

Tobin, James



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James Tobin (</people/social-sciences-and-law/economics-biographies/james-tobin>), winner of the 1981 Nobel Memorial Prize in Economics, was among the leaders of postwar economics, with several significant contributions that now bear his name. Tobin was born in 1918 in Champaign, [Illinois](/places/united-states-and-canada/us-political-geography/illinois) (</places/united-states-and-canada/us-political-geography/illinois>). Educated in economics at Harvard, he earned an AB in 1939, an AM in 1940, and, after a wartime role as a naval officer, a PhD in 1947. After three more years at Harvard, he departed for Yale's economics department, where he spent the rest of his career save academic leaves and eighteen months in Washington as a member of Kennedy's council of economic advisers. He remained an active member of the profession until his death in 2002.

Much of Tobin's fame is due to his contributions to monetary economics and finance. As of the early 1950s, theorists had identified two main motivations for economic agents to hold cash: a *transactions demand* from consumers, and an *investment demand* based on portfolio considerations. While these two forces had been identified, there were no careful models to justify these demands by utility-maximizing agents. Thus, monetary theory lacked an answer to its most basic question: Why should anyone hold cash at all? In two pathbreaking papers, Tobin built models for each source of demand.

In a 1956 paper Tobin showed how to quantify the transactions demand. Starting with two simple forces—the transactions cost of making cash withdrawals and the opportunity cost of forgone interest—the model shows how the transactions demand is affected by interest rates. All other things being equal, an increase in interest rates induces consumers to make smaller, more frequent with-drawals, which lowers their average cash balances and the aggregate demand for cash. In combination with related work by William Baumol, this approach became known as the *Baumol-Tobin model* and still serves as a benchmark model of transactions demand.

Two years later, Tobin published another foundational paper on monetary theory, this time focusing on the investment demand for cash. In Keynes's *General Theory*, the investment demand for cash was driven by investors' subjective and nonrandom expectations of future interest rates, with investors holding cash rather than bonds if they expected interest rates to rise by some critical amount. This theory was criticized by several prominent economists for inconsistency with other parts of Keynes's theory. Tobin (1958a) fixed this problem by introducing uncertainty into the portfolio problem, and then solving for the optimal portfolio of cash and bonds for an investor that cares only about the mean and variance of his portfolio returns. This "mean-variance" approach echoed the work of Harry Markowitz (1952) on portfolio optimization, with Tobin notably providing an important linkage between the financial decisions of individual investors and macroeconomic implications for money demand. Markowitz and Tobin shared their [Nobel Prize \(/science-and-technology/physics/science-general/nobel-prize\)](#) in large part for this work, which provided the key building blocks for the foundational model of modern financial theory, the Capital-Asset-Pricing Model of William Sharpe (1964) and John Lintner (1965).

Tobin continued to build on the portfolio approach of the 1958 paper by adding more assets and increasingly complex economic environments for the portfolio-choice decision. This model-building continued for the remainder of his career. In two papers published in 1968 and 1969 (the first with William Brainard), investment in capital played a direct role in the portfolio decision. As a notational device, these papers used the letter q to represent the price of capital as normalized by its replacement cost. This appellation stuck, and *Tobin's q* is now so ubiquitous that many economists cannot name the original papers from whence it came. In its simplest interpretation, a q greater than 1 indicates that the market price of capital is greater than its replacement cost, and thus rational investors would choose to build new capital rather than buy existing assets. When q is less than 1, investors would prefer the opposite. The large amount of information packed into this simple ratio has enabled an enormous and still-growing literature in macroeconomics and finance, all with Tobin's q as the key valuation measure.

Early in his career, Tobin focused his research on the consumption component of macroeconomic demand. As in his work on monetary economics, Tobin attempted to build more rigorous microfoundations for Keynesian models, and in this attempt he ran into a stubborn econometric problem: For large expenditures on consumer durables such as cars, most consumers have spending of zero in most years. In these cases, ordinary-least-squares (OLS) regression will give biased results. Tobin posited that such estimations require a combination of probit analysis with OLS, and in a paper for *Econometrica* (1958b) he derived an analytical solution for such a combination. Through wordplay based on various literary antecedents, this procedure, which remains a popular tool in econometric analysis, became known as the *Tobit* regression.

In addition to making numerous contributions to economics research, Tobin also maintained an active presence in policy debates. Following his service in Washington in the early 1960s, he generated a stream of policy proposals throughout the rest of his life. The most famous of these proposals, the so-called *Tobin tax*, achieved a life of its own in the twenty-first century over the objections of its originator. Tobin taxes—small taxes on financial transactions—were proposed by Tobin as a possible mechanism for reducing speculation and volatility in foreign-exchange markets. While this proposal never garnered much empirical support and was never an important plank in Tobin’s policy platform, his academic reputation made his name a valuable asset for antiglobalization activists, who saw Tobin taxes as a way to reduce international trade. In the last years of his life, Tobin actively distanced himself from this interpretation of his proposal and affirmed his lifelong support for [free trade](/social-sciences-and-law/economics-business-and-labor/economics-terms-and-concepts/free-trade).

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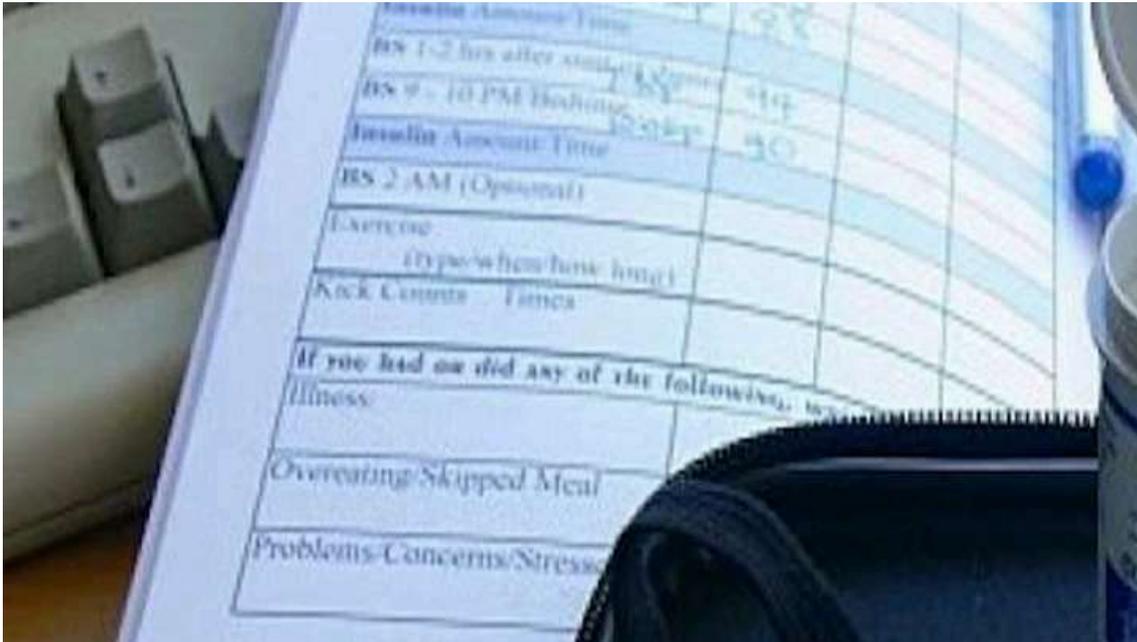
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