

PORTUGUESE CATCHES OF ATLANTIC COD (*GADUS MORHUA*) IN CANADA FOR THE PERIOD 1896-1969: A COMPARISON WITH NAFO DATA

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ABSTRACT

From 1896 to 1934, Atlantic cod (*Gadus morhua*) landings from the Portuguese fishery in Canadian waters were relatively low. However, they increased gradually, and were closely related to the number of boats ('lineships') in the fishery. This fishery was highly selective for larger-sized cod, which resulted in few discards. After 1936, trawlers appeared in the fishery, and became increasingly used until they finally outnumbered the lineships in 1969. As a result, both the catch and value of the cod fishery increased dramatically during this period. The cod catch data fit very closely with NAFO data after they are converted from dried salted weight to wet weight caught. Discards and non-reported catches were likely minimal as a result of Portuguese fishery policy measures, which are discussed.

INTRODUCTION

The historical Portuguese cod fishery was concentrated on several well-known banks south and south-east of Newfoundland (including the Flemish Cap), west of Greenland, east of

Labrador and to a lesser extent off Nova Scotia (Boavida, 1950; Monteiro and Lima Dias, 1969; DGPA, 2000). Here, we describe the fishery for the period 1896 to 1969.

THE YEARS 1896 TO 1934

The data were compiled from the annual statistical publications entitled *Estatística das Pescas Marítimas. Comissão Central de Pescarias: Ministério da Marinha* as:

1. Yearly summaries by ship; and
2. Global statistics of the Portuguese cod fishery in the Northwest Atlantic.

Considerable effort was applied to correct the apparent discrepancies between the two data sets within the same publication, such as missing or mismatch of ship name, GRT, or port of registry. Cod landings and value were not modified, but variables found in the report such as 'Ship-value', 'Gear', and 'Gear-value' (Table 1) were modified, as these data did not appear to have been collected very consistently and are thus of limited use.

Table 1. Information available in the *Estatística das Pescas Marítimas*, official source of information for Portuguese fisheries in Canadian waters during the 20th century.

Variable	Unit	Comment
Year	-	-
Fish. area	-	Fishing area – Newfoundland (Terra Nova), Greenland or both (TNG)
Start	month	Start of fishing trip
Finish	month	End of fishing trip
Port	-	Port of register
Name	-	Name of ship
GRT	-	Gross Registered Tonnage
Crew	number	Number of crew
Boats	number	Number of boats (dories)
Ship-value	escudos	Value in 'Escudos' from 1912 on. Before 1912 in 'Reis'
Gear	number	Number of lines
Gear-type	-	-
Gear-value	escudos	Value in 'Escudos' from 1912 on. Before 1912 in 'Reis'
Cod landings	kg	-
Cod-value	escudos	Value in 'Escudos' from 1912 on. Before 1912 in 'Reis'
Cod-oil	kg	-
Cod-oil-value	escudos	Value in 'Escudos' from 1912 on. Before 1912 in 'Reis'

The revised catch data by ship cover the years 1896 to 1934. After revision, it appears that there is good overall consistency between the two data sets (Figure 1). The trend in landings during this period appears to be closely related to that of the number of boats in the fishery.

THE YEARS 1934 TO 1969

For the period 1934 to 1969, the yearly summaries by ship were not available, which coincides with the establishment of the Cod

Regulatory Commission in 1934 (Comissão Reguladora do Comércio de Bacalhau, CRCB) (Garrido, 1997a, b, 1999). A comparison of data from different sources, including yearly official statistics and data given in Garrido (1997a, referring to the bulletins of the CRCB and the 'Instituto Nacional de Estatística'), yielded good overall consistency. The catch and value of the cod fishery increased considerably after 1936 (Figure 2) as a result of trawlers appearing in the Portuguese fishery in Canadian waters (Figure 3). They remained high, though decreased slightly from 1966 to 1969.

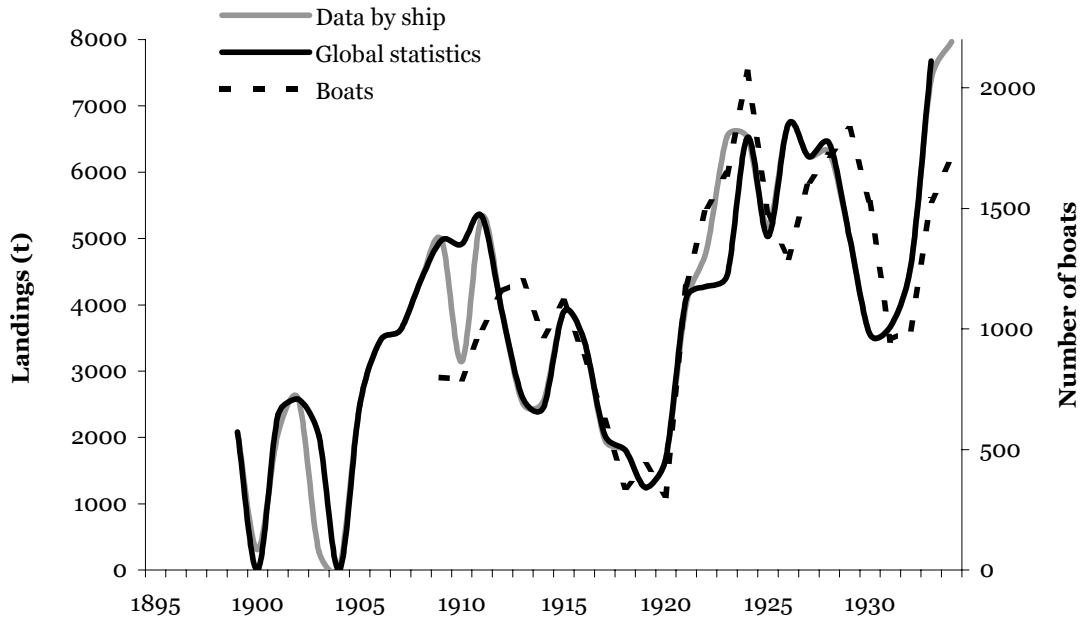


Figure 1. Comparison of Atlantic cod landings between 1899-1934 from two different data sets within 'Estatística das Pescas Marítimas', and number of boats in the fishery (as of 1909).

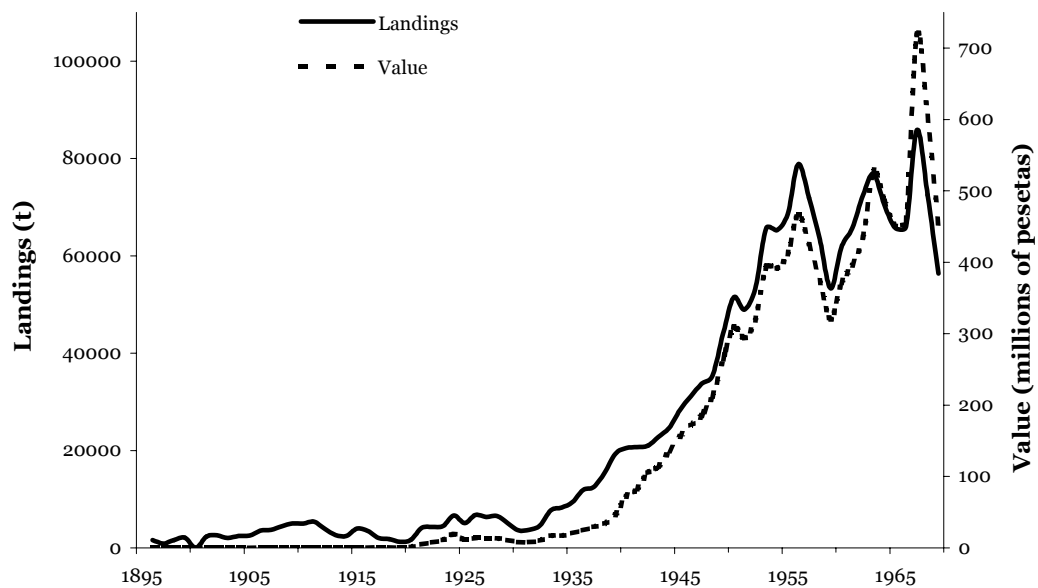


Figure 2. Atlantic cod landings and value of the Portuguese cod fishery from 1899 to 1969.

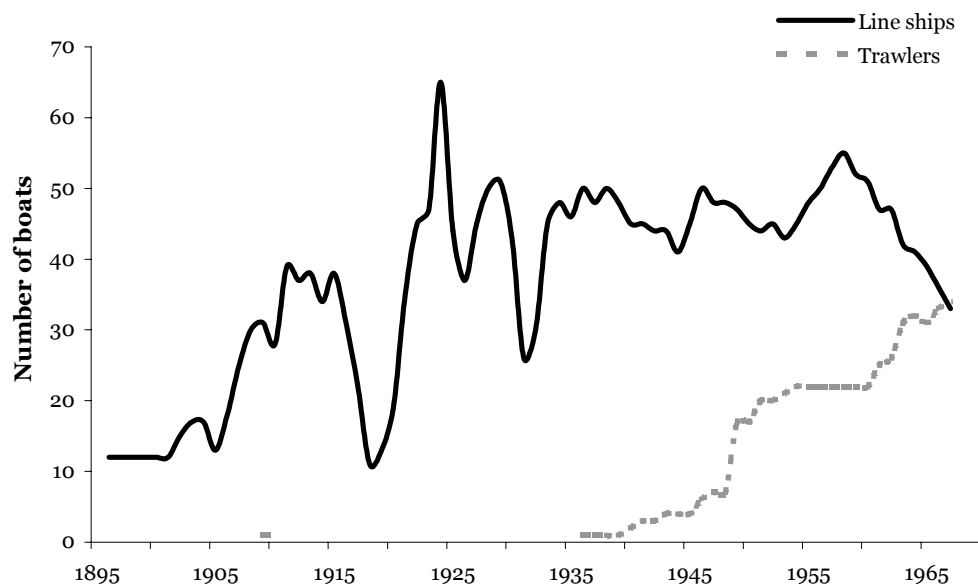


Figure 3. Effort deployed by Portuguese fleets fishing Atlantic cod in Canadian waters, 1896-1967.

COMPARISON WITH NAFO DATA

A proper comparison between Portuguese and NAFO data requires a conversion of the Portuguese data from dry-salted landings to wet weight caught. NAFO data are already reported as wet weight. The conversion factor of 1 kg landed cod to 2.5 kg real catch (wet weight) is based on the estimate for the year 1950 of PSYBE, S.A., a Spanish fishing company (Estatística de Pesca,

1950). This factor was chosen instead of conversion factors from other companies because it is closer to the conversion factor of 3.8 from Hutchings and Myers (1995). It was applied to all years until 1952. For subsequent years, a conversion factor of 1:3 quoted in the Spanish Fishery Yearbooks was used (Estatística de Pesca, 1953-1969). After conversion, the Portuguese cod data fit very well with the NAFO cod data, which are taken from all NAFO areas (Figure 4).

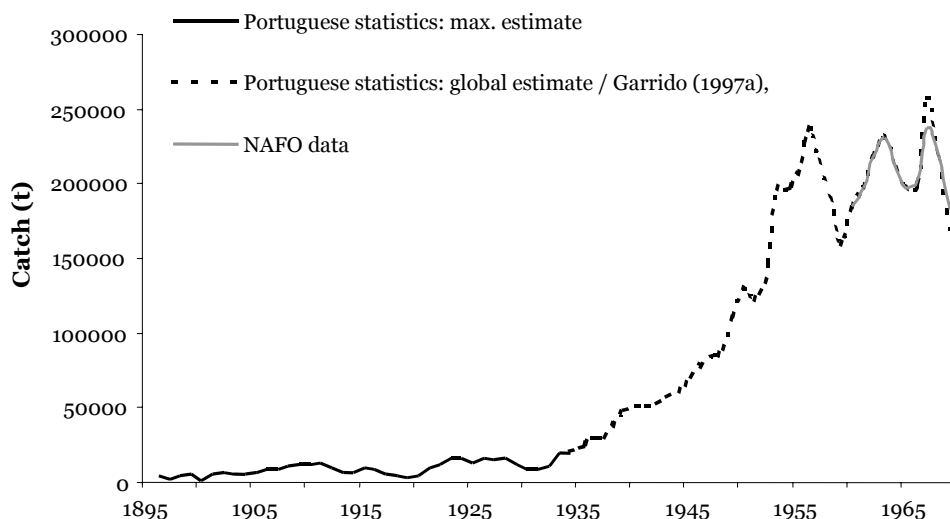


Figure 4. Comparison of data sources for Atlantic cod catches of the Portuguese cod fishery in Canadian waters, 1896-1986. The Portuguese catch statistics were obtained by converting the dried and salted cod landings into wet weight.

DISCARDS AND UNREPORTED CATCHES

There are no direct data sources regarding discards and unreported catches in the cod fishery, but we assume discards were minimal until 1967, which is the year that the market was liberalized (Garrido, 1997b, 1999). Originally, and exclusively until 1936, the fishery consisted of 'lineships', which did not start to decrease in number until 1957 (Figure 3). This fishery is characterized by line fishing from dories, and was selective for larger cod. Thus, discards are considered minimal until 1936. During this period, the fishery developed in both catch and effort, except for an interruption during WW I (Figures 1 and 3).

Starting from 1957, the total catches appear to have reached a maximum, and then fluctuated around 70,000 tonnes, even though trawlers became more dominant in the fishery. This was caused by competition with other fleets, decreasing catch rates, and problems related to the economic profitability of the fishery. This has contributed to the increase in discarding and under-reporting as a result of competition and market prices.

Considering the fierce competition between fleets, the importance of cod in the national economy, and the interest in protecting the cod sector, a number of policy measures were adopted in connection with the establishment of the CRCB in 1934. These included subsidies, fixed prices according to different categories of cod (e.g., larger than 2 kg, at least 800g, smaller than 300g, damaged fish larger than 300g, damaged fish smaller than 300g, etc.). Thus, the government was interested in securing a market for national production and sale of these products, before determining the amount of cod that could be imported to satisfy national demand. As part of this system, not only were the fishing operators obliged to report all catches, it was also in their best interest to do so (Silva, 1957; Garrido, 1999). Furthermore, there was a market for damaged fish, such as the fishmeal industry, which reduced the need to discard.

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