

# The Economics of Peace and Security Journal

© www.epsjournal.org.uk, ISSN 1749-852X

## Book Review

**Peden, G.C. 2007. *Arms, Economics and British Strategy: From Dreadnoughts to Hydrogen Bombs*. Cambridge: Cambridge University Press. Series: Cambridge Military Histories. Xiii + 384 pp. ISBN: 978-0-521-86748-1 (hb). Price: £55.00.**

by Keith Hartley (25 September 2008)

This book makes an original contribution to knowledge by providing an interdisciplinary study of the interactions between technology, economics, and strategy. It addresses three major questions confronting all governments. First, how to compete in military technology; second, what proportion of national income to devote to defence; and third, how best to deploy the armed forces.

The starting point for this study of British defense policy from 1904 to 1969 is the continued tendency for the costs of new weapons to rise more rapidly than national income. For example, the cruiser *HMS Blake* completed in 1961 cost 0.067 percent of national income compared with *HMS Cornwall* completed in 1904 at a cost of 0.046 percent of national income. On this basis, if the Navy had been equipped with cruisers and had received the same share of national income in both years, then it could have afforded only two-thirds as many ships in 1961 as in 1904. Similarly, the first Dreadnought battleships cost about 0.1 percent of national income compared with a 1940s aircraft carrier and its aircraft at a cost of more than twice that percentage. In 1951, it was estimated that to manufacture the *Hunter* jet fighter required 8,000 machine hours compared with 1,100 machine hours to make the pre-war *Hurricane* fighter. There were three possible responses to rising equipment costs: first, reductions in the size of the armed forces; second, obsolescent equipment could be made to last longer; and third, the defense share of national income could be increased. Elements of all three responses have dominated U.K. defense policy since 1900.

The book has chapters on the Dreadnought era (1904-1914); World War I; the retrenchment and rearmament period 1919-1939; World War II; and the impacts of the atomic and hydrogen bombs, the Cold War, and decolonisation. Each chapter is interesting, informative, and insightful. The first chapter on the Dreadnought era concludes that by 1914, "... there is no evidence of general technological backwardness on the part of the arms industry or of conservatism in the Admiralty and the War Office towards weapons procurement. On the contrary, the navy was highly innovative as regards capital ships and submarines and the army was up-to-date in quick-firing artillery" (p. 48).

The costs to Britain of the long war of 1914-18 were the loss of export markets, the weakening of its financial power through the sale of overseas assets and the accumulation of debts and the end of its large balance of payments surpluses of the pre-1914 period. Victory in 1918 "... came at the price of a permanent weakening of British power" (p. 97).

The inter-war years were initially characterized by reductions in Britain's armed forces (1919-1932) reflecting economic problems and the absence of a threat to national security. This was the period of the "Ten Year Rule" when it was assumed that the British Empire would not be engaged in any great war and that no expeditionary force would be needed. The period 1932

to 1939 was different, reflecting a rising international threat with defense receiving political priority. But, after a period of stability from the mid-1920s to the mid-1930s, equipment costs resumed their upward trend. Light bombers such as the *Hart* and *Hind* were replaced by larger aircraft such as the *Battle* and *Blenheim* in 1937 with unit costs rising by some three times; similarly, the four-engined bombers such as the *Halifax* which were ordered in 1939 were estimated to cost 40 percent more than the current twin-engined heavy bombers. For much of this period, the Treasury exercised strong influence as long as ministers were more concerned with economic risks rather than military ones: the Treasury viewed economic stability as the fourth arm of defense. One key example of Treasury influence on defense policy was the decision to favor fighter aircraft rather than bombers on cost grounds: one heavy bomber cost four fighter aircraft. But by February 1939, the situation had changed and military strategy was determining economic policy rather than the other way around.

The chapter on WWII concludes that “The price of Churchill’s policy of victory at any cost was a weakening of British power ... and consequent dependence upon the United States” (p. 199). This conclusion fails to consider the counter-factual: for example, what would have been the price of defeat? The chapter recognizes the use of economists in war departments but provides no details nor evaluation of their contribution. There are also interesting references to the use of excess profits taxes on industry. The Treasury was aware of the disincentive effects of an excess profits tax of 100 percent but initially the rate was 100 percent! There was a culture of cost-plus contracts which was not a “good basis” for increasing productivity and which made firms less competitive in peace-time. At the end of WWII “... the overall impression was one of a formidable military-scientific-industrial complex” (p. 227). But events showed that “... Britain could not stand alone in a great war, militarily, economically or in the scientific-industrial effort to maintain a full range of weapons systems which, by July 1945, included the atomic bomb” (p. 228). In fact, this has been the theme of U.K. defense policy since 1945: budget constraints, the need to make difficult defense choices, and the reluctance of governments to do so.

The period of the atomic bomb and the Cold War 1945-54 was dominated by the costs of defense. Such costs were reflected in demands on the metal-using industries; the major nuclear R&D programs with a limited supply of scientific and technical manpower; conscription contributing to labor shortages; and weak sterling and labor shortages making it difficult to compete in export markets. This was the background to changes in U.K. defense policy over the period 1954 to 1969: the era of the hydrogen bomb, decolonization, and recurring economic problems.

The 1957 Defence White Paper reflected both nuclear and economic arguments. Britain’s military power was dependent on the “health of the economy.” Conscription was abolished and the share of defense in national output was to be reduced, so releasing labor and resources for exports. Interestingly, in 1956, Macmillan as Chancellor of the Exchequer argued for the abolition of Fighter Command on the basis that it could not provide effective air defense against the Soviet threat and had no part to play in other types of war. Subsequently, manned fighter aircraft were retained and the current generation are expected to be the last manned combat aircraft (i.e., Typhoon; F-35). The author returns to his theme of rising costs. “Paul Kennedy is correct in identifying relative economic decline as one important reason for loss of military power, but no conceivable rate of economic growth could have matched the 180 per cent rise in the estimated cost of developing TSR-2 between 1960 and 1964 ” (p. 343).

Again, the book’s conclusion on the role of economics in U.K. defense policy is relevant to the current situation. The tendency for weapons costs to rise faster than national income means

that "... defence policy could not be left to the defence departments alone" (p. 347). Since 1900, Treasury efforts to curb the demands of the armed forces "... were motivated by an understanding that too much defence expenditure would undermine Britain's economic strength" (p. 348).

This is an excellent book which should be recommended reading for defense and peace economists. Its recurring theme is the opportunity costs of defense both within defense budgets and between defense and civil spending.

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