March, 2012

## Executive Summary

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## Executive Summary

## Investment Analysis

- JIC's investment analysis excludes the non-manageable investments (business center and the real estate).
- The Doe's total portfolio asset allocation is $43 \%$ stocks, $25.2 \%$ balanced, $20.2 \%$ cash, and II.5\% bonds. The effective allocation is $62 \%$ stocks, $26 \%$ cash/other (mostly cash) and $\mathrm{I} 2 \%$ to bonds. This is calculated by allocating the balanced funds into their appropriate stock/bond/cash components.
- JIC recommends significantly reducing the cash allocation of the account. Given current cash returns, the Does are losing money on an inflation-adjusted basis (inflation is higher than cash returns).
- JIC is not a strong believe in "balanced funds". For most balanced funds, their stock/bond/cash allocation stays within a relatively narrow range. In addition, our experience is that the expense ratios of balanced funds tend to be closer to equity funds even though a significant allocation to bonds may exist. JIC recommends restructuring the portfolio to eliminate the balanced funds and use investments that are "true" (a stock fund or a bond fund) to a particular asset class. In this way, it is much easier to understand the overall portfolio asset allocation.
- JIC believes the effective stock allocation of $62 \%$ is reasonable. The Does, if they're willing to assume somewhat more portfolio volatility, could consider increasing their stock allocation to $70 \%$ of portfolio assets.
- From a tax perspective, $83 \%$ of investment assets are allocated to tax-deferred accounts.
- Given their tax rate, the Does need to pay attention to the tax considerations of their investments. Specifically:
I. As of 2012 , contributions into a profit-sharing plan may be as high as $\$ 50,000$. Recent experience implies actual contributions of approximately $\$ 33,000$. While there may be valid reasons for "underfunding" the profit-sharing plan, JIC believes John should investigate why his firm is not maximizing their profitsharing contributions. Since highly compensated employees can be discriminated against, it may be possible to increase John's profit-sharing contribution (probably through a lower bonus) compared to other physicians. The key issue is whether the plan could still pass the various discrimination tests.

2. Due to income limitations, the Does cannot contribute to a Roth IRA. However, they could contribute to a traditional IRA (they likely do not receive any income tax benefits from a traditional IRA contribution) and then convert that contribution to a Roth IRA. A Roth IRA will provide tax-deferred growth as well as tax-deferred withdrawals. JIC estimates that Jane and John could convert over \$1 I5,000 each to Roth IRAs over John's remaining working career.
3. Regardless of the prior suggestions, most of the Does increase in retirement savings will occur in taxable accounts. They will have to allocate assets in as tax efficient way as possible. Ideally, taxable accounts will consist of municipal bonds, qualified dividends, and low turnover stock funds.

## Executive Summary

## Investment Analysis (continued)

- The equity portfolio has allocations to most major equity categories. However, we would suggest adjustments to the dollar allocation of certain categories. For example:
I. Nearly $31 \%$ of the equity portfolio is allocated to global stocks with an additional $15 \%$ to emerging markets. The global stock allocation is higher than what we usually see. Generally speaking, JIC recommends a $15 \%$ to $20 \%$ allocation to developed international (not global) stocks. In addition, JIC would suggest a $10 \%$ equity portfolio allocation to emerging markets.
- Portfolio allocation changes, particularly for the emerging markets, could be implemented through additional contributions (as opposed to selling).
- JIC also recommends increasing the allocation to large company U.S. stocks.
- The only specific bond investments the Does have are to U.S. Treasury strips that mature between November, 2012 and August, 2018. Given the recent strong appreciation of U.S.-based debt, the yield to maturity for these Treasury strips is subpar ranging from a low of $0.1 \%$ to a high of $\mathrm{I} .38 \%$ (inflation is currently in the $2.5 \%$ to $3.0 \%$ range). JIC recommend selling the securities and redeploying the proceeds into a more diversified bond structure. While allocations to investmentgrade bonds should be made, JIC believes the Does should also consider other bond (or bond like) categories such as high-yield bonds, emerging market bonds, and preferred stock.
- JIC provides several recommendations with respect to individual mutual fund holdings. These recommendations are included in the investment analysis section of this report.

Investment Analysis

## Asset Allocation Analysis: JIC Observations

## Observations

- JIC's investment analysis excludes the non-manageable investments (business center and the real estate).
- In aggregate (seven different accounts), the Does asset allocation is $43 \%$ stocks, $25.2 \%$ balanced, $20.2 \%$ cash, and $11.5 \%$ bonds. Separating the balanced funds into their appropriate stock/bond/cash components the effective allocation is $62 \%$ stocks, $26 \%$ cash/other (mostly cash) and $12 \%$ to bonds. The balanced accounts appeared to be very stock centric and may not provide the risk control that the Doe's believe they purchased.
I. Data for this chart includes John's $401(k)$ account, traditional IRA, as well as Jane's 5 accounts (traditional and beneficiary IRA, taxable account, XYZ and ABC $401(k)$ accounts). For simplicity sake, Jane may consider rolling her $401(\mathrm{k})$ accounts to the traditional IRA (assuming all contributions in each account are on a pre-tax basis).

2. Data is generally based on November 30, 2011 statements and may not accurately represent the current portfolio structure.

- JIC recommends significantly reducing the cash allocation of the account. Given current cash returns, the Does are losing money on an inflation-adjusted basis (inflation is higher than cash returns).
- In addition, JIC is not a strong advocate of "balanced funds". Often times, it is too difficult to understand the underlying asset mix and the overall impact on a client's portfolio. While there are some managers that significantly adjust the underlying allocation based on their market outlook, the vast majority do not make major allocation changes. In addition, the expense ratios of balanced funds tend to be more similar to equity funds even though they may have a significant bond allocation. JIC recommends the Does structure their portfolio with investments that are "true" to their predominant asset class holding. In this way, it is much easier to understand the overall portfolio allocation and the Does are more in control than the "whims" of a balanced fund portfolio manager.
- From a quantitative perspective (young age / long time horizon, stable employment income), JIC believes the stock allocation (at least on an effective basis) is reasonable. JIC believes, if the Does are willing to accept somewhat more portfolio volatility, they could increase their portfolio stock allocation to $70 \%$.
I. The Does current stock allocation will likely result in significant short-term fluctuations in portfolio market value but, over many years, should provide for a higher long-term return.


Effective Allocation by Asset Class


## Allocation By Account Tax Status

Total Assets \$447,476


## Allocation by Tax Status: Observations

## Observations

- At present, $83 \%$ of investment assets are allocated to tax-deferred accounts (40Ik, 403b, IRA, etc).
- Given their tax rate, JIC strongly encourages the Does to make as high of contribution as possible to tax-deferred accounts.
I. The total contribution to a profit-sharing plan could be $\$ 50,000$ (as of 2012 ). At present, approximately $\$ 33,000$ is invested to the $401(\mathrm{k}) /$ profit sharing plan. Assuming a $40 \%$ tax rate this $\$ 17,000$ "underfunding" of the profit-sharing plan increases the Doe taxes by $\$ 6,800(\$ 17,000 \times 40 \%$ ) each year.
- This "underfunding" of the profit-sharing plan could be the result of a few different reasons. One is that demographic makeup of the employee population does not allow for additional profit-sharing contributions to highly compensated employees and still pass the various discrimination tests. Alternatively, management/owners may decide that only a certain dollar amount should be allocated to the profit-sharing plan.
" Regardless of the reason, JIC suggests investigating whether John could make a higher profit sharing contribution and still have the plan pass the various discrimination tests. Highly compensated employees can be "discriminated" against (doctor A receives a higher contribution than doctor B). John may be able to increase his profit sharing contribution to full funding (in essence reducing his bonus). The key, as mentioned, is whether the discrimination tests are passed.
- There are types of profit-sharing plan designs that "tilt" the profit-sharing contribution to benefit the owners. It is not uncommon to see $80 \%$ of a profitsharing contribution going to owner accounts and $20 \%$ going to employee accounts (but it is highly dependent on individual plan demographics). JIC is not certain if the business uses one of these plan designs (known as a new comparability plan), but we believe it should be investigated.
- While the Does cannot contribute to a Roth IRA (due to income limitations) they can convert IRA assets to a Roth IRA. For example, each year the Does could contribute $\$ 5,000$ each (of already taxed income so there would be no tax implications on the conversion) to a traditional IRA and then convert that to a Roth IRA where will not only receive tax deferred growth but tax-free withdrawals. Over John's remaining 23 year working career it is reasonable to expect the Does could convert over $\$ 1$ 15,000 each to a Roth IRA.
- As the Does become more vigilant about retirement saving, there will be a substantial increase in their taxable assets. As a result, they will have to be extremely aware of appropriate tax management strategies using their various accounts in the most tax-efficient way possible.
I. For example, taxable accounts should generally hold municipal bonds, investments with qualified dividends, and low turnover stock funds.

Doe Equity Portfolio Diversification

|  | Value | Core | Growth |  |  | Value | Core | Growth |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Large | 13.4\% | 13.2\% | 1.9\% | =28.5\% | Large | 19.8\% | 19.9\% | 19.8\% | =59.5\% |
| Mid | 2.4\% | 2.0\% | 0.0\% | =4.4\% | Mid | 5.6\% | 5.8\% | 5.6\% | =17.0\% |
| Small | 0.0\% | 2.0\% | 0.0\% | =2.0\% | Small | 2.8\% | 2.9\% | 2.8\% | =8.5\% |
|  | = $15.8 \%$ | = $17.2 \%$ | =1.9\% |  |  | =28.2\% | =28.6\% | =28.2\% |  |
| Indiv Stock |  | 14.9\% |  | =14.9\% | Indiv Stock |  | 0.0\% |  | =0.0\% |
| Devl Intl |  | 5.4\% |  | =5.4\% | Devl Int1 |  | 15.0\% |  | = $15.0 \%$ |
| Emerging Intl |  | 13.9\% |  | =13.9\% | Emerging Intl |  | 0.0\% |  | =0.0\% |
| Global |  | 30.8\% |  | =30.8\% | Global |  | 0,0\% |  | =0.0\% |

## Observations

- In terms of equity market diversification, the Does have allocations to most major equity categories. The question is whether the dollar allocation and the fund(s) used for each category is appropriate.
- The equity portfolio has a significant allocation to global stocks - more so than we usually see and recommend. Recall that the difference between a global fund and a international fund is that a global fund will usually have a significant allocation to U.S. stocks (whereas an international fund will not). In general, JIC recommends a $15 \%$ to $20 \%$ (of the equity allocation) to developed international stocks. We then tactically adjust that allocation based upon our outlook.
- The emerging market allocation is also significant. Assuming the Does have a willingness to accept emerging market volatility, it may be an appropriate long-term strategy However, emerging market volatility can be very high. For example, the 10 -year risk of the S\&P 500 (as measured by standard deviation) is $15 \%$ while it is $24 \%$ for the emerging market index ( $60 \%$ higher risk compared to domestic stocks). We would suggest reducing the allocation to $10 \%$ of equity assets primarily through future contributions (given that recent emerging market performance has been quite poor it makes no sense to sell now).
- In addition, JIC recommends an increase to U.S. based stocks, establishing a larger index fund allocation, as well as consideration to alternative based investment strategies (as a means to reduce portfolio volatility).


## Bond Portfolio Diversification

## Bond Portfolio Diversification



## Observations

- There are bond holdings within the various balanced funds. However, the only specific bond investments the Does have are to U.S. Treasury strips that mature between November, 2012 and August, 2018.
I. Given the recent strong appreciation of US-based debt, the yield to maturity for these treasury strips is subpar.
- Bond maturing in November, 2012: yield to maturity is $0.1 \%$
- Bond maturing in August, 2015: yield to maturity is $0.6 \%$
- Bond maturing in August, 2017: yield to maturity is $1.15 \%$
- Bond maturing in August, 2018: yield to maturity is $1.38 \%$

2. In all cases, the yield to maturity is below the expected inflation rate. As a result the Does would be losing money (i.e. purchasing power) on an inflationadjusted basis.

- JIC recommends selling the securities and redeploying proceeds into a more diversified bond structure. This diversified structure should yield a little more than the Treasury strip portfolio. In addition, JIC recommends allocations to additional bond or bond-like categories such as high-yield bonds, emerging market bonds, and preferred stock. Each of these bond categories will provide higher yields but will also be more volatile than a "traditional" bond fund.


## Largest Portfolio Holdings

## Largest Portfolio Holdings



## Cumulative Period Returns

Periods Ending December 31, 2011

Returns Ending December 31, 2011

|  | Ticker | Investment Style | Percent Of Portfolio | Percent Of Stocks | Expense Ratio | 1 Year | 3 Years* | 5 Years* | 10 Years * |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Invst. Company of America | AIVSX | Large Core | 2.6\% | 6.1\% | 0.61\% | -1.8 | 11.5 | -0.9 | 3.5 |
| TIAA-CREF S\&P 500 Index | TRSPX | Large Core | 1.7\% | 4.0\% | 0.32\% | 1.8 | 13.8 | -0.5 |  |
| Vanguard Institutional Index | VINIX | Large Core | 3.9\% | 9.2\% | 0.05\% | 2.1 | 14.2 | -0.2 | 2.9 |
| S\&P 500 Index |  |  |  |  |  | 2.1 | 14.1 | -0.3 | 2.9 |
| Morgan Stanley Focus Growth A | AMOAX | Large Growth | 0.8\% | 1.9\% | 1.02\% | -5.8 | 27.5 | 3.8 | 3.3 |
| S\&P Large Growth Index |  |  |  |  |  | 4.7 | 16.6 | 2.4 | 2.8 |
| American Beacon Large Value | AAGPX | Large Value | 0.8\% | 1.9\% | 0.95\% | -2.7 | 12.2 | -2.6 | 4.4 |
| Washington Mutual | AWSHX | Large Value | I.5\% | 3.5\% | 0.63\% | 7.1 | 13.0 | 0.1 | 3.8 |
| Prudential Jennison Eq Income | JDEZX | Large Value | 0.9\% | 2.0\% | 0.98\% | 0.1 | 19.5 | 3.5 | 4.6 |
| S\&P Large Value Index |  |  |  |  |  | -0.5 | 11.5 | -3.0 | 2.9 |
| RS Value A | RSVAX | Mid Core | 0.8\% | 2.0\% | 1.28\% | -11.1 | 15.5 | -1.4 | 10.2 |
| Russell Mid-cap Index |  |  |  |  |  | -I. 5 | 20.2 | 1.4 | 7.0 |
| Goldman Sachs Mid Cap Value A | GCMAX | Mid Value | 1.0\% | 2.4\% | 1.16\% | -6.6 | 15.5 | 0.1 | 7.1 |
| Russell Mid Value Index |  |  |  |  |  | -1.4 | 18.2 | 0.0 | 7.7 |
| Westwood Mighty Mites | WEIMX | Small Core | 0.9\% | 2.0\% | 1.21\% | -5.6 | 15.7 | 4.9 | 9.2 |
| Russell 2000 Index |  |  |  |  |  | -4.2 | 15.6 | 0.2 | 5.6 |

## * Annualized

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LIFE THE WAY YOU PLANNED IT

## Cumulative Period Returns

Periods Ending December 31, 2011

|  |  |  |  |  |  | Returns Ending December 31, 2011 |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Ticker | Investment Style | Percent Of Portfolio | Percent Of Stocks | Expense Ratio | 1 Year | 3 Years * | 5 Years * | 10 Years * |
| Capital World G/I | CWGIX | World Stock | 13.0\% | 30.8\% | 0.79\% | -7.5 | 9.6 | -0.9 | 7.5 |
| MSCI World Index |  |  |  |  |  | -5.5 | 11.1 | -2.4 | 3.6 |
| EuroPacific Growth | REREX | Foreign Large Blend | 1.4\% | 3.2\% | 0.85\% | -13.6 | 9.6 | -1.5 | 6.5 |
| Thornburg International Value | THVRX | Foreign Lrge Growth | 0.9\% | 2.2\% | 1.25\% | -13.3 | 9.1 | -0.7 | 7.7 |
| MSCI EAFE Index |  |  |  |  |  | -12.1 | 7.7 | -4.7 | 4.7 |
| American Funds New World | NEWFX | Emerging Markets | 5.1\% | 12.0\% | 1.02\% | -14.1 | 15.3 | 1.8 | 11.4 |
| Oppenheimer Developing Mkts | ODMAX | Emerging Markets | 0.8\% | 1.9\% | 1.30\% | -18.1 | 23.6 | 5.6 | 17.5 |
| MSCI Emerging Markets |  |  |  |  |  | -20.4 | 17.3 | 0.1 | 11.2 |
| Prudential Natural Resources | PNRZX | Natural Resources | 0.8\% |  | 0.86\% | -18.5 | 22.0 | 4.7 | 17.4 |
| Dow Jones Commodity Index |  |  |  |  |  | -13.3 | 6.4 | -2.1 | 6.6 |
| Capital Income Builder | CAIBX | World Allocation | 23.4\% |  | 0.61\% | 2.9 | 10.5 | 0.9 | 6.7 |
| BlackRock Global Allocation | MDLOX | World Allocation | 0.8\% |  | 1.06\% | -3.7 | 8.8 | 3.6 | 8.1 |
| Fidelity Puritan | FPURX | Moderate Allocation | 1.0\% |  | 0.59\% | 0.7 | 13.3 | 1.8 | 4.9 |


|  | Benchmark | Percent of Rolling I-Year Periods Fund Outperformed Benchmark | Percent of Rolling 3-Year Periods Fund Outperformed Benchmark |
| :---: | :---: | :---: | :---: |
| Invst. Company of America | S\&P 500 | 61.2\% | 85.4\% |
| Morgan Stanley Focus Growth A | S\&P Large Growth | 59.2 | 63.4 |
| American Beacon Large Value | S\&P Large Value | 61.2 | 92.7 |
| Washington Mutual | S\&P Large Value | 46.9 | 63.4 |
| Prudential Jennison Eq Income | S\&P Large Value | 61.2 | 65.9 |
| RS Value A | Russell Mid-Cap | 55.1 | 65.9 |
| Goldman Sachs Mid Cap Value A | Russell Mid Value | 49.0 | 61.0 |
| Westwood Mighty Mites | Russell 2000 | 71.4 | 82.9 |
| Capital World G/I | MSCI World | 83.7 | 92.7 |
| EuroPacific Growth | MSCI EAFE | 67.3 | 92.7 |
| Thornburg International Value | MSCI EAFE | 71.4 | 95.1 |
| American Funds New World | MSCI Emerging | 55.3 | 38.5 |
| Oppenheimer Developing Mkts | MSCI Emerging | 81.6 | 100.0 |

## Observations

- This table is an attempt to measure performance consistency. For rolling one- and three-year periods we calculate the percent of time a fund outperforms its benchmark index (based on the type of investment it holds). Ideally, we seek funds to have rolling three-year consistency ratios of $80 \%$ or higher.
I. It is important to note that a high consistency ratio does not automatically imply a high cumulative return or the "best" return. If a fund were only to outperform an index by a very small amount over each rolling three-year period it would have a high consistency ratio but its cumulative return would likely be just slightly higher than the benchmark. As a result, we believe a combination of cumulative period analysis and performance consistency is a better approach to performance evaluation


## Allocation and Performance Observations

## Observations

- Nearly $25 \%$ of the Doe portfolio is invested to the Capital Income Builder fund (a world allocation fund). JIC recommends eliminating this allocation (after checking potential load related costs) due to an overweight position in global funds, our general dislike for balanced funds, and historical performance results that have been subpar.
- The Does hold two different emerging market funds (American Funds New World And Oppenheimer Developed Markets). We believe the Oppenheimer Developed Markets fund should be emphasized as it has higher long-term returns and significantly greater performance consistency. Although, the current share class has a higher expense ratio than the American Funds New World portfolio. It might be possible to change the type of share class.
- We see no reason to hold three separate large value funds (there is probably significant overlap in the types of holdings). Ideally, we would prefer a different large value fund. The existing funds have generally outperformed their index benchmarks but we would prefer higher index consistency for at least two of them (index consistency is reasonable but not high). American Beacon has a high degree of index consistency but recent results have been very poor. Further investigation would need to be made on this particular fund to determine the likelihood of recovering its past stature.
- We believe better alternatives may exist for the mid-cap holdings (RS Value And Goldman Sachs Mid-Cap Value). Of course, if these are held in a $401(\mathrm{k})$ plan (that is not rolled to an IRA) investment choices may be limited.
- We believe the investments to Westwood Mighty Mites, Capital World Growth and Income, EuroPacific Growth, and Thornburg International Value should be maintained.
- As the Blackrock Global Allocation and Fidelity Puritan funds are balanced funds, our preference would be to eliminate them.
- Evaluating a commodity fund is an extremely difficult and challenging activity in that there is really not a standard type of benchmark. We are not providing a recommendation with respect to the Prudential Natural Resources fund. Allocation to commodities tends to be a reasonable inflation hedge. In addition, as the emerging market world develops, we would expect increased demand for commodities. While volatile, commodities tend to provide reasonable portfolio diversification and we believe having a small allocation ( $5 \%$ or less) is appropriate.


## Detailed Allocation By Account

|  | $\begin{array}{r} \$ \\ \text { Stocks } \end{array}$ | Balanced | $\begin{array}{r} \$ \\ \text { Bonds } \end{array}$ | $\begin{array}{r} \$ \\ \text { Cash } \end{array}$ | $\begin{array}{r} \$ \\ \text { Total } \end{array}$ | $\begin{array}{r} \% \\ \text { Stocks } \end{array}$ | Balanced | $\begin{array}{r} \% \\ \text { Bonds } \end{array}$ |  | $\begin{array}{r} \text { Total } \end{array}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| John - 40Ik | \$22,697 | \$0 | \$0 | \$32,701 | \$55,398 | 41.0\% | 0.0\% | 0.0\% | 59.0\% | 100.0\% |
| John - Traditional IRA | 6,585 | 6,095 | 0 | -132 | 12,547 | 52.5 | 48.6 | 0.0 | -I.I | 100.0 |
| Jane-Traditional IRA | 92,434 | 98,465 | 0 | -1,454 | 189,446 | 48.8 | 52.0 | 0.0 | -0.8 | 100.0 |
| Jane Beneficiary IRA | 0 | 4,626 | 51,592 | 8,414 | 64,633 | 0.0 | 7.2 | 79.8 | 13.0 | 100.0 |
| Jane Taxable | 22,380 | 3,720 | 0 | 50,894 | 76,995 | 29.1 | 4.8 | 0.0 | 66.1 | 100.0 |
| Jane ABC | 18,915 | 0 | 0 | 0 | 18,915 | 100.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Jane XYZ | 29,542 | 0 | 0 | 0 | 29,542 | 100.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Total | \$192,553 | \$112,907 | \$51,592 | \$90,423 | \$447,476 | 43.1\% | 25.2\% | 11.5\% | 20.2\% | 100.0\% |

## Appendix I: Historical Capital Market Returns



## Observation

- The purpose of these charts is to show long-term capital returns on both a before- and after-inflation basis. Not surprisingly, portfolios with higher stock allocations have produced higher returns.


## Annualized Returns By Decade

## Calendar Year Data



## Observations

- Stocks underperformed the return of bonds during the decade of the 1930's, the 1970's, and during the decade of the 2000's.
- Note that the 1930's (which includes the Great Depression) and 2000's had a negative stock market return, albeit small.
- The decade of the 1980's and I990's were unprecedented in capital market history. Never before have there been back-to-back decades with annualized stock returns above 17 percent. Only the decade of the 1950's produced higher returns.

S\&P 500 Stock Returns: Rolling I-Year Periods


S\&P 500 Stock Returns: Rolling 5-Year Periods


S\&P 500 Stock Returns: Rolling 3-Year Periods


S\&P 500 Stock Returns: Rolling 10-Year Periods


## Observations

- These charts show the return of the S\&P 500 over different holding periods. The returns shown are annualized.
- While they still occur, it is interesting to note how infrequently below zero returns occur for holding periods longer than three years.


## 100\% Stock Return Distribution During Different Holding Periods <br> Calendar Year Data 1926 to 201I

Annualized Distribution of Returns (Percent of Observations Within Each Range)

|  | \# of Obs. | \% Above 0 | \% Below 0 | $\begin{array}{r} \text { \% Below } \\ -20 \% \end{array}$ | $\begin{array}{r} -10 \% \text { to } \\ -20 \% \end{array}$ | $\begin{array}{r} -5.1 \% \text { to } \\ -10 \% \end{array}$ | $\begin{array}{r} -0.1 \% \text { to } \\ -5.0 \% \end{array}$ | $\begin{array}{r} 0.1 \% \text { to } \\ 5.0 \% \end{array}$ | $\begin{array}{r} 5.1 \% \text { to } \\ 10 \% \end{array}$ | $\begin{array}{r} 10.1 \% \text { to } \\ 20 \% \end{array}$ | Above 20\% |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 Year Return | 86 | 72.1 | 27.9 | 7.0 | 5.8 | 9.3 | 5.8 | 5.8 | 9.3 | 19.8 | 37.2 |
| 3 Year Returns | 84 | 69.0 | 17.9 | 2.4 | 1.2 | 7.1 | 7.1 | 6.0 | 20.2 | 39.3 | 16.7 |
| 5 Years Returns | 82 | 85.4 | 14.6 | 0 | 2.4 | 3.7 | 8.5 | 15.9 | 13.4 | 45.1 | 11.0 |
| 10 Year Returns | 77 | 94.8 | 5.2 | 0 | 0 | 0 | 5.2 | 11.7 | 32.5 | 49.4 | 1.3 |

Non-Annualized Distribution of Returns (Percent of Observations Within Each Range)

|  | \# of Obs. | \% Above 0 | \% Below 0 | $\begin{array}{r} \text { \% Below } \\ -20 \% \end{array}$ | $\begin{array}{r} -10 \% \text { to } \\ -20 \% \end{array}$ | $\begin{array}{r} -5.1 \% \text { to } \\ -10 \% \end{array}$ | $\begin{array}{r} -0.1 \% \text { to } \\ -5.0 \% \end{array}$ | $\begin{array}{r} 0.1 \% \text { to } \\ 5.0 \% \end{array}$ | $\begin{array}{r} 5.1 \% \text { to } \\ 10 \% \end{array}$ | $\begin{array}{r} 10.1 \% \text { to } \\ 20 \% \end{array}$ | Above 20\% |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 Year Return | 86 | 72.1 | 27.9 | 7.0 | 5.8 | 9.3 | 5.8 | 5.8 | 9.3 | 19.8 | 37.2 |
| 3 Year Returns | 84 | 69.0 | 17.9 | 7.1 | 6.0 | 1.2 | 3.6 | 1.2 | 2.4 | 8.3 | 70.2 |
| 5 Years Returns | 82 | 85.4 | 14.6 | 6.1 | 3.7 | 0.0 | 4.9 | 3.7 | 0.0 | 6.1 | 75.6 |
| 10 Year Returns | 77 | 94.8 | 5.2 | 0.0 | 1.3 | 2.6 | 1.3 | 1.3 | 0.0 | 3.9 | 89.6 |



## 1 Year Returns



Rolling 3 Year Returns


## Observations

- This chart shows the minimum, maximum, and average return for different portfolio allocations over different holding periods. Returns are on an non-annualized basis. These returns include the time period of the Great Depression -- the worst economic and stock market performance period -- in U.S. history
- JIC has also shown the 90th percentile results. These results indicate, for the time period specified, the return in which $90 \%$ of the observations were above. While it is not a worst-case scenario, only $10 \%$ sign of returns were lower. It is interesting to note how much higher the 90 th percentile result is than the minimum result.
- Note that 90th percentile returns are negative for the rolling 3-year period with stock allocations of $75 \%$ or higher. Over 5-year holding periods, the 90 th percentile result is positive except for the $100 \%$ stock allocation.

| Year Ending | $\begin{aligned} & \text { 100\% } \\ & \text { Stock } \end{aligned}$ | Years To Initial Breakeven | Years To Final Breakeven | Year Ending | $\begin{aligned} & \text { 100\% } \\ & \text { Stock } \end{aligned}$ | Years To Initial Breakeven | Years To Final Breakeven |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1929 | -8.4 | 8 | 15 | 2000 | -9.1 | 7 | ? |
| 1930 | -24.9 | 7 | 14 | 2001 | -11.9 | 5 | ? |
| 1931 | -43.4 | 5 | 5 | 2002 | -22.1 | 2 | ? |
| 1932 | -8.2 | 2 | 2 | 2008 | -37.0 | ? | ? |
| 1934 | -1.4 | 2 | 2 |  |  |  |  |
| 1937 | -35.0 | 7 | 7 | Average |  | 3.6 | 4.5 |
| 1939 | -0.4 | 5 | 5 |  |  |  |  |
| 1940 | -9.8 | 4 | 4 | Breakeven Frequency Distribution |  |  |  |
| 1941 | -11.6 | 2 | 2 | 2 Years |  | 11 | 10 |
| 1946 | -8.1 | 3 | 3 | 3 Years |  | 3 | 2 |
| 1953 | -1.0 | 2 | 2 | 4 Years |  | 2 | 1 |
| 1957 | -10.8 | 2 | 2 | 5 Years |  | 3 | 2 |
| 1962 | -8.7 | 2 | 2 | >5 Years |  | 4 | 5 |
| 1966 | -10.0 | 2 | 2 |  |  |  |  |
| 1969 | -8.5 | 3 | 7 |  |  |  |  |
| 1973 | -14.7 | 4 | 6 |  |  |  |  |
| 1974 | -26.5 | 2 | 2 |  |  |  |  |
| 1977 | -7.2 | 3 | 3 |  |  |  |  |
| 1981 | -4.9 | 2 | 2 |  |  |  |  |
| $1990$ | -3.1 | 2 | 2 |  |  |  |  |

## Observations

- The purpose of this table is to examine how long it would take to breakeven from below zero return year(s).
- The data in the table shows the years in which stock returns were negative.
- JIC assumed the investor made their initial investment just before the negative return year. We then calculated how long it would take, based on subsequent calendar-year returns, to breakeven with their initial investment. For example, JIC assumed an investment was made at the end of 1928, just before the negative return year of 1929. In this example, it took eight years to recoup the investor's initial investment. However, because of subsequent declines, the investor's "final" breakeven was not for 15 years.
- The average number of years to breakeven is 3.6 years. However, the most common period to breakeven is 2 years. The difference in years is due to the magnitude of decline during certain periods (1930s, 1973-74, 2000-2002, 2008).

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| Year Ending | $\begin{array}{\|l} 100 \% \\ \text { Bond } \end{array}$ | $\begin{aligned} & \text { 25\% Stock } \\ & \text { 75\% Bond } \end{aligned}$ | $\begin{gathered} \text { 50\% Stock } \\ \text { 50\% Bond } \end{gathered}$ | $\begin{aligned} & \text { 75\% Stock } \\ & \text { 25\% Bond } \end{aligned}$ | $\begin{aligned} & \text { 100\% } \\ & \text { Stock } \end{aligned}$ | Year | $\begin{aligned} & 100 \% \\ & \text { Bond } \end{aligned}$ | $\begin{aligned} & \text { 25\% Stock } \\ & \text { 75\% Bond } \end{aligned}$ | $\begin{aligned} & \text { 50\% Stock } \\ & \text { 50\% Bond } \end{aligned}$ | $\begin{aligned} & \text { 75\% Stock } \\ & \text { 25\% Bond } \end{aligned}$ | $\begin{aligned} & \text { 100\% } \\ & \text { Stock } \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1929 |  |  | -0.1 | -4.0 | -8.4 | 1973 |  | -0.3 | -5.2 | -9.9 | -14.7 |
| 1930 |  | -1.5 | -9.5 | -17.3 | -24.9 | 1974 |  | -2.9 | -11.1 | -19.0 | -26.5 |
| 1931 | -2.3 | -12.9 | -23.4 | -33.6 | -43.4 | 1977 |  | -0.8 | -2.9 | -5.1 | -7.2 |
| 1932 |  |  |  | -1.0 | -8.2 | 1981 |  |  |  | -1.4 | -4.9 |
| 1934 |  |  |  |  | -1.4 | 1990 |  |  |  |  | -3.1 |
| 1937 |  | -8.6 | -18.0 | -26.8 | -35.0 | 1994 | -1.8 | -0.9 | -0.2 |  |  |
| 1939 |  |  |  |  | -0.4 | 2000 |  |  |  | -4.4 | -9.1 |
| 1940 |  |  | -2.8 | -6.2 | -9.8 | 2001 |  |  | -1.8 | -6.9 | -11.9 |
| 1941 |  | -2.5 | -5.5 | -8.5 | -11.6 | 2002 |  |  | -7.0 | -14.7 | -22.1 |
| 1946 |  | -1.0 | -3.2 | -5.6 | -8.1 | 2008 |  | -2.7 | -15.4 | -26.8 | -37.0 |
| 1953 |  |  |  |  | -1.0 | 2009 | -1.2 |  |  |  |  |
| 1955 | -0.7 |  |  |  |  |  |  |  |  |  |  |
| 1956 | -0.4 |  |  |  |  | Min. Loss | -2.3 | -12.9 | -23.4 | -33.6 | -43.4 |
| 1957 |  |  | -1.6 | -6.3 | $-10.8$ | Avg. Loss | -1.1 | -3.3 | -6.5 | -10.8 | -13.6 |
| 1958 | -1.3 |  |  |  |  |  |  |  |  |  |  |
| 1959 | -0.4 |  |  |  |  |  |  |  |  |  |  |
| 1962 |  |  | -1.4 | -5.0 | -8.7 |  |  |  |  |  |  |
| 1966 |  |  | -2.8 | -6.5 | -10.0 |  |  |  |  |  |  |
| 1969 | -0.7 | -2.6 | -4.5 | -6.5 | -8.5 |  |  |  |  |  |  |

Negative 3-Year Returns (non-annualized data)

| Year <br> Ending | $\begin{aligned} & \text { 100\% } \\ & \text { Bond } \end{aligned}$ | $\begin{aligned} & \text { 25\% Stock } \\ & \text { 75\% Bond } \end{aligned}$ | $\begin{gathered} \text { 50\% Stock } \\ \text { 50\% Bond } \end{gathered}$ | $\begin{aligned} & \text { 75\% Stock } \\ & \text { 25\% Bond } \end{aligned}$ | $\begin{aligned} & \text { 100\% } \\ & \text { Stock } \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1930 |  |  |  |  | -1.2 |
| 1931 |  | -11.5 | -30.8 | -47.3 | -61.0 |
| 1932 |  | -7.4 | -27.6 | -45.7 | -61.0 |
| 1933 |  |  |  | -6.6 | -19.9 |
| 1939 |  |  |  | -6.1 | -15.2 |
| 1941 |  |  | -5.3 | -12.8 | -20.6 |
| 1942 |  |  |  | -0.7 | -4.0 |
| 1974 |  |  | -5.7 | -15.8 | -25.3 |
| 1975 |  |  |  | -5.5 | -13.9 |
| 2001 |  |  |  |  | -3.0 |
| 2002 |  |  | -8.2 | -24.0 | -37.6 |
| 2003 |  |  |  | -3.3 | -11.7 |
| 2008 |  |  | -0.5 | -12.2 | -23.0 |
| 2009 |  |  |  | -7.0 | -16.0 |
| 2010 |  |  |  | -1,3 | -8.3 |
| Min. Loss |  | -11.5 | -30.8 | -47.3 | -61.0 |
| Avg. Loss |  | -10.6 | -13.0 | -14.5 | -21.4 |

## 5-Year Returns

| Year Ending | 100\% Bond | 25\% Stock <br> 75\% Bond | 50\% Stock 50\% Bond | 75\% Stock 25\% Bond | 100\% Stock | Year Ending | 100\% <br> Bond | 25\% Stock <br> 75\% Bond | 50\% Stock 50\% Bond | 75\% Stock <br> 25\% Bond | 100\% <br> Stock |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1931 |  |  |  | -10.6 | -23.1 | 1938 |  |  |  |  | -8.5 |
| 1932 |  |  | -12.6 | -31.2 | -48.6 | 1939 |  |  |  |  | -0.5 |
| 1933 |  |  | -6.6 | -25.9 | -44.9 | 2008 |  |  |  |  | -13.0 |
| 1934 |  |  | -2.4 | -21.6 | -40.7 | 2009 |  |  |  |  | -9.1 |
| 1941 |  |  | -6.6 | -19.4 | -32.3 |  |  |  |  |  |  |
| 1974 |  |  |  |  | -11.2 | Min. Loss |  |  |  |  | -13.0 |
| 1977 |  |  |  |  | -1.0 | Avg. Loss |  |  |  |  | -7.8 |
| 2002 |  |  |  |  | -2.9 |  |  |  |  |  |  |
| 2003 |  |  |  |  | -2.8 |  |  |  |  |  |  |
| 2004 |  |  |  |  | -11.0 |  |  |  |  |  |  |
| 2008 |  |  |  |  | -10.5 |  |  |  |  |  |  |
| 2011 |  |  |  | -0.7 | -1.2 |  |  |  |  |  |  |
| Min. Loss |  |  | -12.6 | -31.2 | -48.6 |  |  |  |  |  |  |
| Avg. Loss |  |  | -7.0 | -18.2 | -19.2 |  |  |  |  |  |  |

