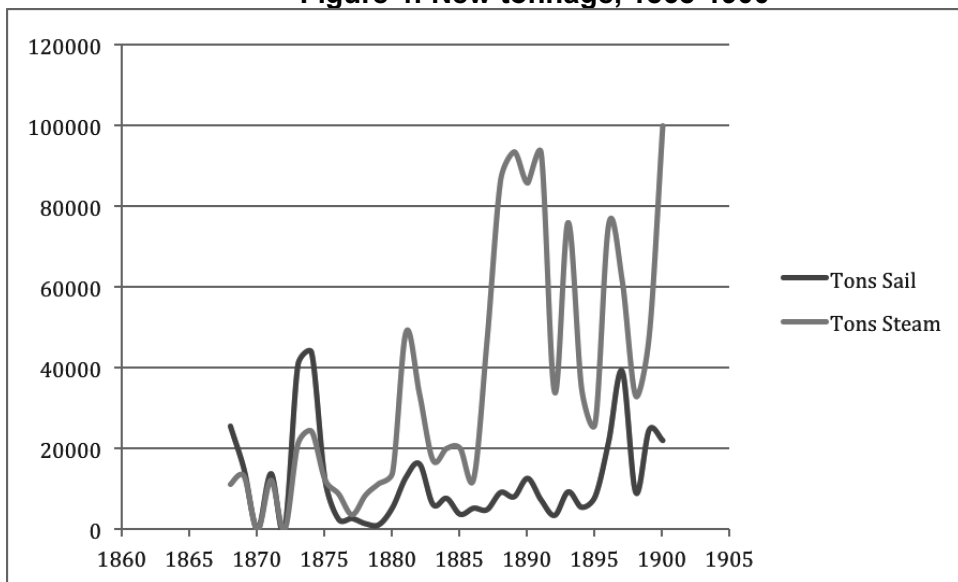


**Figure 4: New tonnage, 1868-1900**

**Source:** "Statement exhibiting the Number and Tonnage of Sailing Vessels, Steam Vessels, Barges &c", United States, Treasury Department, Foreign Commerce and Navigation, 1868-1884; Bureau of Navigation, Annual Report, 1885-1900. [title of table varies slightly over period]

If one accepts as the general purpose of tonnage the measurement of the volume of enclosed spaces (gross tonnage), or simply those spaces used for the purpose of earning revenue (register tonnage), it is an unfortunate fact that the raw data for American steam tonnage is seriously flawed. There are issues with both the changing rules for measurement and how the American rules align with those of other fleets.

In broad terms, American customs houses used only two rules for the measurement of tonnage in the nineteenth century. The first was enacted in the first session of Congress in 1789, and was generally based on Builders Old Measurement as the British rules became known. The formula for single decked vessels of the class prevalent on the Great Lakes was simple:

$$(((\text{Length} - (3/5 \text{ breadth}))) \times \text{breadth} \times \text{depth}) / 95^{20}$$

In the United States this rule was not tinkered with until 1864. In the meantime, Britain had passed new legislation in 1819 and 1835 allowing deductions for the space occupied by the steam engine and boilers. Unlike the American formula, measurements based on these

<sup>20</sup> United States, *Statutes at Large*, 1<sup>st</sup> Congress, Sess. 1, Chap. XI "An Act for Registering and Clearing Vessels, Regulating the Coasting Trade, and for other purposes", sec. 3, 1 September 1789. For vessels with more than one deck inside the hull, half the beam was substituted for depth.