

# Human Capital: The Missing Piece of Your Portfolio

## UNDERSTANDING HUMAN CAPITAL AND HOW TO PROTECT IT<sup>2</sup>

What do you include when asked to determine the value of your total economic wealth? If you are like most savvy investors, you probably turn to a balance sheet of financial assets such as stocks, bonds, mutual funds, real estate holdings and retirement savings accounts to calculate your financial net worth. This traditional definition of wealth, however, is incomplete. It overlooks what may be your largest asset – your “human capital.”

## TOTAL ECONOMIC WEALTH

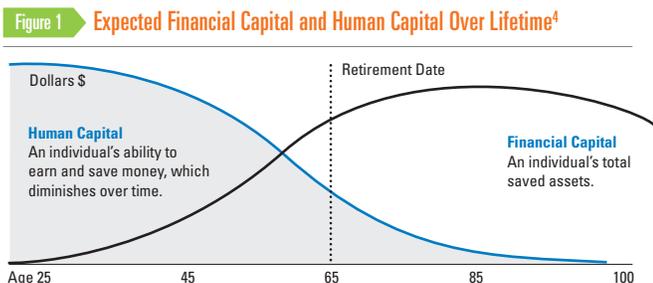
An investor’s true total economic wealth consists of two components. The first is made up of tradable financial assets such as stocks and bonds known as financial capital; the second is comprised of human capital.

Human capital is defined here as the present value of expected future labor income.<sup>3</sup> It can also be thought of as your earning ability. Like other assets, your human capital has a certain risk and return profile. It can be risky and volatile (e.g., stockbroker), stable and low-risk (e.g., tenured professor), or somewhere in between.

Over the course of your lifetime, you convert human capital into financial capital by saving some of the wages you have earned and investing them in the financial markets. When you first start off in your career, you have a greater proportion of wealth in human capital because you have many more years to earn compared with fewer years of accumulated financial wealth. Later on, you will have more financial capital than human capital because you will have fewer prime earning years, but you will have already accumulated financial



capital over a long career. Figure 1 illustrates the pattern of financial capital and human capital over an investor’s lifetime.



Given the magnitude of human capital, especially in early accumulation years, recognizing its addition on a personal financial balance sheet dramatically broadens how investors analyze financial activities.

Academics have increasingly pointed out the importance of including human capital and its volatility in asset allocation decisions from the perspective of personal risk management. This is because the risk profile of your human capital directly impacts the risk of your total economic wealth.

Consequently, financial professionals are beginning to recognize that the investment strategy of a tenured professor at a university should actually differ from that of a stockbroker working on Wall Street.

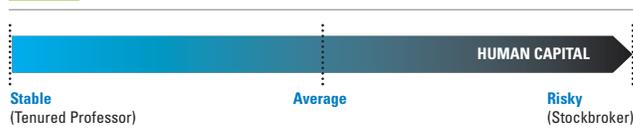
While your human capital is not something you can trade, it is a vital component of your wealth that must be diversified and protected. By considering your total economic wealth, and its trajectory, your financial professional can help you create an optimal investment strategy that changes according to the different stages of your life and career.

## HOW HUMAN CAPITAL AFFECTS YOUR PORTFOLIO

To help quantify how your job can fit into an investment strategy, Ibbotson Associates<sup>5</sup> suggests viewing your human capital as a type of financial security or a combination of stocks and bonds. It can be viewed as more stock-like if your income varies greatly from year to year or the volatility of labor income is high. Similarly, it can be viewed as more bond-like if your income is fairly constant or the volatility of labor income is low.

To be more precise, Ibbotson Associates maintains the average person’s human capital to have the risk profile of a portfolio that is allocated 70% to bonds and 30% to stocks. The human capital of a tenured university professor with a stable income may be more like a portfolio that is 80% bonds and 20% stocks. Someone working in financial services, whose salary and bonus depend largely on the stock market, might be 60% bonds and 40% stocks. Where your human capital falls on this risk continuum (See Figure 2) affects your financial capital asset allocation decision.

**Figure 2** Risk Continuum of Human Capital



Let’s look at three hypothetical investors; each is 45 years old and has a moderate risk tolerance which indicates that their target portfolio should consist of 54% Bonds and 46% Stocks.<sup>6</sup> Without considering their human capital, each investor’s recommended portfolio allocation would match their risk profile (54%Bonds and 46%Stocks). However, when we consider that Investor A’s human capital can be classified as “stable,” Investor B’s as “average,” and Investor C’s as “risky,” the recommended allocation of their financial capital will vary despite their similar investment risk tolerance as demonstrated in Figure 3.

**Figure 3** Human Capital Impacts Asset Allocation Decision<sup>7</sup>

	Human Capital Characteristics	Financial Capital*	Target Asset Allocation
<b>Investor A</b>	Stable	+	→
<b>Investor B</b>	Average	+	→
<b>Investor C</b>	Risky	+	→

\* Financial Capital allocation will vary for each investor in order to reach target asset allocation goals.  Bond  Stock

For people with less risky human capital, it may be appropriate to invest their financial assets more aggressively. Investor A’s human capital has the properties of a more conservative portfolio, and therefore should not allocate as much financial capital to safer investments, such as money market funds, as Investor C.

On the other hand, Investor C has human capital that is highly correlated with risky assets and should have a financial portfolio with a smaller allocation to stocks. All else being equal, Investor A (tenured professor) should invest more aggressively than Investor C (stockbroker) in order to maximize diversification benefits across their entire portfolio.

By incorporating human capital you can create less volatile, better balanced portfolios. Many former employees of Enron Corporation and WorldCom experienced extreme consequences by not accounting for this risk. Their financial assets were largely invested in their employers and thus, their labor income and their financial investments provided no diversification, and they were heavily affected by the companies’ collapses.

To effectively incorporate human capital into your asset allocation decision, you must determine where your human capital falls on the risk continuum and invest financial assets in such a way as to diversify and balance out the risk profile of your human capital.

In addition, because human capital is often your biggest asset, protecting it from potential risk must also be a critical part of your overall investment strategy.

### PROTECTING YOUR HUMAN CAPITAL

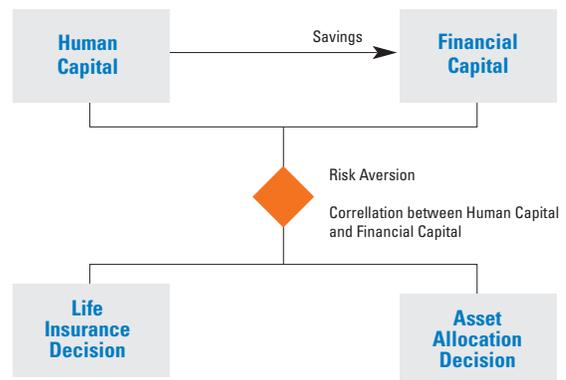
You probably make many decisions to protect the financial investments that you currently own. For instance, you diversify your portfolio and regularly adjust your asset allocations to meet financial needs. But many investors simply overlook the greatest risk to their total economic wealth – the mortality risk associated with their human capital. While your financial investments may be protected, the loss of your human capital can have a devastating effect on the financial well being of your family. Since you do not get paid for taking additional risk with human capital, it is essential to hedge against its potential loss.

Life insurance is uniquely suited to protect your beneficiaries against the potential loss of your future labor income due to premature death. Even if you already own life insurance, do you review your coverage regularly to make sure that you are sufficiently insured? And even more importantly, do you have enough to adequately cover the value of your human capital? Since human capital changes as you progress in your career, or switch careers, your life insurance needs will inevitably change as well.

Popular investment and financial advice about how much life insurance a person should carry is seldom framed in terms of human capital. Additionally, it tends to be a decision made separately from asset allocation decisions. Because human capital impacts both asset allocation and life insurance decisions, the two decisions should be made jointly.

Ibbotson Associates has developed a methodology, illustrated in Figure 4, which combines these decisions into an integrated model that 1) optimizes an investor’s financial portfolio allocation and 2) minimizes the risk exposure in terms of human capital by determining the appropriate amount of life insurance.<sup>8</sup> The model tailors the recommendation to the investor’s risk tolerance, legacy desires, and other factors.

Figure 4 Relationships Among Human Capital, Asset Allocation and Life Insurance



## THE IMPACT OF LIFE INSURANCE

Combining your asset allocation decision with your life insurance decision becomes critical when evaluating investment choices across various life stages. Consider the following case study; there are two scenarios, one in which an investor has no life insurance and another in which the investor has life insurance.

In the first scenario, Investor A's total economic wealth consists of \$1,500,000, with \$800,000 in human capital<sup>9</sup> and \$700,000 in financial capital. While alive, the riskiness of the investor's human capital plays a substantial role in his or her asset allocation, as human capital constitutes more than half of his or her total economic wealth. Since the investor does not have life insurance, his or her legacy amount (the financial assets available to surviving household members) is limited to only \$700,000.

### Scenario 1 Without Life Insurance

<b>Total Economic Wealth</b>	<b>\$1,500,000</b>	<b>Legacy Amount</b>	<b>\$700,000</b>
Human Capital	\$800,000	Human Capital	-
Financial Capital	\$700,000	Financial Capital	\$700,000

In the second scenario, Investor A also has total economic wealth of \$1,500,000, with \$800,000 in human capital and \$700,000 in financial capital. However, in this case, Investor A decides to allocate \$10,000 of his or her financial capital to purchase \$600,000 in life insurance for the given year.<sup>10</sup> Investor A's total economic wealth is marginally reduced to

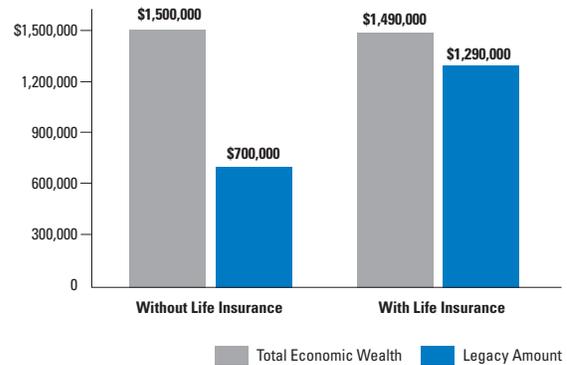
### Scenario 2 With Life Insurance

<b>Total Economic Wealth</b>	<b>\$1,490,000</b>	<b>Legacy Amount</b>	<b>\$1,290,000</b>
Human Capital	\$800,000	Human Capital	\$600,000
Financial Capital	\$690,000	Financial Capital	\$690,000

\$1,490,000, but he or she has increased his or her legacy amount significantly, from \$700,000 to \$1,290,000.

As you can see from Figure 5 below, adding life insurance to the portfolio enhances its total economic value on a mortality-weighted basis. The appropriate hedging of human capital is, therefore, integral to the optimization of total economic wealth. ■

Figure 5 Total Economic Wealth



<sup>1</sup> Source: Individual third-party rating reports (A.M. Best, March 11, 2008; Fitch Ratings, September 4, 2008; Moody's Investors Service, September 2008; Standard & Poor's, August 28, 2008). To view rationale for each of these ratings, please visit [www.NewYorkLife.com](http://www.NewYorkLife.com).

<sup>2</sup> This brochure is derived with permission from Lifetime Financial Advice: Human Capital, Asset Allocation, and Insurance, by Roger G. Ibbotson, Moshe A. Milevsky, Peng Chen, and Kevin X. Zhu.

<sup>3</sup> Ibbotson Associates defines the term "human capital" as the financial economic value of all future wages, which is a scalar quantity that depends on a number of subjective and market equilibrium factors.

<sup>4</sup> Ibbotson Associates, 2008.

<sup>5</sup> Ibbotson Associates, Inc. is a registered investment advisor and wholly owned subsidiary of Morningstar, Inc.

<sup>6</sup> For simplicity we are assuming only two asset classes: stocks and bonds.

<sup>7</sup> Ibbotson Associates, 2008.

<sup>8</sup> The target insurance recommendation is explicitly a minimum. Reasons other than human capital may drive the need for life insurance (e.g., business or estate planning).

<sup>9</sup> The calculation of human capital is based on a number of factors including age, mortality assumptions, and current labor income.

<sup>10</sup> \$10,000 premium payment is assumed to reoccur each year in order to keep the policy in force and is not indicative of any specific life insurance product. Bequest motive is assumed to be 75% of human capital calculation.