José M. Ventura, Ph. D. [*]

Diversified Investments, Market Returns and Low Transaction Costs: Which is the Best Combination of these Factors?

Abstract

The article presents a way to build a diversified portfolio at a cost lower than what most investment service firms and advisors can provide through active fund management. The investment strategy presented consists of selecting the Index that is appropriate for the investment aim and investing the portfolio based on the mix of different indexes that reflect the investor's goal.

Since index investing by definition does not select any other security than the one in the index and has to be purchased in the proportion reflected in the index, stock selection is straightforward and management fees are at a low level or even beat the minimum, if competition works.

Investment decisions and related retirement decisions are becoming more and more complex. One of the major issues is that everybody under the age of 50 (and many above that age too) will have to save significantly more now to secure financial independence well into retirement. The 1990 census shows that what is considered the baby boom generation (people born between 1945 and 1960), the largest proportion of the population, is now starting to enter the retirement period of their lives. Studies of the Social Security system show that by 2035 the present system will not provide a significant retirement income, due to the fact that the Social Security legislation is based on a pay-as-you-go basis, which means that the workers of today pay the retirement of the people in retirement. Therefore, a large proportion of retirees would have to live off a smaller proportion of workers.

Few readers will need to be convinced that the placement of the savings intended for investment and the future should, on one hand be diversified, but on the other hand include a significant portion of the savings placed in the stock market or the financial growth area. In essence, all that investors expect first and foremost from

[*] Catedrático Asociado del Departamento de Gerencia, Facultad de Administración de Empresas, Universidad de Puerto Rico, Recinto de Río Piedras.

any kind of the many financial alternatives is the preservation of the initial assets or investment.

Most of us have experienced some kind of inflation (low over the past few years in general, but higher in Puerto Rico: 1 to 2% in the U.S., 5.7% in Puerto Rico). Something that cost one dollar yesterday suddenly costs $1.05 and then $1.10 and so on. Thus, investing in fixed income, like Certificates of Deposit at the bank or U.S. Government bonds will not, in the long run, provide a satisfactory return on investment and even less retirement income, since such investments case purchasing power. This is not to say that they will always earn less than the prevailing rate of inflation, even if they have done so in the past (under President Carter in the early 1980's government bonds did have negative returns). Still, most people see the convenience of having part of their total assets in these kinds of investment vehicles, and we will suggest later on, that it should be about the equivalent of income needed for one year's retirement expenses or the basic needs of daily living (rent, food, utilities, car or travel expenses, etc.) for one year.

The bulk (or the remainder) of the assets should conceivably be invested in the stock market. Again, for safety or diversification purposes, not all eggs should be put in the same basket. According to the different diversification criteria, which are quite well established in the investment markets, investments are sub-divided into growth and value investments. But many more classifications are prevalent: large or small firms, cyclical and non-cyclical, very broad groups (and in this day and age they should be global), such as durable & non-durable goods which are not necessarily purchased in quantities reflecting the contraction or expansion of the business cycles. There are other well-known subdivisions of investments, like customary government classifications: automotive, construction, aviation, etc. All these sub-groups may be used, but to be practical this will depend on the size of the nest egg: your $1000 may not be well suited to invest directly in the finest subdivision of all industries. The transaction costs of buying a small number of shares would eat much of the savings, even at deep-discount brokerage fees. But the financial industry has solutions to the problem: the index fund -the answer to the question of diversification as well as cost of investing.

Probably the best known of all indexes is the family of the Dow Jones index. The two gentlemen still mentioned in the name called it into life in the late 19th century. It measured, right from the beginning, the performance of different economic sectors. At the time of its inception, transportation, or more specifically the railroads, were the driving force of the economy, for which steel produced the rails, the industry, the rolling stock and locomotives, etc. Today, the transportation index still exists but has evidently much less relevance for the overall economy than before 1900.[1]

Another component of this index is the utilities industry, mainly the electric power generating industry, gas supply and similar economic activities. These industries often are (or until very recently were) monopolies, at least in local or geographic terms. For decades, these behaved much like bonds, meaning that they were mainly traded for reasons of their dividend pay-out or cash return because they were heavily regulated, and their returns government-controlled. The regulatory framework is disappearing (fast -at federal level, but much slower at the local level) and this industry may still gain aggressiveness and generate interest as an investment to consider. Investors should look at the liberalization developments in California and get a glimpse of what will come to most places in the U.S. and eventually the world.

Today, the most interesting component of the Dow Jones is its industrial sector. It is a composite index of 30 large U.S. corporations, which are periodically exchanged. Thus, recently, Chrysler Corporation was replaced since it has been acquired by Daimler-Benz and therefore does not qualify as a U.S. corporation any more.

Of the original 30 corporations only General Electric survives in its integrity in the index. Other corporations have merged or disappeared. The components of the index are often considered the blue chips of America and each and all investors should have some part of their savings in these corporations.[2]

The index is intellectual property and provides income flows to its proprietors through leases. But Dow Jones earns significantly more from its other properties, the Wall Street Journal, Barron's, etc. Due to income generation aspects, there are significant competitors in the index generation area, as will be shown below. The cheapest way

for an investor to constitute a diversified as well as weighted portfolio is to purchase the appropriate index funds.

Index funds aim to follow the ups and downs of the specific index to which they are tailored. There are a variety of indexes in addition to the DJ family. These funds should purchase the appropriate securities that are part of the index in the proportion that the index uses these securities. Staying with the example of the Dow Jones Industrial Average, the index does not track the performance of round lots (100 shares or multiples thereof) of each one of its 30 components. The fund uses a certain weight or proportion of the total, dictated by the index: only that proportion, of say GE, is in the portfolio that makes up its part in the Dow Jones Industrials as well. For this reason, index funds are easy to manage. A manager has only to follow the recipe of the known and provide ingredients as well as the proportional amounts used in an index.

The proportion that the investor should have in the Dow Jones index should be a function of age and risk tolerance. I would advocate that older people should have a larger proportion of the Dow Jones than younger people, and that risk- adverse people should have a larger proportion, again, of the Dow Jones versus a large portfolio of stocks of companies doing Internet business (yahoo, amazon.com etc.). The reasoning is that the Dow Jones reflects in an aggregate way the present state of a large part of the U.S. economy (discounted according to stock exchange expectations) and therefore the optimism or pessimism of the U.S.A. People will therefore empathize with the economy reflected by the Dow Jones. It will be difficult for people to stay investing in down periods or pessimistic economic situations, but for their own benefit they should keep their money in the Dow Jones. In any event, the safety prescription was already set up when it was recommended above that the money for all of next year's expenses should be kept in fixed short-term income investments.

Market timing is a difficult art that very few people can really successfully practice, and even then, their success is restricted to a limited time period. The stock market still has not been accurately predicted in a persistent way, thus a reasonable person should play the appropriate statistical averages, not guess the best time for

investment. In periods of five years or more the Dow Jones Industrial has had very few losses.[3]

These statements can be verified by looking at the figures of the 1998 Yearbook of Ibbotson Assoc. of Chicago (the investment industry data supplier). From 1926 to 1997, one can see that the total stock market had only limited periods of repeated down years. Specifically in the 1930's, it had four consecutive down-move years, and even then, the first -1929- and the last -1932- of the 4 years had losses of less than 8.5%, but 1931, the worst year yet in the Ibbotson data series, had a loss of 43.34%. The arithmetic mean over 72 years of data had a gain of 13% for each year. Thus, more gains occurred in one "normal" year than the losses of the well-remembered 1929![4]

But of the total 72 years of statistical data, the downturns have occurred in the fewest years, and the overall risk adjusted return has been, as stated, of over 13%. The statistics of Ibbotson reflect that of the 72 years, 20 were down years -but of these only 5 lost more than the 13 % average gain of the 72 years series of large company stocks- the kind that will be found in the Dow Jones Industrial index. And only from 1929 on, and from 1939 on, were there periods of three consecutive down years. More significantly, only 1930, 31 and 1973, 74 were periods when in two consecutive years, the big stocks would lose more than 13%. Since 1975 (the last 25 years) each down year was followed by an up year that made up for the negative returns of the previous year. Now, from this information follows the logic of having one and only one year of immediate cash or retirement needs outside the stock market. One would refine this strategy by only taking out of the down market, month by month, the money needed after a down year and the base amount of the safe fixed investment of the year -only if all non-variable market funds were used up. It can be seen from this strategy that real loss will be suffered only from money cashed in after the downturn. Since it is on the basis of one month's need at a time, it will not significantly alter the total holdings. Your saving in the market will recover as the market recovers. It will take a clear mind not to sell much during the downside of the market, but historical data shows that it is the wrong thing to do.

In comparison, even long-term government bonds, which most people consider very safe, had a significant number of down years (See Ibbotson's data!). Long-term bonds will not be sellable at their 1,000 dollars face value, once interest is not the same as indicated on the face of the bond. If interest rates move higher than the interest prevalent at the date of the initial purchase of the bond, the value of the bond in the market will be below $1,000. If today's interest is 8%, why should anyone pay $1,000 to only get 6%? Fools with money are hard to find. That bond, if it has still ten years of life, is worth a lot less today, when new money gets 8%. A financial calculator will be able to give the value instantly.

Bonds are only in equilibrium in terms of price and interest rate at the date of issue or initial purchase. Soon thereafter, there may be a change of interest or risk conditions of the issuer and consequently a re-evaluation of the bond's worth in the marketplace. Even if at the final redemption by the issuer the face amount of $1,000 will be paid in full, today it may not get the $1000. Very few individuals invest in bonds and hold them. Life is seldom so stable and predictable to allow for this kind of investment time frame. The investment rationality states that investors put their money into the best risk-adjusted yield possible at the time of investment. Thus, the practice is that when yields in bonds are low, investors prefer to put their money into stocks, and the reverse, when yields are high, bonds are purchased. Thus, there is a continuous in and out of the respective investment alternatives. In terms of the available data series, total investment returns in bonds have never surpassed 42% p.a. (1982), whereas stock investments have surpassed 140% on occasions and frequently 60% or more (Ibbotson 1998). Consequently, only very short-term government papers, say 3 to maximum 12 months, are investments without significant interest rate risks. These short-term investments or the money market mutual funds that invest mainly in this kind of securities should be the principal component of the purchase of next year's money needs. This is so to be reasonably sure the amount that was set aside for next year's expenses, according to the above mentioned strategy, will indeed be available; that is if the investor likes to keep a certain independence from the stock market, and not sell on a monthly basis to satisfy the needs of the day-to-day expenses.

In addition to the Dow Jones index, there are numerous other indexes that an investor should consider to obtain diversification. Very well known is the series of indexes published and put together by Standard & Poor's. The S&P 500 reflects the investment value of the largest 500 corporations of the country. We recommend that all investors have a portion of their assets invested in these corporations. The easiest way to do that is to purchase into an S&P 500 index fund. As stated above, this is an economic way to partake in a large diversified economic environment. Again, the rule of thumb should be that the older and more risk-adverse the investor is, the larger the proportion of his savings invested in these funds should be. The difference between the Dow Jones and the S & P 500 is a much more diverse set of investments: 500 vs. 30 (See S&P publications).

There are other S&P indexes such as the 400, which represents the mid-cap investments. Then, there is the S&P 600, which is a more comprehensive index with small-cap predominance.

However, the younger and more risk-tolerant the investor is, he would be more risk-tolerant in the case of the S&P 300. This index portrays the investment performance of the 300 smallest corporations of the S&P universe. It is thus an index of small businesses. The above-mentioned statistics of Ibbotson show that during the 72-year period the smaller businesses grew more than the larger ones: 17.7 % for each of the 72 years vs. 13% for the large companies. One dollar invested in a small company index in 1929 would be $1,828.33 in 1997. Some people will recall a specific case to bring home the point: Apple started in 1978 as a small business, and grew to become a large business, even though it retrenched somewhat later. Still it is a relevant part of the market. Investing in this S&P 300 index fund should be one of the growth paths for younger people as well as risk-tolerant older investors –at least with some portion of the portfolio.

There is also the Russell 2000 index. It encompasses 2,000 businesses with stock market capitalization between US$100 and $500 million. The businesses are traded on any of the major U.S. stock exchanges, like the New York Stock Exchange, the American Stock Exchange and Nasdaq. An even broader index is the Wilshare 5000, but considering that there are millions of businesses in the United States, even the 5000 is not all-encompassing. Any traditional mutual

fund should be able to beat this index. Statistics of the funds industry provided by Morningstar or Lippert on a monthly, quarterly or yearly basis show that only 50% of money managers achieve that. Therefore, mutual funds -in general- should not be the greatest attraction to a savvy investor. An interesting study by J. Bogle showed that in the 22 years between 1971 and 1992, the unmanaged index did better in 15 of those years than the majority of the mutual funds in the U.S. (See Bogle / 1994).

Some further diversification can be obtained by investing in real estate. For liquidity purposes, it is best to do it through a REIT - managed investment organizations that invest in real estate related assets. Again, there is an index published by the National Association of Real Estate Investment Trusts -NAREIT- that tracks REIT investments. It tracks all the REIT's that are traded on the major exchange in the U.S. Bloomberg, another of the financial information services, also compiles a REIT index different from the previous one. There are still other REIT indexes.[5] A financial product or investment that is based on this index is, again, a diversified and inexpensive investment vehicle. The preference of the individual investor for fixed assets and less risk will dictate the proportion of the investment in the portfolio that should make the owner feel at ease.

No investor should ignore the world outside the United States. Global funds are funds that include US investments and should not attract investors that have already diversified according to the above outlined rules. International funds exclude U.S. securities and should therefore represent a great attraction for further diversification. International investment can be sub-divided into regions, and it should be of interest to investors to allocate their assets according to their geographical preferences. Morgan Stanley has some well-regarded indexes that reflect this thinking: MSCI -EAFE covers large corporations in Europe, Africa and the Far East. A broader cover is the MS- World and as it states, it covers the entire world. Nevertheless, the investor may like to be more selective. Maybe he would like to have an exposure to Europe through an European index fund, at present the most promising economic growth area.

The Pacific area also has index funds that can be purchased. Some even exclude Japan, which right now may not be an attractive

investment area according to some advisors. But Japan in the long run will recover and exposure to it should generate good returns. Timing here is the issue, and as stated above, it is very difficult to ascertain the best time to buy or to sell. In any event, in the stock market, there is a seller for a buyer, and a buyer for a seller. Both think they do the right thing by doing the opposite of what the other is doing.

A further refinement of this family of funds is the Emerging Markets Funds, which comprise countries like China, India, Brazil and Mexico. They may be geographically sub-divided or have other kinds of criteria. Indexes can be found that reflect the investment behavior, and index funds, if not yet available, will soon appear in the market tracking their respective market behavior. Financial service organizations are very inventive and need to bring new products to the market, the same way that car companies need to bring out new models to compete with the others in the market place. Not all of these products are U.S. based: London, Frankfurt, Hong Kong and other financial centers are after you, the client with money to invest.

Many may be thinking that Canada is a good place to invest. A good index for it is the TSE 300. But the Canadian market moves much like the U.S. market and thus it is not a diversification, but just more of the same. If Canada is included, it should count towards the U.S. home base, not as an international diversification.

Individual stocks should only be purchased after the value of your investment has reached a level of being able to finance at least five years of your retirement needs. The exception may be to buy or even have to buy stock in the corporation you work for. Most often you are able to buy that stock at a discount to the market; and there is nothing wrong with buying a bargain. Also, your direct knowledge of the company will provide confidence and even a perception of future prospects: there may be a new development that is being kept secret and could enhance the financial future of your employer and of your pocket book. But individual stock picking should never be done as a game; better go to a casino and really have fun at your game skills. Investing should always be performed as a serious endeavor and your aim should be to earn more than what you paid for. That takes study and understanding of many things. A game it is not.

In conclusion, many kinds of investment philosophies can be

incorporated into a portfolio by mainly investing in the appropriate index funds. This kind of investing is significantly cheaper than customary mutual funds, including even the no-load funds, since they may not charge a sales load, but do charge significant management fees, which in the right kind of index funds should be a fraction of the customary fees. To be specific, typically the charge for an index fund can be as low as .20% of total assets for U.S. funds compared to up to 2% (and more) for most mutual funds. For international index funds, the fee should be .5% vs. up to 3% (or more) for customary international funds.

Fund expenses should not be the only reason to follow the index investing criteria; the diversification of the investment and appropriate returns for the assumed risk may be the overriding reason. It would take a significant amount of money to be able to diversify broadly in the stock market. Even 30 round lots of companies like GE and Sears are beyond an average investor's money. But asset allocation or investments according to certain priorities are as important if not more so than just to be investing in the stock market. Studies have shown that a diversified (technically an uncorrelated) selection of stocks not only reduces the risk of the portfolio, but also increases its return, especially if foreign securities are included (See Fabozzi / 1995).

An example of a diversified portfolio with our rules may be a balancing act amongst the following selections in addition to the customary value and growth criteria:

Dow Jones Industrial Average index fund	15 to 25%
S&P 300 Bara growth index fund	10 to 20%
NASDAQ 100 technology fund	5 to 15%
Russell 2000 value or Wilshire 5000 fund	5 to 15%
Real estate: your own house + REIT index fund	25 to 45%
International– min. 15 % of total US assets, max. 40 %	15 to 40%

Cash– about the equivalent of next year's needed retirement expenses 10%

Of course, the percentages do not add up: here we show the difficulty of asset allocation. You need to select what you consider your comfort zone. You do like to have a good night's sleep every night! But you can also get help here. The Internet has much information as many financial journals do.

Notes

1. A good description of this index as well as the other indexes mentioned below can be found at the Chicago Board Options Exchange product description web page - cboe.com./products.

2. To be up-to-date on the exact 30 corporations of the index visit: www.dowjones.com

3. Other index funds that have outperformed the Dow Jones index (such as Nasdaq 100, S&P 500, for instance) are not considered here.

4. See the data from Ibbotson, Rloger G & Rex A Sinquefield "Stocks, Bonds, Bills and Inflation: 1998 Yearbook".

5. For the technical description of the index, visit the Chicago Board Option Exchange web page on product specifications.

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Selected WEB:

www.cboe.com/products/prodspec.htm: the Chicago Board Options Exchange product description web page. Most of the indexes mentioned in the paper are specified technically at this sight, since they are traded on that market [as well as other markets].

www.dju.wsj.com: the university for virtual investing.

www.dowjones.com: main or home web page of this financial information service.

www.ibbotson.inter.net: Ibbotson Associates data.

*www.mcgraw-hill.com/*financial-markets/finpro.htm: *www.mcgraw-hill.com/financial-markets/finpro.htm:* Standard & Poor's services.

www.ms.com: web of Morgan Stanley, the publisher of the most followed international indexes.

www.neatideas.com/data.htm: charts for some of the indexes, like the Russell 2000 from 1994 to the present.

www.tradepbs.com/pbscgi/fool: Motley Fool's Market Watch tracks different indexes. Updates are about 20 minutes delayed from the availability of the data for paying customers of information services.

www.wilshire.com: the home page for that Index.