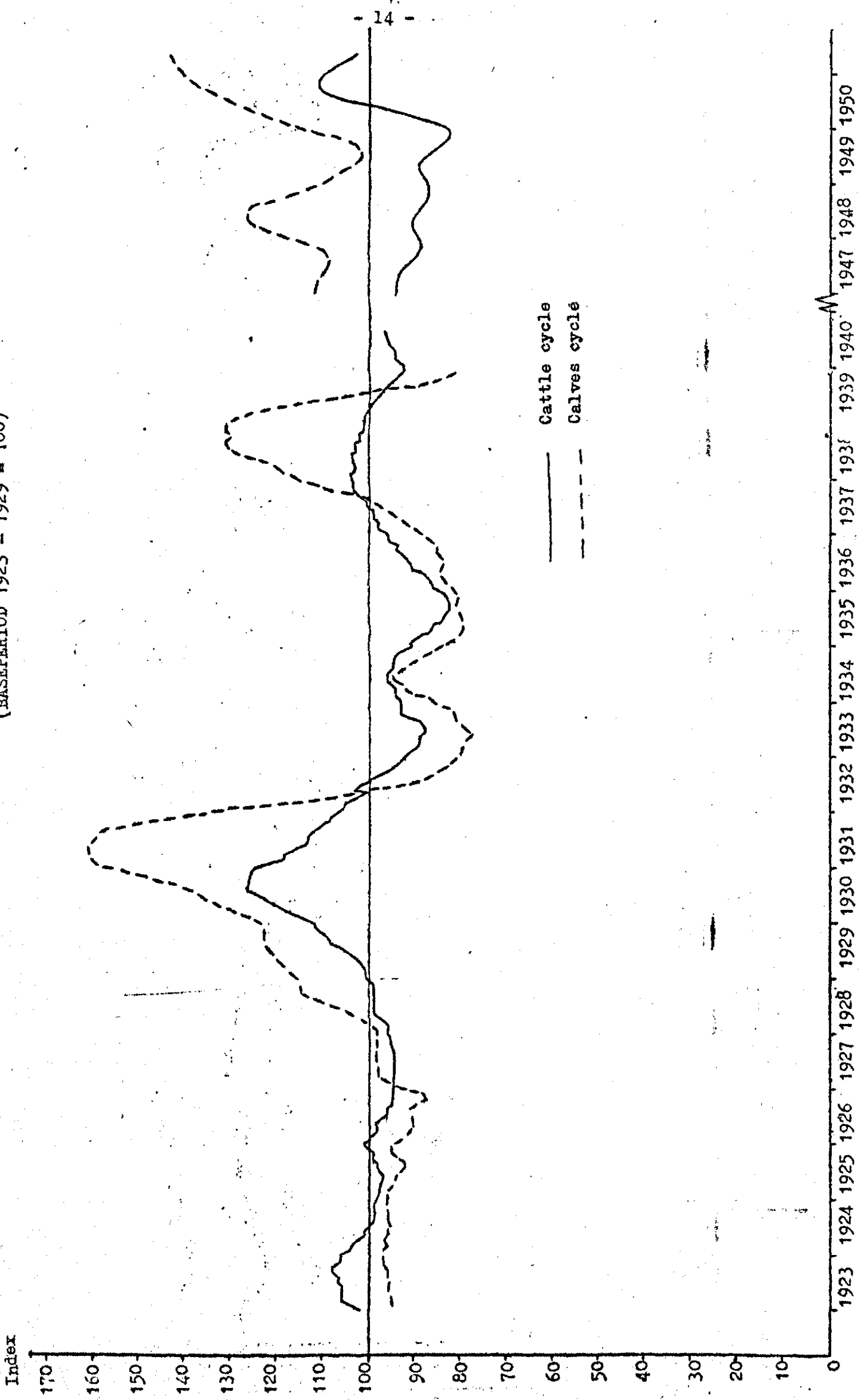
2nd quality

3rd quality

1923 1924 1925 1926 1927 1928 1929 1930 1931 1932 1933 1934 1935 1936 1937 1938 1939 1940 1941 1942 1943 1944 1945 1946 1947 1948 1949 1950 1951

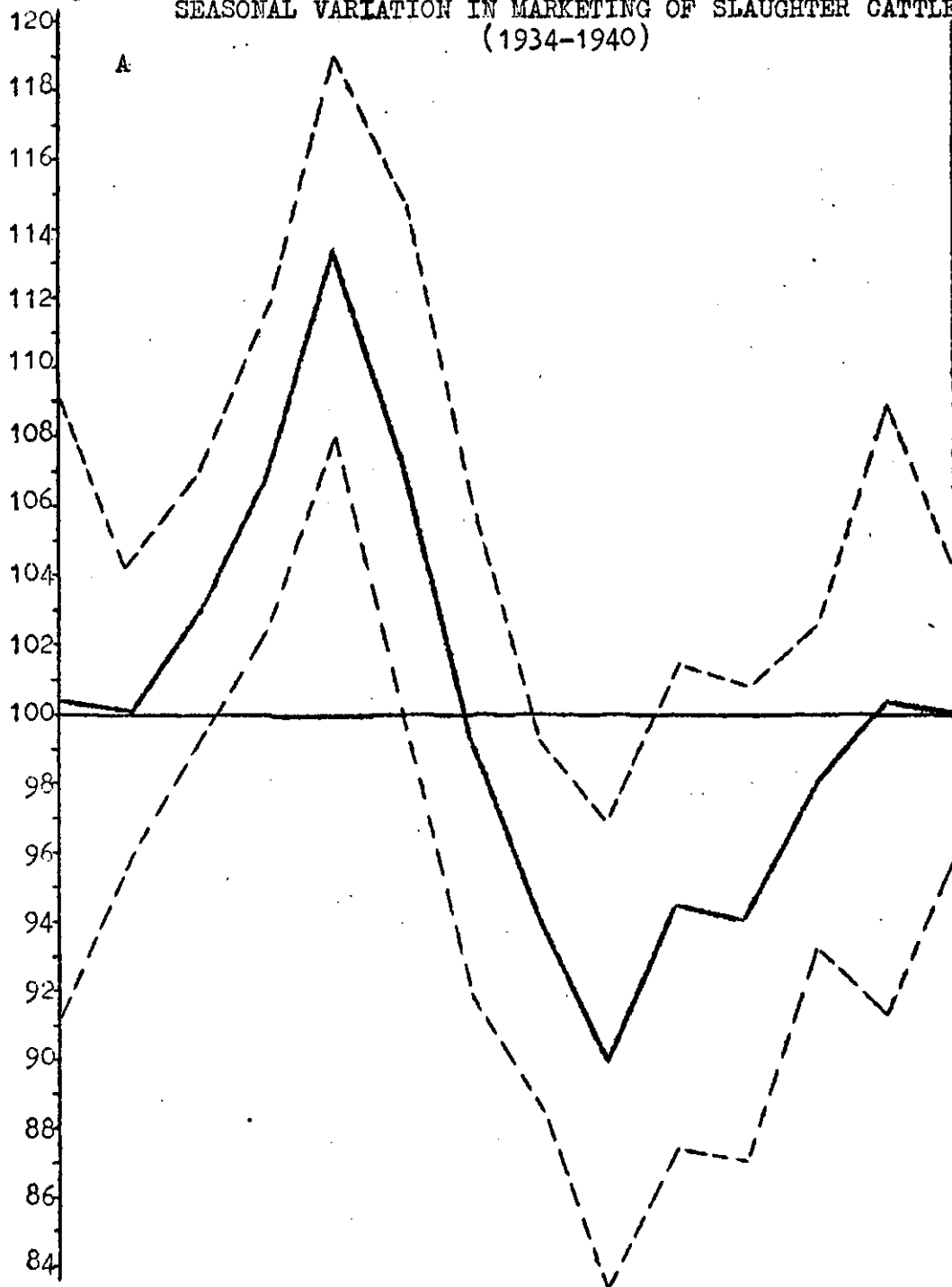
Graph. 10

CYCLES (ON INDEX-BASE) OF CATTLE 2nd QUALITY AND CALVES 2nd QUALITY
(BASEPERIOD 1923 - 1929 = 100)

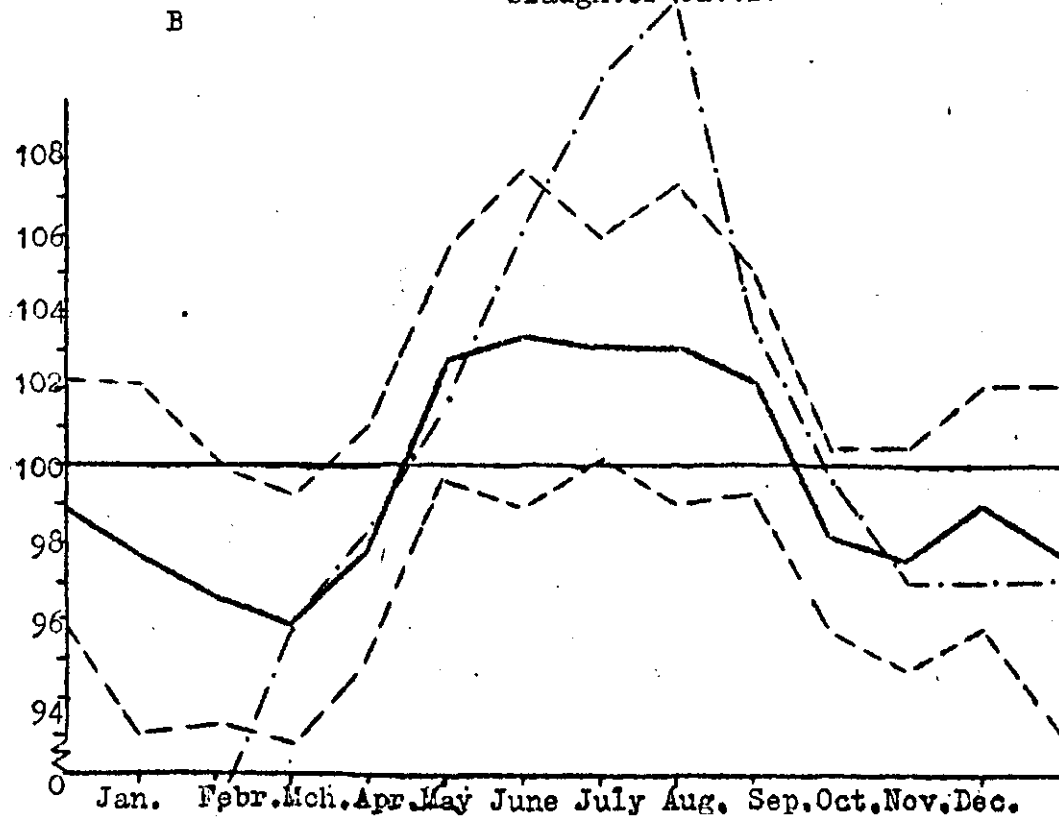


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SEASONAL VARIATION IN MARKETING OF SLAUGHTER CATTLE (1934-1940)



Seasonal variation in the price of 2nd quality of slaughter cattle



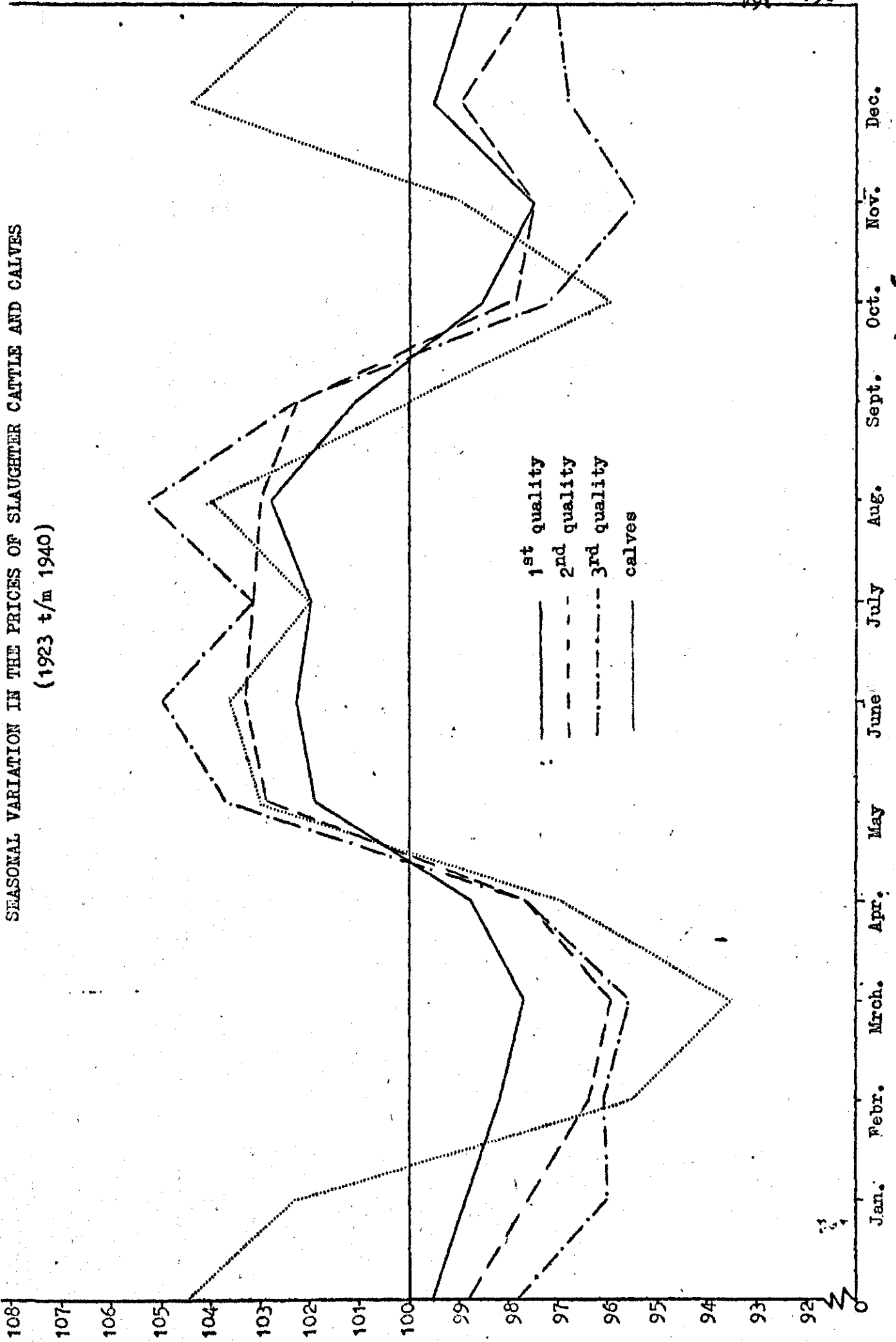
— Seasonal pattern
- - - Price index in 1950
(monthly average = 10)

364 364

SEASONAL VARIATION IN THE PRICES OF SLAUGHTER CATTLE AND CALVES
(1923 t/m 1940)

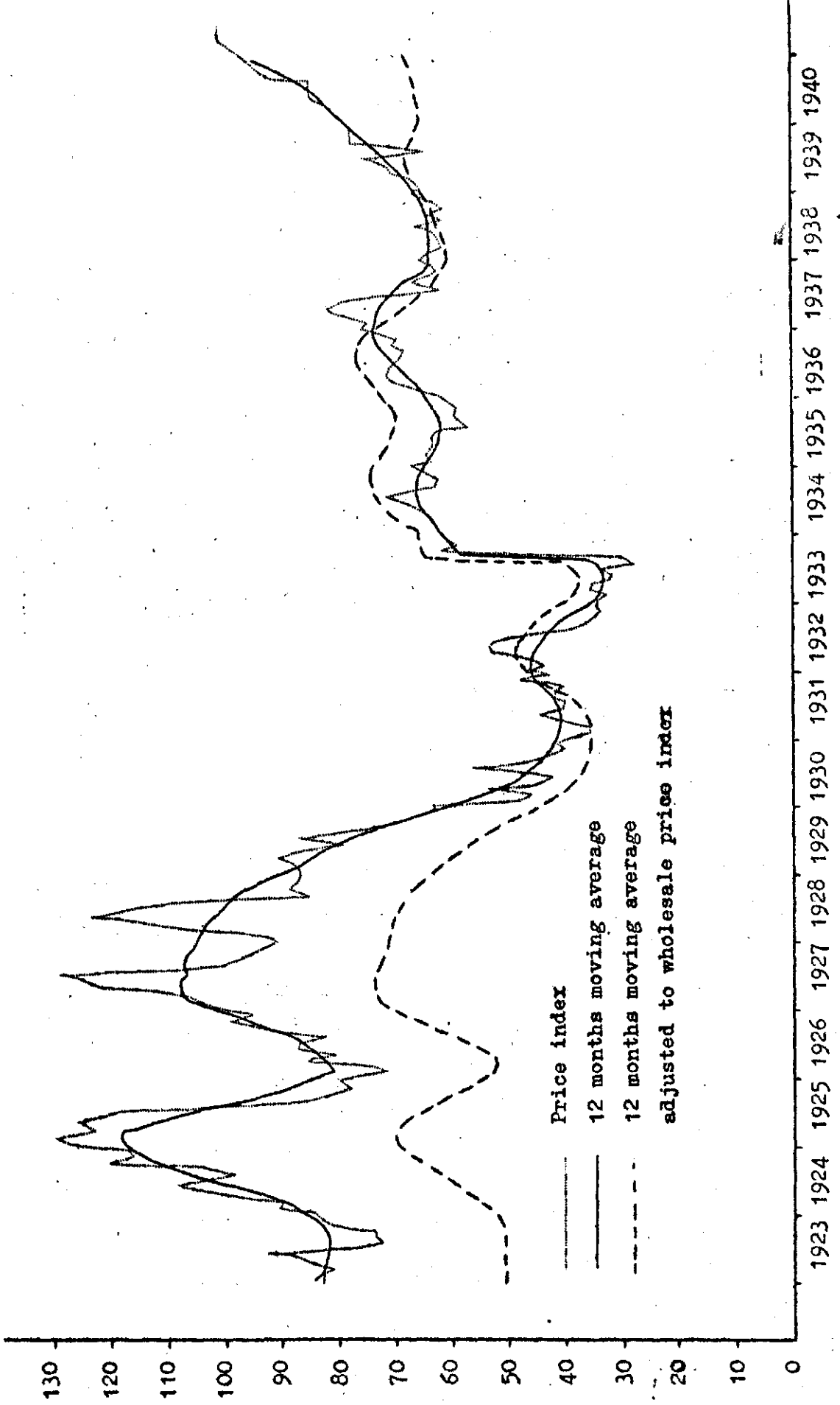
Graph 12

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PRICE INDEX OF RYE (1923 t/m 1940)

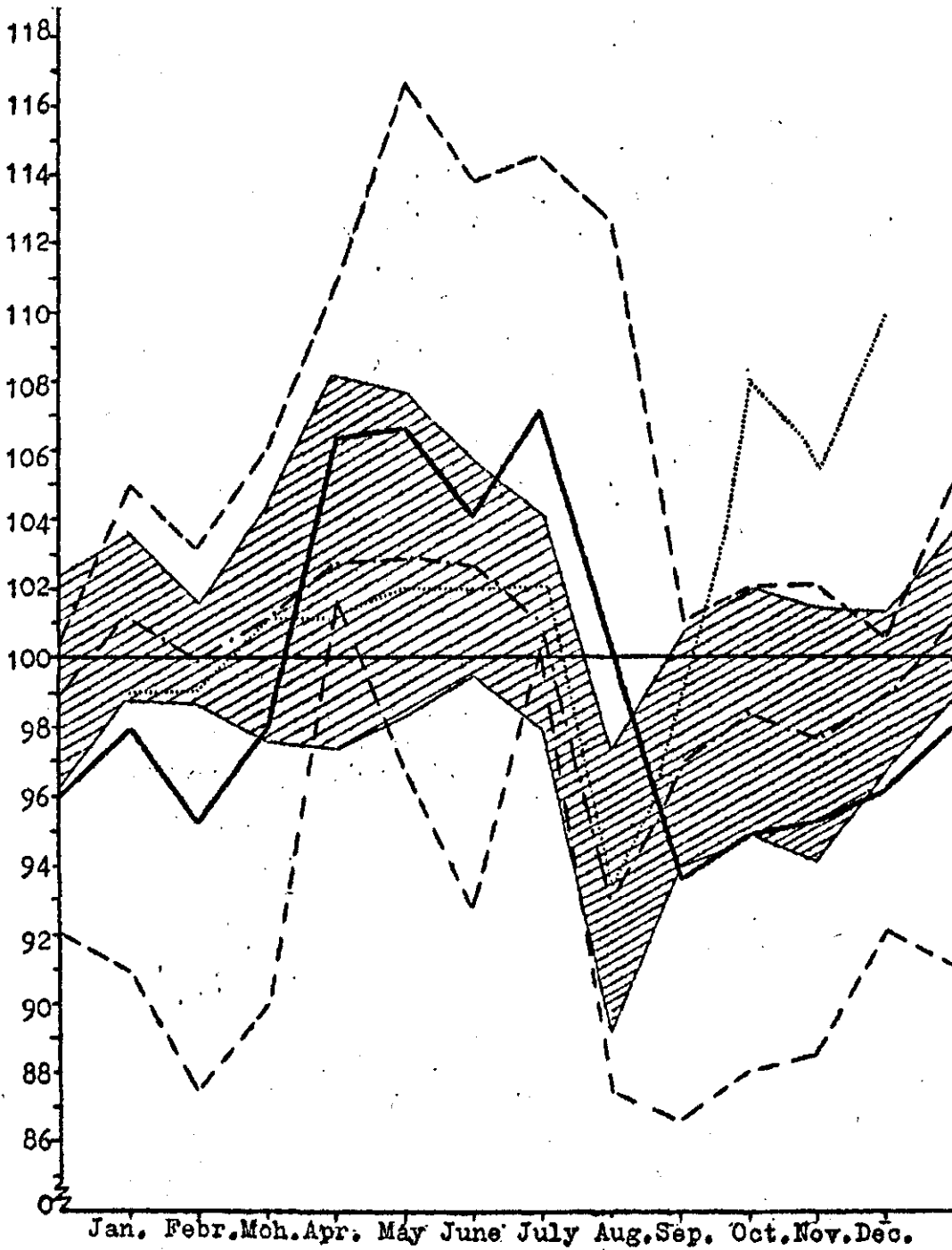
Graph 13



Graph 14

SEASONAL VARIATION IN THE PRICE OF RYE
1923 T/M 1940

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- Seasonal pattern 1923 t/m 1934
- - - " " 1935 t/m 1940
- 1949
- - - Zone of irregularity 1923 t/m 1934
- ▨ " " " 1935 t/m 1940