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PRIVATE AND CONFIDENTIAL

Mr. Darren Schulz, CFA
Interim Chief Investment Officer
North Dakota Retirement and Investment Office
ND Retirement and Investment Office
1930 Burnt Boat Drive
P.O. Box 7100
Bismarck, ND 58507-7100

Subject: Scope of Work for Asset Allocation and Spending Policy Study

Dear Darren:

This Scope of Work documents the agreement between North Dakota Retirement and Investment Office. ("North Dakota") and Towers Watson Investment Services ("TWIS"), a Towers Watson Company ("Towers Watson").

Background

We understand that North Dakota wishes to conduct a comprehensive study for the North Dakota Legacy Fund, in order to develop an appropriate asset allocation strategy, and sustainable spending policy. The Asset Allocation and Spending Policy study will provide North Dakota with objective information critical to making investment and spending policy decisions. Our approach places asset allocation and spending policy into a quantifiable economic impact on the state and current and future generations of stakeholders.

Process

The process uses detailed projections of the assets values in the future, expected cumulative spending, risk to the future value of assets including purchasing power protection, and risks of sudden drops in spending levels, enabling expected future cash flows to and from the fund to be modeled in a way which varies with projected future economic scenarios. An asset model is used to produce the necessary variety of projected economic scenarios.

The main objectives of the Asset Allocation and Spending Policy Study are to:

- Understand how the assets are expected to grow and be available to benefit future generations;
- Understand how much investment risk is being taken relative to protection of assets for future generations;
- Understand how much investment risk is being taken relative to maintaining a spending level for the protection of current generations;
- Determine the risk/return trade-off of the alternative spending and asset allocation policies;
- Analyze the financial effect of alternative spending policies;
- Analyze the financial effect of alternative asset allocation policies;
- Analyze how the amount of return seeking and risk reducing assets should vary over time as the fund grows;

- Recommend spending policies that appear to have positive benefits; and
- Recommend asset allocation policies that appear to have positive benefits.

Deliverable

Tower Watson Investment Services (TWIS) will prepare and present a written report on our findings with recommendations on the asset allocation and bond portfolio duration. We anticipate two face-to-face meetings with North Dakota representatives; one kickoff meeting to discuss variables to consider going into the study, and another to present the results.

Project Timing

We estimate that this project will take 8 weeks after this letter is signed has been signed and we have a kick off meeting to go over our Asset Allocation and Spending Policy project planning guide. We would expect to have preliminary results in week 6 or 7.

The Towers Watson Consulting Team

Brian Murphy and Marko Komarynsky will be the primary contacts for North Dakota related to any investment consulting needs.

The Asset Allocation and Spending Policy Study will be led by Mark Ruloff, Director, Asset Allocation. He has over 30 years of consulting experience. He has worked on asset allocation and spending policy studies for endowments, foundations, and sovereign wealth funds ranging in size from as small as \$50 million to more than \$300 billion.

Mark has been a featured speaker on the issue of spending policy, including Washington Area Investment Forum Sept 2009, IMI E&F Forum Spring 2010, Institutional Investor Institute E&F Roundtable June 2010, IMI E&F Forum Summer 2010, 2011 & 2012, Opal E&F Forum 2010, 2011 & 2012, IMI E&F Forum Spring 2010, 2011 & 2012.

Fees and Expenses

Our fixed fee for the Asset Allocation and Spending Policy study will be \$75,000. This fixed fee quote assumes the following:

1. Delivery of modeling results of the North Dakota Legacy Fund, including analysis of projected assets, risk to assets, alternative spending policy levels, and risk to spending, and other key liability measures (as determined by North Dakota); as well as analysis of other funding scenarios and asset allocations, in terms of:
 - changes to spending policies
 - changes to the equity/bond split (up to 10 total investment policy alternatives),
 - changes to the U.S./non-U.S. equity split,
 - changes in the fixed income composition including duration, and
 - changes to the allocations to alternative strategies.
2. Attendance at 2 meetings and conference calls as needed.
3. A final written report with our findings and recommendations.

We have attempted to build our scope understanding there are multiple variables to consider, in terms of funding expectations (revenues into the Legacy Fund), alternative spending policies, and alternative asset allocation policies. The fee quote we have provided is based on the knowledge we have acquired so far about your needs and the assumptions set out above. To the extent that North Dakota desires other work to be conducted beyond this scope, we will develop fee estimates for any out-of-scope work, and get your prior written approval before proceeding.

Terms and Conditions of Engagement

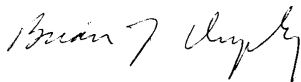
These services will be provided pursuant to the attached Terms and Conditions between Towers Watson Investment Services and North Dakota.

This document will serve as scope of work under this engagement letter provided that we receive an executed copy from you within 90 days of the date of this letter.

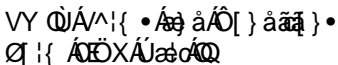
* * *

If this letter and the Attachments accurately describe the terms of our engagement, please have an authorized representative of North Dakota sign two copies and return one to us. Please do not hesitate to call if you have any questions related to the content of this letter.

Sincerely,



Brian J. Murphy, CFA
Senior Investment Consultant

Attachments: 

cc: Marko Komarynsky, Towers Watson Investment Services
Mark Ruloff, Towers Watson Investment Services

AGREED AND ACCEPTED:

North Dakota Retirement and Investment Office

By: _____

Title: _____

Date: _____

Towers Watson Investment Services, Inc.

By: _____

Title: _____

Date: _____

Towers Watson and North Dakota Retirement Terms & Conditions

- 1. Parties and Application.** These terms and conditions ("terms") cover all services, advice, work product and other deliverables (collectively, the "services") provided by the Towers Watson Investment Services, Inc. entity identified below or any of its affiliates ("Towers Watson", "we", "our" or "us") to the entity identified below or any of its affiliates ("you" or "your").

The scope of our services for each project (the "statement of work") will be agreed by you and us in written communications and shall, unless provided otherwise, incorporate these terms.

- 2. Fees.** Unless otherwise specified, our fees will be calculated by reference to any agreed assumptions, the time spent on, the importance, complexity and urgency of each project. Any fees or rates quoted or estimated are exclusive of any applicable sales, or similar taxes. Expenses are charged in addition. We also charge a technical and administrative fee based on a percentage (currently 7%) of the consulting fees and an administrative fee of 5% for vendor charges other than travel, unless arrangements are made in advance for such charges to be invoiced to and paid by you directly.

Unless otherwise agreed, we will submit invoices for the services provided and expenses incurred on a monthly basis. Invoices are payable within 30 days of receipt. In the event that invoices are not paid within that time we shall be entitled to charge a late payment fee of the lesser of 1.0% per month or the maximum allowed by law.

- 3. Our Responsibilities.** We shall provide the services in a professional manner with reasonable skill and care. We will assign to the project team members of our staff with adequate education, training and experience to perform the tasks assigned to them. We will use reasonable endeavors to meet any timetable that we may agree with you.

The work product we deliver to you in connection with the performance of the services will not infringe any intellectual property right of any third party. Unless otherwise expressly agreed in writing or under applicable law, we do not accept any fiduciary or trust responsibilities or liability in connection with the performance of the services. We do not provide legal, accounting or tax advice.

- 4. Your Responsibilities.** You will timely provide us with the documentation, information, access to your personnel and cooperation we reasonably require to provide the services. Any delay or failure to provide materials, information or cooperation may result in a revision to any agreed timetable and/or, if we need to do additional work as a result, in additional fees being charged. We will rely on the documentation and information provided to us by you or your representatives and do not take responsibility for verifying the accuracy or completeness of it. You may rely only upon our final work product and not on any drafts or oral statements made by us in the course of the services.

- 5. Intellectual Property Rights and Work Product.** You shall retain ownership of all original data and materials, and the intellectual property rights in that data, provided to us by you or your representatives. You will have the right to use, reproduce and adapt the copies of the work product delivered to you for internal purposes within your organization. We shall retain the intellectual property rights in such work product, and the skills, know-how and methodologies used or acquired by us during the course of providing any services.

The services we perform, including the work product we deliver to you, are provided solely for the intended purpose, and may not be referenced or distributed to any other party without our prior

written consent. You may distribute our work product to your affiliates, provided that you ensure that each such affiliate complies with these terms and the applicable statement of work as if it were a party to them, and you remain responsible for such compliance.

You shall not refer to us or include any of our work product in any shareholder communication or in any offering materials (or fairness opinion provided by your professional advisers) prepared in connection with the public offering or private placement of any security, unless otherwise agreed in writing.

- 6. Confidentiality and Data Privacy.** Each party shall protect all confidential information which the other party provides to it (whether orally, in writing or in any other form) using the same standards as the recipient applies to its own comparable confidential information, but in no event less than reasonable measures.

Each party's obligations will not apply to information: (i) already known to it at the time of disclosure; (ii) in the public domain or publicly available; (iii) available from a third party who is under no such obligation of confidentiality; or (iv) independently developed by it. Each party may disclose confidential information to its legal advisers to protect its own legitimate interests and to comply with any legal or regulatory requirements. If any court, regulatory authority, professional body or legal process requires the recipient to disclose information covered by this confidentiality obligation, then the recipient may make any such disclosure; provided that the recipient will, if permitted by law, advise the other party promptly of any such requirement and cooperate, at such other party's expense, in responding to it.

We are a global business and in performing the services we may pass Personal Data within our global network of offices and affiliates and to providers of IT outsourcing who will be subject to appropriate data protection standards. Irrespective of where we receive or hold individually identifiable personal information ("Personal Data") on your behalf, we confirm that, acting as data processor we will take appropriate technical, physical and organizational/administrative measures to protect that Personal Data against accidental or unlawful destruction or accidental loss or unauthorized alteration, disclosure or access. We will only use that Personal Data for the purposes of providing services to you or for other reasonable purposes which are related to the services we provide, unless you instruct us otherwise. You and Towers Watson shall each comply with the provisions and obligations imposed on each of us by applicable data privacy legislation and regulations.

- 7. Limitation of Liability.** If our services do not conform to the requirements agreed between us please notify us promptly and we shall re-perform any non conforming services at no additional charge or, at our option, refund the portion of the fees paid with respect to such services.

If re-performance of the services or refund of the applicable fees would not provide an adequate remedy for damages, the aggregate liability of Towers Watson and its employees, directors, officers, agents and subcontractors (the "related persons") to you whether in contract, tort (including negligence), breach of statutory duty or otherwise for any losses arising from or in any way connected with our services shall not exceed in aggregate the greater of (a) \$250,000 or (b) the total amount of the fees paid to us for the services provided pursuant to that statement of work during any 12-month period beginning with the commencement of that statement of work, unless otherwise agreed in writing. Nothing in these terms shall exclude or limit the liability of Towers Watson or our related persons in the case of: (a) death or personal injury resulting from our or our related person's negligence; (b) willful misconduct; (c) fraud; or (d) other liability to the extent that the same may not be excluded or limited as a matter of law. In no event shall we or any of our related persons or

affiliates be liable for any incidental, special, punitive, or consequential damages of any kind (including, without limitation, loss of income, loss of profits, or other pecuniary loss).

Where we are jointly liable to you with another party, we shall to the extent permitted by law only be liable for those losses that correspond directly with our share of responsibility for the losses in question.

- 8. Third Parties.** These terms only create rights enforceable by you and do not create any rights enforceable by any other party.

We accept no responsibility for any consequences arising from any third party relying on our work product. If we agree to provide our work product to a third party, you are responsible for ensuring that the third party is made aware of the fact that they are not entitled to rely upon it.

You agree to reimburse us for all costs (including reasonable attorney's fees) that we incur in responding to any requests or demands from third parties, pursuant to legal process or otherwise, for data or information related to the services provided to you.

- 9. Termination.** Either party may terminate a project on 30 days' written notice to the other party. We shall be entitled to be paid for services rendered up to the date of any such termination, and for expenses incurred. Any of these terms that would be reasonably intended to apply after termination will do so.
- 10. Miscellaneous.** These terms, together with the statement of work, set out the entire agreement between you and us concerning the provision of the services. Any modifications of or amendments to these terms or a change to the services must be in writing and agreed by the parties. Should any of these terms be declared void, illegal or otherwise unenforceable, the remainder shall survive unaffected.

Neither party may assign or delegate any of its rights or obligations to any third party without the prior written consent of the other party. Notwithstanding the foregoing either party may assign or delegate any of its rights and obligations to an affiliate. We reserve the right to employ subcontractors to assist us in providing services and to pass to them any information and materials they need to perform their work. Where we use affiliates or subcontractors to provide the services to you, we will remain responsible for the provision of the services to you.

- 11. Dispute Resolution.** The parties agree to work in good faith to resolve any disputes that may arise. If we cannot resolve a dispute the matter will be submitted to nonbinding mediation before either party pursues other remedies. If the governing law is any jurisdiction other than California, the parties hereby waive any right they may have to demand a jury trial.

If the governing law is that of California, except as otherwise provided below, any controversy or claim arising out of or relating to the Agreement which the parties are unable to resolve between themselves shall be resolved by arbitration in San Diego, California before a panel of three arbitrators in accordance with the Commercial Arbitration Rules of the American Arbitration Association. Each party shall have the right to select one of the arbitrators and the two arbitrators so selected will agree on the choice of the third arbitrator. Each party will bear the expenses of the arbitrator it selects and one-half of the expenses of the third arbitrator and other costs related to the arbitration. The arbitrators shall provide a decision in writing stating their reasons and rationale for the decision. Judgment upon the award rendered by the arbitrators may be entered in any court having jurisdiction thereof. Each party hereto hereby consents to personal jurisdiction in the State of California and agrees that venue will be proper in such state and that such state is the most convenient forum for

actions or proceedings arising out of any such controversy or claim and consents to the service of process in any such action or proceeding by certified or registered mailing of the summons and complaint therein directed to such party at the address provided. This arbitration process will be the sole and exclusive means for resolving any controversy or claim except for a controversy or claim involving the ownership or use of work product or intellectual property, provided that either party may seek an injunction or other equitable relief if such action is necessary to avoid irreparable damage or to preserve the status quo.

12. Governing Law. Any controversy, dispute or claim of any kind between the parties shall be governed by and interpreted in accordance with the laws of the jurisdiction where our office principally responsible for providing services to you is located, without regard to any provisions governing conflicts of laws; provided that if such office is located outside of the US or Canada, the governing law shall be that of the State of New York.

13. Fiduciary Status. Our responsibility as a fiduciary shall extend only to those activities deemed to be fiduciary activities under applicable law. Where Towers Watson Investment Services, Inc. ("TWIS") provides services that would cause it to be a fiduciary under Section 3(21) of ERISA, TWIS will provide services in accordance with the standard of care that applies to fiduciaries under Title I of ERISA.

14. Investment Adviser and Disclosure Brochure. TWIS represents that it is registered with the United States Securities and Exchange Commission ("SEC") as an investment adviser under the Investment Advisers Act of 1940 (the "Act"). These terms shall not be construed as a waiver of any of your rights under the Act. You hereby acknowledge receipt of the Disclosure Brochure prior to the date of execution of these terms.

Signed by and on behalf of:

TOWERS WATSON INVESTMENT SERVICES, INC.

By: _____

Print Name: _____

Print Title: _____

Date: _____

Accepted and agreed on behalf of:

North Dakota Retirement

By: _____

Print Name: _____

Print Title: _____

Date: _____



Towers Watson Investment Services, Inc.

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www.towerswatson.com

September 16, 2011

This brochure provides information about the qualifications and business practices of Towers Watson Investment Services, Inc. If you have any questions about the contents of this brochure, please contact us at TWISCompliance@towerswatson.com. Additional information can be found by visiting www.towerswatson.com. The information in this brochure has not been approved or verified by the United States Securities and Exchange Commission (SEC) or by any state securities authority.

Towers Watson Investment Services, Inc. is registered with the SEC as an investment adviser. Registration with the SEC does not imply a certain level of skill or training.

Additional information about Towers Watson Investment Services, Inc. also is available on the SEC's website at www.adviserinfo.sec.gov.

ITEM 2: MATERIAL CHANGES

The SEC adopted new rules in July 2010 which require registered investment advisers to provide current and prospective clients with a narrative brochure. The brochure discloses information in a proscribed manner, with mandated section headings.

This brochure is the first version of this “plain English” brochure, and replaces prior versions of the Part 2 of Form ADV.

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ITEM 4: ADVISORY BUSINESS

Towers Watson Investment Services, Inc. (Towers Watson) is a wholly-owned subsidiary of Towers Watson Delaware Inc., which is a subsidiary of Towers Watson Delaware Holdings Inc., which is a subsidiary of Towers Watson & Co. Towers Watson & Co. is a public company traded on the New York Stock Exchange and the NASDAQ Stock Market (NYSE, NASDAQ: TW). Towers Watson Investment Services, Inc. was incorporated in 1993 in order to provide professional, dedicated investment advisory consulting services to our clients.

Towers Watson provides investment advisory services to help clients manage investment complexity, establish risk tolerance and improve governance, combining innovative thinking with capable execution so that clients can successfully balance risk and return. We develop strategies that offer financial predictability and stability for clients. Our services include:

- Delegated Consulting Services
- Asset-Liability Modeling
- Strategic Asset Allocation Policy
- Risk Hedging
- Investment Management Structure, Selection and Ongoing Evaluation
- Fund Monitoring
- Educational webcasts, seminars, and conferences

Towers Watson offers Advanced Investment Solutions (AIS), a service that enables clients and their investment committees to delegate to Towers Watson various responsibilities for the oversight and management of their investment programs. We collaborate with the client to develop a governance structure for the management of the client's investment programs. A client may delegate to Towers Watson responsibility for implementing investment policy, hiring and terminating investment managers, monitoring investment managers, and communicating with investment managers. Pursuant to such delegated authority, Towers Watson will periodically rebalance client assets among the investment managers responsible for managing particular asset classes according to clients' applicable investment policies and may implement appropriate changes in investment managers; the hiring of any new investment manager may require the client to enter into an advisory agreement with that manager unless the delegated authority allows Towers Watson to enter into a manager agreement on behalf of the client.

Towers Watson may review clients' current investment policy against alternative policies using Towers Watson's proprietary asset liability modeling methodology and monitor the investment policy going forward. Towers Watson will work with the client to implement changes to policy to seek to improve the financial efficiency of the investment program, subject to clients' governance constraints and risk tolerance, and develop a cost-effective manager structure to implement the investment policy. We are not a broker-dealer and so we will not provide brokerage services, though we will work with clients' managers and broker-dealers to minimize the cost of any security transactions involved in transitioning portfolios.

If agreed upon with the client, Towers Watson monitors investment performance and prepares periodic reports, typically quarterly, which highlight key issues or events. These reports compare performance of total funds and each manager against appropriate market benchmarks and comparably-managed accounts. This is discussed in greater detail in item 13.

Towers Watson provides consulting services to clients in the area of developing long-term investment strategies for funds by broad classes of investment (common stocks, bonds, real estate, etc.). Towers Watson does not provide advice with respect to the selection of individual securities except under certain circumstances for bank and insurance company pooled funds, mutual funds, exchange-traded funds, group trusts, derivatives, annuity products, or U.S. government or AAA-rated sovereign negotiable debt

obligations. We typically develop such strategies with the assistance of a computer model projecting future obligations and probabilistic outcomes of alternative investment strategies.

Towers Watson assists clients in the selection of investment managers for their portfolios by providing quantitative and statistical evaluations of their performances and providing qualitative advice as to the managers whose approach and style might be compatible with the client's investment objectives.

Clients may engage Towers Watson for additional related services, such as investment performance measurement and evaluation, insurance contract analysis, and asset-liability projections and modeling and research-related projects relating to asset studies.

As our clients have unique investment goals that reflect their individual situation, our service agreements with our clients are customized to meet their needs. In determining investment strategies for allocations and other matters, clients may impose restrictions on securities and types of securities.

Towers Watson is not an investment manager; we provide investment advice and services to meet client needs. We do not participate in wrap fee programs by providing portfolio management services.

ITEM 5: FEES AND COMPENSATION

All fees and compensation are negotiated in advance of any work done and are established in a written contract between Towers Watson and our client. As we do not maintain custody of client assets, we do not deduct fees from assets. Towers Watson will bill for services in accordance with the terms and conditions that are agreed to prior to the commencement of work.

Fees are generally on a fixed-fee retainer basis with monthly or quarterly billing. In some circumstances, Towers Watson may enter into a compensation agreement that is asset-based or time-and-expense-based. Towers Watson does not have a fee schedule as fees are negotiable to reflect the level and the nature of the responsibilities that are delegated to Towers Watson and may be based on the size of the portfolio and reflect the level of services provided.

Clients may pay in advance, as determined by prior agreement. If work terminates during a calendar billing cycle, then Towers Watson will promptly refund any unearned prepayments.

Our fees do not include custodian fees, brokerage commissions, transaction costs, trustee fees, or mutual fund expenses. Our clients may incur these fees, costs, or expenses through the investments they make. Our brokerage practices are discussed in item 12. Neither Towers Watson nor any of its associates accept compensation from third parties for the sale of securities or other products.

ITEM 6: PERFORMANCE-BASED FEES AND SIDE-BY-SIDE MANAGEMENT

Towers Watson does not charge performance-based fees.

ITEM 7: TYPES OF CLIENTS

Towers Watson provides investment advisory services to a wide variety of clients with substantial levels of invested assets including pension and profit sharing plan trusts, endowments, foundations, institutional trusts, insurance companies, and nonprofit organizations.

Towers Watson does not have a minimum account size or other pre-determined account requirements.

ITEM 8: METHODS OF ANALYSIS, INVESTMENT STRATEGIES AND RISK OF LOSS

Methods of Analysis and Investment Strategies

Towers Watson has developed a computerized stochastic model for broad asset categories based on a comprehensive analysis of historical and prospective performance of such asset groups in relation to inflation, prior trends within each asset category, and performance relationships relative to other asset groups. The model determines probability values of the outcome of various investment strategies or asset mixes.

Towers Watson does not offer advice with respect to individual securities, except potentially with respect to bank and insurance company pooled funds, mutual funds, exchange-traded funds, group trusts, derivatives, annuity products, or U.S. government or AAA-rated sovereign negotiable debt obligations.

Our investment strategy team has experience in disciplines that include investment banking, asset management and actuarial science, and we have dedicated teams of investment manager research professionals that cover asset classes from mainstream to alternative investments, including hedge funds and private equity. These research teams develop quantitative and statistical evaluation of investment manager performance and perform qualitative analysis of approach and style to assess whether a manager may be compatible with the investment objectives of a particular client or fund.

In developing our views, sources of information that may be utilized include industry news sources; rating services; publicly filed documents; investment manager databases; information collected through investment manager and bank/broker/dealer questionnaires, interviews, and on-site visits; publicly available information on pooled funds and indices; and other information gathered from various data collection services.

Risk of Loss

Investing in securities involves risk of loss, potentially up to the full value of the security, which investors should be prepared to bear. Investment in alternative assets such as hedge funds or private equity involve additional risks, such as illiquidity, unlimited risk of loss, and counterparty risk and may be subject to less regulatory oversight than other types of securities. Each asset class has its own risk factors, which will be discussed in the offering or organizational documents for each applicable investment.

As noted above, Towers Watson has a number of methods of analysis and consults on a variety of investment strategies. Material risks associated with these include:

- The investment advice or strategies that we help develop may not lead to the expected or desired results, particularly in the short term.
- Information or data received from third parties may not be accurate; material inaccuracies in underlying data may impact the reliability or suitability of subsequent analysis.
- Economic or market conditions may move unpredictably, or with the correlation of market components behaving outside the range of expectations, which may result in material loss.
- The accuracy of results from a computerized stochastic model depends on the accuracy of the data provided, the analytical underpinnings of the model, and the appropriate interpretation of the output.

Clients should be aware that future performance of an investment or of an investment strategy may not be comparable to prior performance.

ITEM 9: DISCIPLINARY ACTION

There are no legal or disciplinary events that are material to a current or prospective client's evaluation of Towers Watson's investment advisory business or the integrity of our management.

ITEM 10: OTHER FINANCIAL INDUSTRY ACTIVITIES AND AFFILIATIONS

Towers Watson Investment Services, Inc. and its management persons are not registered or in the process of registering as a broker-dealer, registered representative of a broker-dealer, futures commission merchant, commodity pool operator, commodity trading advisor, or an associated person of the foregoing.

Towers Watson Investment Services, Inc. is affiliated through common ownership by Towers Watson & Co. with Towers Watson Capital Markets, Inc., a registered broker/dealer. Towers Watson Investment Services, Inc. does not currently conduct any securities transactions or investment advisory business through this affiliate and this affiliate is not a management person of Towers Watson Investment Services, Inc.

Many of our affiliated entities are pension consultants, including:

- Towers Watson Delaware Inc.
- Towers Watson Pennsylvania Inc.

These affiliated entities may provide services to clients of Towers Watson Investment Services, Inc.

As an affiliate of a large global professional services company, Towers Watson Investment Services, Inc. or related parties may have provided services to firms or to their parent organizations with which a client may be considering investing. The sources of this revenue are typically from consulting services provided by our corporate parent, Towers Watson & Co. or its subsidiaries. These engagements and relationships are unrelated to the services Towers Watson Investment Services, Inc. provides to clients and we take steps to ensure that our ability to provide objective, unbiased advice is not impaired, as, for example, detailed in item 11.

Towers Watson & Co., Inc. is a publicly traded company whose stock may from time to time be included in funds managed by institutional holders or in mutual funds, or may otherwise be held by clients of managers. Stock ownership status does not constitute a factor in our analysis. The identity of the top institutional and mutual fund ownership of Towers Watson & Co. stock is publicly available on the website of the SEC at www.sec.gov.

Towers Watson does not receive any benefit from any brokerage, insurance, or other third-party company in connection with our investment advisory services; we do not receive compensation from managers or broker-dealers or third party advisers in connection with our investment advisory services.

ITEM 11: CODE OF ETHICS, PARTICIPATION OR INTEREST IN CLIENT TRANSACTIONS AND PERSONAL TRADING

Towers Watson Investment Services, Inc. maintains a Code of Ethics governing the standards of behavior of its associates. The Code of Ethics is based on the principles that employees have a fiduciary duty to place the interests of the company and its clients ahead of their own and that employees are required to avoid taking advantage of their position. The Code of Ethics covers issues such as personal securities holdings and transactions, gifts and entertainment, and treatment of sensitive information.

In addition, all associates are subject to the Towers Watson & Co. Code of Business Conduct and Ethics, which addresses ethical responsibilities and delineates the principles and behavior expected of all Towers Watson & Co. associates. Our employees are required to disclose material outside business activities.

Towers Watson associates are required to certify annually that they have complied with the terms of the Code of Ethics.

The Towers Watson Investment Services, Inc. Code of Ethics requires employees to make periodic disclosures of their personal securities holdings and transactions, in accordance with SEC requirements. These disclosures are reviewed by the Chief Compliance Officer. The Code of Ethics restricts investment in private placements and new issues, and restricts and mandates reporting of certain gifts, meals, and entertainment.

In addition our Code of Ethics and the Code of Business Conduct and Ethics governing our own associates, we work with our parent company to monitor potential conflicts of interest that may exist through our affiliated entities.

Towers Watson will provide a copy of its Code of Ethics and the Code of Business Conduct and Ethics to any client or prospective client upon request.

ITEM 12: BROKERAGE PRACTICES

Towers Watson does not recommend specific brokers to clients at point of execution. We may assist clients in establishing commission recapture arrangements, and may provide assistance in analyzing whether a directed brokerage arrangement would be in the client's best interests for a particular situation. For derivatives execution, Towers Watson may develop a panel of broker-dealers who could be capable of assisting the client, for consideration by the client's agent at point of execution. The client or client's agent makes the final decision as to which brokerage or risk transfer arrangement is selected. Towers Watson does not receive any benefit from any brokerage or other third party company in connection with these services.

If the client chooses, we will work with the client's managers and broker-dealers to minimize the cost of any security transactions involved in transitioning portfolios.

Towers Watson does not accept or receive soft dollar compensation.

ITEM 13: REVIEW OF ACCOUNTS

Towers Watson reviews client accounts on a periodic basis and, for most of our clients, provides a comprehensive written performance report on a quarterly basis along with an in-person meeting to discuss findings and possible actions. These reviews are coordinated by a dedicated client team led by a lead investment consultant, providing continuity and consistency.

Account reviews evaluate manager performance of the fund, considering both the impact of investment policy and fund structure on overall performance and the capital market environment. The performance review process focuses on plan structure and diversification, the performance and tracking error of managers within each asset class, and how the asset classes interrelate. We use appropriate benchmarking to evaluate both returns and risk.

Our reports have been developed in-house to provide information on portfolio characteristics and to incorporate a number of risk diagnostics.

In addition to regular reporting, Towers Watson will review client accounts and investment policies as warranted by market or economic conditions, or by events within the client's portfolio such as a change in personnel within an investment manager.

ITEM 14: CLIENT REFERRALS AND OTHER COMPENSATION

Towers Watson does not receive any economic benefit from any person or entity other than a client for providing investment advice or other advisory services to a client.

Towers Watson does not compensate any person for a client referral. Employees of our parent organization, Towers Watson & Co. and its affiliates may be expected to provide referrals if that would be considered to be in the best interests of the prospective client. Towers Watson does not compensate these employees for referrals.

ITEM 15: CUSTODY

Towers Watson does not have custody of clients' funds or securities.

ITEM 16: INVESTMENT DISCRETION

For certain clients, Towers Watson may provide delegated consulting services through Advanced Investment Solutions, a service that enables clients and their investment committees to delegate to Towers Watson discretionary authority over various aspects of the oversight and management of their investment programs. These responsibilities are generally limited to the hiring and termination of investment managers and management of account requirements as detailed in guidelines agreed to by the client.

Towers Watson holds extensive discussion with the client prior to our acceptance of this authority. We work with the client to ensure that policies and guidelines are written to reflect the client's specific needs and intentions. Once the client approves an investment policy statement and guidelines, Towers Watson may accept discretionary authority for functions such as investment manager selection or termination, rebalancing, and asset sourcing. A dedicated internal oversight commission meets routinely to oversee operations.

The parameters of the discretionary authority are set out in our services agreement with the client.

ITEM 17: VOTING CLIENT SECURITIES

Towers Watson does not vote any client proxies. Unless clients specify otherwise with their investment managers, proxies and/or other solicitations will be provided to them directly from their custodian, fund manager, or transfer agent. Clients may contact their lead consultant with questions about a particular solicitation, or contact twiscompliance@towerwatson.com.

ITEM 18: FINANCIAL INFORMATION

Towers Watson does not request or require payment of fees in excess of \$1,200 per client for six months or more in advance. We are aware of no financial condition that would be reasonably likely to impair our ability to meet contractual commitments to clients. We have not been the subject of a bankruptcy petition at any time during the past ten years.



Marko Komarynsky

Director

191 N. Wacker Drive, Chicago IL, 60606

312-543-8073

marko.komarynsky@towerswatson.com

Towers Watson Investment Services, Inc.

875 Third Avenue

New York, NY 10022

212-725-7500

www.towerswatson.com

Date of this supplement: June 4, 2012

ITEM 1: COVER PAGE

This brochure supplement provides information about Marko Komarynsky that supplements the Towers Watson Investment Services, Inc. (Towers Watson) brochure. You should have received a copy of that brochure. Please contact our Chief Compliance Officer, Becky Carroll, at TWISCompliance@towerswatson.com if you did not receive Towers Watson's brochure or if you have any questions about the contents of this supplement.

ITEM 2 - EDUCATIONAL BACKGROUND AND BUSINESS EXPERIENCE

Name: Marko Komarynsky

Year of birth: 1966

Education: Northern Illinois University, BS in Finance; University of Illinois, MS in Finance

Business background for preceding five years: I have been employed as a research consultant at Towers Watson.

ITEM 3 – DISCIPLINARY INFORMATION

I have not had any disciplinary issues.

ITEM 4 – OTHER BUSINESS ACTIVITIES

None.

ITEM 5 – ADDITIONAL COMPENSATION

None.

ITEM 6 – SUPERVISION

Research and consulting teams consisting of associates of Towers Watson develop and monitor the general advice provided to clients. These teams are overseen by the chairman of the Americas Investment Committee and head of Strategy and Portfolio Construction Investment in the Americas. Individual advice is developed by client teams in conjunction with the client's investment objectives. Christopher Hemmer is responsible for supervising Marko Komarynsky's advisory activities on behalf of Towers Watson; his contact information is christopher.hemmer@towerwatson.com.

ITEM 7 – REQUIREMENTS FOR STATE-REGISTERED ADVISERS

Towers Watson Investment Services, Inc. is not registered with individual states.



Brian James Murphy, CFA

Director

191 North Wacker Drive, Chicago, IL 60606

Telephone: 312 525-2333

brian.murphy@towerswatson.com

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875 Third Avenue

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Date of this supplement: November 15, 2011

ITEM 1: COVER PAGE

This brochure supplement provides information about Brian Murphy that supplements the Towers Watson Investment Services, Inc. (Towers Watson) brochure. You should have received a copy of that brochure. Please contact our Chief Compliance Officer, Becky Carroll, at TWISCompliance@towerswatson.com if you did not receive Towers Watson's brochure or if you have any questions about the contents of this supplement.

ITEM 2 - EDUCATIONAL BACKGROUND AND BUSINESS EXPERIENCE

Name: Brian James Murphy, CFA

Year of birth: 1956

Education: BA, Northwestern University, 1979; earned Chartered Financial Analyst designation 1994.

Business background for preceding five years: Mr. Murphy is Director at Towers Watson Investment Services; Mr. Murphy joined Towers Watson in July, 1992.

ITEM 3 – DISCIPLINARY INFORMATION

None.

ITEM 4 – OTHER BUSINESS ACTIVITIES

None.

ITEM 5 – ADDITIONAL COMPENSATION

None.

ITEM 6 – SUPERVISION

Research and consulting teams consisting of associates of Towers Watson develop and monitor the general advice provided to clients. These teams are overseen by the chairman of the Americas Investment Committee and head of Strategy and Portfolio Construction Investment in the Americas. Individual advice is developed by client teams in conjunction with the client's investment objectives. Chris Hemmer, Director, Chicago Investment Leader, is responsible for supervising Mr. Murphy's advisory activities on behalf of Towers Watson; his contact information is christopher.hemmer@towerwatson.com or 312.525.2335.

ITEM 7 – REQUIREMENTS FOR STATE-REGISTERED ADVISERS

Towers Watson Investment Services, Inc. is not registered with individual states.



Mark Ruloff

Director, Asset Allocation
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Date of this supplement: November 15, 2011

ITEM 1: COVER PAGE

This brochure supplement provides information about Mark Ruloff that supplements the Towers Watson Investment Services, Inc. (Towers Watson) brochure. You should have received a copy of that brochure. Please contact our Chief Compliance Officer, Becky Carroll, at TWISCompliance@towerswatson.com if you did not receive Towers Watson's brochure or if you have any questions about the contents of this supplement.

ITEM 2 - EDUCATIONAL BACKGROUND AND BUSINESS EXPERIENCE

Name: Mark Ruloff

Year of birth: 1958

Education: BS, Actuarial Science, Lebanon Valley College

Business background for preceding five years: Mark Ruloff has been in his current role for the last 5 years.

ITEM 3 – DISCIPLINARY INFORMATION

None

ITEM 4 – OTHER BUSINESS ACTIVITIES

None

ITEM 5 – ADDITIONAL COMPENSATION

None

ITEM 6 – SUPERVISION

Research and consulting teams consisting of associates of Towers Watson develop and monitor the general advice provided to clients. These teams are overseen by the chairman of the Americas Investment Committee and head of Strategy and Portfolio Construction Investment in the Americas. Individual advice is developed by client teams in conjunction with the client's investment objectives. Matt Stroud, Head of Investment Strategy, is responsible for supervising Mark Ruloff's advisory activities on behalf of Towers Watson; his contact information is matthew.stroud@towerswatson.com or 212-309-3835.

ITEM 7 – REQUIREMENTS FOR STATE-REGISTERED ADVISERS

Towers Watson Investment Services, Inc. is not registered with individual states.



North Dakota Legacy Fund

Introduction to Towers Watson Investment Services

Mark Ruloff, FSA, EA, CERA
Marko Komarynsky, CFA
Brian J. Murphy, CFA

September 28, 2012

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TOWERS WATSON 

Outline

- Introduction
- Managing Assets and Spending
- Why Towers Watson
- Appendix
 - Biographies
 - Manager Research

Introduction

Towers Watson Investment Overview

Our Firm

- Independent advisor to institutional investors
- Focus on liability-driven investing since 1990
- Ranked #1 in industry in *Fortune's* "World's Most Admired Companies"

Our Client Base

- \$2T+ in global client assets under advisement
- Diverse Client Base
- \$50B+ in delegated ("outsourced") assets

INVESTMENT
PROFESSIONALS

700

MANAGER
RESEARCHERS

140

STRATEGY
CONSULTANTS

135

GLOBAL
OFFICES

25

Our People

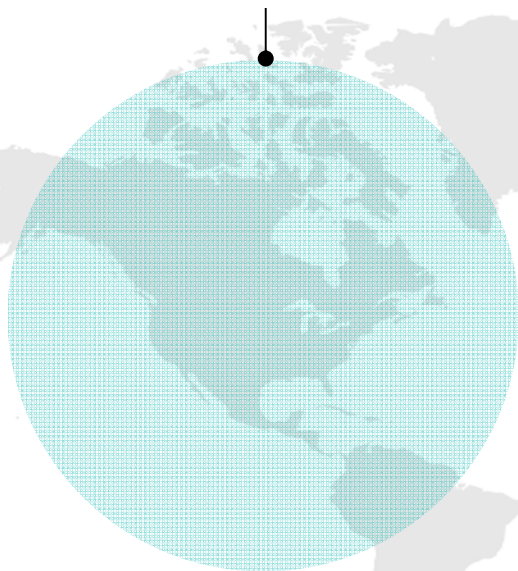
- More than 700 professionals across strategy, consulting and research functions
- More than 120 investment associates in the U.S., of which 34 hold the CFA designation and 17 are credentialed actuaries

Local Team Levers Global Resources for North Dakota's Benefit

Our Global Strength Benefits Our Clients

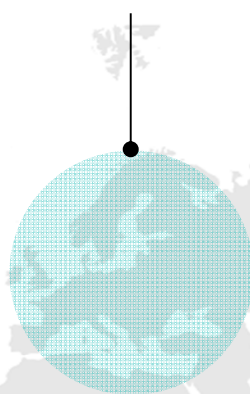
AMERICAS

3 countries, 215 investment consultants, 32 manager research, 26 strategy/ALM



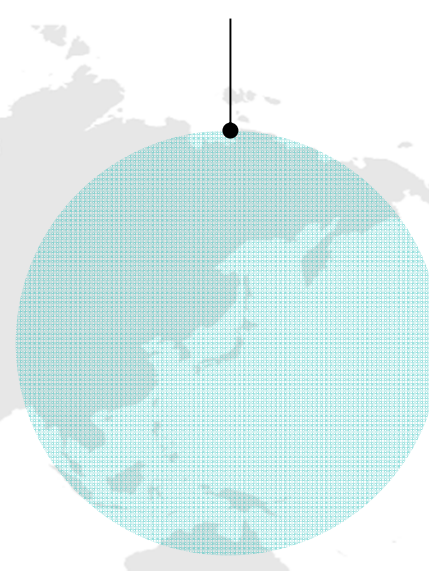
EUROPE

11 countries, 375 investment consultants, 80 manager research, 88 strategy/ALM



ASIA-PACIFIC

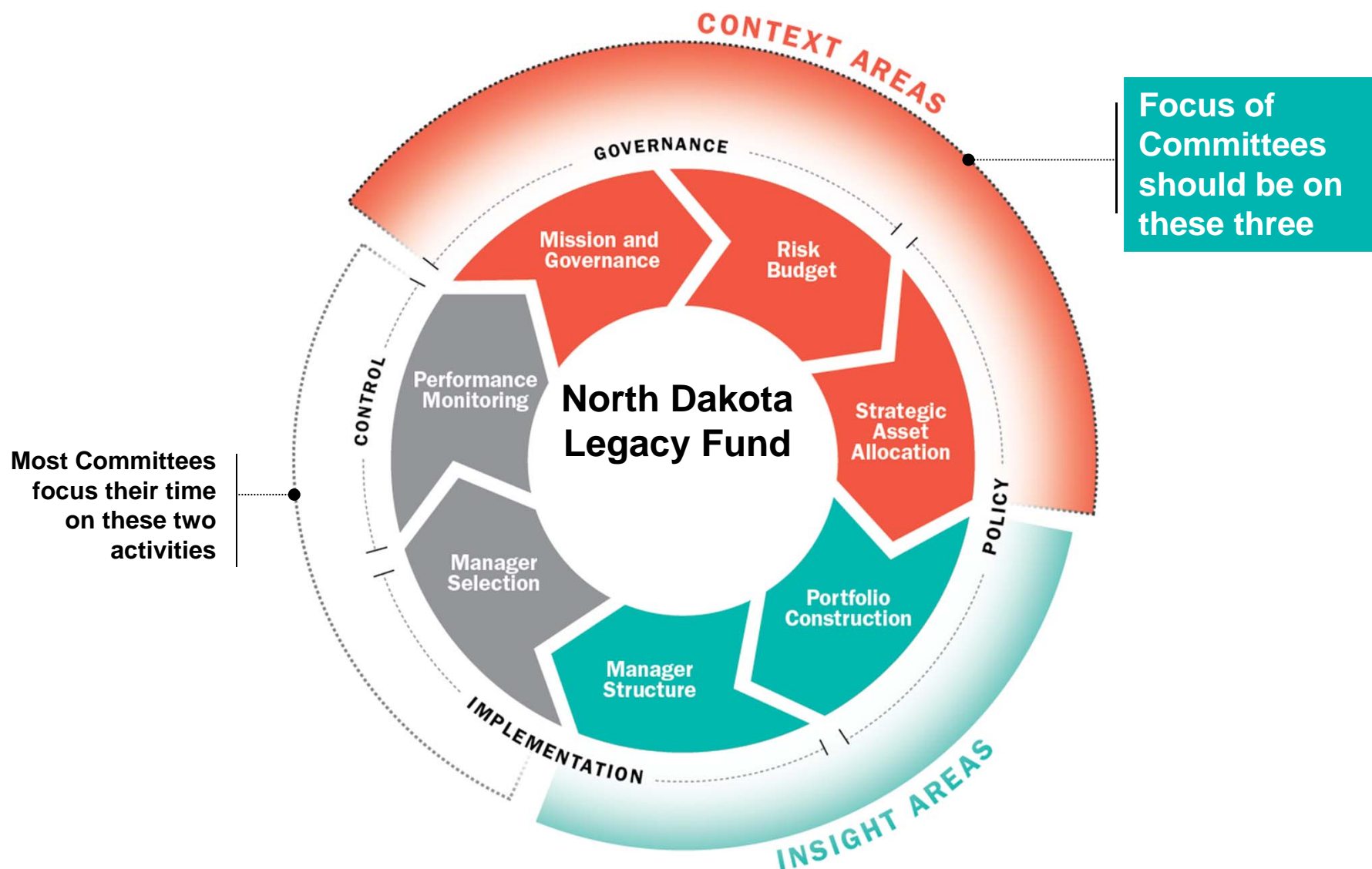
11 countries, 85 investment consultants, 28 manager research, 25 strategy/ALM



- 675 investment consultants in 25 countries
- 140 involved in manager research including 80 full-time specialists
- 139 involved in investment strategy including 90 full-time specialists

- Our clients include pension plans, endowments, insurance companies and some of the world's largest sovereign wealth funds
- "Investment Consultant of the Year" in 5 of the last 7 years – *Global Pensions Magazine*

Focus On the Right Things



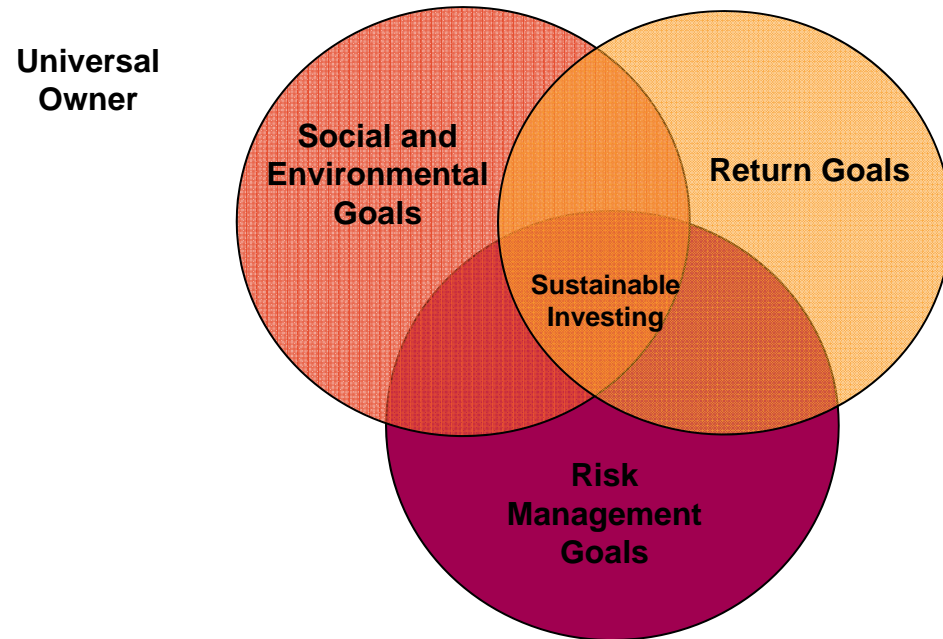
Developing Asset Allocation and Spending Policies

Risk Management

- Payout/Liability Hedging
- Better Diversification (including Manager Skill)
- Risk Steering
- Risk Pricing
- Long-Termism Risk Return Concepts
- Beyond Investment Policy

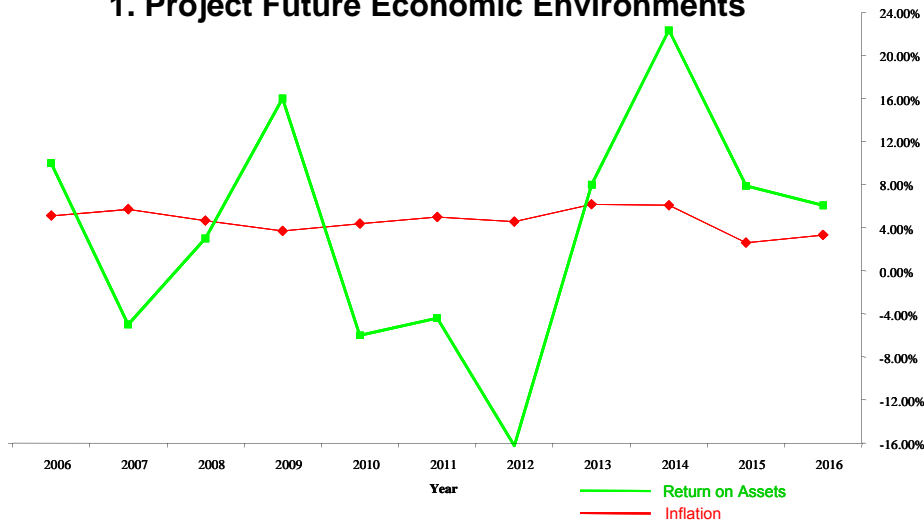
New Thinking on Risk

- Long-termism
- Risk scenarios
- Theme investing
- Extreme risks
- Sustainability
- Beyond investment policy
 - Benefit/spending policy
 - Funding policy
 - Core business

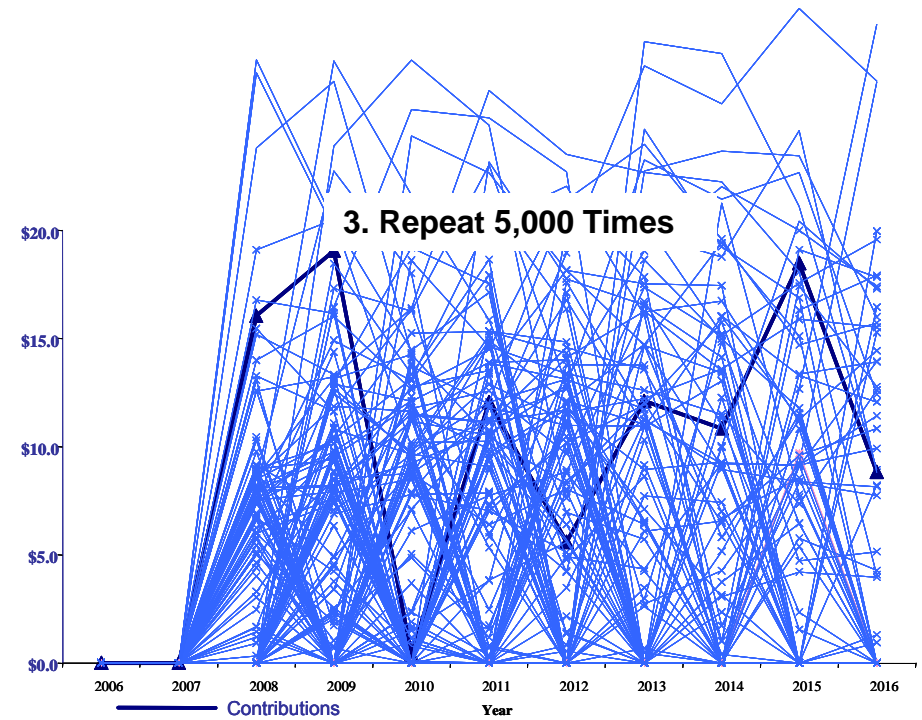


How Does Modeling Work?

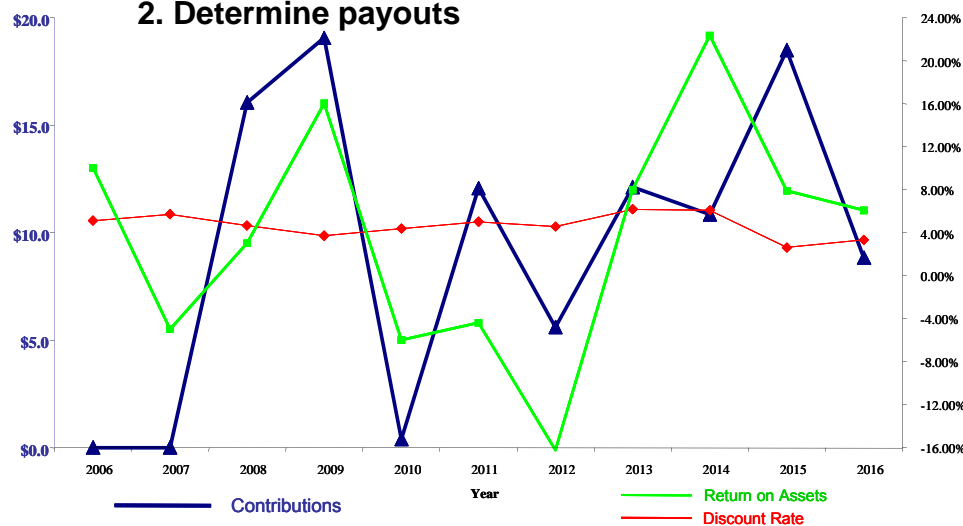
1. Project Future Economic Environments



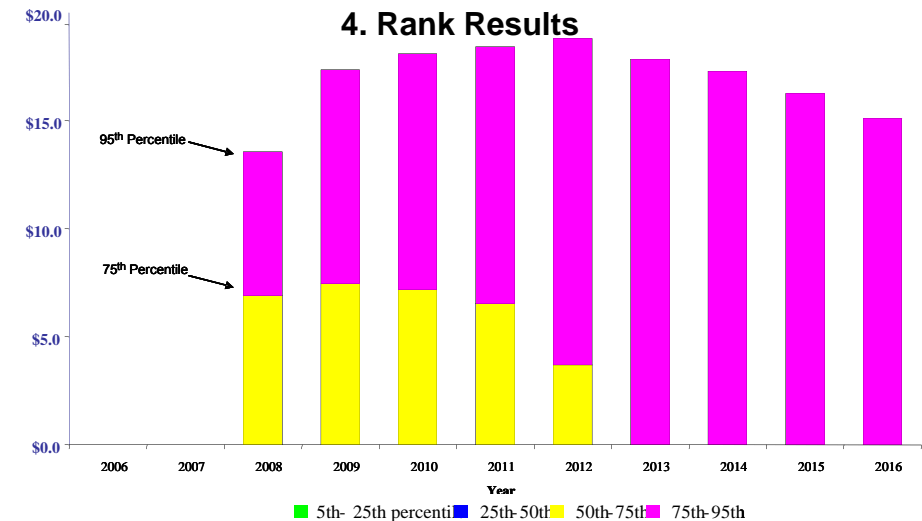
3. Repeat 5,000 Times



2. Determine payouts



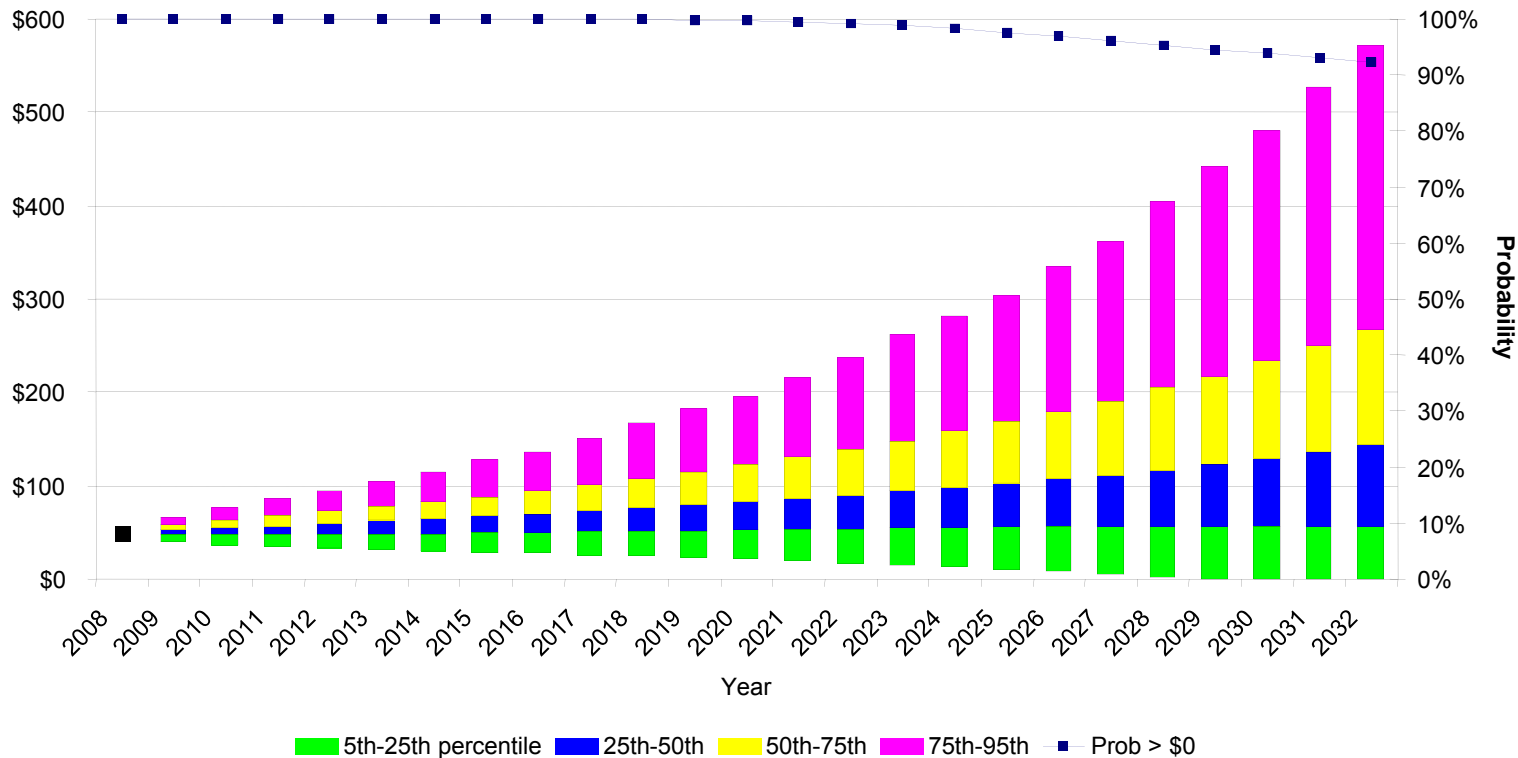
4. Rank Results



Projections of Assets

4.0% Spending Policy

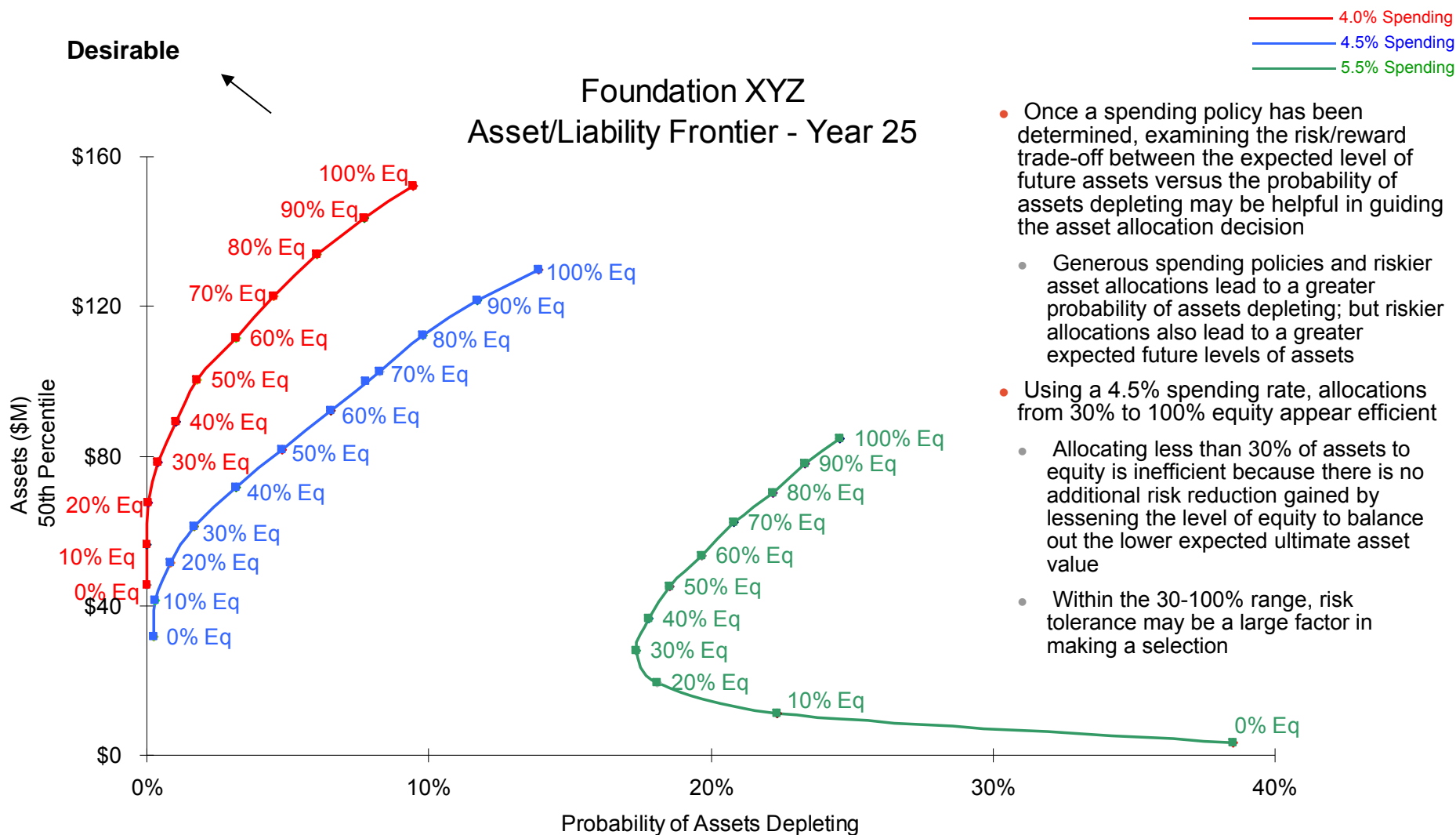
Foundation XYZ
Assets (\$M) at 90% Equity



- Using the 4.0% spending policy and an asset allocation of 10% fixed income / 90% equity, assets are expected to grow over time to \$144M by 2032 (50th percentile result)
- Under a best-case economic scenario, assets can grow to as high as \$572M by 2032 (95th percentile)
- However, under a worst-case economic scenario, assets can be depleted by 2032
 - There is a 7.7% probability of this occurring (i.e. in 7.7% of the 5,000 scenarios run, assets are depleted by 2032)

Analysis of Spending Level

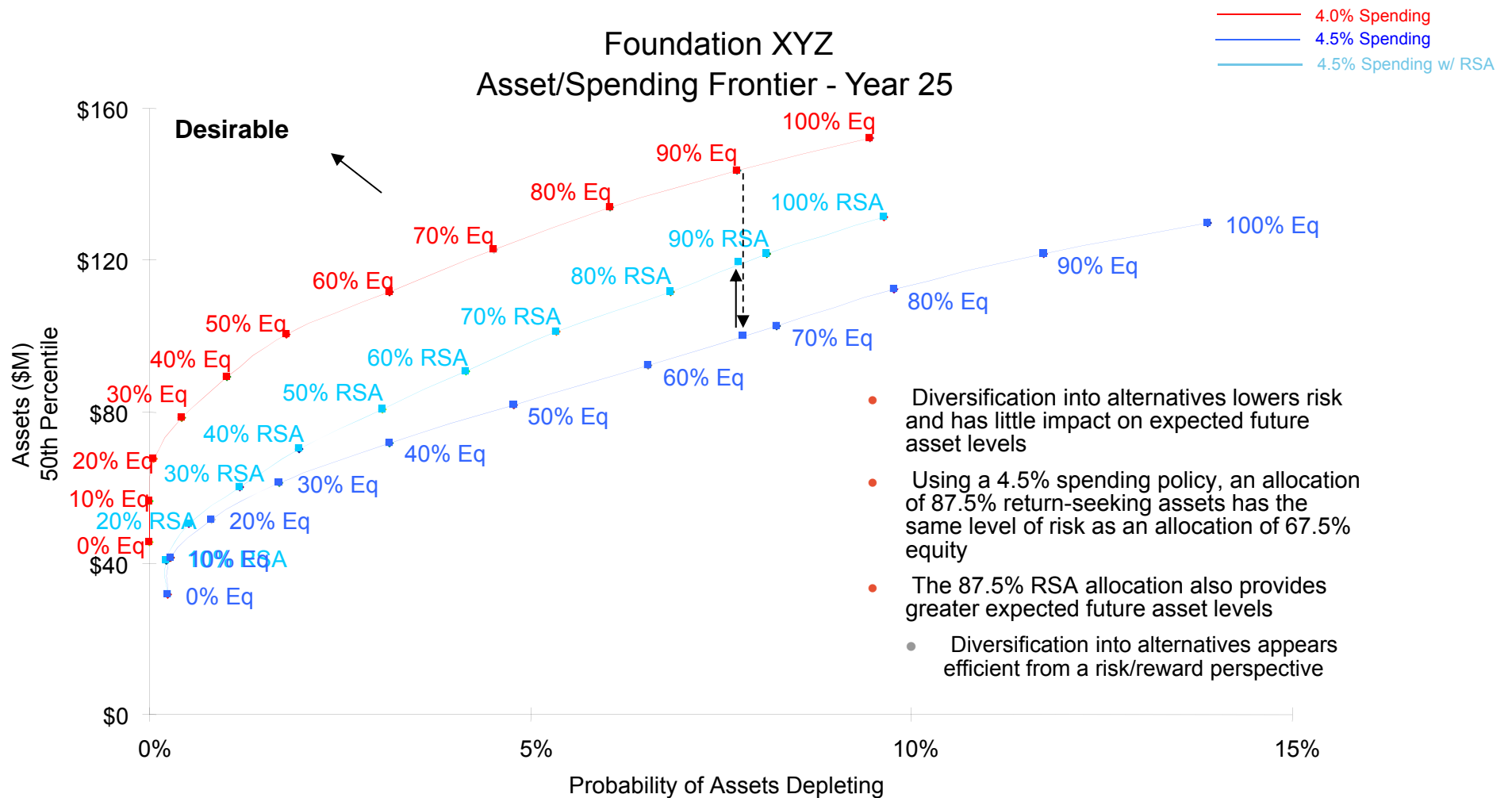
Expected Assets vs. Probability of Assets Depleting



- Once a spending policy has been determined, examining the risk/reward trade-off between the expected level of future assets versus the probability of assets depleting may be helpful in guiding the asset allocation decision
 - Generous spending policies and riskier asset allocations lead to a greater probability of assets depleting; but riskier allocations also lead to a greater expected future levels of assets
- Using a 4.5% spending rate, allocations from 30% to 100% equity appear efficient
 - Allocating less than 30% of assets to equity is inefficient because there is no additional risk reduction gained by lessening the level of equity to balance out the lower expected ultimate asset value
 - Within the 30-100% range, risk tolerance may be a large factor in making a selection

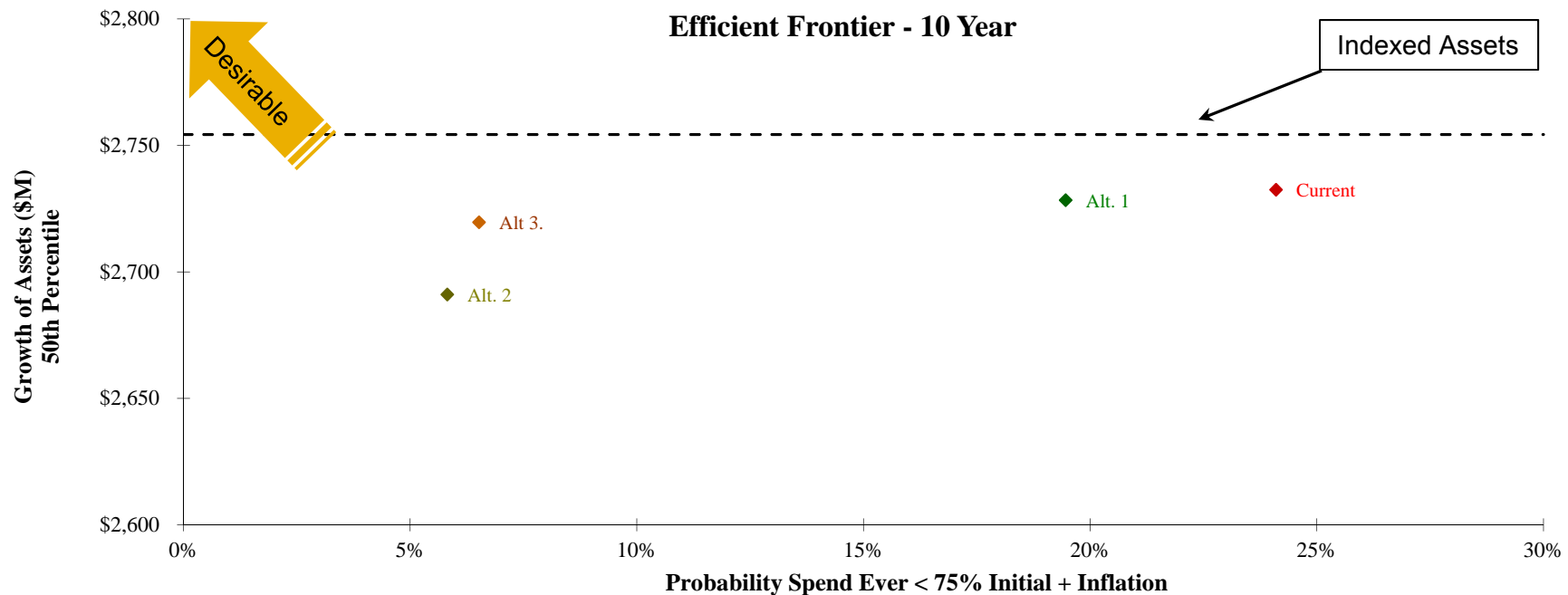
Allocation to Equity & Alternatives

Expected Assets vs. Probability of Assets Depleting



Analysis of Alternative Spending Policies

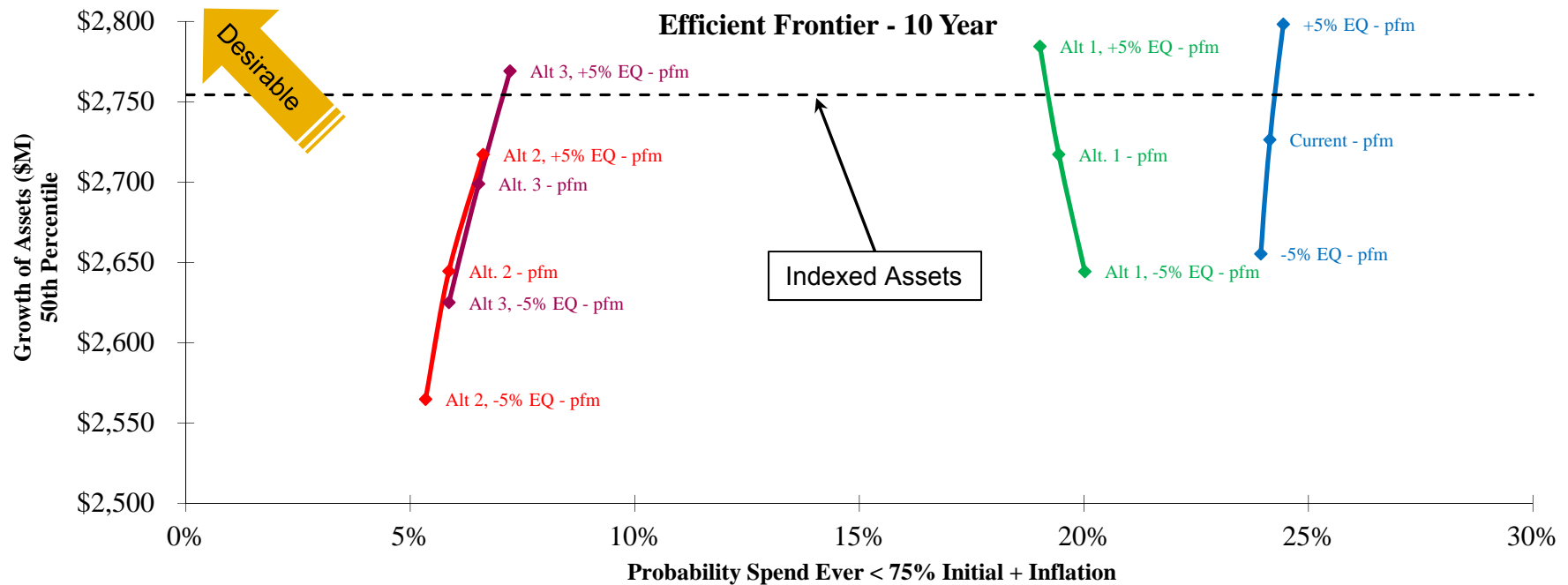
Growth of Assets vs. Spending Risk



- Consider the probability of the spending level ever falling below 75% of the 2012 budget indexed with inflation versus the expected value of assets after 10 years
- Relative to the current spending policy and alternative 1, alternative spending policy 3 has a significantly lower probability of ever having spending fall below the floor with minimal effect on the expected level of the IP after 10 years

Analysis of Alternative Spending Policies

Growth of Assets vs. Spending Risk



- When analyzing the reward of asset growth against the risk that annual budget ever falls below the floor, a trade-off exists between adding and subtracting equity from the portfolio
 - Higher levels of equity increase the expected level assets after 10 years, at a cost of a higher probability that annual spending falls below the threshold
- Analyzing these two metrics, alternative spending policies 2 and 3 have little impact on the slope of the line

Why Towers Watson?

Our Value Proposition

INDUSTRY LEADERS

- Depth of expertise for modeling assets and spending policies
- Leaders in asset allocation modeling

INDEPENDENT INVESTMENT ADVISOR

- Client fees are our only source of revenue

EXTENSIVE RISK MANAGEMENT EXPERTISE

- 480+ studies conducted by strategy team in 2010

COMMITMENT TO RESEARCH

- Nearly 20% of TWIS professionals are devoted to research
- Dedicated thought leadership – Global Investment Committee

EXPERIENCED CLIENT TEAM

- Senior consultants lead a deep and experienced team
- Proactive consulting approach

Appendix

Biographies

Mark Ruloff, FSA, EA, CERA

Title: Director

- Mark is Director, Asset Allocation in the Towers Watson Investment Services. He is a Fellow of the Society of Actuaries, an Enrolled Actuary, and a Chartered Enterprise Risk Analyst. He has over 30 years of consulting experience. He has worked on asset allocation and spending policy studies for endowments as small as \$50 million, foundations as big as \$2 billion, sovereign wealth funds with more than \$300 billion and asset liability studies for hundreds of pension plans with assets from \$20 million to \$100 billion.
- Mark has been quoted in the Wall Street Journal, Forbes, Financial Times, Pension and Investments, Financial Week, US News and World Report, Treasury & Risk, CFO Magazine, CFA Magazine, Barron's, Employee Benefit News Canada, Fundfire, New York Times, and National Public Radio.
- Mark is a frequent speaker and has spoken at many public forums, including P&I conferences, IMI E&F Forums, and Institutional Investor Institute.
- Mark has written over ten articles and manuscripts on pension risk and asset allocation including "Defined Benefit Plans are More Successful with Bonds", SOA Pension Section News, Sept 2004. He is known worldwide and has been quoted by other actuaries in the North American Actuarial Journal, The Actuary in the UK, and Actuary in Australia.

Marko G. Komarynsky, CFA

Title: Director

Areas of Experience:

- Working with U.S. and multinational sponsors of DB and other tax-exempt programs
- Consulting on strategic planning and investment management issues, including fixed income, structured solutions, and selection and retention of investment managers
- Investment manager research and selection

Qualifications, Industry-Specific Experience and Education:

- 20 years of investment consulting experience, including 7 years with Towers Watson
- Member of the Portfolio Construction Group
- Former Head of Investment Manager Research in the United States
- Expertise in liability driven investments, structured solutions, and portfolio construction
- Former positions as a credit analyst, portfolio manager, and short-term trader
- CFA charterholder and member of the CFA Society of Chicago and the CFA Institute
- B.S. in Finance from Northern Illinois University and M.S. in Finance from the University of Illinois with a concentration in investments
- Published and quoted in various trade publications and the financial press

Brian Murphy, CFA

Title: Director

Areas of Experience:

- Working with U.S. and multinational sponsors of DB, DC and other tax-exempt programs
- Consulting on strategic planning and investment management issues, including asset/liability modeling, effective style structures, and selection and retention of investment managers

Qualifications, Industry-Specific Experience and Education:

- 27 years of investment consulting experience, including 20 years with Towers Watson
- Significant experience with retainer clients in the energy and utility sectors, primarily with DB and DC plans; conducted a benchmarking project in 2011 for a large energy services multinational
- Previously led the TWIS's topical research on nontraditional investments
- Former director of consulting for the subsidiary of a large global financial services organization, where he was also a member of the firm's Investment Policy Committee
- Contributed directly to the development of proprietary analytical models and databases at EK&A and held an ownership stake in the firm
- CFA charterholder and member of the CFA Society of Chicago and the CFA Institute
- B.A. in economics from Northwestern University

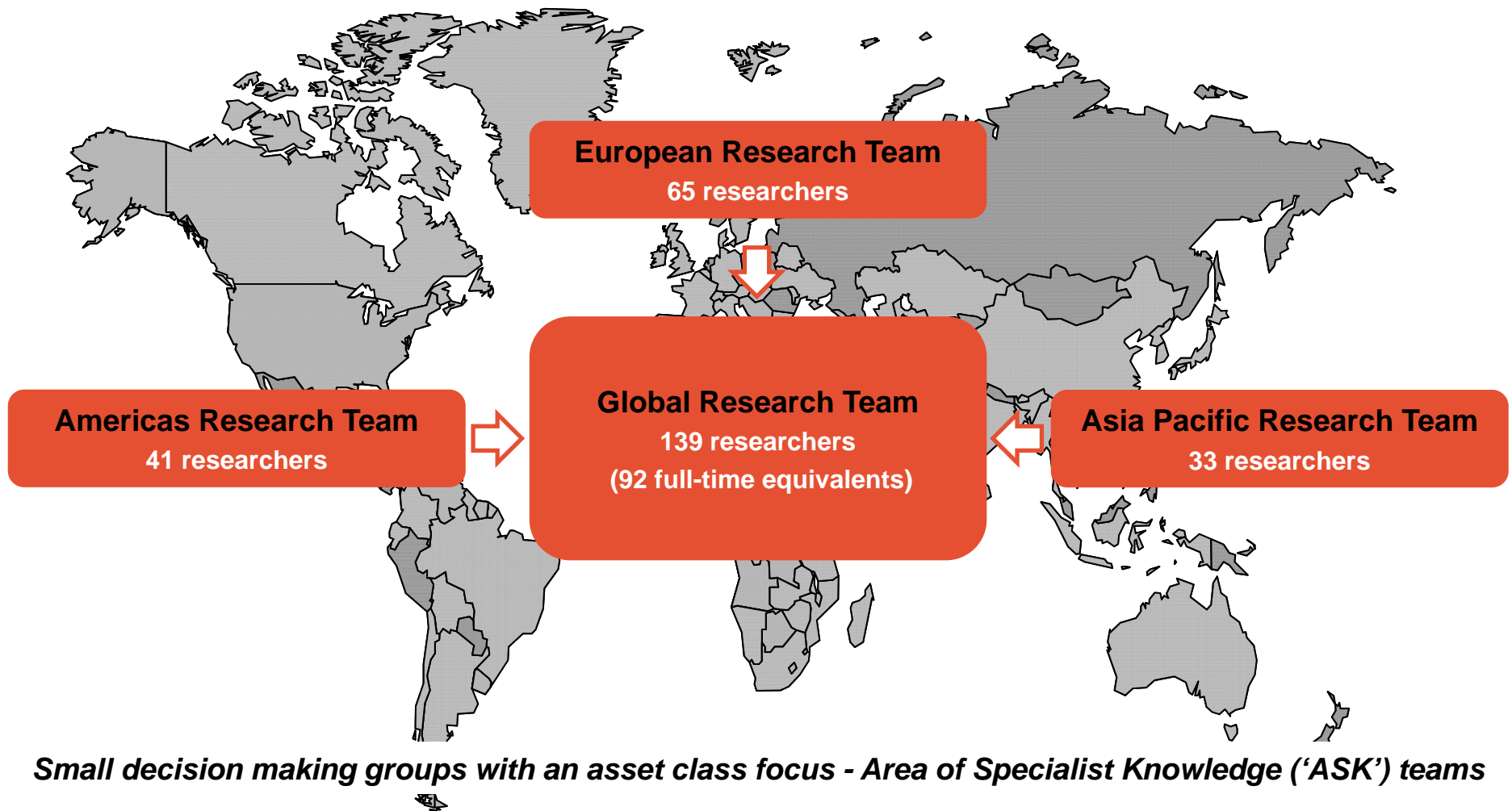
Manager Research

Key Differentiators of our Manager Research

Our resources to evaluate and select managers are unique in the industry.

One of the world's largest teams	Experienced and stable team <ul style="list-style-type: none"> Ability to leverage one of the largest teams of independent manager researchers globally and our team of analysts Local on-the-ground presence in every major market
Research- driven	Globally integrated, substantial resources <ul style="list-style-type: none"> Asset class focus, including global and regional exposure Experienced in working alongside clients' research teams
Independent	Consulting advice and implementation is our only sources of revenue <ul style="list-style-type: none"> No asset management or banking operation No fund of funds operation
Well defined investment philosophy	Focus on the traits of the 'great investors' in history <ul style="list-style-type: none"> Past performance useless for providing answers, great for providing more questions Qualitative research is key: Business, People and Process
Asset experts enrich strategic thinking	Manager Research feeds ideas and innovations into top-down asset research teams <ul style="list-style-type: none"> Bottom-up idea generation We are close to the best managers
Quant analysis tailored to your needs	TWIS has invested heavily to develop proprietary tools to meet your needs <ul style="list-style-type: none"> Ex ante risk assessment Trade analysis and Capacity analysis

Manager Research Locations



Areas of Specialist Knowledge (ASK)

Manager Research resources are organized into a series of ASK teams. There are ASK teams for all of the major asset classes and specialist activities in the investment industry. Each ASK team is responsible for researching all managers within its asset class, and providing recommendations of suitable managers. Teams are also responsible for staying current and providing white paper research on trends in their respective investment areas

- | | | | |
|--------------------|--------------------|---|---|
| • Equities | • Bonds | • Alternatives | • Specialist |
| • Australian | • Asian | • Commodities | • Custody |
| • Canadian | • Australian | • Currency/TAA/ Target Return Multi Asset | • Indexation |
| • EAFE | • Canadian | • Hedge Funds – Direct | • Multi Manager |
| • Emerging Markets | • Emerging Markets | • Hedge Funds – Fund of Funds | • Structured Products |
| • European | • European | • Infrastructure | • Sustainable Investment & Corporate Governance |
| • Global | • Global | • Private Equity – Direct | • Quantitative Analysis Input |
| • Hong Kong | • High Yield | • Private Equity – Fund of funds | • Target Date Funds |
| • Japanese | • Hong Kong | • Real Estate – Europe | • Transition |
| • Pacific Basin | • Japanese | • Real Estate – North America | • Stable Value |
| • Singapore | • Singapore | • Real Estate – Asia Pacific | • Defined Contribution Initiatives |
| • UK | • Swiss | | |
| • US | • UK | | |
| | • U.S. | | |

Alternative Assets — Breadth and Depth of Resources

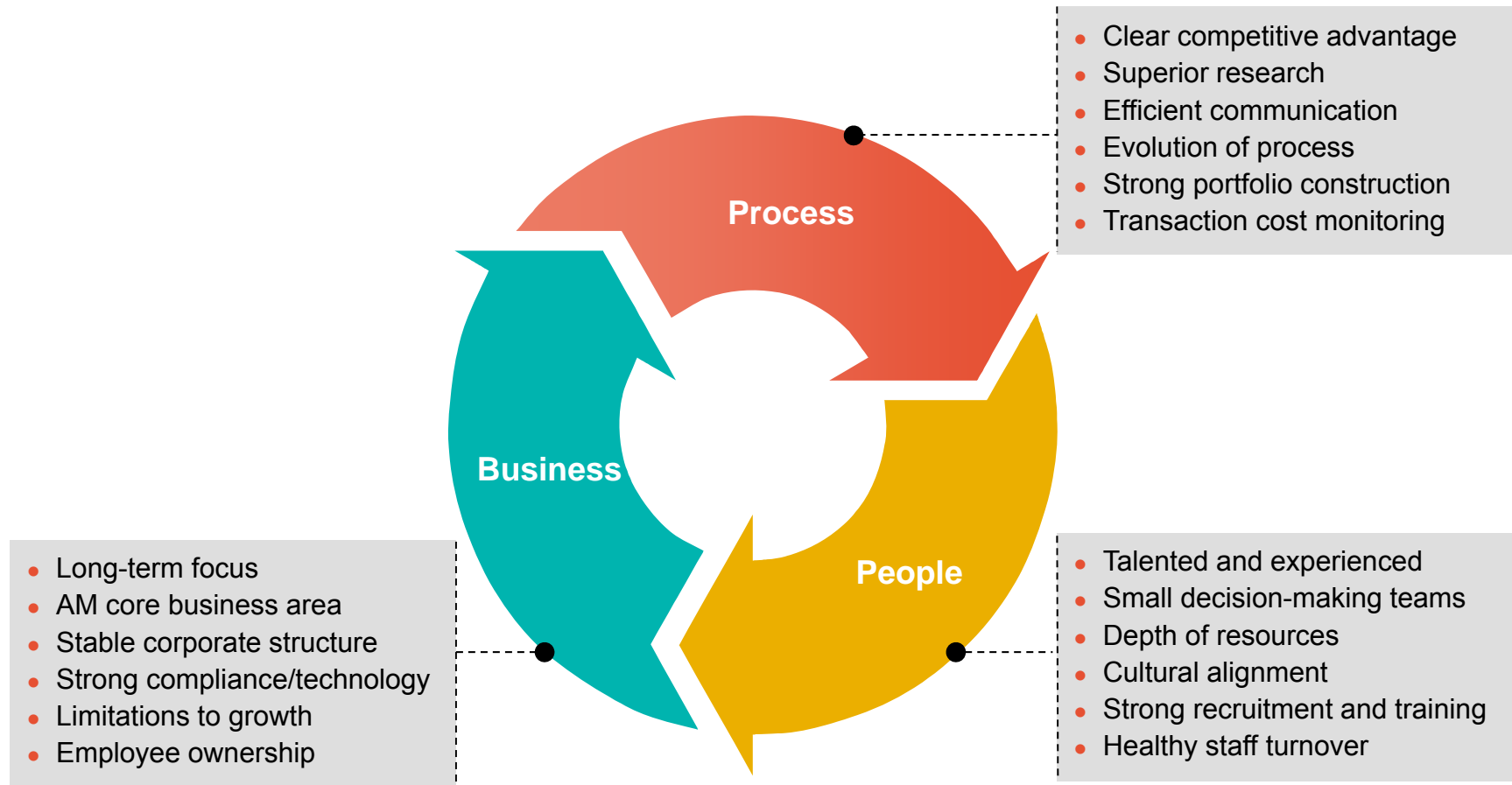
Equity Research Team	Manager Research Quant Team	Manager Research Systems Team	Manager Research Admin	Fixed Income Research Team
43 Team Members	5 Members	11 Members	15 Members	25 Team Members

Alternatives Research Teams	
Hedge Fund Research Team	Private Markets Research Team
23 Team Members Average exp 12 years	31 Team Members Average exp 13 years

Equity Hedge Fund Team	Fixed income Hedge Fund Research Team	Distressed Research Team	Real Estate Research Team
Multi Strategy Hedge Fund Research Team	Fund of Hedge Fund Research Team	Private Equity Research Team	Infrastructure Research Team

• Hedge Funds	• Beta/replication	• Private Equity	• Venture
• Reinsurance	• Distressed	• Real Estate	• Private Equity FOFs
• Currency	• Mezzanine	• Infrastructure	• Timberland
• FoHF	• Real Estate Debt	• Secondaries	• Energy

The Qualities We Look for in Managers



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It may also not be disclosed to any other party without Towers Watson Investment Services' prior written permission except as may be required by law. In the absence of our express written agreement to the contrary, Towers Watson Investment Services accepts no responsibility for any consequences arising from any third party relying on this document or the opinions we have expressed. This document is not intended by Towers Watson Investment Services to form a basis of any decision by a third party to do or omit to do anything.

Please note that investment returns can fall as well as rise and that past performance is not a guide to future investment returns.



The Future Foundation

Spending Policy Analysis

Mister Fantastic, CFA

Human Torch, FSA, CERA

February 2012

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TOWERS WATSON 

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Report Content

- I. Current Spending Analysis
- II. Alternative Spending Analysis
- III. Alternative Spending Analysis with Private Foundation Minimum
- IV. Conclusions
- v. Appendix
 - I. Impact on Risk/Reward Trade-Off
 - II. Spending Rules Framework



Current Spending Analysis

Assumptions – Asset Classes

- Asset classes are described by their returns, volatility, and correlation with other asset classes
- Expectations for individual asset classes were developed by the Towers Watson Investment Model as of October 2011
- Return assumptions are net of fees assuming passive management (or minimum risk)
- Return distributions incorporate fat tails
- Correlations between return-seeking asset classes increase when fat-tail events occur
- Simulated government yield curves and simulated corporate spreads are used in developing liability discount rates and returns on fixed income

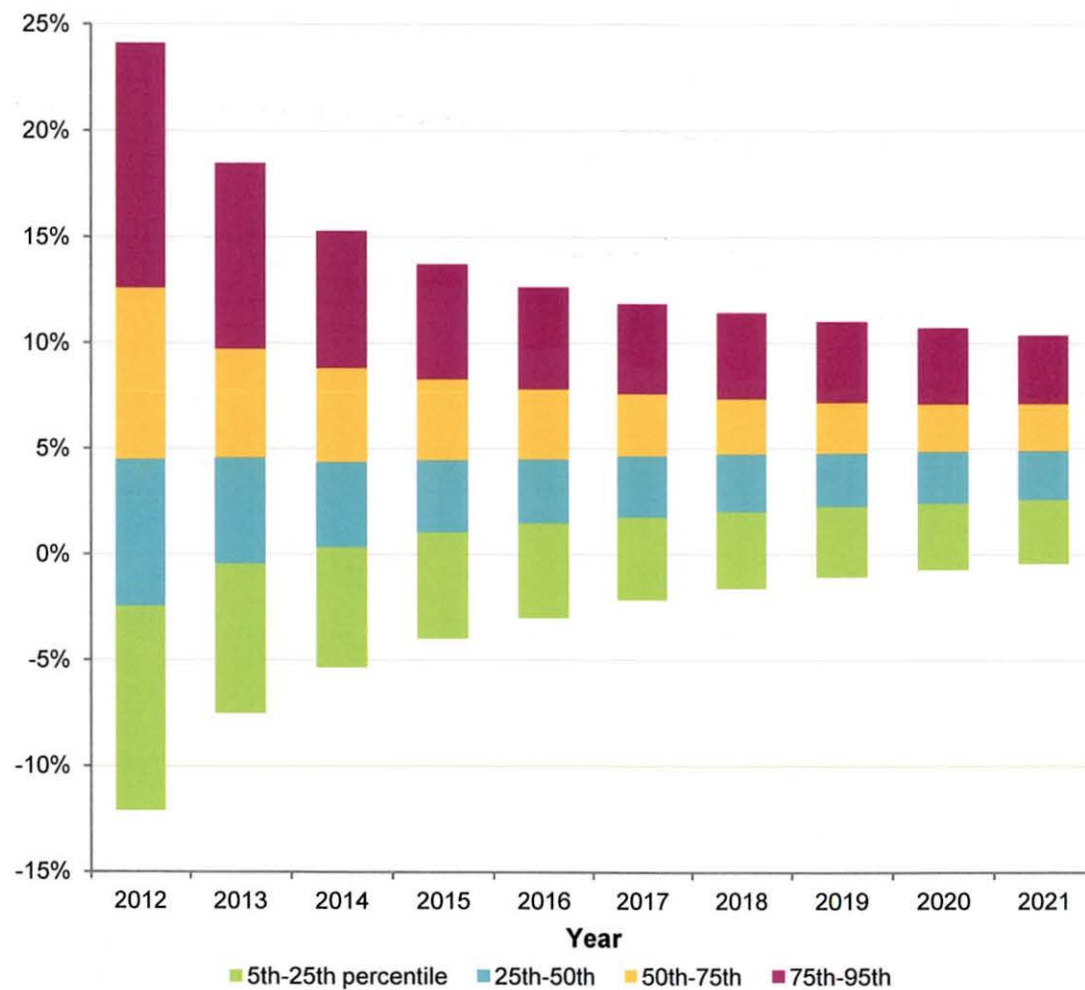
towerswatson.com

Summary assumptions for October 1, 2011 Towers Watson Investment Services						
	1st Year Returns		10th Year Returns		10 Year Returns	
	Arithmetic Mean	Standard Deviation	Arithmetic Mean	Standard Deviation	Geometric Mean	Standard Deviation
Equity Investments						
Global (unhedged)	9.7%	20.9%	9.0%	16.0%	7.8%	17.5%
Global (hedged)	9.3%	20.1%	8.8%	15.0%	7.6%	16.6%
US Equity	9.4%	21.8%	8.8%	16.2%	7.5%	17.9%
US Large Cap	9.3%	22.0%	8.7%	16.2%	7.4%	18.0%
US Small Cap	10.2%	27.1%	9.4%	21.1%	7.3%	23.0%
International (unhedged)	9.9%	24.5%	9.2%	18.6%	7.5%	20.4%
International (hedged)	9.3%	21.4%	8.7%	15.8%	7.4%	17.5%
International Developed	9.8%	24.6%	9.2%	18.7%	7.5%	20.5%
International Developed (hedged)	9.1%	21.4%	8.6%	15.8%	7.3%	17.5%
Emerging Market Equity	10.7%	30.7%	9.5%	23.0%	6.9%	25.4%
Private Equity	10.1%	29.2%	8.9%	21.5%	6.6%	23.9%
REITs	7.7%	17.0%	7.7%	14.0%	6.7%	14.9%
Infrastructure	8.4%	23.5%	7.4%	15.0%	6.4%	17.8%
Fixed Income						
US Investment Grade	3.1%	5.9%	4.8%	5.3%	2.8%	5.9%
High Yield	4.0%	13.1%	7.1%	10.1%	5.7%	11.1%
Inflation-Indexed	3.1%	6.2%	4.3%	6.0%	3.0%	6.1%
Long Government	0.3%	14.5%	4.0%	10.1%	1.0%	12.0%
Long Credit	3.7%	16.6%	5.9%	13.0%	3.5%	14.9%
Long Government/Credit	2.0%	15.0%	5.0%	10.5%	2.4%	12.4%
Emerging Market Debt	1.9%	11.0%	6.6%	9.0%	4.8%	9.8%
Cash	0.6%	0.8%	3.6%	2.5%	2.3%	2.3%
Alternatives						
Real Estate	6.9%	12.0%	7.1%	10.0%	6.6%	10.6%
Hedge Fund-of-Funds	4.5%	7.5%	6.6%	7.2%	5.4%	7.3%
Commodities	3.0%	14.0%	5.6%	10.3%	3.9%	11.5%
Inflation	2.0%	1.5%	2.4%	2.5%	2.3%	2.3%

Projection of IP Spending Policy

Cumulative Returns

Annualized Portfolio Total Return over Inflation



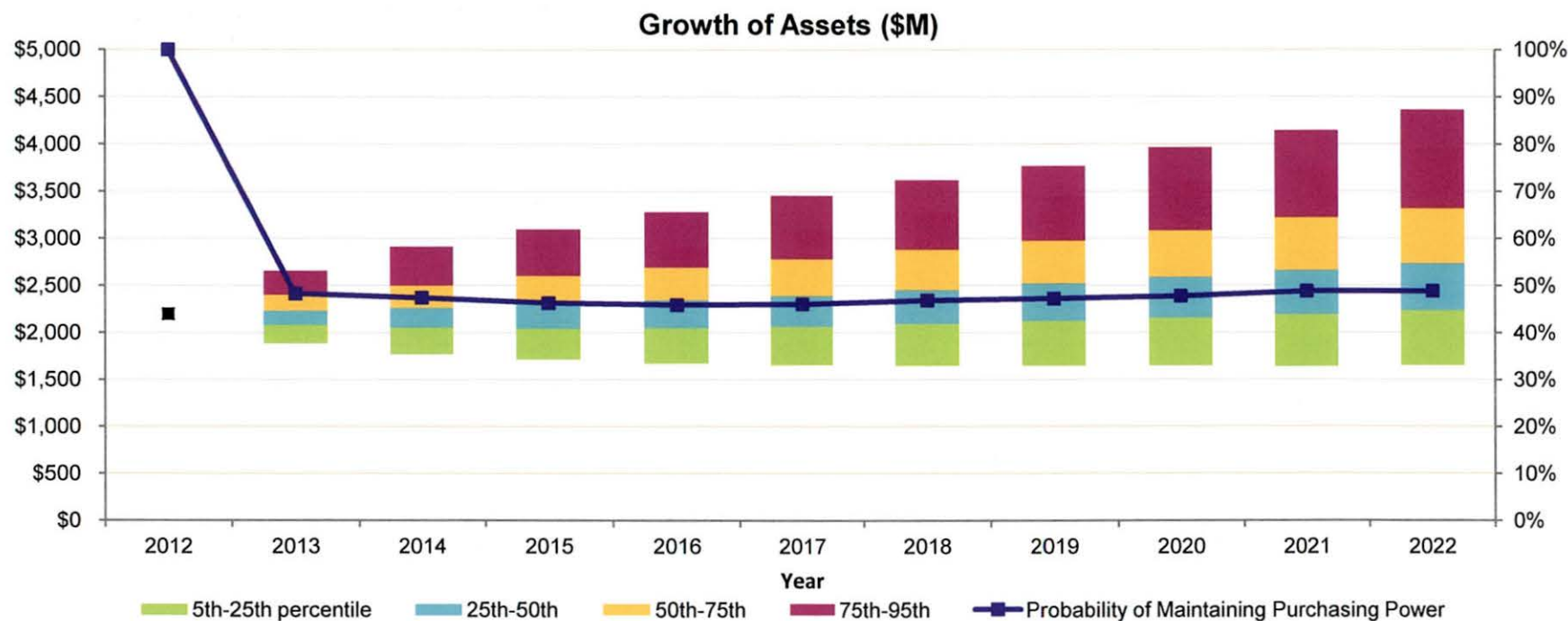
Overview of Investment Portfolio (IP)

Objectives and current spending policy

- Current investment objectives
 - To maintain and enhance the value of the IP, while allowing for appropriate expenditures for carrying out the mission of the Future Foundation (“FF”)
 - Achieve a minimum long term return, net of fees and expenses, of CPI + 5% while minimizing volatility
- The spending policy determines the annual budget for grants and operations funded by the IP
- The current spending policy is: 5% of the 3 year average* market value of the IP

Projection of IP Spending Policy

Growth of assets – current spending policy



- Under poor (5th percentile) economic scenarios, the IP can fall below \$1.6B
- There is a 50% probability that the IP will maintain purchasing power at the end of the 10 year projection



Alternative Spending Analysis

Summary of Analysis

- Spending during the forecast is used for the current generation
 - The cumulative spending and the risk to spending are improved by spending policies related to inflation, not market value of the portfolio
- Assets at the end of the forecast benefit future generations
 - Spending policies based on level of the portfolio improved end of period assets
- A trade off exists between spending for the current generation and growing assets for future generations
 - Spending policies that increase spending in the near term, benefitting the current generation, deplete the assets available for future generations
 - Spending policies that aim to grow assets for the future generation may decrease spending in the near term, reducing the benefits the current generation receives
- Spending policies with inflation and market value components attempt to strike a balance between investing for the future generation and spending for the current generation

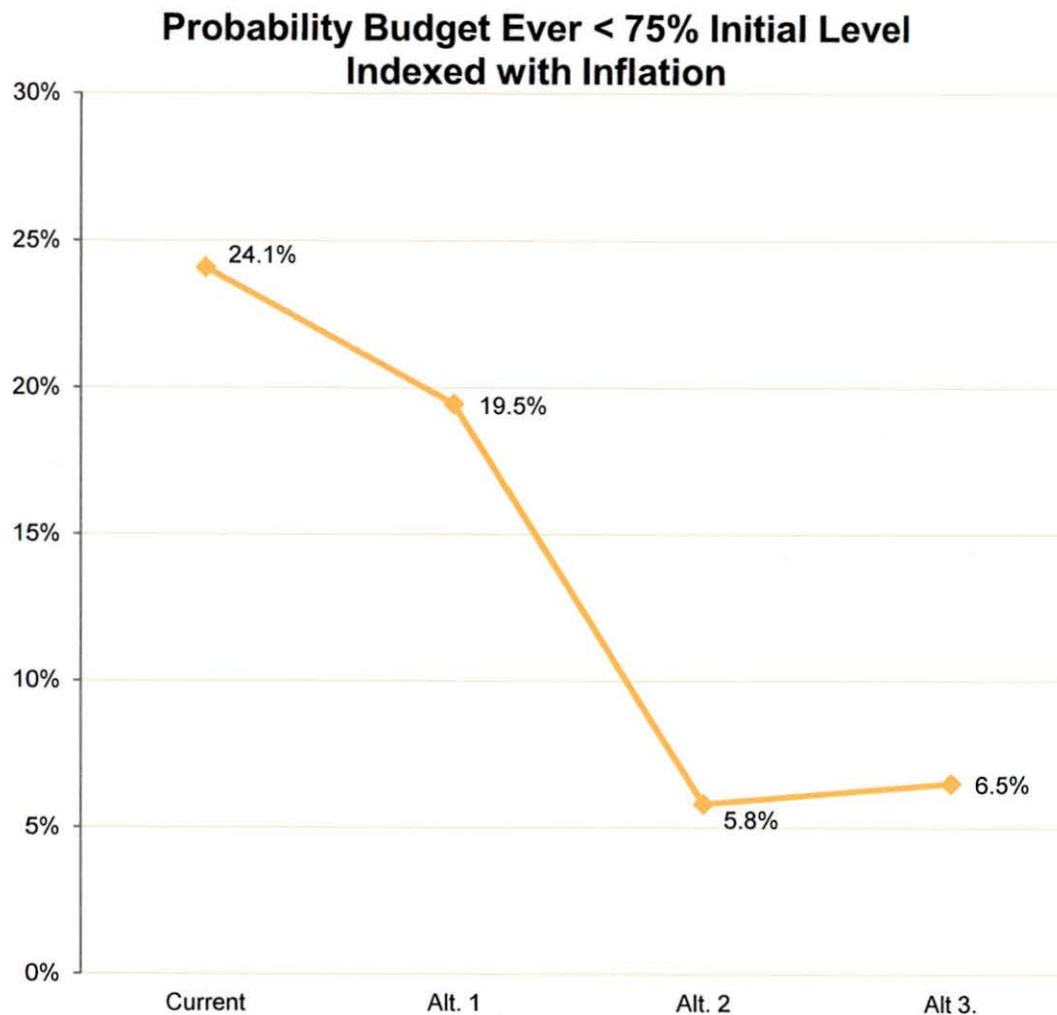
IP Spending Policy Analysis

Alternative spending policies examined

- For purposes of the study, analyzed the effect of alternative spending policies on:
 - The spending level
 - The growth of the IP
- Alternative spending policy 1
 - \$100 million for 2012
 - 2013 and beyond: 5% of the 3 year average* market value of the IP, subject to a floor of 95% and maximum of 105% of the prior year spending level indexed with inflation
- Alternative spending policy 2
 - \$100 million for 2012
 - 2013 and beyond: Prior year spending level indexed with inflation, subject to a minimum of 3% of market value and maximum of 7% of market value
- Alternative spending policy 3
 - \$100 million for 2012
 - 2013 and beyond: 3% of 3 year average* market value *plus* 2% of initial 2012 market value indexed with inflation
 - Based on percentage of annual spending that is currently for multi-year commitments

Analysis of Alternative Spending Policies

Annual budget analysis

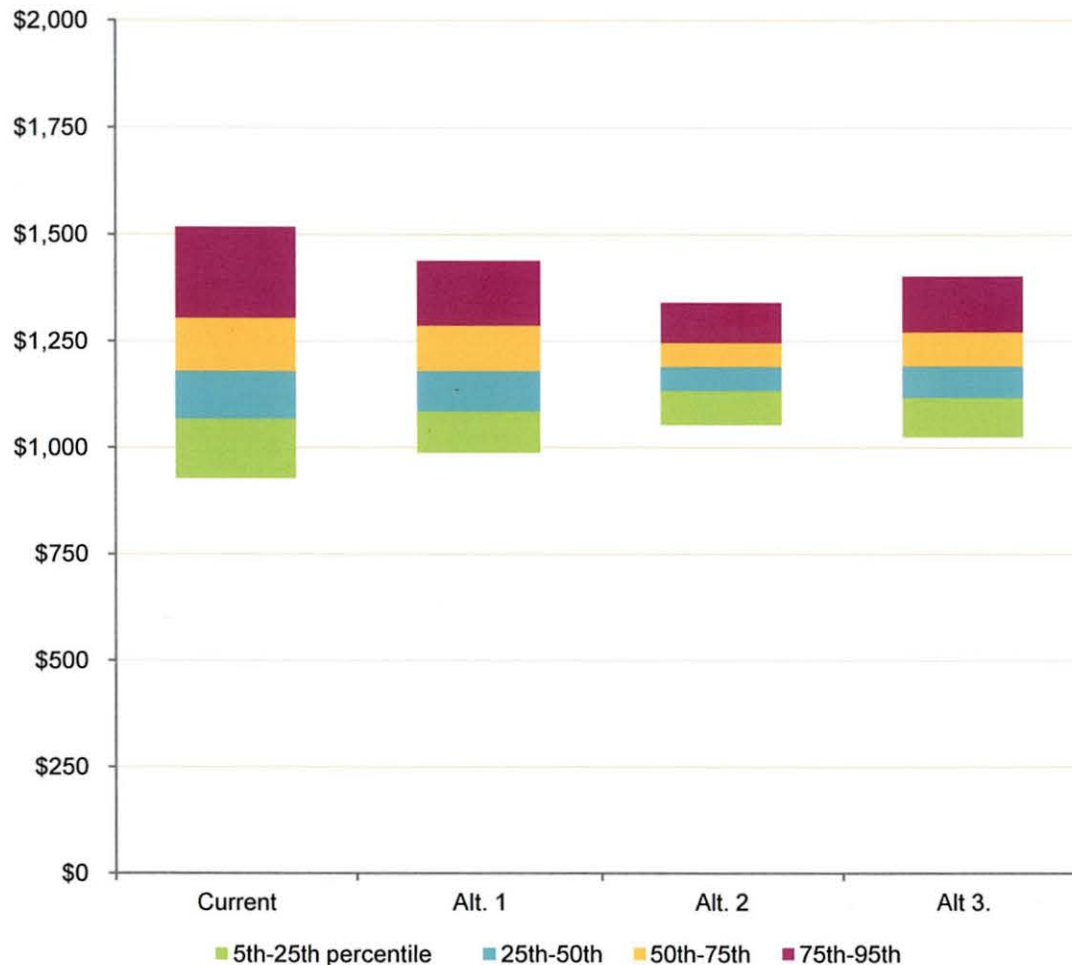


- Examined the probability that annual budget ever fell below 75% of the 2012 budget indexed with inflation throughout the projection period
 - Lower probabilities are preferred, indicating budget did not fall below the threshold
- Alternatives 2 and 3 show significant improvement over the current spending policy and Alternative 1, as both of these policies have an inflationary component to their calculation

Analysis of Alternative Spending Policies

Annual budget analysis

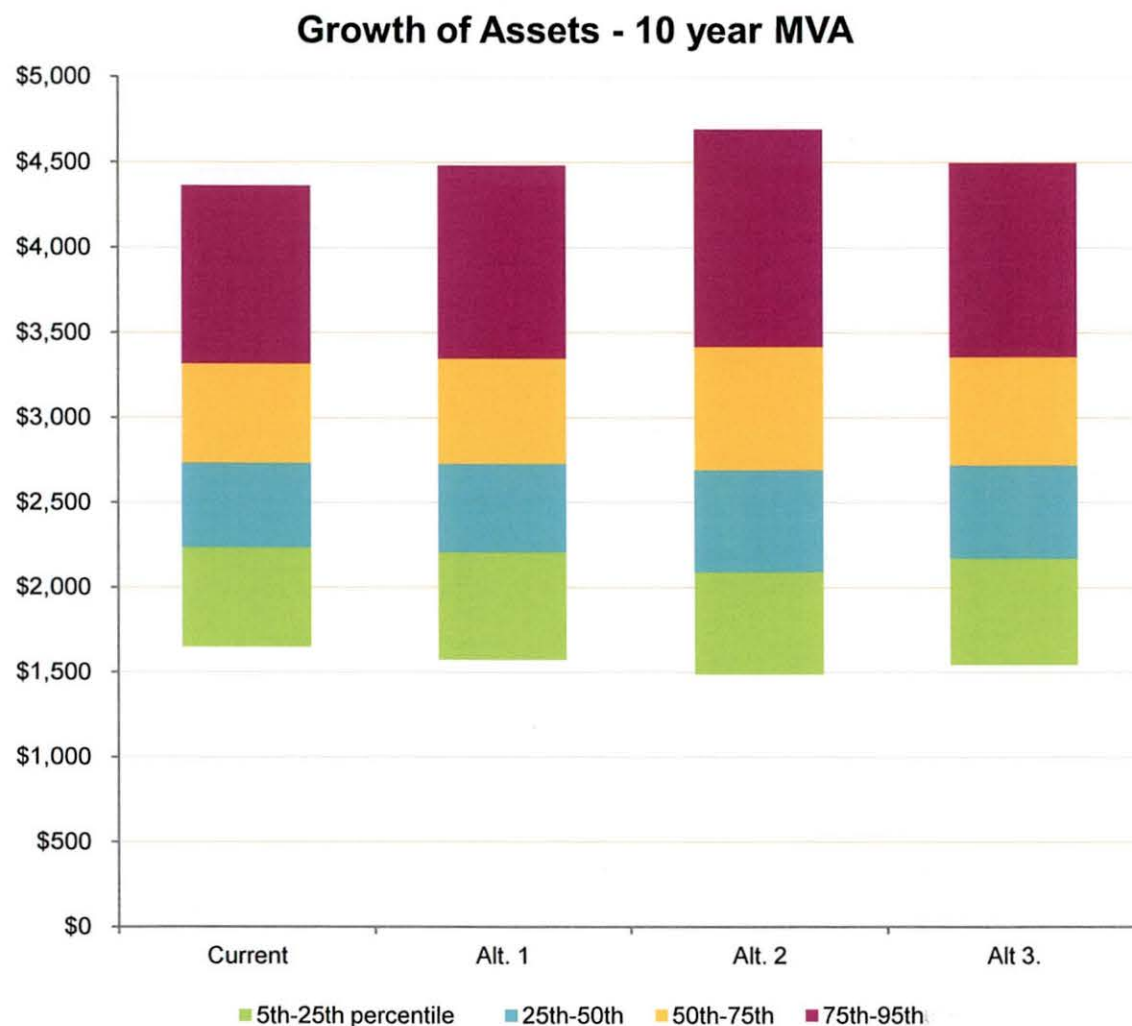
Cumulative Spending (\$M) - 10 year



- Examined the total amount spent during the 10 year projection
- Under all policies examined, the cumulative amount of spending is approximately \$1.2B over the 10 year projection
- The current spending policy provides for the greatest range (5th to 95th percentile) in spending after the 10 year period
 - 5th percentile spend is \$0.9B
 - 95th percentile spend is \$1.5B

Analysis of Alternative Spending Policies

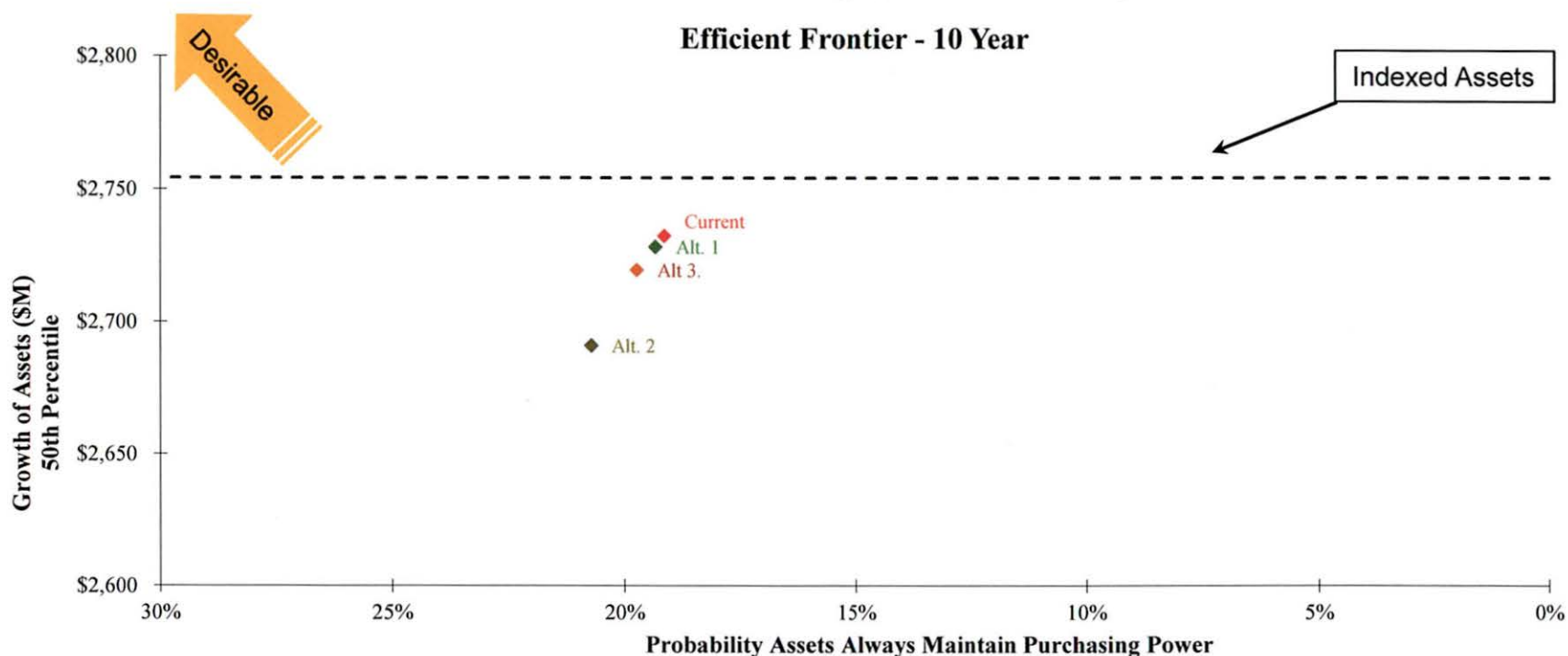
Growth of assets



- Under all spending policies examined, assets are expected to grow to approximately \$2.7B over the 10 year projection
- The current spending policy provides for the lowest range (5th to 95th percentile) of assets after the 10 year period
 - 5th percentile assets are \$1.6B
 - 95th percentile assets are \$4.4B
- Alternative spending policy 2 provides the greatest disparity between 5th and 95th percentile results
 - 5th percentile assets are \$1.5B
 - 95th percentile assets are \$4.7B

Analysis of Alternative Spending Policies

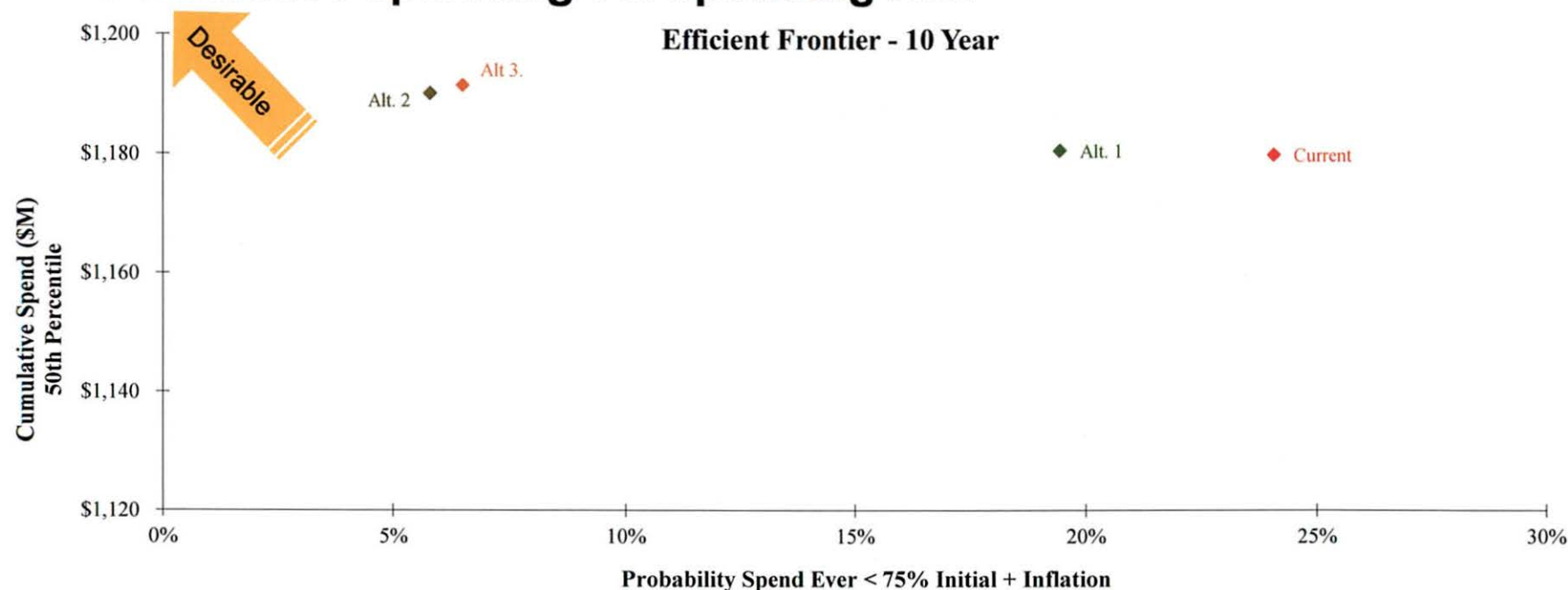
Growth of assets vs. maintaining purchasing power



- Under all spending policies examined, there is a trade-off between the expected level of the IP after 10 years and the probability that the IP never falls below the beginning 2012 level, indexed with inflation
 - Increasing the expected level of the IP after 10 years comes at a decreased probability that assets are always greater than the initial level of the IP indexed with inflation
- Alternative 2 provides the greatest probability of assets remaining above the indexed level of the IP, but provides the lowest expected value of the IP after 10 years

Analysis of Alternative Spending Policies

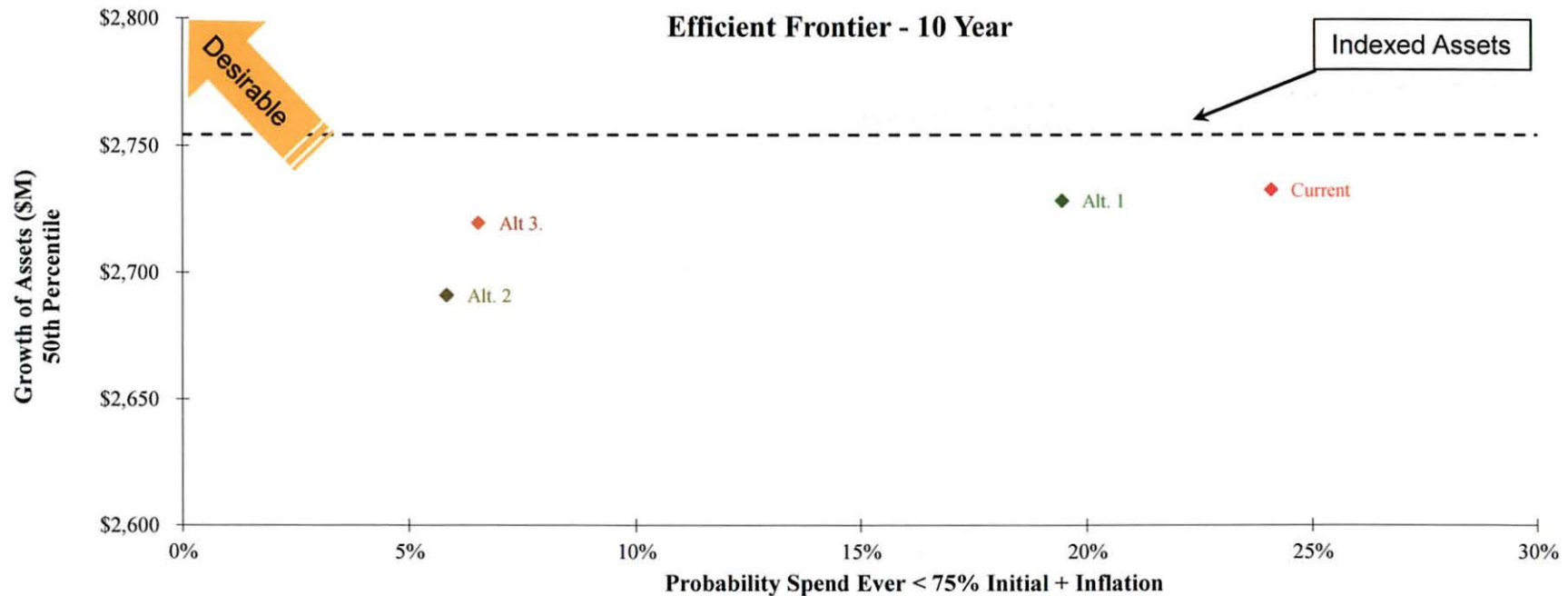
Cumulative spending vs. spending risk



- Consider the probability of the spending level ever falling below 75% of the 2012 budget indexed with inflation versus the expected cumulative level of spending over the projection
- Alternative spending policies 2 and 3 both have significantly lower probability of ever having spending fall below the floor while expecting a marginally higher level of spend over the period
 - This is due largely to the inflation component of the budget calculation versus the current policy and alternative 1

Analysis of Alternative Spending Policies

Growth of assets vs. spending risk



- Consider the probability of the spending level ever falling below 75% of the 2012 budget indexed with inflation versus the expected value of assets after 10 years
- Relative to the current spending policy and alternative 1, alternative spending policy 3 has a significantly lower probability of ever having spending fall below the floor with minimal effect on the expected level of the IP after 10 years



Alternative Spending Analysis with Private Foundation Minimum

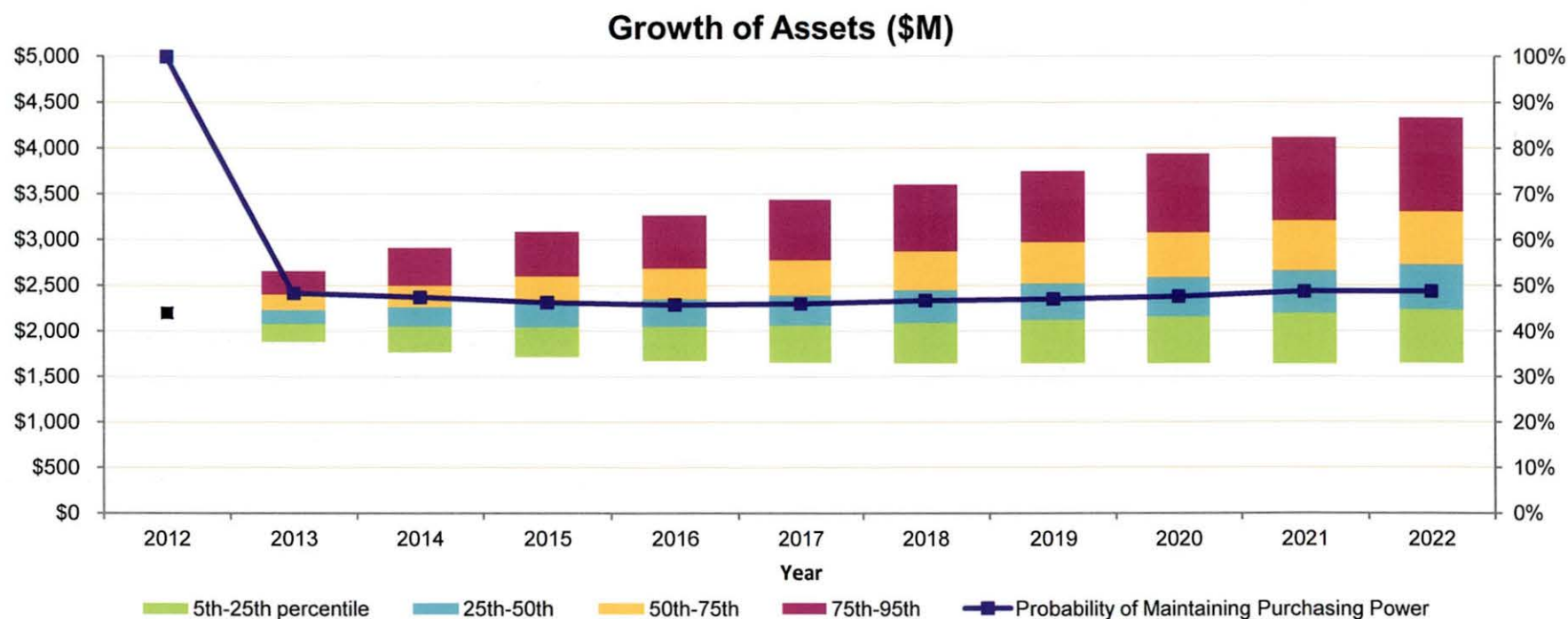
IP Spending Policy Analysis

Private Foundation Minimum Spending Rules

- Also analyzed each of the spending policies with the private foundation constraint
- The calculation of the annual spending amount is consistent with the current policy and alternatives 1, 2 & 3
- This amount is then subject to the minimum spending level under the private foundation rules
 - 4.925% of 12 month average market value
 - 12 month average is modeled as beginning and end of year average
 - Rules state 5% of 12 month average market value less 1.5% cash held for charitable purposes
 - Excess distributions over the minimum can be carried forward to reduce the minimum for 5 years
 - For example:
 - Year 1 budget of \$125, year 2 budget of \$80
 - 4.925% of market value is \$100 in year 1 and \$100 in year 2
 - Spend \$25 excess over private foundation minimum in year 1, can reduce private foundation minimum from \$100 to \$75 in year 2
- It should be noted that the private funding minimum will generally be applied when markets are doing well while risk metrics generally reflect when markets are performing poorly

Analysis of Private Foundation Minimum Spending

Growth of assets – current spending policy

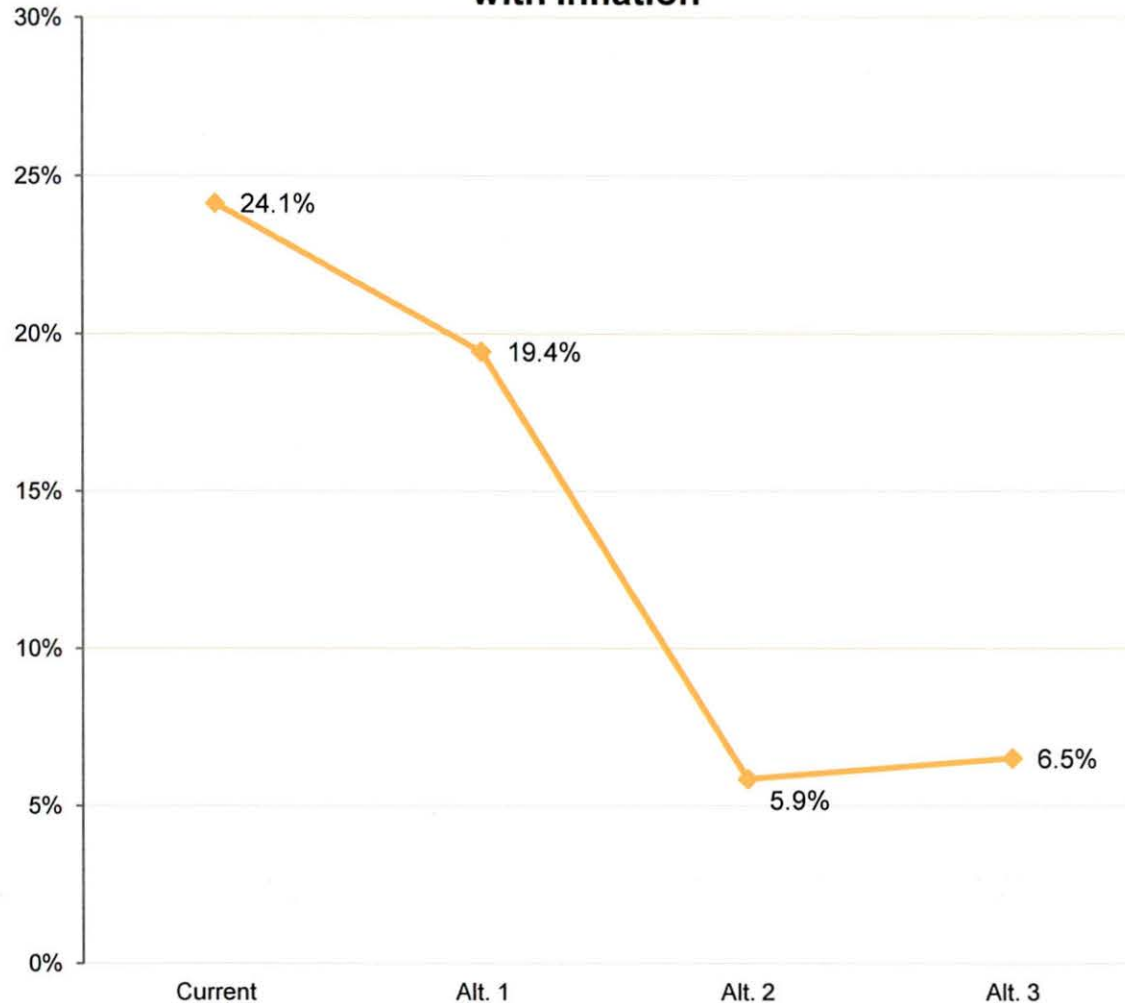


- The probability that the IP will maintain purchasing power through the 10 year projection remains at approximately 50%

Analysis of Private Foundation Minimum Spending

Annual budget analysis

Probability Budget Ever < 75% Initial Level Indexed with Inflation

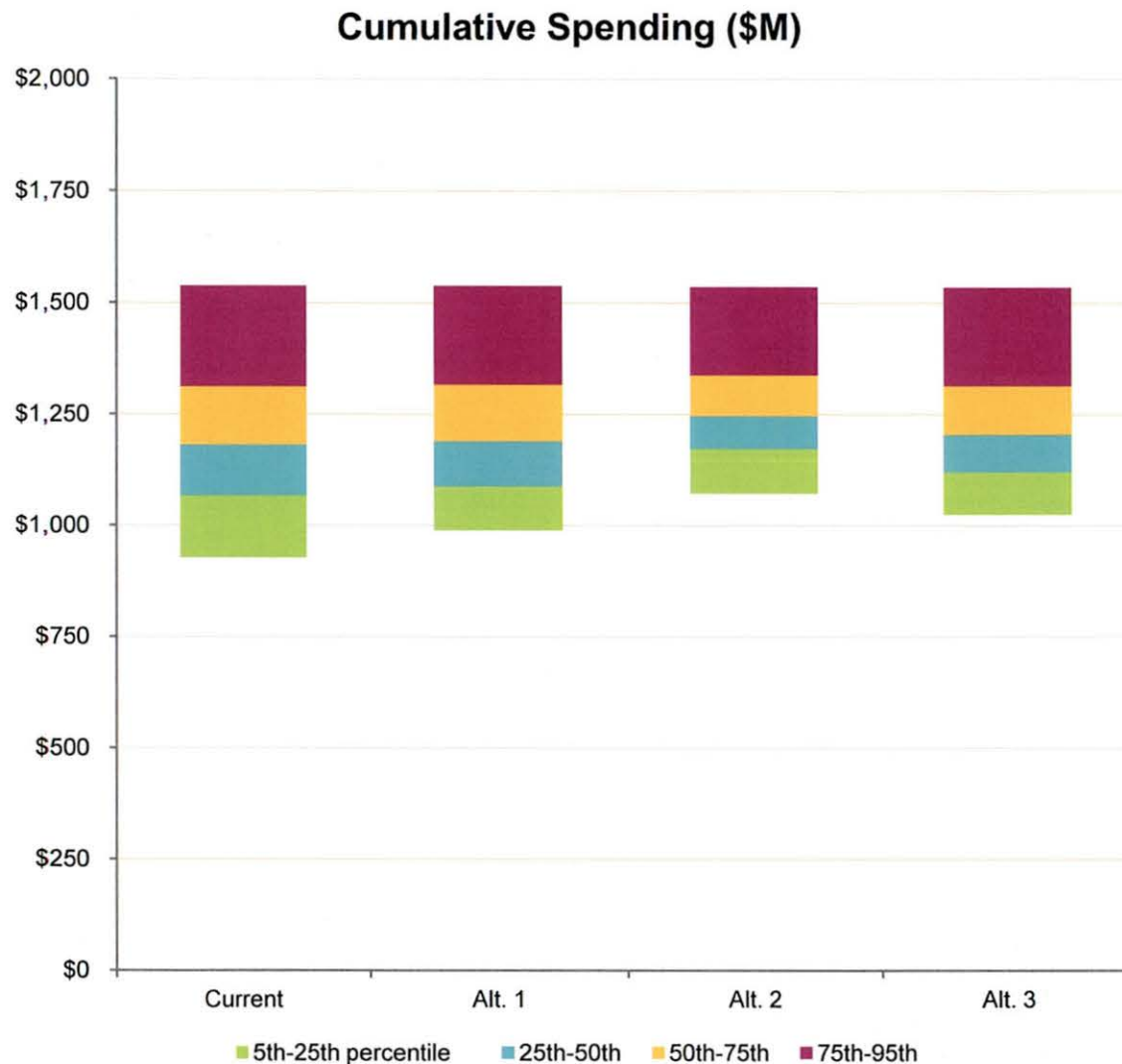


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- Examined the probability that annual budget ever fell below 75% of the 2012 budget indexed with inflation throughout the projection period
 - Lower probabilities are preferred, indicating budget did not fall below the threshold
- Including the private foundation minimum constraint, Alternatives 2 and 3 continue to provide improvement over the current spending policy

Analysis of Private Foundation Minimum Spending

Annual budget analysis

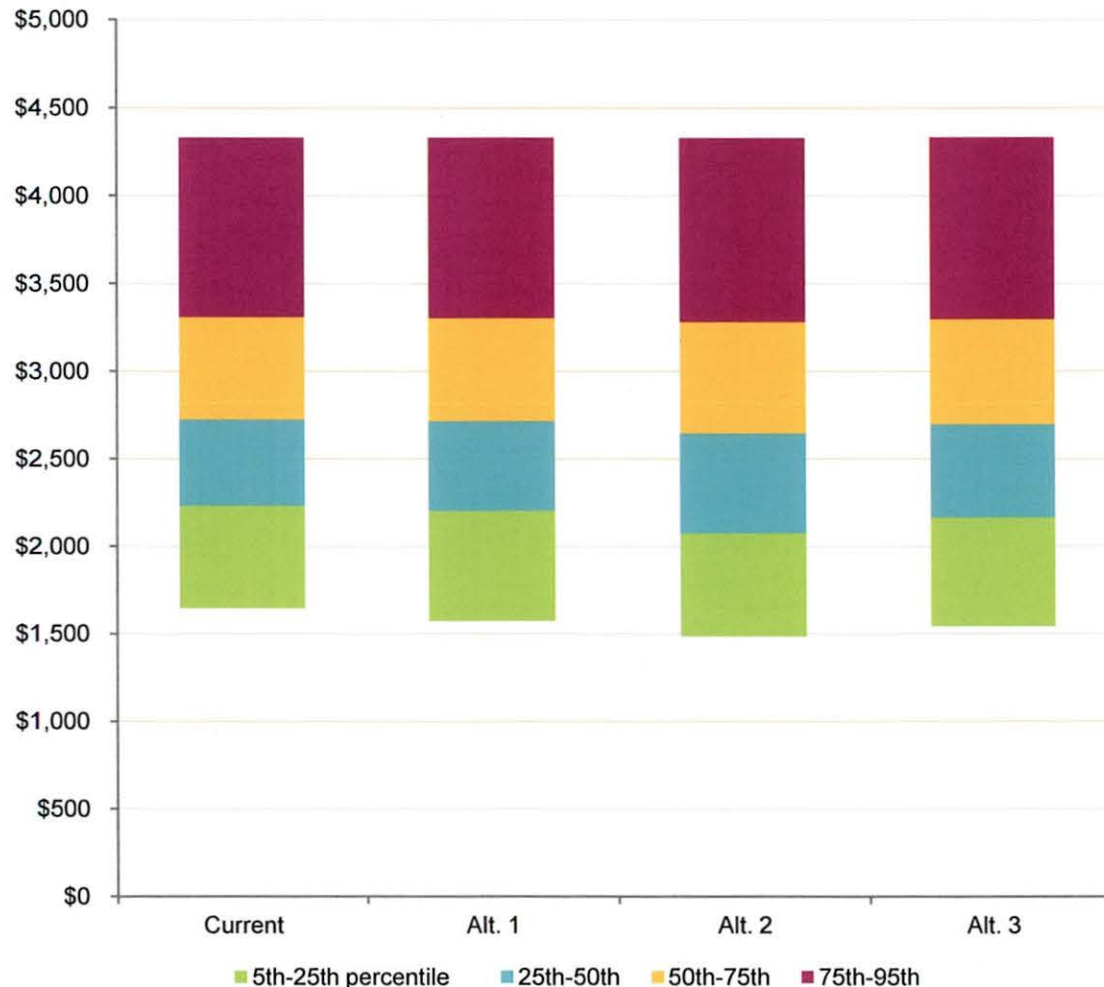


- Examined the total amount spent during the 10 year projection
- Under all policies examined, the cumulative amount of spending is approximately \$1.2B over the 10 year projection
- However, including the private foundation minimum has increased the expected level for alternatives 2 and 3 by approximately \$30-50 million

Analysis of Private Foundation Minimum Spending

Growth of assets

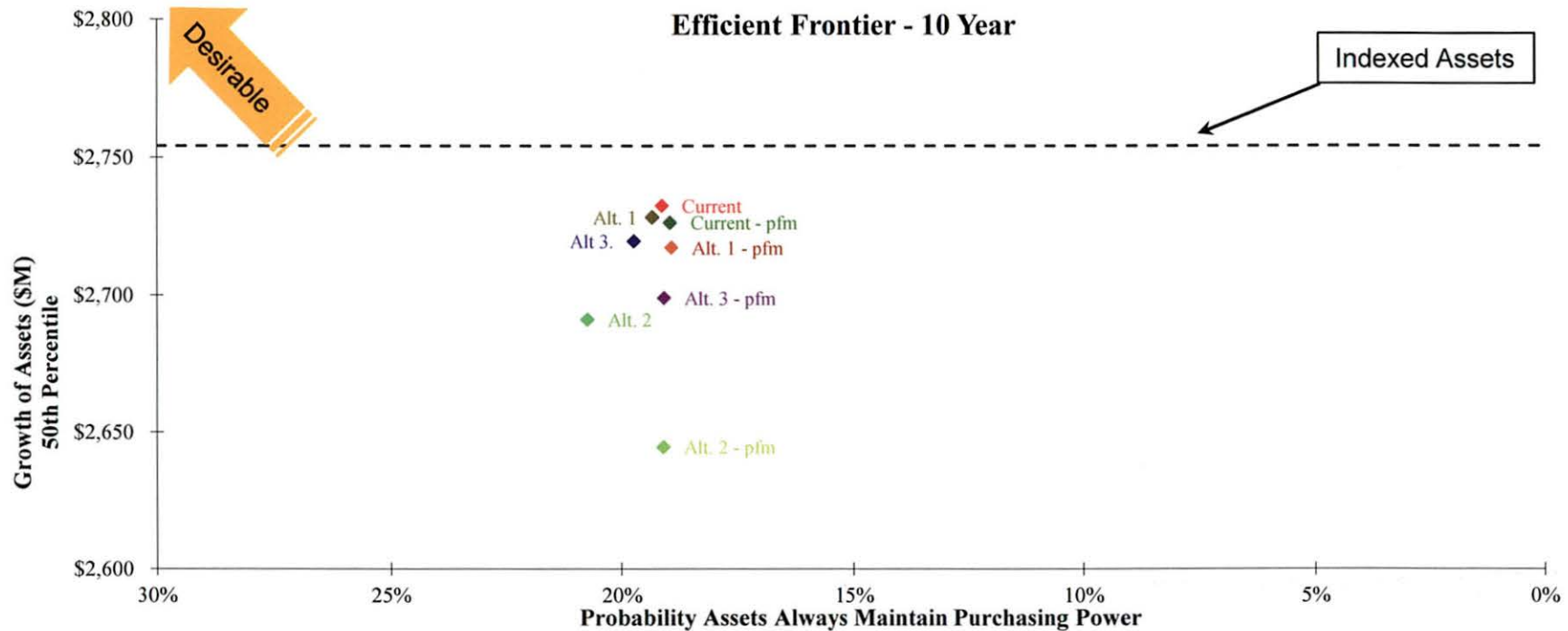
Growth of Assets (\$M)



- Incorporating the private foundation minimum spending rules, there is little effect on the expected level of the IP after 10 years for the current spending policy and alternative 1
- The expected level of alternatives 2 & 3 are both lowered by implementing the private foundation minimum constraint

Analysis of Alternative Spending Policies

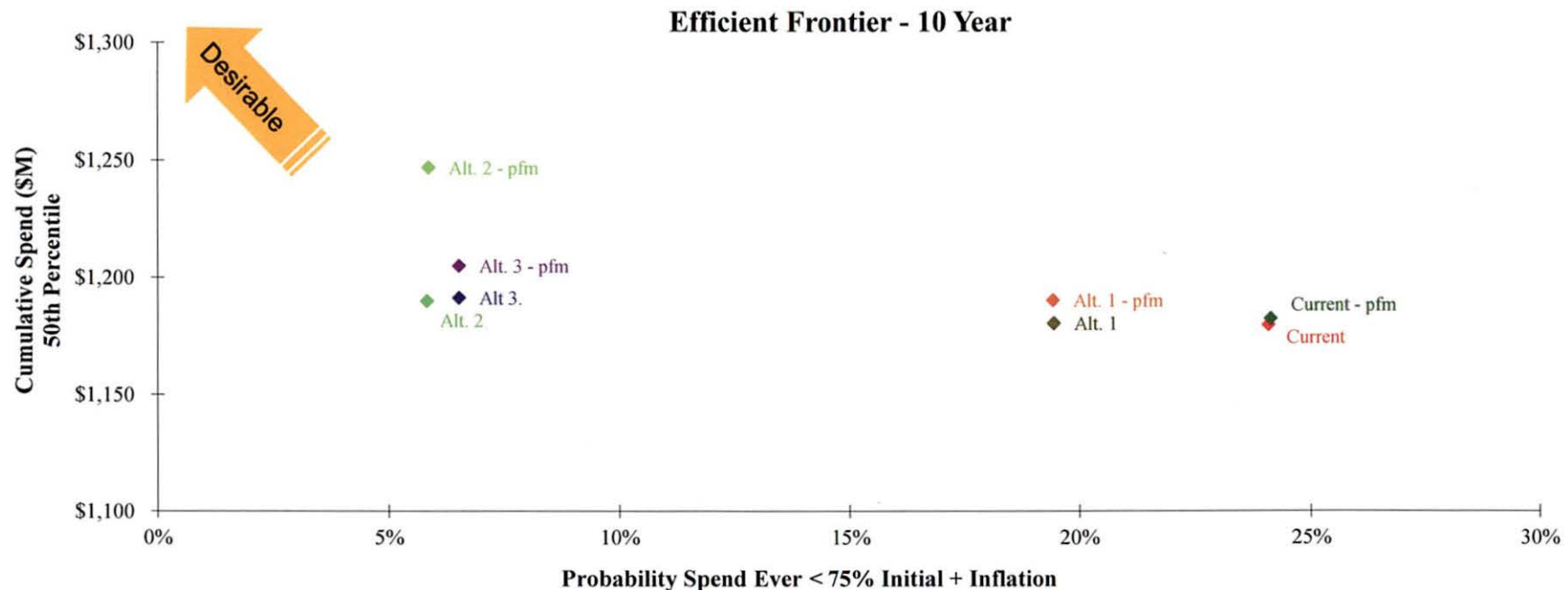
Growth of Assets vs. Maintaining Purchasing Power



- Applying the private foundation minimum spending rules reduces both the probability of assets always being greater than the indexed level and the expected level of the IP after 10 years
- Alternatives 2 & 3 are effected the most by applying the rules due to smaller component of current market value in the calculation of the annual budget

Analysis of Alternative Spending Policies

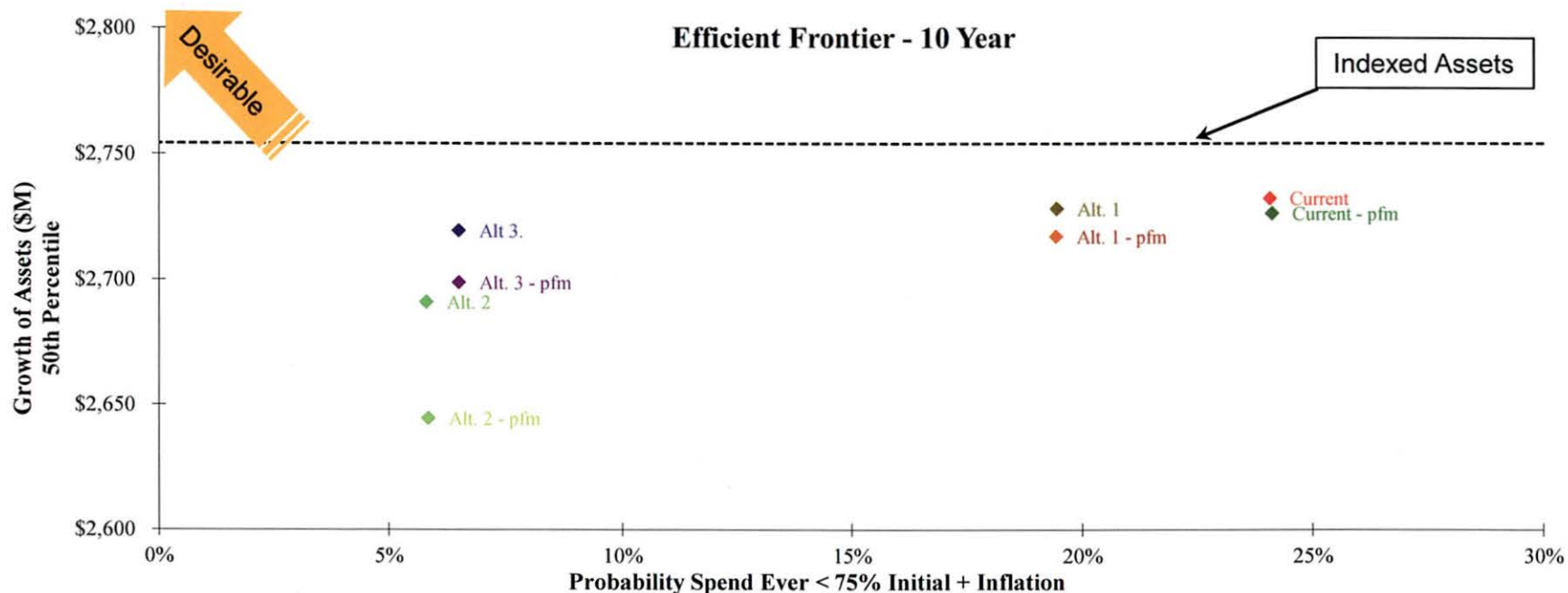
Cumulative Spending vs. Spending Risk



- Consider the probability of the spending level ever falling below 75% of the 2012 budget indexed with inflation versus the expected cumulative level of spending over the projection
- Alternative spending policy 2 has the greatest increase in expected cumulative spending levels due to the application of the private foundation minimum

Analysis of Alternative Spending Policies

Growth of assets vs. spending risk



- Consider the probability of the spending level ever falling below 75% of the 2012 budget indexed with inflation versus the expected value of assets after 10 years
- Relative to the current spending policy and alternative 1, alternative spending policy 3 has a significantly lower probability of ever having spending fall below the floor with minimal effect on the expected level of the IP after 10 years
- Applying the private foundation minimum spending rules has minimal effect on the probability of spending ever falling below the floor, but does reduce the expected level of the IP for alternative 2 & 3



Conclusions

Conclusions

- Spending during the forecast is used for the current generation
 - The cumulative spending and the risk to spending is improved with spending policies like alternative 2 and 3
- Assets at the end of the forecast benefit future generations
- Comparing risk and rewards
 - Using expected assets at the end of the forecast, which benefit future generations, as a reward metric
 - Using drop in spending below 75% of current in real terms, which hurts the current generation, as a risk metric
 - The alternative spending policies can be compared in regard to their risk and rewards for the current and future generations
 - Alternative 2 and especially alternative 3, show a relatively high reduction in risk while giving up a relatively small reduction in reward
 - The application of the private foundation minimum increases the reduction in reward



Appendix



Impact on Risk/Reward Trade-Off

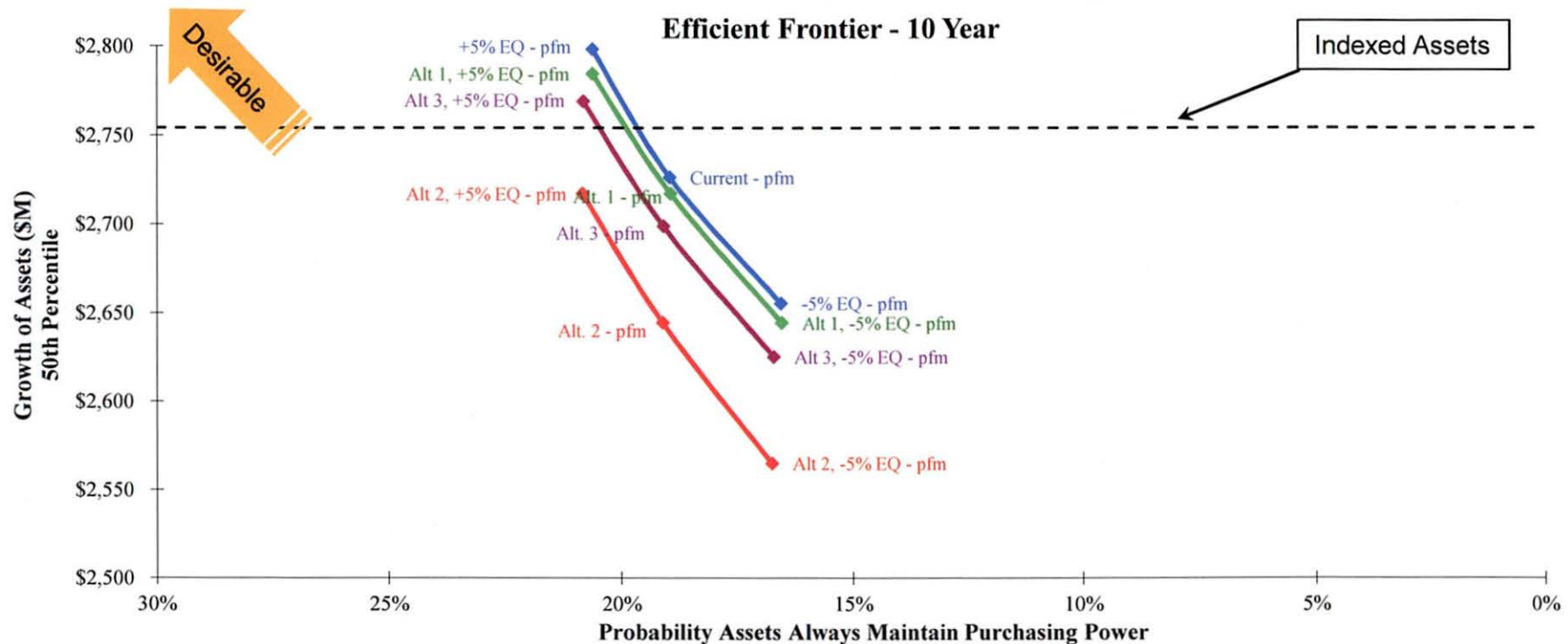
IP Spending Policy Analysis

Additional Asset Allocations

- Also analyzed the effect of alternative asset allocations on the spending policies
- Assumed the private foundation constraint was in effect
- For each spending policy, examined the effect of a 5% increase in allocation to fixed income
 - 5% sourced from global equities
 - Increase split evenly between nominal and inflation linked fixed income
- In addition, examined the effect of a 5% decrease in fixed income on each spending policy
 - 5% sourced equally from nominal and inflation linked fixed income
 - 5% put into global equity

Analysis of Alternative Spending Policies

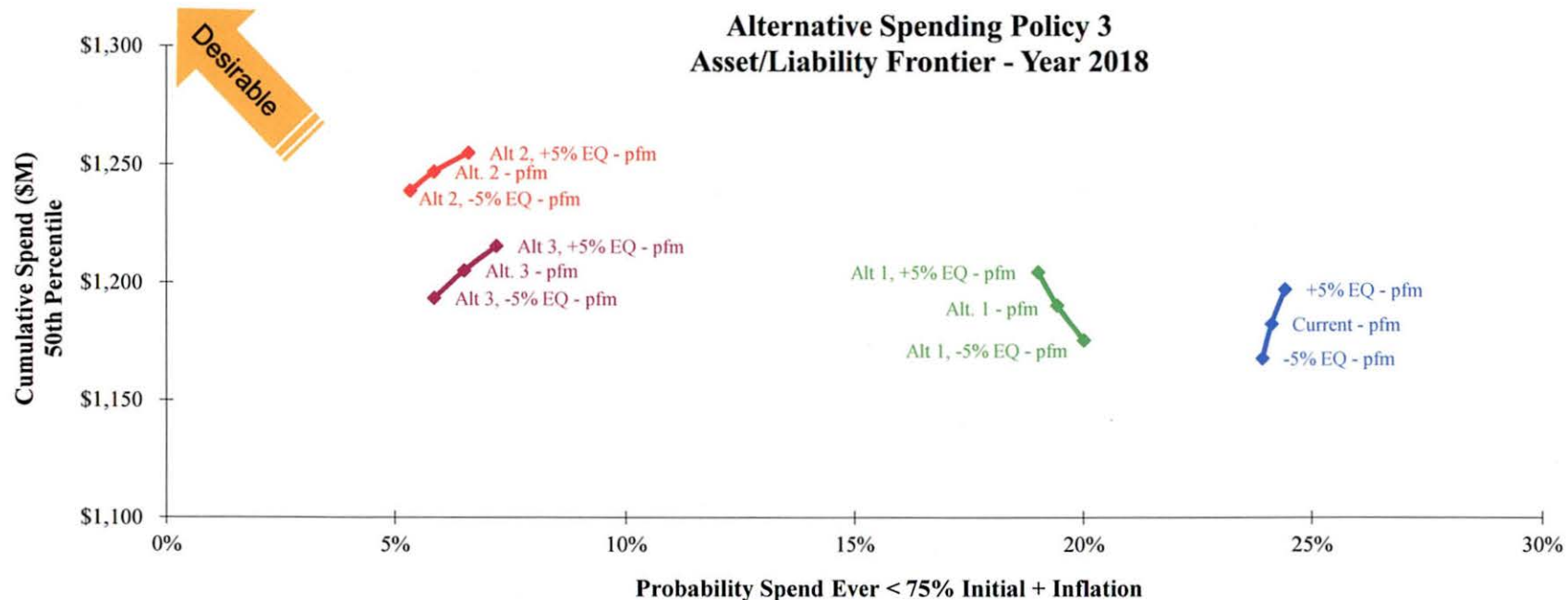
Growth of Assets vs. Maintaining Purchasing Power



- For each of the spending policies, an increase in the equity allocation increases the expected level of assets after 10 years and increases the probability of assets always being greater than the 2012 level indexed with inflation
- Analyzing these two metrics, the spending policy has little impact on the slope of the line

Analysis of Alternative Spending Policies

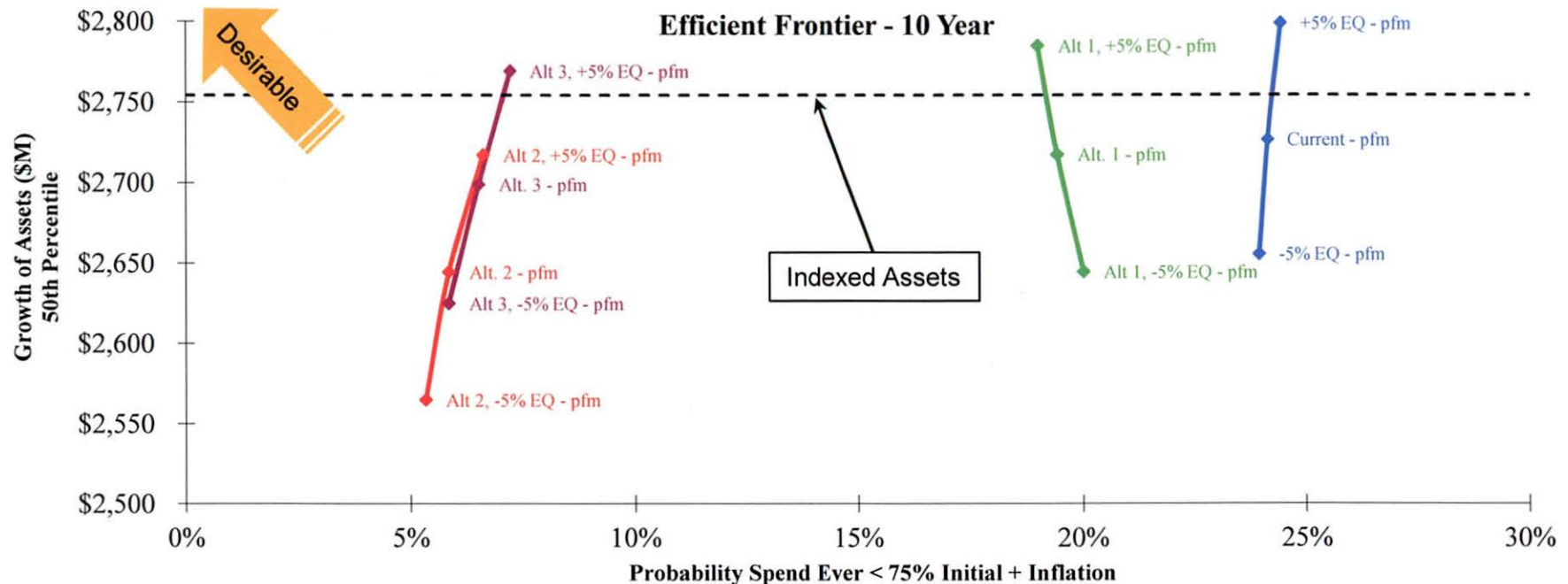
Cumulative Spending vs. Spending Risk



- When examining the expected cumulative spending level versus the probability that spending never falls below the floor, a trade-off exists for the current spending policy, and alternative policy 2 and 3
 - As equity is increased, the expected cumulative level of spending increases, at a cost of a higher probability that the spending level falls below the floor at some point in the projection period
- Analyzing these two metrics, alternative spending policies 2 and 3 have little impact on the slope of the line

Analysis of Alternative Spending Policies

Growth of assets vs. spending risk



- When analyzing the reward of asset growth against the risk that annual budget ever falls below the floor, a trade-off exists between adding and subtracting equity from the portfolio
 - Higher levels of equity increase the expected level assets after 10 years, at a cost of a higher probability that annual spending falls below the threshold
- Analyzing these two metrics, alternative spending policies 2 and 3 have little impact on the slope of the line



Spending Rule Frameworks

Spending Rule frameworks

- Spending rules should focus on:
 - Considerations of **intergenerational equity**, balancing objectives and beneficiary needs, and considering the appropriate target market values for the fund, and the implications for current and future generations
 - Policies and strategies for managing **purchasing power** over the long run
 - Developing target **rates of spending** to meet stakeholder needs and expectations
 - Perhaps avoiding fluctuations in payout that could have a negative impact on the institution's activities and planning.
- The remainder of this section outlines 5 different approaches and thought processes for spending rules

Spending Rule Frameworks

- Investment policy and long-term expenditure planning are key decisions for any fund which plans to make regular distributions.
- Future spending ability is affected by uncertain investment outcomes.
- Spending rules are a key planning tool that assist the savings institution to meet its mission by funding current and future beneficiaries.
- In some cases spending rules can be distorted by taxation regimes.
- Savings institutions usually commit themselves (or are obliged by regulation – for example, in the case of US private foundations) to spending targets that exceed the risk-free rate.
- As a consequence, a portion of the portfolio needs to be invested in risky assets that, on average, yield higher returns, thus allowing larger levels of spending.
- However, the increased volatility of returns resulting from these strategies implies that poor returns are also likely to occur.
- Therefore, prudent institutional investors need to carefully consider these potential shortfalls when planning spending and implementing a risk budgeting approach.

Spending Rule Frameworks

(1) Percentage of (average) market value over a set-period of time

- According to the National Association of College and University Business Officers (NACUBO), the most common spending rule for US foundations and endowments (F&E's) is to disburse 5% of the three-year average of an endowment's market value
- Even though there is a certain smoothing behind this rule (as F&E's consider multi-year timeframes), it can become problematic as most F&E also seek to maintain the real value of the funds and therefore spending could be resented in periods where returns fall below CPI + 5%
- Additionally, under favourable market conditions (like the ones experienced in the 1990s), the spending of F&E's that use rules of this type grows together with the value of the fund. Conversely, the recent more volatile market conditions have jeopardized spending levels and, therefore, F&E's are now taking a closer look at spending rules

Spending Rule Frameworks

(2) *Yale spending rule*

- Also known as the “Stanford rule”, this term is commonly used to refer to spending approaches implemented by large US university endowments
- It aims at controlling the volatility in spending as well as reflecting recent performance of the endowment fund
- The rule basically combines a long-term spending rate of 5% and a smoothing factor in order to adjust spending to the variations in the endowment’s market value
- The actual rate is determined by the weighted average of the amount that would have been spent using the 5% rule and the previous year’s nominal spending
- **Advantages:**
 - it **moderates large fluctuations in spending** (by considering the previous year’s spending) and also allows spending to reflect the changes in the market value of the endowment, **protecting the fund’s real value**
- **Disadvantages:**
 - it **cannot guarantee intergenerational equity**
 - **Somewhat naive form of averaging**
 - **Quite short term approach**

Spending Rule Frameworks

(3) *Alpha-Beta rule*

- According to this rule, the endowment fund is broken down into:
 - An “Intergenerational equity fund”, defined as the current real value of the initial endowment
 - A “Stabilization fund”, calculated as the difference between the current value and the initial inflation adjusted endowment. Its function is to absorb the fluctuations in the total endowment's value. This is sometimes termed the “rainy day” fund.
- The total nominal spending for the period is then obtained by selecting a different spending rate for each of the above.
 - In practice the spending rate of the intergenerational equity term should be equal to the expected long term real return rate (for example 4%)
 - The one used for the stabilization term should be set at a level that keeps it close to the difference.
- **Advantages:**
 - it **allows for intergenerational equity** while permitting an adjusting factor to react to changes in the current value of the endowment fund
- **Disadvantages:**
 - it **does not guarantee a smooth rate of spending.**

Spending Rule Frameworks

(4) *Milevsky rule*

- This is a probabilistic approach.
- The objective is to maximize the level of spending subject to a constraint on the probability that the fund will exceed some pre-defined value over a specified time horizon
- In essence this rule is a weighted average of two rules:
 1. relates to the idea of spending a fixed real value amount
 2. relates to the idea of spending a proportion of the current endowment's value
- **Advantages:**
 - It is the only rule which considers that **spending is in real terms**. It includes the **idea of perpetual survival** of the fund.
- **Disadvantages:**
 - It **might lead to overspending** in nominal terms

Spending Rule Frameworks

(5) Inflation-linked rule

- It proposes to fix the current spending rate to an amount equal to the previous year's spending rate adjusted by the inflation rate.
- However, and in order to reduce variability in spending due to changes in the market value of the endowment's fund, the rule defines lower and upper limits for the payout rate (for example, 3% and 6%).
- Under this rule, the preservation of the endowment's value over time and the achievement of intergenerational equity relies heavily on the appropriate setting of the above limits.
- An Allocation Planning Model (APM) can be utilised to forecast the future value of the endowment's fund under different scenarios, and determine the width and level of the boundaries for the payout.

Limitations of Analysis

In preparing the analysis contained in this report, Towers Watson Investment Services, Inc. has used information and data provided to us by the Future Foundation. We have relied on all the data and information provided as being complete and accurate.

The analysis contained in this report involves forecasts. Forecasts require that we make assumptions about future events. We have used assumptions that we believe are reasonable and appropriate for the purpose for which they have been used. Other assumptions may also be reasonable and could result in substantially different results.

In addition, because it is not possible or practical to model all aspects of a situation, we use summary information, estimates, or simplifications of calculations to facilitate the modeling of future events. We may also exclude factors or data that are immaterial in our judgment. We believe that we have not oversimplified the situation being modeled and have not inappropriately included or excluded any items.

Naturally, future events and actual experience will vary from the assumptions we have employed and calculations prepared with actual data will vary from estimates or summaries used for modeling purposes.

The numbers in this report are not necessarily rounded. The use of unrounded numbers does not imply precision.

The analysis reported has been prepared solely for the benefit of the Future Foundation. This report is not complete without the accompanying discussion with a representative of Towers Watson Investment Services, Inc. This report should not be used for purposes other than spending policy or relied upon by any other person without prior written consent.

Analysis in this report is based on the Towers Watson Investment Model.