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Attorneys for Plaintiff and Counterdefendant
Research Affiliates, LLC

UNITED STATES DISTRICT COURT
CENTRAL DISTRICT OF CALIFORNIA
SOUTHERN DIVISION

Research Affiliates, LLC,

Plaintiff,

v.

WisdomTree Investments, Inc., WisdomTree Trust, WisdomTree Asset Management, Inc., WisdomTree Retirement Services, Inc., Mellon Capital Management Corp., and ALPS Distributors, Inc.,

Defendants.

AND RELATED COUNTERCLAIMS.

CASE NO. SACV11-01846 DOC (ANx)

FIRST AMENDED COMPLAINT FOR PATENT INFRINGEMENT

DEMAND FOR JURY TRIAL

JUDGE: HONORABLE DAVID O. CARTER

Plaintiff and Counterdefendant Research Affiliates, LLC hereby amends its Complaint against WisdomTree Investments, Inc., WisdomTree Trust, WisdomTree Asset Management, Inc., WisdomTree Retirement Services, Inc., Mellon Capital Management Corp., and ALPS Distributors, Inc. (collectively, "Defendants"), and alleges as follows:

NATURE OF THE SUIT

1. This action is for patent infringement under the Patent Laws of the United States of America, 35 U.S.C. §§ 1 et seq., including 35 U.S.C. § 271.

THE PARTIES

2. Plaintiff Research Affiliates, LLC ("Plaintiff" or "RA LLC") is a limited liability company duly organized and existing under the laws of the State of California, with its principal place of business at 620 Newport Center Dr., Suite 900, Newport Beach, California 92600.

3. Defendant WisdomTree Investments, Inc. ("WT Investments") is a corporation duly organized and existing under the laws of the State of Delaware, with its principal place of business at 380 Madison Avenue, 21st Floor, New York, New York 10017.

4. Defendant WisdomTree Trust ("WT Trust") is a corporation duly organized and existing under the laws of the State of Delaware, with its principal place of business at 380 Madison Avenue, 21st Floor, New York, New York 10017. The Chief Executive Officer of WT Investments serves as a Trustee and President of WT Trust; and the Chief Financial Officer of WT Investments serves as Treasurer of the Trust.

5. Defendant WisdomTree Asset Management, Inc. ("WT Asset Management") is a corporation duly organized and existing under the laws of the State of Delaware, with its principal place of business at 380 Madison Avenue, 21st Floor, New York, New York 10017. WT Asset Management is a wholly-owned subsidiary of WT Investments. WT Asset Management is the operating subsidiary

of WT Investments through which WT Investments provides investment advisory and other management services to the WT ETFs (as defined herein).

6. Defendant WisdomTree Retirement Services, Inc. ("WT Retirement Services") is a corporation duly organized and existing under the laws of the State of Delaware, with its principal place of business at 380 Madison Avenue, 21st Floor, New York, New York 10017. WT Retirement Services is a wholly owned subsidiary of WT Investments. WT Retirement Services markets with selected third parties the use of WT ETFs in 401(k) plans as well as offering a platform that offers WT ETFs to the 401(k) marketplace.

7. Defendant Mellon Capital Management Corp. ("MCM") is a corporation duly organized and existing under the laws of the State of Delaware, with its principal place of business at 50 Fremont Street, Suite 3900, San Francisco, California 94105. MCM is under contract with WT Asset Management to act as a sub-advisor and provide portfolio management services and other related services for the WT ETFs.

8. Defendant ALPS Distributors Inc. ("ALPS") is a corporation duly organized and existing under the laws of the State of Colorado, with its principal place of business at 1290 Broadway, Suite 1100, Denver, Colorado 80203. ALPS is a distributor of the WT ETFs.

JURISDICTION AND VENUE

9. This Court has subject matter jurisdiction under 28 U.S.C. §§ 1331 and 1338(a) because this is a civil action for patent infringement arising under the United States patent statutes.

10. The Court has personal jurisdiction over Defendants, because, upon information and belief, Defendants have done business in this judicial district, have continuous and systematic contacts within this district, have committed and continue to commit acts of patent infringement in this judicial district, and have harmed and continue to harm RA LLC in this judicial district by, among other things, offering

for sale and selling products made by practicing infringing methods in this judicial district.

11. Venue is proper pursuant to 28 U.S.C. §§ 1391 and 1400 because, among other reasons, Defendants are subject to personal jurisdiction and have committed acts of patent infringement in this judicial district.

THE PATENTS-IN-SUIT

12. On June 29, 2010, U.S. Patent No. 7,747,502 (the "'502 Patent") was issued to RA LLC by the United States Patent and Trademark Office ("USPTO") and is titled "Using Accounting Data Based Indexing to Create a Portfolio of Assets." A true and correct copy of the '502 Patent is attached hereto as Exhibit A.

13. On September 7, 2010, U.S. Patent No. 7,792,719 (the "'719 Patent") was issued to RA LLC by the USPTO and is titled "Valuation Indifferent Non-Capitalization Weighted Index and Portfolio." A true and correct copy of the '719 Patent is attached hereto as Exhibit B.

14. On August 23, 2011, U.S. Patent No. 8,005,740 (the "'740 Patent") was issued to RA LLC by the USPTO and is titled "Using Accounting Data Based Indexing to Create a Portfolio of Financial Objects." A true and correct copy of the '740 Patent is attached hereto as Exhibit C.

15. RA LLC is the owner by assignment of all right, title, and interest to the '502 Patent, the '719 Patent, and the '740 Patent (collectively, the "Patents-in-Suit") and has the right to bring an action and recover damages for infringement of the Patents-in-Suit, including damages for past infringement.

16. The Patents-in-Suit are valid, enforceable, and were duly issued in full compliance with Title 35 of the United States Code.

17. On information and belief, WT Investments, WT Trust, WT Asset Management, and WT Retirement Services (collectively, "WisdomTree") have had knowledge of the Patents-in-Suit since their issuance and of the patent applications that led to the issuance of the Patents-in-Suit even before they issued.

18. For example, around September 2005, counsel for RA LLC wrote to WT Investments and provided notice of the publication of the patent application that led to the issuance of the '719 Patent. This publication was U.S. Pub. No. 2005/0171884 A1 (the "'884 Application").

19. S. Craig Hemenway, counsel for WT Investments, responded to the September 2005 letter in a letter to RA LLC's counsel dated October 7, 2005. In this letter, Mr. Hemenway wrote that RA LLC's intellectual property rights were "speculative at best" and that "WisdomTree is not interested in speculating about [Research Affiliate's] eventual patent rights . . . ."

20. In the same letter, Mr. Hemenway also wrote that RA LLC should have received service copies of WisdomTree's submission to the USPTO of alleged prior art references related to the '884 Application.

21. In a separate letter to RA LLC on October 12, 2005, Mr. Hemenway enclosed the two Third Party Submissions that were submitted during the prosecution of the application that issued as the '719 patent. Mr. Hemenway sent this letter at the instruction of WisdomTree.

22. Mr. Hemenway also submitted prior art during the prosecution of the application that issued as the '502 Patent. On information and belief, this submission was also done at the request of WisdomTree.

23. The United States Patent Office duly issued RA LLC's patents despite WisdomTree's submission of alleged prior art references.

24. Furthermore, RA LLC's Fundamental Index® methodologies have become extremely well known in the financial industry.

25. RA LLC's patents are also well known and RA LLC has licensed its technology to numerous major entities in the financial industry.

26. On March 1, 2007, RA LLC management, including Mr. Robert Arnott, traveled to WisdomTree's location in New York for a discussion with WisdomTree's management, including Mr. Michael H. Steinhardt, the current

chairman of WTI's Board of Directors. RA LLC's pending patent applications were a primary topic of that discussion.

27. Prior to the March 1, 2007 meeting, Mr. Arnott had met with management of Barclays Global Investors. On information and belief, Mr. Bruce Lavine, WTI's President and Chief Operating Officer since 2006, attended or was aware of the discussions that occurred at the meeting. During this meeting, Mr. Arnott spoke about his inventions and patent applications.

28. On information and belief, WisdomTree has monitored the prosecution of the Patents-In-Suit and was aware of when the Patents-In-Suit issued.

29. RA LLC has complied with 35 U.S.C. § 287 by requiring licensees of the Patents-in-Suit to place a notice that any product made, used, sold, or offered for sale under the license is covered by the Patents-in-Suit.

COUNT I – INFRINGEMENT OF THE '502 PATENT

(Against All Defendants)

30. RA LLC restates and re-alleges each of the allegations contained in all preceding paragraphs of this Complaint, and incorporates them as if fully stated herein.

31. As set forth more fully below, Defendants have infringed and continue to infringe – directly, contributorily, and/or by active inducement – one or more claims of the '502 Patent by using the methods claimed in the '502 patent and/or selling products created by using said methods without authority and in violation of 35 U.S.C. § 271.

32. WT Investments directly infringes and continues to directly infringe at least claim 53 of the '502 Patent by performing, directing and/or controlling others to perform, or offering to perform one or more claims of the '502 Patent related to financial products that are based on fundamental factors and by making, using, selling, licensing, and/or offering to sell said financial products. Alternatively, WT Investments directly infringes and continues to directly infringe at least claim 53 of

the '502 Patent by performing and directing and/or controlling others to perform one or more steps of one or more claims of the '502 Patent related to financial products that are based on fundamental factors and by making, using, selling, licensing, and/or offering to sell said financial products. Example financial products that are based on fundamental factors include: WisdomTree Dividend Index, WisdomTree LargeCap Dividend Index, WisdomTree MidCap Dividend Index, WisdomTree SmallCap Dividend Index, WisdomTree Equity Income Index, WisdomTree ex-Financials Dividend Index, WisdomTree Earnings Index, WisdomTree Earnings 500 Index, WisdomTree MidCap Earnings Index, WisdomTree SmallCap Earnings Index, WisdomTree LargeCap Growth Index, WisdomTree LargeCap Value Index, WisdomTree Global Equity Income Index, WisdomTree World ex-U.S. Growth Index, WisdomTree DEFA Index, WisdomTree DEFA Equity Income Index, WisdomTree International LargeCap Dividend Index, WisdomTree International MidCap Dividend Index, WisdomTree International SmallCap Dividend Index, WisdomTree Japan SmallCap Dividend Index, WisdomTree Europe SmallCap Dividend Index, WisdomTree Asia Pacific ex-Japan Index, WisdomTree Australia Dividend Index, WisdomTree International Dividend ex-Financials Index, WisdomTree Commodity Country Equity Index, WisdomTree Global Natural Resources Index, WisdomTree International Utilities Sector Index, WisdomTree International Real Estate Index, WisdomTree Japan Hedged Equity Index, WisdomTree DEFA International Hedged Equity Index, WisdomTree India Earnings Index, WisdomTree Emerging Markets Equity Income Index, WisdomTree Emerging Markets SmallCap Dividend Index, WisdomTree Middle East Dividend Index (collectively, "WT Indexes") and related Exchange Traded Funds ("WT ETFs"). As a direct and proximate result of WT Investments' direct infringement of the '502 Patent, Plaintiff has been and continues to be damaged.

33. WT Investments has indirectly infringed and continues to indirectly infringe at least claim 53 the '502 Patent by actively inducing direct infringement by

other persons. In particular, WT Investments has induced direct infringement by customers and partners of WT Investments, including without limitation WT Trust, WT Retirement Services, WT Asset Management, MCM, and ALPS. WT Trust, WT Retirement Services, WT Asset Management, MCM, and ALPS perform one or more claims of the '502 Patent pursuant to contractual agreements with WT Investments and/or make, use, sell, license, or offer for sale financial products made by performing one or more of the claims of the '502 patent. WT Investments engaged in such inducement having knowledge of the '502 Patent. Furthermore, WT Investments knew or should have known that its actions would induce direct infringement by others and intended that its actions would induce direct infringement by others. As a direct and proximate result of WT Investments' indirect infringement of the '502 Patent, Plaintiff has been and continues to be damaged.

34. WT Investments has contributorily infringed and continues to contributorily infringe at least claim 53 the '502 Patent by providing non-staple articles of commerce to others for use in an infringing method with knowledge of the '502 Patent and knowledge that these non-staple articles of commerce are used as a material part of the claimed invention of the '502 Patent. As a direct and proximate result of WT Investments' contributory infringement of the '502 Patent, Plaintiff has been and continues to be damaged.

35. WT Trust issues WT ETFs based on the WT Indexes. WT Trust has directly infringed and continues to directly infringe at least claim 53 of the '502 Patent by performing or directing and/or controlling others to perform one or more claims of the '502 Patent related to financial products that are based on fundamental factors and by making, using, selling, licensing, and/or offering to sell said financial products. Alternatively, WT Trust directly infringes and continues to directly infringe at least claim 53 of the '502 Patent by performing and directing and/or controlling others to perform one or more steps of one or more claims of the '502

Patent related to financial products that are based on fundamental factors and by making, using, selling, licensing, and/or offering to sell said financial products. As a direct and proximate result of WT Trust's direct infringement of the '502 Patent, Plaintiff has been and continues to be damaged.

36. WT Trust has indirectly infringed and continues to indirectly infringe at least claim 53 of the '502 Patent by actively inducing direct infringement by other persons. In particular, WT Trust has induced direct infringement by partners of WT Trust including, without limitation, WT Asset Management, MCM, and ALPS. WT Asset Management, MCM, and ALPS perform one or more claims of the '502 Patent pursuant to contractual agreements with WT Trust and/or make, use, sell, license, or offer for sale financial products, including WT ETFs, made by performing one or more of the claims of the '502 patent. WT Trust engaged in such inducement having knowledge of the '502 Patent. Furthermore, WT Trust knew or should have known that its actions would induce direct infringement by others and intended that its actions would induce direct infringement by others. As a direct and proximate result of WT Trust's indirect infringement of the '502 Patent, Plaintiff has been and continues to be damaged.

37. WT Asset Management directly infringes and continues to directly infringe at least claim 53 of the '502 Patent by performing, directing and/or controlling others to perform, and/or offering to perform one or more claims of the '502 Patent related to financial products, including WT ETFs, that are based on fundamental factors and by making, using, selling, licensing, and/or offering to sell said financial products. Alternatively, WT Asset Management directly infringes and continues to directly infringe at least claim 53 of the '502 Patent by performing and directing and/or controlling others to perform one or more steps of one or more claims of the '502 Patent related to financial products that are based on fundamental factors and by making, using, selling, licensing, and/or offering to sell said financial products.

38. WT Asset Management has indirectly infringed and continues to indirectly infringe at least claim 53 of the '502 Patent by actively inducing direct infringement by other persons. In particular, WT Asset Management has induced direct infringement by partners of WT Asset Management, including without limitation MCM. MCM performs one or more claims of the '502 Patent pursuant to contractual agreements with WT Asset Management and/or makes, uses, sells, licenses, or offers for sale financial products, including WT ETFs, made by performing one or more of the claims of the '502 patent. WT Asset Management engaged in such inducement with knowledge of the '502 Patent. Furthermore, WT Asset Management knew or should have known that its actions would induce direct infringement by others and intended that its actions would induce direct infringement by others. As a direct and proximate result of WT Asset Management's indirect infringement of the '502 Patent, Plaintiff has been and continues to be damaged.

39. WT Retirement Services directly infringes and continues to directly infringe at least claim 53 of the '502 Patent by performing or directing and/or controlling others to perform one or more claims of the '502 Patent related to financial products, including WT ETFs, that are based on fundamental factors and by making, using, selling, licensing, and/or offering to sell said financial products. As a direct and proximate result of WT Retirement Services' direct infringement of the '502 Patent, Plaintiff has been and continues to be damaged.

40. MCM directly infringes and continues to directly infringe at least claim 53 of the '502 Patent by performing, directing and/or controlling others to perform, and/or offering to perform one or more claims of the '502 Patent related to financial products, including WT ETFs, that are based on fundamental factors and by making, using, selling, licensing, and/or offering to sell said financial products. As a direct and proximate result of MCM's indirect infringement of the '502 Patent, Plaintiff has been and continues to be damaged.

41. ALPS directly infringes and continues to directly infringe at least claim 53 of the '502 Patent by selling, licensing, and/or offering to sell said financial products, including WT ETFs, that are based on fundamental factors that are created by performing one or more claims of the '502 Patent. As a direct and proximate result of ALPS's direct infringement of the '502 Patent, Plaintiff has been and continues to be damaged.

42. Defendants' acts of infringement have caused damage to RA LLC. RA LLC is entitled to recover from Defendants the damages that it has incurred as a result of the infringing acts under the theories of lost profits, reasonable royalty, and/or any other theory adequate to fully compensate RA LLC. Moreover, Defendants are still infringing the Patents-in-Suit and will continue to do so unless preliminarily and permanently enjoined by this Court.

43. WT Investments, WT Trust, and WT Asset Management have had notice of the '502 Patent. Despite having notice, WT Investments, WT Trust, and WT Asset Management have continued to infringe the '502 Patent despite an objectively high likelihood that their actions constituted infringement of a valid patent. On information and belief, the infringement of WT Investments, WT Trust, and WT Asset Management has been deliberate and willful.

COUNT II – INFRINGEMENT OF THE '719 PATENT

(Against Defendants WT Investments, WT Trust and WT Asset Management)

44. RA LLC restates and re-alleges each of the allegations contained in all preceding paragraphs of this Complaint, and incorporates them as if fully stated herein.

45. As set forth more fully below, WT Investments, WT Trust, and WT Asset Management have infringed and continue to infringe – directly, contributorily, and/or by active inducement – one or more claims of the '719 Patent by using the methods claimed in the '719 patent and/or selling products created by using said methods without authority and in violation of 35 U.S.C. § 271.

46. WT Investments has directly infringed and continues to directly infringe at least claims 34, 35, and 36 of the '719 Patent by performing, directing and/or controlling others to perform, or offering to perform one or more claims of the '719 Patent related to financial products that are based on fundamental factors and by making, using, selling, licensing, and/or offering to sell said financial products. Alternatively, WT Investments directly infringes and continues to directly infringe at least claims 34, 35, and 36 of the '719 Patent by performing and directing and/or controlling others to perform one or more steps of one or more claims of the '719 Patent related to financial products that are based on fundamental factors and by making, using, selling, licensing, and/or offering to sell said financial products. Example financial products of WT Investments that are based on fundamental factors include the WT Indexes. As a direct and proximate result of WT Investments' direct infringement of the '719 Patent, Plaintiff has been and continues to be damaged in an amount yet to be determined.

47. WT Investments has indirectly infringed and continues to indirectly infringe at least claims 34, 35, and 36 of the '719 Patent by actively inducing direct infringement by other persons. In particular, WT Investments has induced direct infringement by customers and partners of WT Investments, including without limitation index managers. The index managers perform one or more claims of the '719 Patent pursuant to contractual agreements with WT Investments and/or make, use, sell, license, or offer for sale financial products made by performing one or more of the claims of the '719 patent. WT Investments engaged in such inducement having knowledge of the '719 Patent. Furthermore, WT Investments knew or should have known that its actions would induce direct infringement by others and intended that its actions would induce direct infringement by others. As a direct and proximate result of WT Investments' indirect infringement of the '719 Patent, Plaintiff has been and continues to be damaged.

48. WT Trust has indirectly infringed and continues to indirectly infringe at

least claims 34, 35 and 36 of the '719 Patent by actively inducing direct infringement by other persons. In particular, WT Trust has induced direct infringement by partners of WT Trust, including without limitation WT Investments. Partners of WT Trust perform one or more claims of the '719 Patent pursuant to contractual agreements with WT Trust. WT Trust engaged in such inducement with knowledge of the '719 Patent. Furthermore, WT Trust knew or should have known that its actions would induce direct infringement by others and intended that its actions would induce direct infringement by others. As a direct and proximate result of WT Trust's indirect infringement of the '719 Patent, Plaintiff has been and continues to be damaged.

49. WT Asset Management has indirectly infringed and continues to indirectly infringe at least claims 34, 35 and 36 of the '719 Patent by actively inducing direct infringement by other persons. In particular, WT Asset Management has induced direct infringement by partners of WT Asset Management, including without limitation WT Investments. Partners of WT Asset Management perform one or more claims of the '719 Patent pursuant to contractual agreements with WT Asset Management. WT Asset Management engaged in such inducement with knowledge of the '719 Patent. Furthermore, WT Asset Management knew or should have known that its actions would induce direct infringement by others and intended that its actions would induce direct infringement by others. As a direct and proximate result of WT Asset Management's indirect infringement of the '719 Patent, Plaintiff has been and continues to be damaged.

50. WT Investments, WT Trust, and WT Asset Management's acts of infringement have caused damage to RA LLC. RA LLC is entitled to recover from WT Investments, WT Trust, and WT Asset Management the damages that it has incurred as a result of the infringing acts under the theories of lost profits, reasonable royalty, and/or any other theory adequate to fully compensate RA LLC.

Moreover, WT Investments, WT Trust, and WT Asset Management are still infringing the Patents-in-Suit and will continue to do so unless preliminarily and permanently enjoined by this Court.

51. WT Investments, WT Trust, and WT Asset Management have had notice of the '719 Patent. Despite having notice, WT Investments, WT Trust, and WT Asset Management have continued to infringe the '719 Patent despite an objectively high likelihood that their actions constituted infringement of a valid patent. On information and belief, the infringement of WT Investments, WT Trust, and WT Asset Management has been deliberate and willful.

COUNT III – INFRINGEMENT OF THE '740 PATENT

(Against Defendants WT Investments, WT Trust and WT Asset Management)

52. RA LLC restates and re-alleges each of the allegations contained in all preceding paragraphs of this Complaint, and incorporates them as if fully stated herein.

53. As set forth more fully below, WT Investments, WT Trust, and WT Asset Management have infringed and continue to infringe – directly, contributorily, and/or by active inducement – one or more claims of the '740 Patent by using the methods claimed in the '740 patent and/or selling products created by using said methods without authority and in violation of 35 U.S.C. § 271.

54. WT Investments has directly infringed and continues to directly infringe at least claim 1 of the '740 Patent by performing, directing and/or controlling others to perform, or offering to perform one or more claims of the '740 Patent related to financial products that are based on fundamental factors and by making, using, selling, licensing, and/or offering to sell said financial products. Alternatively, WT Investments directly infringes and continues to directly infringe at least claim 1 of the '740 Patent by performing and directing and/or controlling others to perform one or more steps of one or more claims of the '740 Patent related to financial products that are based on fundamental factors and by making, using,

selling, licensing, and/or offering to sell said financial products. Example financial products of WT Investments that are based on fundamental factors include the WT Indexes. As a direct and proximate result of WT Investments' direct infringement of the '740 Patent, Plaintiff has been and continues to be damaged.

55. WT Investments has indirectly infringed and continues to indirectly infringe at least claim 1 of the '740 Patent by actively inducing direct infringement by other persons. In particular, WT Investments has induced direct infringement by customers and partners of WT Investments, including without limitation index managers. The index managers perform one or more claims of the '740 Patent pursuant to contractual agreements with WT Investments and/or make, use, sell, license, or offer for sale financial products made by performing one or more of the claims of the '740 patent. WT Investments engaged in such inducement having knowledge of the '740 Patent. Furthermore, WT Investments knew or should have known that its actions would induce direct infringement by others and intended that its actions would induce direct infringement by others. As a direct and proximate result of WT Investments' indirect infringement of the '740 Patent, Plaintiff has been and continues to be damaged.

56. WT Trust has indirectly infringed and continues to indirectly infringe at least claim 1 of the '740 Patent by actively inducing direct infringement by other persons. In particular, WT Trust has induced direct infringement by partners of WT Trust, including without limitation WT Investments. Partners of WT Trust perform one or more claims of the '740 Patent pursuant to contractual agreements with WT Trust. WT Trust engaged in such inducement with knowledge of the '740 Patent. Furthermore, WT Trust knew or should have known that its actions would induce direct infringement by others and intended that its actions would induce direct infringement by others. As a direct and proximate result of WT Trust's indirect infringement of the '740 Patent, Plaintiff has been and continues to be damaged.

57. WT Asset Management has indirectly infringed and continues to

indirectly infringe at least claim 1 of the '740 Patent by actively inducing direct infringement by other persons. In particular, WT Asset Management has induced direct infringement by partners of WT Asset Management, including without limitation WT Investments. Partners of WT Asset Management perform one or more claims of the '740 Patent pursuant to contractual agreements with WT Asset Management. WT Asset Management engaged in such inducement with knowledge of the '740 Patent. Furthermore, WT Asset Management knew or should have known that its actions would induce direct infringement by others and intended that its actions would induce direct infringement by others. As a direct and proximate result of WT Asset Management's indirect infringement of the '740 Patent, Plaintiff has been and continues to be damaged.

58. WT Investments, WT Trust, and WT Asset Management's acts of infringement have caused damage to RA LLC. RA LLC is entitled to recover from WT Investments, WT Trust, and WT Asset Management the damages that it has incurred as a result of the infringing acts under the theories of lost profits, reasonable royalty, and/or any other theory adequate to fully compensate RA LLC. Moreover, WT Investments, WT Trust, and WT Asset Management are still infringing the Patents-in-Suit and will continue to do so unless preliminarily and permanently enjoined by this Court.

59. On information and belief, WT Investments, WT Trust, and WT Asset Management have had notice of the '740 Patent. Despite having notice, WT Investments, WT Trust, and WT Asset Management have continued to infringe the '740 Patent despite an objectively high likelihood that their actions constituted infringement of a valid patent. On information and belief, the infringement of WT Investments, WT Trust, and WT Asset Management has been deliberate and willful.

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PRAYER FOR RELIEF

RA LLC prays for the following judgment and relief:

A. Judgment that Defendants have infringed the '502 Patent;

B. Judgment that WT Investments, WT Trust, and WT Asset Management have infringed the '719 Patent and '740 Patent;

C. An award of preliminary and permanent injunction enjoining Defendants and their agents, servants, officers, directors, employees, and persons or entities acting in concert with Defendants, from infringing directly or indirectly, inducing others to infringe, and/or contributing to the infringement of the infringed Patents-in-Suit;

D. An award to RA LLC in an amount to be determined for the damages necessary to compensate it for Defendants' infringement of the Patents-in-Suit pursuant to 35 U.S.C. § 284;

E. An award to RA LLC of enhanced damages for the willful infringement of the Patents-in-Suit pursuant to 35 U.S.C. § 284;

F. An award to RA LLC of its attorneys' fees, costs, expert witness fees, and expenses incurred by it in connection with this action pursuant to 35 U.S.C. § 285;

G. Pre-judgment and post-judgment interest; and

H. Any other and further relief, both general and special, at law or in equity, to which RA LLC is entitled.

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DEMAND FOR JURY TRIAL

Pursuant to Rule 38(b) of the Federal Rules of Civil Procedure, RA LLC hereby demands a trial by jury of all issues in this action.

Dated: June 11, 2012

WILSON SONSINI GOODRICH & ROSATI P.C.

By: _____

David S. Steuer
Jose C. Villarreal
Natalie J. Morgan

Attorneys for Plaintiff and Counterdefendant RESEARCH AFFILIATES, LLC

EXHIBIT A

US007747502B2

(12) **United States Patent**
Arnott et al.

(10) **Patent No.: US 7,747,502 B2**
(45) **Date of Patent: Jun. 29, 2010**

(54) **USING ACCOUNTING DATA BASED INDEXING TO CREATE A PORTFOLIO OF ASSETS**

(75) Inventors: **Robert D. Arnott**, Pasadena, CA (US); **Paul Christopher Wood**, Waltham (GB)

(73) Assignee: **Research Affiliates, LLC**, Newport Beach, CA (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 594 days.

(21) Appl. No.: **11/509,002**

(22) Filed: **Aug. 24, 2006**

(65) **Prior Publication Data**

US 2007/0055598 A1 Mar. 8, 2007

Related U.S. Application Data

(63) Continuation-in-part of application No. 11/196,509, filed on Aug. 4, 2005, now Pat. No. 7,620,577, which is a continuation-in-part of application No. 10/961,404, filed on Oct. 12, 2004, and a continuation-in-part of application No. 10/159,610, filed on Jun. 3, 2002.

(60) Provisional application No. 60/541,733, filed on Feb. 4, 2004, provisional application No. 60/751,212, filed on Dec. 19, 2005.

(51) **Int. Cl.**
G06Q 40/00 (2006.01)

(52) **U.S. Cl.** ..... **705/36 R**; 705/35

(58) **Field of Classification Search** ..... None
See application file for complete search history.

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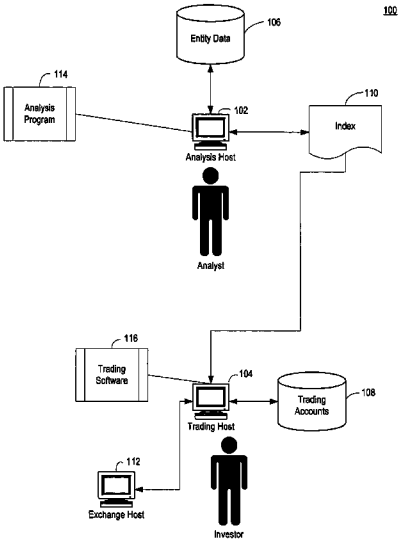
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(57) **ABSTRACT**

A system, method and computer program product creates an index based on accounting based data, as well as a portfolio of financial objects based on the index where the portfolio is weighted according to accounting based data. A passive investment system may be based on indices created from various metrics. The indexes may be built with metrics other than market capitalization weighting, price weighting or equal weighting. Non-financial metrics may also be used to build indexes to create passive investment systems. Additionally, a combination of financial non-market capitalization metrics may be used along with non-financial metrics to create passive investment systems. Once the index is built, it may be used as a basis to purchase securities for a portfolio. Specifically excluded are widely-used capitalization-weighted indexes and price-weighted indexes, in which the price of a security contributes in a substantial way to the calculation of the weight of that security in the index or the portfolio, and equal weighting weighted indexes. Valuation indifferent indexes avoid overexposure to overvalued securities and underexposure to undervalued securities, as compared with conventional capitalization-weighted and price-weighted.

61 Claims, 5 Drawing Sheets



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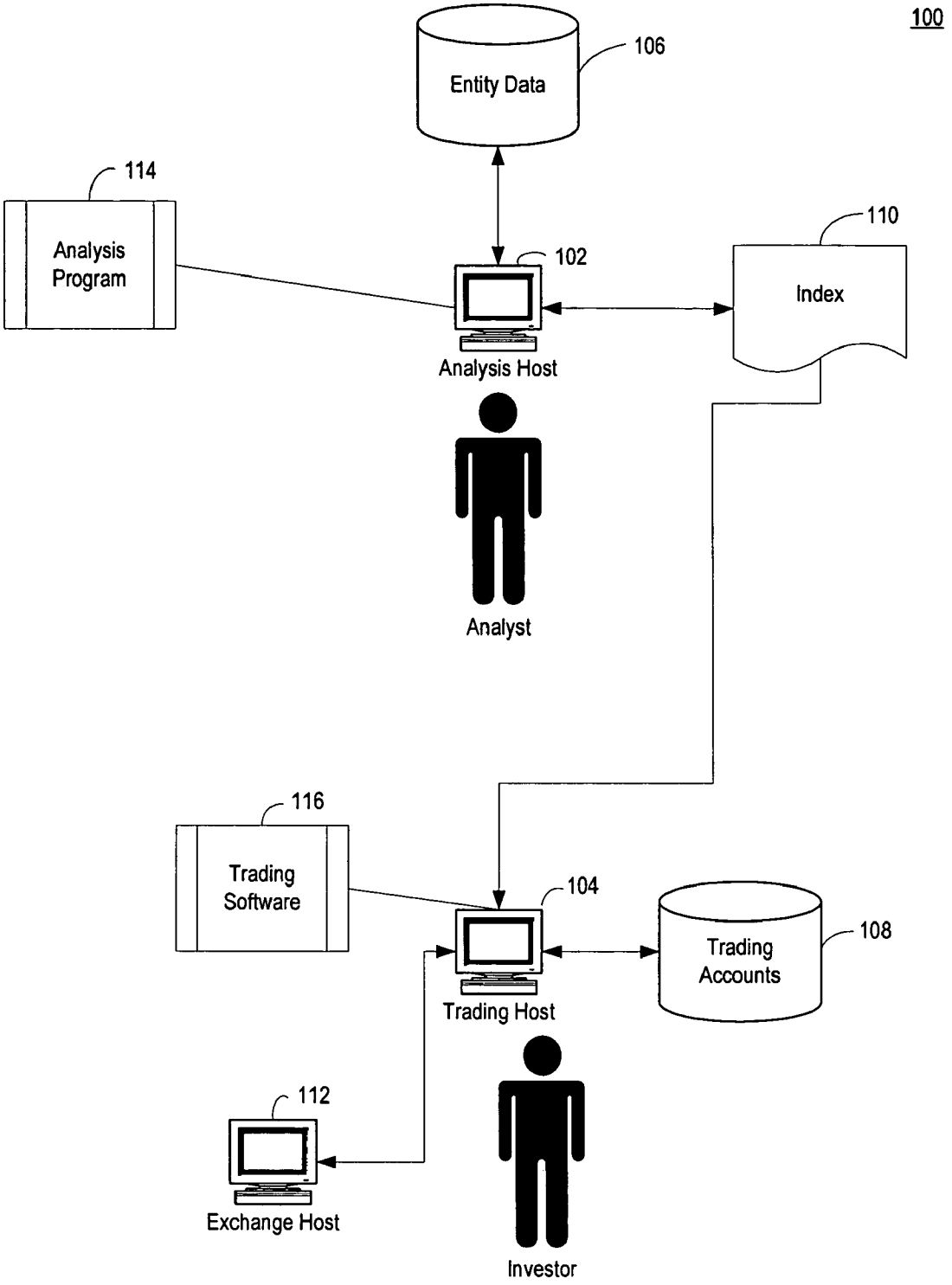

100
Entity Data
106
114
Analysis Program
102
110
Index
Analysis Host
Analyst
116
Trading Software
104
108
Trading Accounts
Trading Host
112
Exchange Host
Investor

FIG. 1

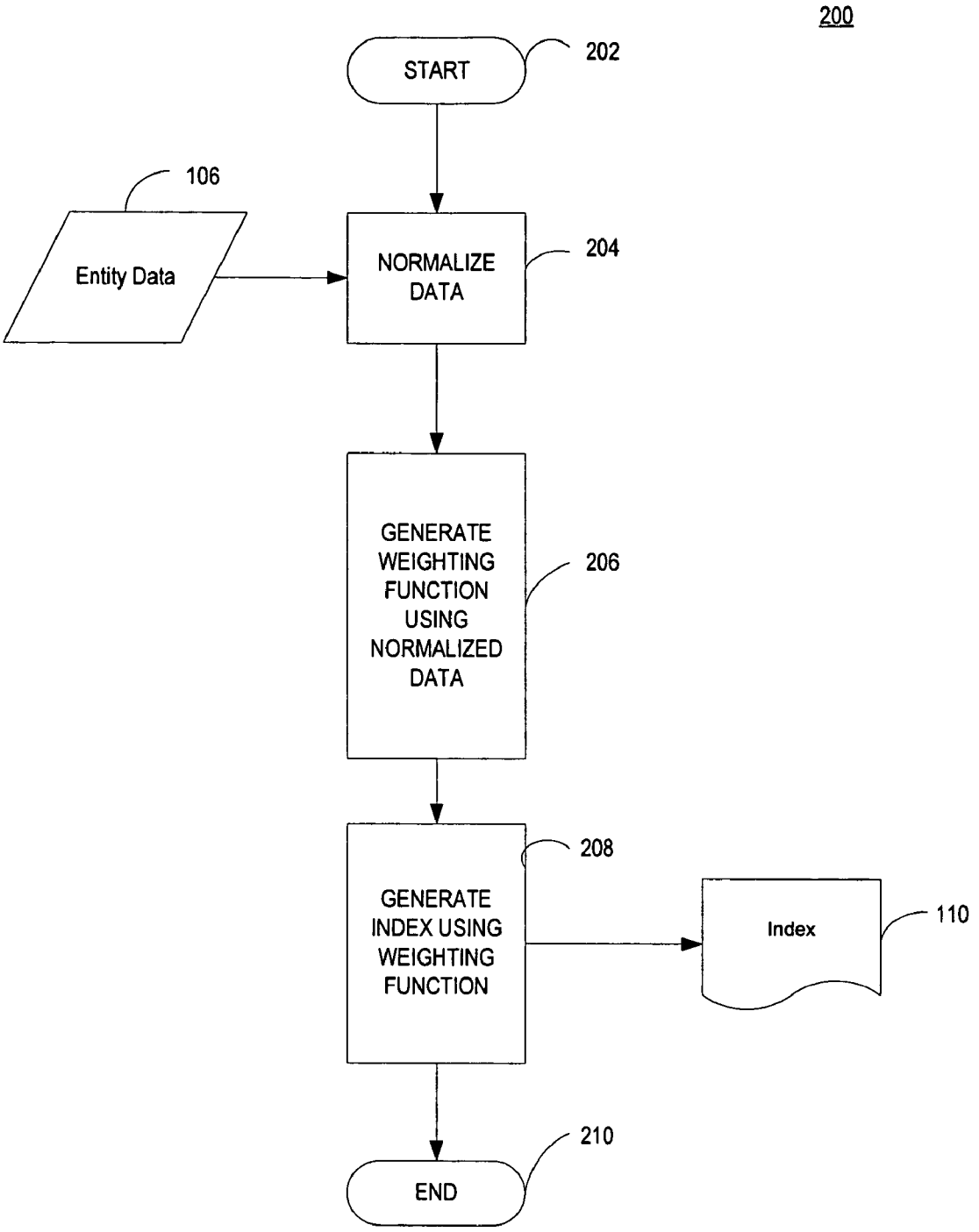

200
START
202
106
Entity Data
NORMALIZE DATA
204
GENERATE WEIGHTING FUNCTION USING NORMALIZED DATA
206
GENERATE INDEX USING WEIGHTING FUNCTION
208
Index
110
END
210

FIG. 2

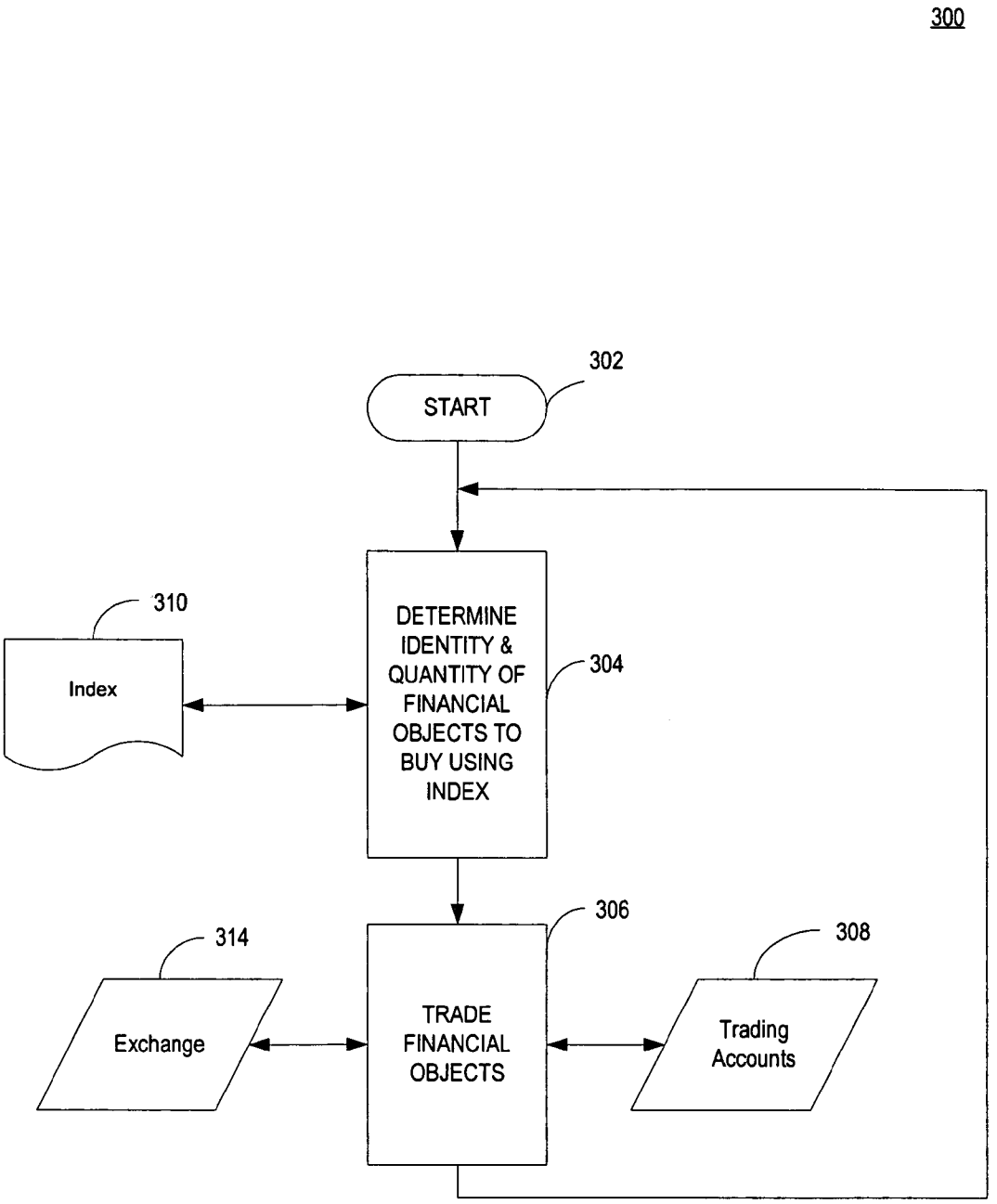

300
302
START
310
Index
DETERMINE IDENTITY & QUANTITY OF FINANCIAL OBJECTS TO BUY USING INDEX
304
306
314
Exchange
TRADE FINANCIAL OBJECTS
308
Trading Accounts

FIG. 3

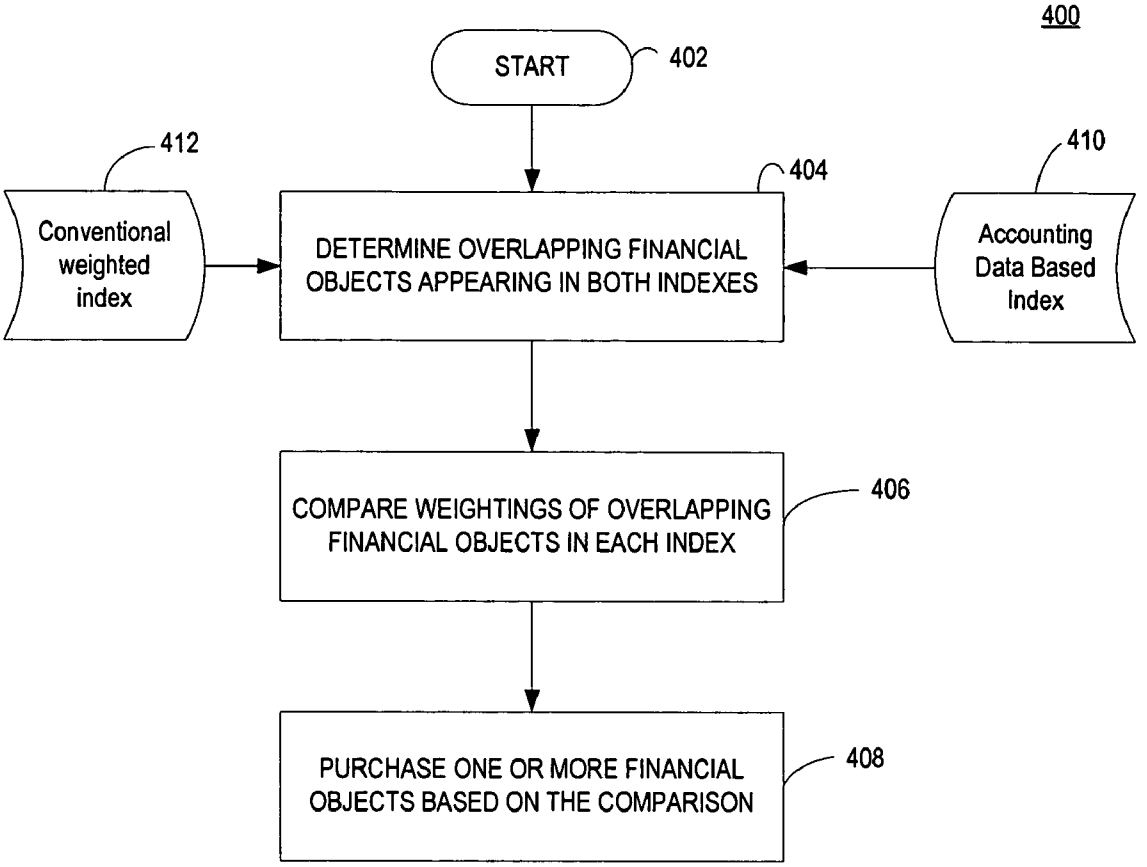

400
START
402
412
Conventional weighted index
404
DETERMINE OVERLAPPING FINANCIAL OBJECTS APPEARING IN BOTH INDEXES
410
Accounting Data Based Index
COMPARE WEIGHTINGS OF OVERLAPPING FINANCIAL OBJECTS IN EACH INDEX
406
PURCHASE ONE OR MORE FINANCIAL OBJECTS BASED ON THE COMPARISON
408

FIG. 4

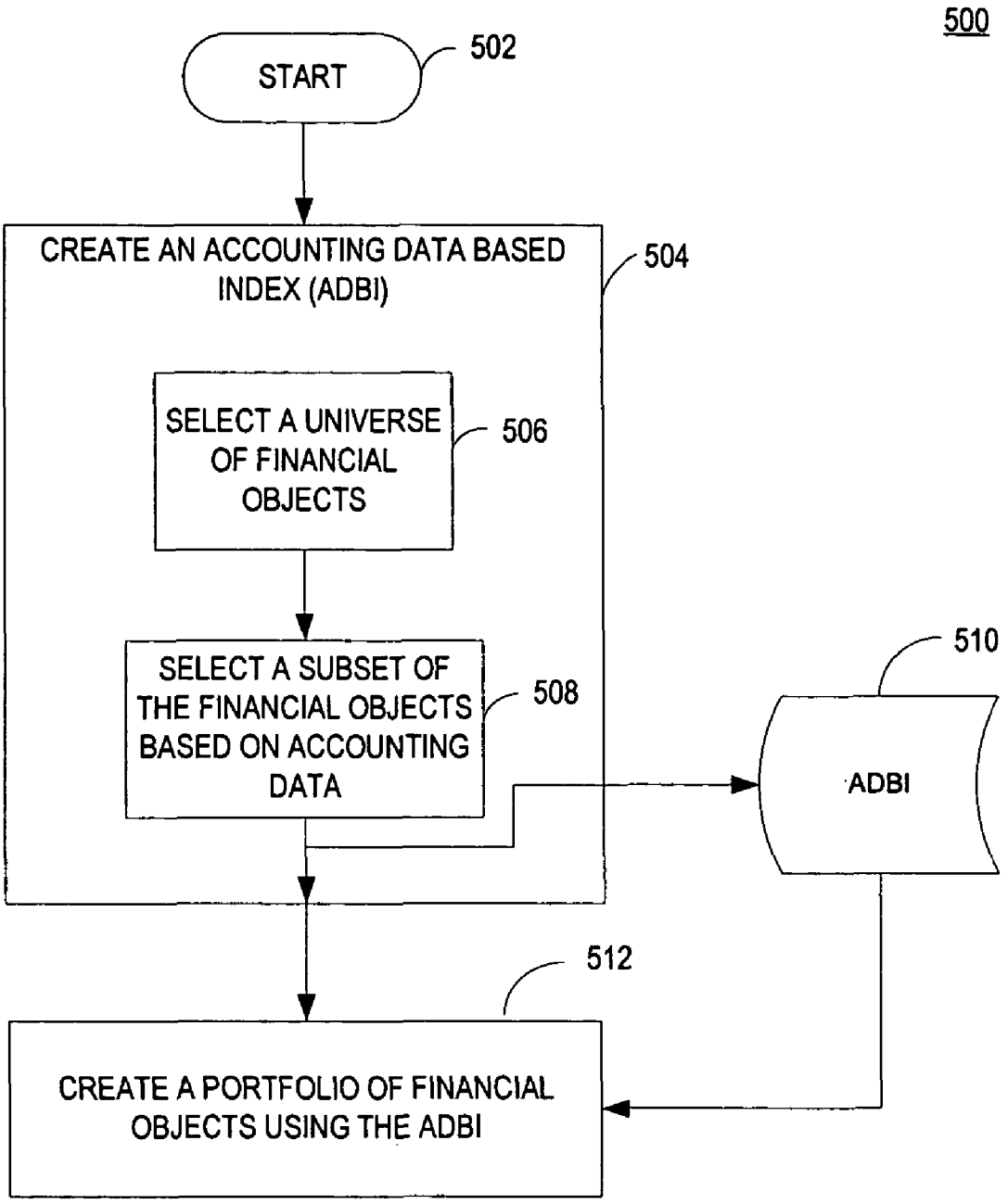

500
START
502
CREATE AN ACCOUNTING DATA BASED INDEX (ADBI)
504
SELECT A UNIVERSE OF FINANCIAL OBJECTS
506
SELECT A SUBSET OF THE FINANCIAL OBJECTS BASED ON ACCOUNTING DATA
508
510
ADBI
512
CREATE A PORTFOLIO OF FINANCIAL OBJECTS USING THE ADBI

FIG. 5

USING ACCOUNTING DATA BASED INDEXING TO CREATE A PORTFOLIO OF ASSETS

CROSS-REFERENCE TO RELATED APPLICATION

The present application claims the benefit of U.S. Patent Application No. 60/751,212, Confirmation No. 7679, filed Dec. 19, 2005 previously entitled "Using a Fundamental Index to Create a Portfolio of Assets," entitled "Using Accounting Data Based Indexing to Create a Portfolio of Assets" to Robert D. Arnott, of common assignee to the present invention, the contents of which are incorporated herein by reference in their entirety.

The present application also claims the benefit of and is also a continuation-in-part of U.S. patent application Ser. No. 11/196,509, filed Aug. 4, 2005, which is a continuation-in-part of U.S. patent application Ser. No. 10/961,404, entitled "Non-Capitalization Weighted Fundamental Indexing System, Method and Computer Program Product," to Arnott, filed Oct. 12, 2004, (which claims the benefit of U.S. Provisional Patent Application No. 60/541,733, entitled "Securities Indexing," to Arnott, and U.S. patent application Ser. No. 10/159,610, entitled "Fundamental Stock Market Index and Index Fund or Funds," filed Jun. 3, 2002, all of which are of common assignee to the present invention, and all of the contents of which are incorporated herein by reference in their entireties.

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates generally to securities investing, and more particularly to construction and use of indexes and portfolios based on indexes.

2. Related Art

Conventionally, there are various broad categories of securities portfolio management. One conventional securities portfolio management category is active management wherein the securities are selected for a portfolio individually based on economic, financial, credit, and/or business analysis; on technical trends; on cyclical patterns; etc. Another conventional category is passive management, also called indexing, wherein the securities in a portfolio duplicate those that make up an index. The securities in a passively managed portfolio are conventionally weighted by relative market capitalization weighting or equal weighting. Another middle ground conventional category of securities portfolio management is called enhanced indexing, in which a portfolio's characteristics, performance and holdings are substantially dominated by the characteristics, performance and holdings of the index, albeit with modest active management departures from the index.

The present invention relates generally to the passive and enhanced indexing categories of portfolio management. A securities market index, by intent, reflects an entire market or a segment of a market. A passive portfolio based on an index may also reflect the entire market or segment. Often every security in an index is held in the passive portfolio. Sometimes statistical modeling is used to create a portfolio that duplicates the profile, risk characteristics, performance characteristics, and securities weightings of an index, without actually owning every security included in the index. (Examples could be portfolios based on the Wilshire 5000 Equity Index or on the Lehman Aggregate Bond Index.) Sometimes statistical modeling is used to create the index itself such that it duplicates the profile, risk characteristics, performance characteristics, and securities weightings of an entire class of securities. (The Lehman Aggregate Bond Index is an example of this practice.)

Indexes are generally all-inclusive of the securities within their defined markets or market segments. In most cases indexes may include each security in the proportion that its market capitalization bears to the total market capitalization of all of the included securities. The only common exceptions to market capitalization weighting are equal weighting of the included securities (for example the Value Line index or the Standard & Poors 500 Equal Weighted Stock Index, which includes all of the stocks in the S&P 500 on a list basis; each stock given equal weighting as of a designated day each year) and share price weighting, in which share prices are simply added together and divided by some simple divisor (for example, the Dow Jones Industrial Average). Conventionally, passive portfolios are built based on an index weighted using one of market capitalization weighting, equal weighting, and share price weighting.

Most commonly used stock market indices are constructed using a methodology that is based upon either the relative share prices of a sample of companies (such as the Dow Jones Industrial Average) or the relative market capitalization of a sample of companies (such as the S&P 500 Index or the FTSE 100 Index). The nature of the construction of both of these types of indices means that if the price or the market capitalization of one company rises relative to its peers it is accorded a larger weighting in the index. Alternatively, a company whose share price or market capitalization declines relative to the other companies in the index is accorded a smaller index weighting. This can create a situation where the index, index funds, or investors who desire their funds to closely track an index, are compelled to have a higher weighting in companies whose share prices or market capitalizations have already risen and a lower weighting in companies that have seen a decline in their share price or market capitalization.

Advantages of passive investing include: a low trading cost of maintaining a portfolio that has turnover only when an index is reconstituted, typically once a year; a low management cost of a portfolio that requires no analysis of individual securities; and no chance of the portfolio suffering a loss—relative to the market or market segment the index reflects—because of misjudgments in individual securities selection.

Advantages of using market capitalization weighting as the basis for a passive portfolio include that the index (and therefore a portfolio built on it) remains continually 'in balance' as market prices for the included securities change, and that the portfolio performance participates in (i.e., reflects) that of the securities market or market segment included in the index.

The disadvantages of market capitalization weighting passive indexes, which can be substantial, center on the fact that any under-valued securities are underweighted in the index and related portfolios, while any over-valued securities are over weighted. Also, the portfolio based on market capitalization weighting follows every market (or segment) bubble up and every market crash down. Finally, in general, portfolio securities selection is not based on a criteria that reflects a better opportunity for appreciation than that of the market or market segment overall.

Most commonly used stock market indices are constructed using a methodology that is based upon either the relative share prices of a sample of companies (such as the Dow Jones Industrial Average) or the relative market capitalization of a sample of companies (such as the S&P 500 Index or the FTSE 100 Index). The nature of the construction of both of these types of indices means that if the price or the market capitali-

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Price or market capitalization based indices can contribute to a 'herding' behavior on the behalf of investors by effectively compelling any of the funds that attempt to follow these indices to have a larger weighting in shares as their price goes up and a lower weighting in shares that have declined in price. This creates unnecessary volatility, which is not in the interests of most investors. It may also lead to investment returns that have had to absorb the phenomenon of having to repeatedly increase weightings in shares after they have risen and reduce weightings in them after they have fallen.

Capitalization-weighted indexes ("cap-weighted indexes") dominate the investment industry today, with approximately $2 trillion currently invested. Unfortunately, cap-weighted indexes suffer from an inherent flaw as they overweight all overvalued stocks and underweight all undervalued stocks. This causes cap-weighted indexes to underperform relative to indexes that are immune to this shortcoming. In addition, cap-weighted indexes are vulnerable to speculative bubbles and emotional bear markets which may unnaturally drive up or down stock prices respectively.

It is a well established empirical conclusion of investment theory that cap-weighting is not mean-variance optimal. This conclusion holds because weighting schemes based on market price, including cap-weighting, overweight 100% of overvalued stocks and underweight 100% of undervalued stocks. Both mathematically and empirically, this over and under weighting problem inherent to cap-weighting leads to a return drag of 200 bps per year in the U.S. and more than 200 bps per year internationally.

One example of the phenomenon comes from the recent stock market bubble of 1997-2000, when, e.g., Internet network service provider Cisco comprised nearly 5% of the S&P 500. At its peak in 2000, Cisco traded at $70 per share. Since March 2000, Cisco has fallen to approximately 12% of its peak, dragging down S&P 500 performance of which it comprised 5%.

While it is difficult or impossible to know the true fair value of a company, what is known is that if an overvalued company's weight in an index is determined by market capitalization, then the company will be over-weighted in the index. Conversely, if a company's weight is determined by market capitalization and it is undervalued, it will be underweighted in a capitalization-weighted index.

Over the past 40 years, the largest stock by market capitalization in the S&P 500 has underperformed the average stock in the index over a 10-year time period by an average of 40%. The largest 10 stocks by market capitalization have underperformed the average stock over the subsequent 10-year time frame by an average of 26%. Yet, cap-weighted indexes continue to invest 20-30% of their value in the largest 10 stocks by market cap, despite the fact that they underperform the average stock in the index, because the stocks are selected and weighted using market capitalization, which by its nature over-weights over valued stocks and under-weights undervalued stocks.

Equal-weighted indexation is a popular alternative to cap-weighting but one that suffers from its own shortcomings. One significant problem with equal-weighted indexes is that they come out of the same cap-weighted universes as cap-weighted indexes. For example, the S&P Equal Weighted Index simply re-weights the 500 equities that comprise the S&P 500, retaining the bias already inherent to cap-weighted indexes.

High turnover and associated high costs are additional problems of equal-weighted indexes. Equal-weighted indexes include small illiquid stocks, which are required to be held in equal proportion to the larger, more liquid stocks in the index. These small illiquid stocks must be traded as often as the larger stocks but at a higher cost because they are less liquid.

What is needed then is an improved method of weighting financial objects in a portfolio based on an index that overcomes shortcomings of conventional solutions.

SUMMARY OF THE INVENTION

In an exemplary embodiment of the present invention a system, method and computer program product for index construction and/or portfolio weighting is disclosed.

Exemplary embodiments of the present invention may use accounting data based indexing, i.e., accounting data based measures of firm size, rather than market capitalization, to construct a stock index. By avoiding the inherent valuation bias of cap-weighted indexes, accounting data based indexes (ADBI) may outperform cap-weighted indexes by as much as 200 bps in the US and by more than 250 bps internationally, based on extensive back testing (to 1962 in the US and to 1988 internationally).

An exemplary embodiment may use four specific metrics in ADBI construction: book equity value; income (free cash flow); sales; and gross dividends. An ADBI construction strategy may offer several advantages. For example, ADBI may outperform cap-weighted indexes. Additionally, ADBI may be adaptable to distinct strategies. ADBI may be used to construct either large or small company indexes, industry sector indexes, geographic indexes and others. ADBI may also effectively limit portfolio risk by providing the benefits of traditional cap-weighted indexes, including diversification, broad market participation, liquidity and low turnover, while generating incrementally higher returns with somewhat lower volatility than comparable cap-weighted indexes. ADBI may also provide protection against market bubbles and fads because a stock's weight in the index is immune to errors in stock valuation.

In an exemplary embodiment, the present invention may be a method of constructing a portfolio of financial objects, including the steps of: purchasing a portfolio of a plurality of mimicking financial objects to obtain and/or create a mimicking portfolio, where performance of the portfolio of mimicking financial objects substantially mirrors the performance of an accounting data based index based portfolio without substantially replicating the accounting data based index based portfolio.

The embodiment may further include: obtaining and/or using a risk model for the portfolio of mimicking financial objects, where the risk model mirrors a risk model of the accounting data based index.

The performance of the portfolio of mimicking financial objects may substantially mirror the performance of the accounting data based index based portfolio without substantially replicating financial objects and/or weightings in the accounting data based index based portfolio. The risk model may be substantially similar to the Fama-French factors,

where the Fama-French factors may include at least one of size effect, value effect, and/or momentum effect.

A financial object may include: at least one unit of interest in at least one of: an asset; a liability; a tracking portfolio; a financial instrument and/or a security, where the financial instrument and/or the security denotes a debt, an equity interest, and/or a hybrid; a derivatives contract, including at least one of: a future, a forward, a put, a call, an option, a swap, and/or any other transaction relating to a fluctuation of an underlying asset, notwithstanding the prevailing value of the contract, and notwithstanding whether such contract, for purposes of accounting, is considered an asset or liability; a fund; and/or an investment entity or account of any kind, including an interest in, or rights relating to: a hedge fund, an exchange traded fund (ETF), a fund of funds, a mutual fund, a closed end fund, an investment vehicle, and/or any other pooled and/or separately managed investments.

In another exemplary embodiment, the present invention may be a method of constructing a portfolio of financial objects, including the steps of: purchasing a plurality of financial objects according to weightings substantially similar to the weightings of an accounting data based index, where performance of the plurality of financial objects substantially mirrors the performance of the accounting data based index without using substantially the same financial objects in the accounting data based index.

The financial object may include: at least one unit of interest in at least one of: an asset; a liability; a tracking portfolio; a financial instrument and/or a security, where the financial instrument and/or the security denotes a debt, an equity interest, and/or a hybrid; a derivatives contract, including at least one of: a future, a forward, a put, a call, an option, a swap, and/or any other transaction relating to a fluctuation of an underlying asset, notwithstanding the prevailing value of the contract, and notwithstanding whether such contract, for purposes of accounting, is considered an asset or liability; a fund; and/or an investment entity or account of any kind, including an interest in, or rights relating to: a hedge fund, an exchange traded fund (ETF), a fund of funds, a mutual fund, a closed end fund, an investment vehicle, and/or any other pooled and/or separately managed investments.

In another exemplary embodiment, the present invention may be a method of constructing a portfolio of financial objects, including the steps of: determining overlapping financial objects appearing in both an accounting data based index (ADBI) and a conventional weighted index, where the conventionally weighted index may includes an index weighted based on at least one of capitalization, equal weighting, and/or share price weighting, and where the ADBI may includes weighting based on at least one accounting data based factor and not based on any of capitalization, equal weighting, and/or share price weighting index; comparing weightings of the overlapping financial objects in the ADBI with weightings of the overlapping financial objects in the conventionally weighted index; and purchasing at least one financial object based on the comparing.

The purchasing may include at least one of: purchasing a long position in at least one overlapping financial object when the comparing indicates the at least one overlapping financial object is over weighted in the non-capitalization weighted index relative to the conventional index; and/or purchasing a short position in at least one overlapping financial object when the comparing indicates the at least one overlapping financial object is underweighted in the non-capitalization weighted index relative to the conventional index.

The purchasing of the long and/or short positions may be implemented by using total return swaps. The long and/or short positions may be held for one year.

The embodiment may further include rebalancing the portfolio. The rebalancing may include: at least one of creating new long and/or short positions using cash flow from new capital contributions, and/or altering existing long and/or short positions using cash flow from new capital contributions.

The embodiment may further include using leverage to obtain the long and/or short positions.

The comparing may include calculating a difference between the weightings, and/or calculating a difference between arithmetically modified values of the weightings. The arithmetically modified values of the weightings may include square roots of the weightings.

The comparing may include calculating a difference based on tiers of weightings using stratified sampling.

The financial object may include: at least one unit of interest in at least one of: an asset; a liability; a tracking portfolio; a financial instrument and/or a security, where the financial instrument and/or the security denotes a debt, an equity interest, and/or a hybrid; a derivatives contract, including at least one of: a future, a forward, a put, a call, an option, a swap, and/or any other transaction relating to a fluctuation of an underlying asset, notwithstanding the prevailing value of the contract, and notwithstanding whether such contract, for purposes of accounting, is considered an asset or liability; a fund; and/or an investment entity or account of any kind, including an interest in, or rights relating to: a hedge fund, an exchange traded fund (ETF), a fund of funds, a mutual fund, closed end fund, an investment vehicle, and/or any other pooled and/or separately managed investments.

In another exemplary embodiment, the present invention may be a method of constructing a portfolio of financial objects, including the steps of: determining non-overlapping financial objects appearing in only one of either an accounting data based index (ADBI) or a conventional weighted index by comparing financial objects in an ADBI with financial objects in a conventionally weighted index, where the conventionally weighted index may includes conventionally weighting based on at least one of capitalization, equal weighting, and/or share price weighting, and where the ADBI may includes accounting data based weighting on at least one accounting data based factor and not based on any of capitalization, equal weighting, and/or share price weighting index; weighting the non-overlapping financial objects appearing only in the ADBI by accounting data based weighting; weighting the non-overlapping financial objects appearing only in the conventionally weighted index by the conventional weighting; and purchasing financial objects based on the weightings.

The accounting data based weighting may include: (a) gathering data about a plurality of financial objects; (b) selecting a plurality of financial objects to create an index of financial objects; and (c) weighting each of the plurality of financial objects selected in the index based on an objective measure of scale based on accounting data of a company associated with each of the plurality of financial objects, where the weighting may include: (i) weighting at least one of the plurality of financial objects based on accounting data; and (ii) weighting other than weighting based on at least one of market capitalization, equal weighting, and/or share price weighting.

The embodiment may further include weighting each of the plurality of financial objects, where the each of the financial objects may include: at least one unit of interest in at least

one of: an asset; a liability; a tracking portfolio; a financial instrument and/or a security, where the financial instrument and/or the security denotes a debt, an equity interest, and/or a hybrid; a derivatives contract, including at least one of: a future, a forward, a put, a call, an option, a swap, and/or any other transaction relating to a fluctuation of an underlying asset, notwithstanding the prevailing value of the contract, and notwithstanding whether such contract, for purposes of accounting, is considered an asset or liability; a fund; and/or an investment entity or account of any kind, including an interest in, or rights relating to: a hedge fund, an exchange traded fund (ETF), a fund of funds, a mutual fund, closed end fund, an investment vehicle, and/or any other pooled and/or separately managed investments.

The embodiment may further include weighting each of the plurality of financial objects, where the each of the financial objects may include a stock.

The objective measures of scale may include weighting based on any dividends, book value, cash flow, and/or revenue. The embodiment may further include equally weighting each objective measure of scale.

The embodiment may further include weighting based on the objective measure of scale, where the objective measure of scale may include a measure of company size associated with each of the plurality of financial objects.

The measure of company size may include at least one of: inventory, revenue, sales, income, book income, taxable income, earnings growth rate, earnings before interest and tax (EBIT), earnings before interest, taxes, depreciation and amortization (EBITDA), retainer earnings, number of employees, capital expenditures, salaries, book value, assets, fixed assets, current assets, quality of assets, operating assets, intangible assets, dividends, gross dividends, dividend yields, cash flow, liabilities, losses, long term liabilities, short term liabilities, liquidity, long term debt, short term debt, bonds, corporate bonds, net worth, shareholder equity, goodwill, research and development expenditures, costs, cost of goods sold (COGS), and/or research and development costs.

The financial object may include: at least one unit of interest in at least one of: an asset; a liability; a tracking portfolio; a financial instrument and/or a security, where the financial instrument and/or the security denotes a debt, an equity interest, and/or a hybrid; a derivatives contract, including at least one of: a future, a forward, a put, a call, an option, a swap, and/or any other transaction relating to a fluctuation of an underlying asset, notwithstanding the prevailing value of the contract, and notwithstanding whether such contract, for purposes of accounting, is considered an asset or liability; a fund; and/or an investment entity or account of any kind, including an interest in, or rights relating to: a hedge fund, an exchange traded fund (ETF), a fund of funds, a mutual fund, a closed end fund, an investment vehicle, and/or any other pooled and/or separately managed investments.

In another exemplary embodiment, the present invention may be a method, executed on a data processing system, including the steps of: creating an accounting data based index (ADBI) based on accounting data including: selecting a universe of financial objects, and selecting a subset of the universe based on the accounting data to obtain the ADBI; creating a portfolio of financial objects using the ADBI, including weighting the financial objects in the portfolio according to a measure of value of a company associated with each financial object in the portfolio.

The universe may include at least one of: a sector; a market; a market sector; an industry sector; a geographic sector; an international sector; a sub-industry sector; a government issue; and/or a tax exempt financial object.

The accounting based data used in weighting as a measure of value of the company associated with the financial object, may include at least one of: any dividends; revenue; cash flow; and/or book value.

The accounting based data may be weighted relatively dependent on the geography of the company associated with the financial object.

The financial object may include: at least one unit of interest in at least one of: an asset; a liability; a tracking portfolio; a financial instrument and/or a security, where the financial instrument and/or the security denotes a debt, an equity interest, and/or a hybrid; a derivatives contract, including at least one of: a future, a forward, a put, a call, an option, a swap, and/or any other transaction relating to a fluctuation of an underlying asset, notwithstanding the prevailing value of the contract, and notwithstanding whether such contract, for purposes of accounting, is considered an asset or liability; a fund; and/or an investment entity or account of any kind, including an interest in, or rights relating to: a hedge fund, an exchange traded fund (ETF), a fund of funds, a mutual fund, a closed end fund, an investment vehicle, and/or any other pooled and/or separately managed investments.

In another exemplary embodiment, the present invention may be a computer-implemented method for construction and management of an index and at least one index fund containing a portfolio of financial objects based on the index, where weighting of the index is based on accounting based data rather than on stock prices or market capitalization or equal weighting, the computer-implemented method including the steps of: creating an index, and at least one index fund containing a portfolio of financial objects, where the constituent weightings of the companies issuing the financial objects in the index fund are based upon accounting based data regarding the companies associated with the financial objects, where the accounting based data may includes any dividends, cash flow, revenues, and/or book value.

The embodiment may further include: creating the index, and the at least one index fund containing a portfolio of financial objects where the constituent weightings are based upon any ratio of accounting based data, or any manipulation of accounting based data, that is contained within a standard company annual report and accounts.

The embodiment may further include: creating the index, and the at least one index fund containing a portfolio of financial objects where the constituent weightings are based upon any ratio of accounting based data per share, or any manipulation of accounting based data, that is contained within a standard company annual report and accounts.

The embodiment may further include: managing an accounting based data index, and at least one index fund containing a portfolio of financial objects based on the index including: altering the relative weightings of the financial objects within the at least one index fund as the accounting based data concerning the companies associated with the financial objects changes.

The altering may include at least one of: altering based on at least one of: changes in relative weightings of financial objects in the index; and/or changes in the financial objects that are members of the index outside the sample changes; and/or altering at the time of at least one of when, and/or after at least one company associated with a financial object of the index reports its accounting information.

The financial object may include: at least one unit of interest in at least one of: an asset; a liability; a tracking portfolio; a financial instrument and/or a security, where the financial instrument and/or the security denotes a debt, an equity interest, and/or a hybrid; a derivatives contract, including at least

one of: a future, a forward, a put, a call, an option, a swap, and/or any other transaction relating to a fluctuation of an underlying asset, notwithstanding the prevailing value of the contract, and notwithstanding whether such contract, for purposes of accounting, is considered an asset or liability; a fund; and/or an investment entity of any kind, including an interest in, or rights relating to: a hedge fund, an exchange traded fund (ETF), a fund of funds, a mutual fund, an investment vehicle, and/or any other pooled and/or separately managed investments.

The measure of company size may include at least one of: a financial ratio of a company; a ratio of accounting based data; a ratio of accounting based data per share; a ratio of a first accounting based data to a second accounting based data; a liquidity ratio; a working capital ratio; a current ratio; a quick ratio; a cash ratio; an asset turnover ratio; a receivables turnover ratio; an average collection period ratio; an average collection period ratio; an inventory turnover ratio; an inventory period ratio; a leverage ratio; a debt ratio; a debt-to-equity ratio; an interest coverage ratio; a profitability ratio; a return on common equity (ROCE) ratio; profit margin ratio; an earnings per share (EPS) ratio; a gross profit margin ratio; a return on assets ratio; a return on equity ratio; a dividend policy ratio; a dividend yield ratio; a payout ratio; a capital market analysis ratio; a price to earnings (PE) ratio; and/or a market to book ratio.

Further features and advantages of the invention, as well as the structure and operation of various embodiments of the invention, are described in detail below with reference to the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

The foregoing and other features and advantages of the invention will be apparent from the following, more particular description of exemplary embodiments of the invention, as illustrated in the accompanying drawings. In the drawings, like reference numbers generally indicate identical, functionally similar, and/or structurally similar elements. The drawing in which an element first appears is indicated by the leftmost digits in the corresponding reference number. A preferred exemplary embodiment is discussed below in the detailed description of the following drawings:

FIG. **1** is a deployment diagram of an index generation and use process in accordance with an exemplary embodiment of the present invention;

FIG. **2** is a process flow diagram of an index generation process in accordance with an exemplary embodiment of the present invention;

FIG. **3** is a process flow diagram of an index use process in accordance with an exemplary embodiment of the present invention;

FIG. **4** is a process flow diagram of a method of creating a portfolio of financial objects; and

FIG. **5** is a process flow diagram of a method of constructing an ADBI and a portfolio of financial objects using the ADBI.

DETAILED DESCRIPTION OF EMBODIMENTS OF THE PRESENT INVENTION

Various exemplary embodiments of the invention are discussed in detail below including a preferred embodiment. While specific implementations are discussed, it should be understood that this is done for illustration purposes only. A person skilled in the relevant art can recognize that other components, configurations, accounting data, and ratios may be used without parting from the spirit and scope of the invention.

An exemplary embodiment of the invention may be implemented on a computing device(s), processor(s), computer(s) and/or communications device(s).

The computer, in an exemplary embodiment, may comprise one or more central processing units (CPUs) or processors, which may be coupled to a bus. The processor may, e.g., access main memory via the bus. The computer may be coupled to an input/output (I/O) subsystem such as, e.g., but not limited to, a network interface card (NIC), or a modem for access to a network. The computer may also be coupled to a secondary memory directly via bus, or via a main memory, for example. Secondary memory may include, e.g., but not limited to, a disk storage unit or other storage medium. Exemplary disk storage units may include, but are not limited to, a magnetic storage device such as, e.g., a hard disk, an optical storage device such as, e.g., a write once read many (WORM) drive, or a compact disc (CD), or a magneto optical device. Another type of secondary memory may include a removable disk storage device, which may be used in conjunction with a removable storage medium, such as, e.g. a CD-ROM, a floppy diskette or flash drive, etc. In general, the disk storage unit may store an application program for operating the computer system referred to commonly as an operating system. The disk storage unit may also store documents of a database (not shown). The computer may interact with the I/O subsystems and disk storage unit via bus. The bus may also be coupled to a display for output, and input devices such as, but not limited to, a keyboard and a mouse or other pointing/selection device.

In this document, the terms "computer program medium" and "computer readable medium" may be used to generally refer to media such as, e.g., but not limited to, a removable storage drive, a hard disk installed in hard disk drive, and signals, etc. These computer program products may provide software to the computer system. The invention may be directed to such computer program products.

References to "one embodiment," "an embodiment," "example embodiment," "various embodiments," etc., may indicate that the embodiment(s) of the invention so described may include a particular feature, structure, or characteristic, but not every embodiment necessarily includes the particular feature, structure, or characteristic. Further, repeated use of the phrase "in one embodiment," or "in an exemplary embodiment," do not necessarily refer to the same embodiment, although they may.

In the following description and claims, the terms "coupled" and "connected," along with their derivatives, may be used. It should be understood that these terms are not intended as synonyms for each other. Rather, in particular embodiments, "connected" may be used to indicate that two or more elements are in direct physical or electrical contact with each other. "Coupled" may mean that two or more elements are in direct physical or electrical contact. However, "coupled" may also mean that two or more elements are not in direct contact with each other, but yet still co-operate or interact with each other.

An algorithm is here, and generally, considered to be a self-consistent sequence of acts or operations leading to a desired result. These include physical manipulations of physical quantities. Usually, though not necessarily, these quantities take the form of electrical or magnetic signals capable of being stored, transferred, combined, compared, and otherwise manipulated. It has proven convenient at times, principally for reasons of common usage, to refer to these signals as bits, values, elements, symbols, characters, terms,

numbers or the like. It should be understood, however, that all of these and similar terms are to be associated with the appropriate physical quantities and are merely convenient labels applied to these quantities.

Unless specifically stated otherwise, as apparent from the following discussions, it is appreciated that throughout the specification discussions utilizing terms such as "processing," "computing," "calculating," "determining," or the like, refer to the action and/or processes of a computer or computing system, or similar electronic computing device, that manipulate and/or transform data represented as physical, such as electronic, quantities within the computing system's registers and/or memories into other data similarly represented as physical quantities within the computing system's memories, registers or other such information storage, transmission or display devices.

In a similar manner, the term "processor" may refer to any device or portion of a device that processes electronic data from registers and/or memory to transform that electronic data into other electronic data that may be stored in registers and/or memory. A "computing platform" may comprise one or more processors.

Embodiments of the present invention may include apparatuses for performing the operations herein. An apparatus may be specially constructed for the desired purposes, or it may comprise a general purpose device selectively activated or reconfigured by a program stored in the device.

Constructing Accounting Data Based Indexes

A financial object, as discussed herein, may include at least one unit of interest in an asset; a liability; a tracking portfolio; and/or a financial instrument and/or a security, where the financial instrument and/or security denotes a debt, an equity interest, and/or a hybrid. A financial object, as discussed herein, may also include at least one unit of interest in a derivatives contract, including but not limited to at least one of: a future, a forward, a put, a call, an option, a swap, or other financial instrument whose price is derived from the price of the underlying financial asset, and/or any other transaction relating to a fluctuation of an underlying asset, notwithstanding the prevailing value of the contract, and notwithstanding whether such contract, for purposes of accounting, is considered an asset or liability. A financial object, as discussed herein, may also include at least one unit of interest in a fund; and/or in an investment entity or account of any kind, including an interest in, or rights relating to: a hedge fund, an exchange traded fund (ETF), a fund of funds, a mutual fund, a closed end fund, an investment vehicle, and/or any other pooled and/or separately managed investments.

FIG. **1** depicts an exemplary deployment diagram **100** of an index generation and use process in accordance with an exemplary embodiment of the present invention. According to the exemplary embodiment, an analyst may use a computer system **102** to generate an index **110**. The analyst may do so by using analysis software **114** to examine data **106** about entities offering different kinds of financial objects that may be traded by investors. An example of an entity that may be offering financial objects may be a publicly held company whose shares trade on an exchange. However, the present invention also applies to any entity that may have any type of financial object that may be traded where information about the entity and/or its financial objects is available (or capable of being made available) for analysis.

In an exemplary embodiment, once index **110** has been generated by an analyst using the entity data **106**, index **110** may be used to build investment portfolios. An investor, advisor, manager or broker may then manage the purchased financial objects as a mutual fund, an electronic traded fund, a hedge fund or other portfolio or account of assets for one or for a plurality of individual and/or institutional investors. The investor, advisor, manager or broker may use a trading computer **104** with trading software **116** to manage one or more trading accounts **108**. Alternatively, the purchased financial objects may be managed for one or more investors. In the latter case, financial objects may be purchased based on the index for inclusion in an individual or an institutional investor's portfolio. One or more trades may be effected or closed in cooperation with and via communication with an exchange host **112**.

FIG. **2** depicts an exemplary process flow diagram **200** of an index generation process in accordance with an exemplary embodiment of the present invention. In an exemplary embodiment, starting at block **202**, to generate index **110**, an analyst using analysis software **114** may access entity data **106** about various entities that have financial objects that are traded. For example, publicly traded companies must disclose information about certain financial aspects of their operations. This information may be aggregated for a plurality of entities. Market sectors and corresponding indices may then be identified and generated using the aggregate data.

In slightly more detail, an index **110** may be generated by normalizing entity data for a particular non-market capitalization metric in block **204**. The normalized entity data may be used to generate a weighting function, in block **206**, describing the contribution of each entity to a business sector as defined by the metric, in an exemplary embodiment. Index **110** may be generated using the weighting function in block **208**. The process ends at block **210**. Once index **110** is generated, according to an exemplary embodiment, index **110** may be used to track the business sector defined by the metric or to create a portfolio of financial objects offered by the entities whose information was used to generate the index.

For example, in an exemplary embodiment of the invention a method of constructing a non-capitalization weighted portfolio of financial objects may include, e.g., gathering data about various financial objects; selecting a group of financial objects to create the index of financial objects; and weighting each of the group of financial objects selected in the index based on an objective measure of scale of each member of the group of financial objects, where the weighting may include weighting all or a subset of the group of financial objects, and weighting based on other than market capitalization, equal weighting, or share price weighting.

In one exemplary embodiment, the weighting of each member of the group of financial objects, may include weighting financial objects of any of various types. Examples of various types of financial objects may include, e.g., but not limited to, a stock type; a commodity type; a futures contract type; a bond type; a mutual fund type; a hedge fund type; a fund of funds type; an exchange traded fund (ETF) type; a derivative type asset, and any other portfolio or account of financial objects. The weighting may also include, e.g., but not limited to, a negative weighting on any of the various types of financial objects.

According to exemplary embodiments of the present invention, the index **110** may be weighted based on an objective measure of scale, where the objective measure of scale may include a measure relating to an underlying asset itself. The financial object may include a municipality, a municipality issuing bonds, or a commodity. An objective measure of scale associated with the financial object may include any combination or ratios of: revenue, profitability, sales, total sales, foreign sales, domestic sales, net sales, gross sales, profit margin, operating margin, retained earnings, earnings

per share, book value, book value adjusted for inflation, book value adjusted for replacement cost, book value adjusted for liquidation value, dividends, assets, tangible assets, intangible assets, fixed assets, property, plant, equipment, goodwill, replacement value of assets, liquidation value of assets, liabilities, long term liabilities, short term liabilities, net worth, research and development expense, accounts receivable, earnings before interest, taxes, dividends, and amortization (EBITDA), accounts payable, cost of goods sold (CGS), debt ratio, budget, capital budget, cash budget, direct labor budget, factory overhead budget, operating budget, sales budget, inventory method, type of stock offered, liquidity, book income, tax income, capitalization of earnings, capitalization of goodwill, capitalization of interest, capitalization of revenue, capital spending, cash, compensation, employee turnover, overhead costs, credit rating, growth rate, dividends, dividends per share, dividend yields, tax rate, liquidation value of company, capitalization of cash, capitalization of earnings, capitalization of revenue, cash flow, and/or future value of expected cash flow.

Ratios too may be used. In an exemplary embodiment, the weighting of financial objects in the index based on objective measures of scale may include a ratio of any combination of the objective measures of scale of the financial object other than ratios based on weighting the financial objects based on market capitalization, equal weighting, or share price weighting. For example, the ratio of any combination of the objective measures of scale may include, e.g., but not limited to, current ratio, debt ratio, overhead expense as a percent of sales, or debt service burden ratio.

In an exemplary embodiment, the portfolio of financial objects may include, e.g., but not limited to, one or more of, a fund; a mutual fund; a fund of funds; an asset account; an exchange traded fund (ETF); a separate account, a pooled trust; a limited partnership or other legal entity, fund or account.

In an exemplary embodiment, a measure of company size may include one of, or a combination of one or more of, gross revenue, sales, income, earnings before interest and tax (EBIT), earnings before interest, taxes, depreciation and amortization (EBITDA), number of employees, book value, assets, liabilities, net worth, cash flow or dividends.

In one exemplary embodiment, the measure of company size may include a demographic measure of the financial object. The demographic measure of the financial object may include, e.g., one of, or any combination of one or more of a non-financial metric, a non-market related metric, a number of employees, floor space, office space, or other demographics of the financial object.

In an exemplary embodiment, weighting may be based on the objective measure of scale, where the measure may include a geographic metric. The geographic metric in an exemplary embodiment may include a geographic metric other than gross domestic product (GDP) weighting.

FIG. **3** depicts an exemplary process flow diagram **300** of an index use process in accordance with an exemplary embodiment of the present invention. The process starts at block **302**. An index **310** may be received from an index generation process and may be used to determine the identity and quantity of securities to purchase for a portfolio in block **304**, according to an exemplary embodiment. The securities may be purchased, in block **306**, from an exchange **314** or other market and may be held on account for an investor or group of investors in trading accounts **308**. The index **310** may be updated on, e.g., but not limited to, a periodic basis and may be used as a basis to rebalance the portfolio, according to an exemplary embodiment. According to another exemplary embodiment, the portfolio can be rebalanced when, e.g., a pre-determined threshold is reached. In this way, a portfolio may be created and maintained based on a non-market capitalization index.

Rebalancing can be based on financial objects reaching a threshold condition or value. For example, but not limited to, rebalancing may occur upon reaching a threshold such as, e.g., 'when the portfolio of financial objects increases in market value by 20%,' or 'when the financial objects on a sub-category within the portfolio exceed 32% of the size of the portfolio,' or 'when a U.S. President is elected from a different party than the incumbent,' etc. Rebalancing may take place periodically, e.g., quarterly, or annually.

The present invention, in an exemplary embodiment, may be used for investment management, or investment portfolio benchmarking.

Another exemplary embodiment of the present invention may include an Accounting Data Based Index (ADBI) such as, e.g., but not limited to, a FUNDAMENTAL INDEX™ and Index Fund or Funds.

This exemplary embodiment may utilize a new series of accounting data based stock market indices in which the index weightings may be determined by company accounting data such as, e.g., but not limited to, the relative size of a company's profits, or its pre-exceptional profits, or sales, or return on investment or any accounting data based accounting item, or ratio, may help to address some of the issues raised above. An index that is weighted based on company accounting data, rather than the share price, or market capitalization or equal weighting, may have a stabilizing element within it that can help to remove excess volatility generated by indices constructed on the basis of price or market capitalization alone. Over the medium to longer term, such accounting data based indices have the potential to outperform price or market capitalization-based indices, and may do so with less volatility.

The exemplary inventive method may create a new class of stock market indices and index funds that may be implemented on, e.g., but not limited to, a computing device or a processor, or as a computer software or hardware, or as an algorithm. This new class of stock market indices may base its weightings on the accounting data of the companies that make up that index. One possible version of an accounting data based stock market index may be an index that is based on the relative size of a sample of the companies' pre-exceptional profits. If the chosen sample of companies was determined to be one hundred and the accounting data based criteria that the index manager decided to use was to be 'largest pre-exceptional profits,' then the index may contain, e.g., the one hundred largest companies as defined by the size of their pre-exceptional profits. As an example, if the total pre-exceptional profits of the largest one hundred companies, as measured by their pre-exceptional profits, was 100 dollars, pound, or other currency, in a defined time period (such as a quarter or year) and in the same time period the pre-exceptional profits of theoretical company 'A' were $2, then theoretical company A would be allocated a 2% weighting in the accounting data based index, in an exemplary embodiment. If theoretical company B had pre-exceptional profits of $1.5 in over the same time period then it would have a weighting of 1.5% in the accounting data based index according to an exemplary embodiment.

The index weightings may be managed based on how the fundamentals of the companies within, or outside, the chosen index sample may change. As an example, the index manager could choose to rebalance the weightings from time to time such as, e.g., but not limited to, periodically, aperiodically,

quarterly, as company pre-exceptional profits change, and/or on an annual basis, etc., and enter their choice into, e.g., a computing device. If, for instance, by the time of the next rebalancing period the total pre-exceptional profits of the largest one hundred companies, as measured by their pre-exceptional profits, had grown to $120, and theoretical company A now had pre-exceptional profits of $1.2, the computing device may calculate the weighting of company in the accounting data based index such as, e.g., the accounting data based index down to 1% from 2% in the previous period. Creating such accounting data based indices may give an investor the opportunity to follow, or invest, passively in an index which may be anchored to the economic realities of the companies within it. This new accounting data based index construction technique by a computing device may produce an index and related index fund products with increased stability and with increased economically rational behavior as compared with known methods of investing.

Accounting Data Based Indexation

In one exemplary embodiment, a computing device may create an accounting data based stock market index (ADBI) such as, e.g., an accounting data based stock market index by using any of the accounting data based data points regarding a company or a group of companies that can be found in a company's annual report and accounts. In one exemplary embodiment, the computing device may create an index of companies based on the relative size of the companies' sales, assets, profits, cash flow or the shareholders equity. In addition, the computing device can also create the ADBI by using a ratio of any of the data concerning a company or group of companies that may be contained in a company report and accounts. In one exemplary embodiment, this could include the relative size of the return on financial objects of a selection of companies, their return on investment, or their return on capital compared to their cost of capital.

Once the index manager has decided and entered which accounting data based criteria to use and how many constituents the manager may decide that he or she wants to include in the index, the computing device may create the index in the following way. If, for example, the index manager decides to construct an accounting data based stock market index of one hundred constituent members and decides to use pre-exceptional profit as the chosen accounting data based criteria, the computing device may create the index as follows. First, the computing device may perform a search to find which are the largest one hundred listed companies as defined by the size of their pre-exceptional profits. Once the computing device has identified this information, the computing device may be ready to construct the index. Companies may be accorded index weightings based on the relative size of their pre-exceptional profits. If the combined pre-exceptional profits of the one hundred companies is $100 and theoretical company A has pre-exceptional profits of $2, then it may have an index weighting of 2%. Once the one hundred companies may have been accorded their weightings, the computing device may begin to calculate future index performance as the share prices of the different companies in the index changes from day to day. This may be achieved by assuming a starting value for the index, or index portfolio, and then calculating how each of the index constituents may perform going forward.

The computing device may then rebalance the index weightings as the accounting data based data points change over time as desired by the investor. For instance, if at the end of the next company reporting season the combined pre-exceptional profits of the one hundred largest companies had grown from $100 to $120 and the pre-exceptional profits of theoretical company A had declined from $2 to $1.2, the computing device may determine its weighting in the index would decline from 2% in the prior period to 1% in the current period. Also, some of the original companies in the first one hundred may be eliminated from the index if their pre-exceptional profits fall below a certain level while new companies that were not in the original sample may be included. The computing device, under the direction of an investor, may choose to rebalance the weightings in the index, e.g., but not limited to, as individual companies report their pre-exceptional profits on a quarterly basis, and/or waiting until the majority of companies have reported their pre-exceptional profits and then adjusting them all at once. Also, the computing device, under the direction of an investor, could choose to determine the weightings based on, e.g., but not limited to, either the total nominal amount of pre-exceptional profit each quarter or on a cumulative rolling basis.

Constructing a stock market index according to an exemplary embodiment using accounting data based company accounts data or a ratio, or manipulation of that data may provide a series of genuine alternatives for investors who want to invest in a passive style while focusing on fundamentals that they believe are important. For instance, according to an exemplary embodiment an investor may always want to own an index of U.S. or foreign equities that are, e.g., the largest five hundred companies as measured by sales, or by profits, or by growth in sales, or by return on investment, or any accounting data based company accounts data or ratio of that data.

Long-Short Equity Strategies

An exemplary embodiment of the present invention may take long and short positions based on an extent to which accounting data based indexation suggests that equities are under or over valued.

FIG. **4** illustrates an exemplary process flow diagram **400** of a method of creating a portfolio of financial objects according to an embodiment of the present invention. In block **402** the process starts. In block **404**, a determination is made of overlapping financial objects that appear in both an accounting data based index (ADBI) **410** and a conventional weighted index **412**. In block **406**, the weightings of the overlapping financial objects in the ADBI are compared with the weightings of the overlapping financial objects in the conventionally weighted index. Then, in block **408**, one or more of the overlapping financial object may be purchased based on the result of the comparison.

In the alternative, exemplary embodiments of the present invention may determine non-overlapping financial objects appearing in only one of either an accounting data based index (ADBI) or a conventional weighted index by comparing financial objects in an ADBI with financial objects in a conventionally weighted index. Non-overlapping financial objects appearing only in the ADBI may be weighted by accounting data based weighting. Non-overlapping financial objects appearing only in the conventionally weighted index may be weighted by the conventional weighting. Financial objects may then be purchased based on the resulting weightings.

In an exemplary embodiment, an index of the largest 1,000 U.S. equities, weighted by accounting data, may overlap an index of the largest 1,000 U.S. capitalization-weighted companies by approximately 80%. The 20% of non-overlapping companies may drive the 2.0% increase in return of an accounting data based index such as, e.g., but not limited to, RESEARCH AFFILIATES FUNDAMENTAL INDEX™ (RAFI™) available from Research Affiliates, LLC of Pasa-

dena, Calif., versus a cap-weighted index. A long-short strategy according to an exemplary embodiment is designed to leverage this 20% of companies that do not overlap, and may capture the expected alpha from the accounting data based indexation. An exemplary long-short U.S. equity strategy may be approximately beta and dollar neutral and can replace or complement market neutral or long-short strategies, or as part of a portfolio's alternative strategies bucket.

Accounting data based indexation may use economic measures of company size in constructing indexes. Using accounting data based economic measures of firm size may create an index that is indifferent to price. Accounting data based indexes may avoid flaws inherent in capitalization (price)-weighted indexes. Capitalization-weighted indexes naturally overweight overvalued stocks and underweight undervalued stocks. Accounting data based indexes may more accurately estimate a true fair value of a company, allowing the weight of a company's stock in the index to rise or fall only to the extent that the underlying economic value of the issuing company may rise or fall.

ADBI Portfolio Construction

FIG. **5** illustrates an exemplary flow process diagram **500** of a method of constructing an ADBI and a portfolio of financial objects using the ADBI, starting at block **502**. In block **504**, the ADBI **510** is created. Creating the ADBI may include, in block **506**, selecting a universe of financial objects, and, in block **508**, selecting a subset of the universe based on the accounting data to obtain the ADBI **510**. Then, in block **512**, a portfolio of financial objects is created using the ADBI **510**, including weighting the financial objects in the portfolio according to a measure of value of a company associated with each financial object in the portfolio.

To construct an exemplary accounting data based index (ADBI), such as, e.g., but not limited to, the RESEARCH AFFILIATES FUNDAMENTAL INDEX™ (RAFI™), some number of financial objects, e.g., 1000 US equities, may be selected and/or weighted based on the following four accounting data based measures of firm size: book equity value, free cash flow, sales, and gross dividends.

An exemplary embodiment of an accounting data based index such as, e.g., but not limited to, the RAFI™ index may first weight all US equities by each of the four accounting data based measures of firm size detailed above. According to an exemplary embodiment, an optimal relative weighting between the four factors may differ by geography of the stock market from which the equities are selected such as, e.g., an equal weighting may be optimal in one country or industry sector, while a different relative weighting between the factors may make sense in another country or industry sector. The index may then compute an overall weight for each holding by equally-weighting each of the four accounting data based measure of firm size according to an exemplary embodiment. For example, assume that a company has the following weights: 2.8% of total US book values, 2% of total US cash flow, 3% of total US sales, and 2.2% of total US dividends.

Equally-weighting these four accounting data based measures of firm size (i.e., book value, cashflow, sales and dividends) may produce a weight of 2.5%. According to an exemplary embodiment, for companies that have never paid dividends, one may exclude dividends from the calculation of the company's accounting data based weight. Finally, in an exemplary embodiment, the 1000 equities with the highest accounting data based weights may be selected and may be assigned a weight in the RAFI™ portfolio equal to its accounting data based weight.

According to another exemplary embodiment, an accounting data based index such as, e.g., but not limited to, RAFI™ maybe constructed using aggregate (not per-share) measures of firm size. For example, RAFI™ may use total firm cash flow instead of cash flow per share and total book value instead of book value per share in its construction.

In an exemplary embodiment, the accounting data may include the following four factors, book value, sales/revenue, cash flow and dividends. In another exemplary embodiment, only one or more of these factors may be used. In another exemplary embodiment, additional factors may be used, such as, e.g., any other accounting data. In one exemplary embodiment, the weightings of each of these factors may be equal relative to one another, i.e., 25% of each of book value, sales/revenue, cash flow and dividends. In one exemplary embodiment, if there are no dividends, then the other three factors may be weighted in equal parts, i.e., 33% each to book value, sales/revenue, and cash flow. In another exemplary embodiment, dividends may be weighted in a greater part such as, e.g., but not limited to, weighting dividends at 50% and book value, sales/revenue, and cash flow at ⅙th each, etc. In one exemplary embodiment, weightings may be the same, depending on the country or sovereign of origin or the industry sector of the stock or other financial object. In another exemplary embodiment, weightings may vary depending on the country or sovereign of origin or the industry sector of the stock or other financial object. In another exemplary embodiment, weightings may vary based on other factors, such as, e.g., but not limited to, types of assets, industry sectors, geographic sectors, sizes of companies, profitability of companies, amount of revenue generated by the company, etc.

An accounting data based index may be available in several varieties to meet the unique needs of different classes of retail and institutional investors, including, e.g., but not limited to, as enhanced portfolios, Exchange Traded Funds (ETFs), open-end mutual funds, tax managed portfolios, a collection of financial objects managed collectively but tracked separately, and closed-end mutual funds. Various US and international investment managers may offer, e.g., but not limited to, a suite of products.

A limited partnership or other fund or account investing in assets based on an Accounting Data Based Index, such as, e.g., Research Affiliates Fundamental Index, L.P. (RAFI LP) may increase the alpha generated by accounting data based indexation in the US through improvements or enhancements, including, e.g., but not limited to, monthly cash rebalancing and quality of earnings and corporate governance screens. The additional enhancements available through the LP may be expected to add an additional 40-70 bps of annual outperformance above the 200 basis points (bps) of annual out performance that may be achieved through the use of accounting data based indexing in portfolio construction.

A limited partnership or other fund or account investing in assets based on an ADBI international LP such as, RAFI International LP (RAFI™-I may apply accounting data based indexation to the international equity space in an exemplary embodiment to create an enhanced portfolio of, e.g., but not limited to 1000 international (ex-US) equities. RAFI-I may be expected to outperform capitalization weighted indexes by approximately 250 bps per year. Like the other RA Fundamental Index LP's, RAFI-I is an enhanced portfolio that may use monthly cash rebalancing and quality of earnings and corporate governance screens to improve upon the performance of the RAFI International index.

Open-end mutual funds may manage financial objects employing a fixed income strategy and portable alpha using the Accounting Data Based Index (ADBI) according to an exemplary embodiment.

An Exchange Traded Fund (ETF) of the ADBI such as, e.g., but limited to, POWERSHARES FTSE RAFI US 1000 Portfolio ETF (ticker symbol: PRF) may meet needs of retail and institutional investors interested in a low-cost means of accessing the power of accounting data based indexing in another exemplary embodiment.

Another exemplary embodiment includes a closed-end fund implementing accounting data based indexing such as, e.g., Canadian Fundamental Income 100, a closed-end mutual fund of the largest 100 accounting data based equities in Canada which attracted investments from retail and institutional investors in 2005, one of the most difficult closed end markets in recent history, demonstrating the strength of the accounting data based indexation strategy.

Accounting Data Based Indexation Long-Short (ADBI-LS)

Accounting data based indexation long-short (ADBI-LS) such as, e.g., but not limited to, RAFI-LS, is a long-short U.S. equity strategy that leverages ADBI such as RAFI™ innovation. The RAFI U.S. 1000 portfolio is designed to outperform the Russell 1000 (and the S&P 500) by about 200 bps per annum. By going long in stocks that have greater weight in the RAFI U.S. 1000 portfolio relative to the Russell 1000 and short in the stocks that are underweight in the RAFI U.S. 1000 relative to the Russell 1000, the RAFI-LS strategy captures the RAFI alpha process and enhances that alpha source.

ADBI-LS such as, e.g., RAFI-LS according to an exemplary embodiment, is designed to be roughly dollar and beta neutral, but not sector neutral. The sector bet can be significant if the ADBI strategy determines that a sector is substantially overvalued.

In general the overlap between ADBI RAFI U.S. 1000 and capitalization based index Russell 1000 may be about 75%. This may give 25% weights for the long portfolio and 25% weights for the short portfolio. The portfolio may be applied to 300% long and 300% short, which may magnify the RAFI alpha and the portfolio volatility. Leverage may be applied tactically, and can range from about 200% long/short to about 400% long/short according to exemplary embodiments.

ADBI-LS such as, e.g., RAFI-LS according to an exemplary embodiment may be designed to achieve an annual volatility of 15-25%. Volatility of the exemplary RAFI-LS, since inception, has been about 15%.

According to an exemplary embodiment, ADBI-LS, such as, e.g., RAFI-LS may use leverage in both its short and long positions. On average, $100 invested in RAFI-LS may result in a $300 notional long position and a $300 notional short position.

Implementation of an ADBI-LS's Long and Short Positions

According to an exemplary embodiment, one does not necessarily directly need to hold long or short positions in the underlying stocks, nor does it need to access a direct line of credit for the portfolio leverage. Instead, according to an exemplary embodiment, derivatives, such as a total return swaps may be used to implement the long and short positions. It may be possible to achieve minimal counterparty default risk exposure by entering into swaps with large Wall Street firms in an exemplary embodiment. Investors in an ADBI-LS may not be physically shorting any U.S. equities; rather, investors may merely hold OTC derivative contracts. This may provide both tax benefits and efficiency in investment logistics.

ADBI-LP such as, e.g., RAFI-LP™, may be a full-market ADBI. ADBI-LS such as, e.g., RAFI-LS™, may be a fund that uses the differences between company weights in ADBI such as, e.g., RAFI™ and in a capitalization-weighted index to establish long and short positions according to an exemplary embodiment.

ADBI-LS may be designed to be dollar neutral and equity beta neutral in an exemplary embodiment. Therefore, one may expect ADBI-LS returns to be largely uncorrelated with the equity market return in an exemplary embodiment. However, ADBI may not be market neutral in the traditional sense as it is not industry sector neutral in an exemplary embodiment.

ADBI-LS does not pair positions, and thus is different from traditional equity long-short strategies whereby e.g., but not limited to, a short General Motors (GM) position is paired with a long Ford position. Instead, ADBI-LS may acquire both long and short positions based on the relative difference between the ADB Index such as, e.g., FUNDAMENTAL INDEX™ weights and those of a cap-weighted index, such as, e.g., but not limited to the Russell 1000.

An exemplary embodiment of ADBI-LS may rebalance periodically and/or aperiodically. For example, on average, the ADBI-LS, such as, e.g., RAFI-LS portfolio may hold its long-short bets for about one year. The cash flow from new capital contributed to the strategy may be used to rebalance the portfolio to create new or alter existing long-short bets according to an exemplary embodiment.

In an exemplary embodiment, the present invention may be a method of constructing a portfolio of financial objects, comprising: purchasing a portfolio of a plurality of mimicking financial objects to obtain and/or create a mimicking portfolio, wherein performance of the portfolio of mimicking financial objects substantially mirrors the performance of the accounting data based index based portfolio without substantially replicating the accounting data based index based portfolio. The method may further obtain and/or use a risk model for the portfolio where the risk model mirrors a risk model of the accounting data based index. The risk model may be substantially similar to the Fama-French factors, wherein the Fama-French factors may comprise at least one of size effect (e.g., where small cap beats large cap), value effect (e.g., where high B/P beats low B/P), and/or momentum effect (e.g. where strong momentum beats weak momentum in very long run, e.g. 10 or more years). The performance of the portfolio of mimicking financial objects may substantially mirror the performance of the accounting data based index based portfolio without substantially replicating financial objects and/or weightings in the accounting data based index based portfolio.

In another exemplary embodiment, the present invention may include purchasing a plurality of financial objects according to weightings substantially similar to the weightings of an accounting data based index (ADBI), where performance of the financial objects substantially mirrors the performance of the ADBI without using substantially the same financial objects in the ADBI.

While various embodiments of the present invention have been described above, it should be understood that they have been presented by way of example only, and not limitation. Thus, the breadth and scope of the present invention should not be limited by any of the above-described exemplary embodiments, but should instead be defined only in accordance with the following claims and their equivalents.

What is claimed is:

1. A computer-implemented method for construction of an index of financial objects, the computer-implemented method comprising:

creating, by at least one computer, the index of the financial objects, said creating comprises:

selecting, by the at least one computer, financial objects as constituents of the index based upon at least one accounting data regarding entities issuing the financial objects rather than price of the financial objects, wherein the at least one accounting data comprises at least one of: cash flow of the entities issuing the financial objects, sales of the entities issuing the financial objects, book value of the entities issuing the financial objects or any dividends of the entities issuing the financial objects; and

weighting, by the at least one computer, the constituents of the index based upon at least one accounting data regarding the entities issuing the financial objects rather than price of the financial objects, to obtain constituent weightings of the constituents of the index, wherein the at least one accounting data comprises at least one of: cash flow of the entities issuing the financial objects, sales of the entities issuing the financial objects, book value of the entities issuing the financial objects or any dividends of the entities issuing the financial objects, and

managing, by the at least one computer, the index, and managing at least one portfolio of financial objects based on the index comprising:

altering, by the at least one computer, the relative weightings of the financial objects within said at least one portfolio of financial objects based on the index as the at least one accounting data concerning the entities of the financial objects changes or the constituents of the index change over time.

2. The computer-implemented method of claim **1**, wherein the computer implemented method comprises:

creating, by the at least one computer, said index of financial objects wherein the constituent weightings are based upon any ratio of at least one accounting data, or any manipulation of at least one accounting data, that is contained within a company financial report.

3. The computer-implemented method of claim **1**, wherein the computer implemented method comprises:

creating, by the at least one computer, said index of financial objects wherein the constituent weightings are based upon any ratio of at least one accounting data per share, or any manipulation of at least one accounting data, that is contained within a company financial report.

4. The computer implemented method of claim **1**, wherein said altering comprises at least one of:

altering based on at least one of: changes in relative weightings of financial objects in said index; or changes in said financial objects that are members of said index; or

altering at the time of at least one of: when, or after, at least one entity associated with a given financial object of said index reports its accounting information.

5. The computer-implemented method of claim **1**, wherein said financial object comprises:

at least one unit of interest in at least one of:

an asset;

a liability;

a tracking portfolio;

a financial instrument or a security, wherein said financial instrument or said security denotes a debt, an equity interest, or a hybrid;

a derivatives contract, including at least one of:

a future, a forward, a put, a call, an option, a swap, or any other transaction relating to a fluctuation of an underlying asset, notwithstanding the prevailing value of the contract, and notwithstanding whether such contract, for purposes of accounting, is considered an asset or liability;

a fund; or

an investment entity of any kind, including an interest in, or rights relating to at least one of:

a hedge fund, an exchange traded fund (ETF), a fund of funds, a mutual fund, an investment vehicle, or any other pooled or separately managed investments.

6. The method of claim **1**, wherein said at least one accounting data further comprises at least one of:

inventory of the entity;
revenue of the entity;
sales of the entity;
income of the entity;
book income of the entity;
taxable income of the entity;
earnings growth rate of the entity;
earnings before interest and tax (EBIT) of the entity;
earnings before interest, taxes, depreciation, and amortization (EBITDA) of the entity;
expected earnings of the entity;
retained earnings of the entity;
expected revenue of the entity;
number of employees of the entity;
capital expenditures of the entity;
salaries of the entity;
book value of the entity;
assets of the entity;
fixed assets of the entity;
current assets of the entity;
quality of assets of the entity;
operating assets of the entity;
intangible assets of the entity;
dividends of the entity;
gross dividends of the entity;
dividend yields of the entity;
expected dividends of the entity;
cash flow of the entity;
expected cash flow of the entity;
liabilities of the entity;
losses of the entity;
long term liabilities of the entity;
short term liabilities of the entity;
liquidity of the entity;
long term debt of the entity;
short term debt of the entity;
bonds of the entity;
corporate bonds of the entity;
net worth of the entity;
shareholder equity of the entity;
goodwill of the entity;
research and development expenditures of the entity;
costs of the entity;
cost of goods sold (COGS) of the entity; or
research and development costs of the entity.

7. The computer-implemented method of claim **1**, wherein the computer implemented method comprises:

creating, by the at least one computer, said index wherein the constituent weightings are based upon weighting of said cash flows of the entities issuing the financial

objects, said sales of the entities issuing the financial objects, and said book value of the entities issuing the financial objects.

8. The computer-implemented method of claim **1**, wherein the computer implemented method comprises:

creating, by the at least one computer, said index wherein the constituent weightings are based upon equally weighting said cash flows of the entities issuing the financial objects, said sales of the entities issuing the financial objects, and said book value of the entities issuing the financial objects.

9. The computer-implemented method of claim **1**, wherein the constituent weightings are based upon equally weighting said cash flows of the entities issuing the financial objects, said sales of the entities issuing the financial objects, and said book value of the entities issuing the financial objects, at ⅓ each.

10. The computer-implemented method of claim **1**, wherein the computer implemented method comprises:

creating, by the at least one computer, said index wherein the constituent weightings are based upon weighting of said cash flows of the entities issuing the financial objects, said sales of the entities issuing the financial objects, said book value of the entities issuing the financial objects, and said any dividends of the entities issuing the financial objects.

11. The computer-implemented method of claim **1**, wherein the computer implemented method comprises:

creating, by the at least one computer, said index wherein the constituent weightings are based upon equally weighting of said cash flows of the entities issuing the financial objects, said sales of the entities issuing the financial objects, said book value of the entities issuing the financial objects, and said any dividends of the entities issuing the financial objects.

12. The computer-implemented method of claim **1**, wherein the constituent weightings are based upon:

equally weighting by the at least one computer, said cash flows of the entities issuing the financial objects, said sales of the entities issuing the financial objects, said book value of the entities issuing the financial objects, and said any dividends of the entities issuing the financial objects, at ¼ each, for financial objects with dividends; and

equally weighting by the at least one computer, said cash flows of the entities issuing the financial objects, said sales of the entities issuing the financial objects, and said book value of the entities issuing the financial objects, at ⅓ each, for financial objects with no dividends.

13. The computer-implemented method of claim **1**, wherein the constituent weighting of the entity of the financial object is based upon the at least one accounting data of the entity of the financial object relative to the total at least one accounting data of the entities of the financial objects.

14. The computer-implemented method of claim **1**, wherein the constituent weightings are adjusted based on at least one of: a country, a sovereign of origin of the entity of the financial object, or an industry sector of the entity of the financial object.

15. The computer-implemented method of claim **1**, wherein said selecting comprises selecting, by the at least one computer, a set of the entities of the financial objects of a universe of financial objects.

16. The computer-implemented method of claim **15**, wherein said selecting is relative to the at least one accounting data of the entities of the financial objects of the universe.

17. The computer-implemented method of claim **16**, wherein said selecting comprises:

selecting by the at least one computer, the set of the entities of the financial objects based on weighting the relative size of the at least one accounting data of the entity of each financial object relative to a total of the at least one accounting data of the entities of the financial objects of the universe.

18. The computer-implemented method of claim **15**, wherein said any dividends of the entities of the financial objects comprise the averaged total dividend distributions of the entities of the financial objects for a period of time, said cash flows of the entities of the financial objects comprise the averaged cash flow of the entities of the financial objects for the period of time, and said sales of the entities of the financial objects comprise the averaged sales of the entities of the financial objects for the period of time.

19. The computer-implemented method of claim **18**, wherein the period of time

comprises at least one of: at least a quarter, at least a year, or at least five years.

20. The computer-implemented method of claim **15**, wherein said selecting comprises:

selecting, by the at least one computer, a set of the entities of the financial objects based upon weighting the relative size of an average of the at least one accounting data of the entity of the financial object relative to a total of the averaged at least one accounting data of the entities of the financial objects of said universe.

21. The computer-implemented method of claim **15**, wherein said selecting the set comprises:

calculating, by the at least one computer, measures of value for the entities of the financial objects based upon said at least one accounting data regarding the entities of the financial objects; and

selecting, by the at least one computer, a set of the entities of the financial objects based on the measures of value.

22. The computer-implemented method of claim **21**, wherein said selecting the set of the entities of the financial objects comprises selecting, by the at least one computer, a fixed number of the entities of the financial objects with the largest measures of value from the universe.

23. The computer-implemented method of claim **15**, wherein said universe comprises at least one of:

publicly traded companies;

a sector;

a market;

a market sector;

an industry sector;

a geographic sector;

an international sector;

a sub-industry sector;

a government issue; or

a tax exempt financial object.

24. The computer-implemented method of claim **15**, wherein said weighting comprises:

determining by the at least one computer, the constituent weighting of the entities of the financial objects of the set, by the at least one computer, based upon weighting the relative size of an average of the at least one accounting data of entities issuing financial objects for a period of time relative to a total of the averaged at least one accounting data of the entities of the financial objects of said universe.

25. The computer-implemented method of claim **1**, wherein the constituent weightings of the entities of the finan-

cial objects are based on a proportion of types of financial objects issued by the same entity.

26. The computer-implemented method of claim **1**, further comprising:

(a) gathering, by the at least one computer, the at least one accounting data about a plurality of the financial objects;

(b) selecting, by the at least one computer, a plurality of financial objects based on an objective measure of scale comprising at least one accounting data of the entity associated with each of said plurality of financial objects to create said index of financial objects; and

(c) weighting, by the at least one computer, each of said plurality of financial objects selected in said index based on an objective measure of scale comprising at least one accounting data of the entity associated with each of said plurality of financial objects,

wherein said weighting comprises:

(i) weighting by the at least one computer at least one of said plurality of financial objects based on said at least one accounting data; and

(ii) weighting is exclusive of weighting based on market capitalization, equal weighting, and share price weighting.

27. The method according to claim **26**, wherein said weighting based on the objective measure of scale comprises weighting by the at least one computer based on said any dividends of the entities issuing the financial objects, said book value of the entities issuing the financial objects, said cash flows of the entities issuing the financial objects, or said sales of the entities issuing the financial objects.

28. The method of claim **27**, further comprising equally weighting by the at least one computer, each objective measure of scale.

29. The method of claim **26**, wherein (c) comprises weighting by the at least one computer based on said objective measure of scale, wherein said objective measure of scale comprises a measure of the entity size associated with each of said plurality of financial objects.

30. The method of claim **29**, wherein said measure of the entity size comprises at least one of:

inventory of the entity;
revenue of the entity;
sales of the entity;
income of the entity;
book income of the entity;
taxable income of the entity;
earnings growth rate of the entity;
earnings before interest and tax (EBIT) of the entity;
earnings before interest, taxes, depreciation, and amortization (EBITDA) of the entity;
expected earnings of the entity;
retained earnings of the entity;
expected revenue of the entity;
number of employees of the entity;
capital expenditures of the entity;
salaries of the entity;
book value of the entity;
assets of the entity;
fixed assets of the entity;
current assets of the entity;
quality of assets of the entity;
operating assets of the entity;
intangible assets of the entity;
dividends of the entity;
gross dividends of the entity;
dividend yields of the entity;
expected dividend of the entity;
cash flow of the entity;
expected cash flow of the entity;
liabilities of the entity;
losses of the entity;
long term liabilities of the entity;
short term liabilities of the entity;
liquidity of the entity;
long term debt of the entity;
short term debt of the entity;
bonds of the entity;
corporate bonds of the entity;
net worth of the entity;
shareholder equity of the entity;
goodwill of the entity;
research and development expenditures of the entity;
costs of the entity;
cost of goods sold (COGS) of the entity; or
research and development costs of the entity.

31. A computer-implemented method of claim **1**, further comprising:

creating, by at least one computer, a portfolio of financial objects comprising purchasing constituent financial objects of the index in proportion to the constituent weightings of the constituents of the index.

32. The method of claim **1**, wherein said at least one accounting data further comprises at least one of:

a financial ratio of a company;
a ratio of accounting based data;
a ratio of accounting based data per share;
a ratio of a first accounting based data to a second accounting based data;
a liquidity ratio;
a working capital ratio;
a current ratio;
a quick ratio;
a cash ratio;
an asset turnover ratio;
a receivables turnover ratio;
an average collection period ratio;
an average collection period ratio;
an inventory turnover ratio;
an inventory period ratio;
a leverage ratio;
a debt ratio;
a debt-to-equity ratio;
an interest coverage ratio;
a profitability ratio;
a return on common equity (ROCE) ratio;
profit margin ratio;
an earnings per share (EPS) ratio;
a gross profit margin ratio;
a return on assets ratio;
a return on equity ratio;
a dividend policy ratio;
a dividend yield ratio; or
a payout ratio.

33. The computer-implemented method of claim **1**, further comprising: selecting a subset of a universe of financial objects based on at least one of: a liquidity of the financial objects, or a minimum size of said entity of said financial object.

34. The computer-implemented method of claim **1**, wherein said at least one accounting data regarding entities issuing the financial objects further comprises net income of the entities issuing the financial objects.

35. The computer-implemented method of claim 1, wherein said selecting comprises:
calculating a first weight of a first accounting data of said at least one accounting data regarding an entity;
calculating a second weight of a second accounting data of said at least one accounting data regarding the entity;
averaging the first weight and the second weight to obtain an averaged weight; and
selecting the entity based on the averaged weight.

36. The computer-implemented method of claim 1, wherein said weighting comprises:
calculating a first weight of a first accounting data of said at least one accounting data regarding an entity;
calculating a second weight of a second accounting data of said at least one accounting data regarding the entity;
averaging the first weight and the second weight to obtain an averaged weight; and
weighting the entity based on the averaged weight.

37. The computer-implemented method of claim 1, further comprising:
quarterly rebalancing the index of financial objects.

38. The method according to claim 1, wherein said selecting said financial objects further comprises selecting a universe and selecting a subset of said universe.

39. The method according to claim 38, wherein said subset comprises at least one of:
a subset based upon at least one criteria;
a sector;
a market;
a market sector;
an industry sector;
a geographic sector;
an international sector;
a sub-industry sector;
a government issue; or
a tax exempt financial object.

40. The method according to claim 38, wherein said universe comprises at least one of:
publicly traded stocks of at least one of: at least one country, or at least one country's at least one stock market;
at least one sector;
at least one market;
at least one market sector;
at least one growth market sector;
at least one value market sector;
at least one industry sector;
at least one geographic sector;
at least one international sector;
at least one sub-industry sector;
at least one government issue;
at least one measure of value;
at least one price-based ratio sector;
at least one size of an entity;
at least one market size of an entity;
any measure of size of an entity;
at least one size of a company; or
at least one tax exempt financial object.

41. The method according to claim 38, wherein said selecting said subset of said universe comprises selecting upon at least one of: a liquidity of the financial objects, or a minimum size of the entity of the financial object.

42. The method according to claim 38, wherein said selecting said subset comprises selecting, by the at least one processor based on user input, said subset based on any measure of company size.

43. The method according to claim 42, wherein said selecting said subset comprises selecting, by the at least one processor based on user input, said subset based on at least one of: a maximum measure of company size, a minimum measure of company size, or a range of measures of company size.

44. The method according to claim 38, wherein said selecting said universe comprises selecting a universe based on any measure of company size.

45. The method according to claim 44, wherein said selecting said subset comprises selecting, by the at least one processor based on user input, said subset based upon at least one of: a minimum measure of said company size; a maximum measure of said company size, or a range of measures of said company size.

46. The method according to claim 38, wherein at least one of said selecting said universe or said selecting said subset, comprises: selecting, by the at least one processor based on user input, based upon a measure of company size comprising at least one of: a large cap, a mid cap, or a small cap.

47. The method according to claim 38, further comprising:
dividing, by the at least one processor based on user input, said index into at least one partition of said index based upon at least one measure of scale of entities of the financial objects in said index.

48. The method according to claim 38, further comprising:
selecting, by the at least one processor based on user input, at least a portion of said index based upon any measure of scale of entities of the financial objects in said index.

49. The method according to claim 38, wherein said universe comprises publicly traded stocks of all companies in at least one of: a given country; or at least one stock market of a given country.

50. The method according to claim 38, wherein said subset is selected based upon a measure of company size comprising at least one of:
a financial ratio of a company;
a ratio of accounting based data;
a ratio of accounting based data per share;
a ratio of a first accounting based data to a second accounting based data;
a liquidity ratio;
a working capital ratio;
a current ratio;
a quick ratio;
a cash ratio;
an asset turnover ratio;
a receivables turnover ratio;
an average collection period ratio;
an average collection period ratio;
an inventory turnover ratio;
an inventory period ratio;
a leverage ratio;
a debt ratio;
a debt-to-equity ratio;
an interest coverage ratio;
a profitability ratio;
a return on common equity (ROCE) ratio;
profit margin ratio;
an earnings per share (EPS) ratio;
a gross profit margin ratio;
a return on assets ratio;
a return on equity ratio;
a dividend policy ratio;
a dividend yield ratio; or
a payout ratio.

51. The method according to claim 1, further comprising:
selecting, by the at least one processor based on user input, a subset of an accounting data based index (ADBI) based on a measure of scale of entities in said ADBI.

52. The method according to claim 1, wherein said creating said index, said managing said index, and said managing said at least one portfolio are performed by at least one of: a same entity as, or one or more separate entities.

53. A computer-implemented method for construction of a portfolio based on an index, wherein selecting financial objects as constituents of the index and weighting of the constituents of the index is based upon at least one accounting data regarding entities issuing the financial objects rather than price data of the financial object, the computer-implemented method comprising:

creating, by at least one computer, the portfolio of financial objects comprising purchasing constituent financial objects of the index in proportion to constituent weightings of the constituents of the index, wherein the index was created by an index provider having:

selected, by the at least one computer, financial objects as said constituents of the index based upon at least one accounting data regarding entities issuing the financial objects rather than price of the financial objects, wherein the at least one accounting data comprises at least one of: cash flow of the entities issuing the financial objects, sales of the entities issuing the financial objects, book value of the entities issuing the financial objects or any dividends of the entities issuing the financial objects; and

weighted, by the at least one computer, the constituents of the index based on at least one accounting data related to the entities of the financial objects rather than price of the financial objects, to obtain the constituent weightings of the constituents of the index, wherein the at least one accounting data comprises at least one of: cash flow of the entities issuing the financial objects, sales of the entities issuing the financial objects, book value of the entities issuing the financial objects or any dividends of the entities issuing the financial objects, and

managing the portfolio comprising:

purchasing, by the at least one computer, financial objects at least one of: added to the index or having increased constituent weighting over time; and

selling, by the at least one computer, financial objects at least one of: removed from the index or having decreased constituent weighting over time.

54. The computer-implemented method of claim 53, wherein said at least one accounting data regarding entities issuing the financial objects further comprises net income of the entities issuing the financial objects.

55. The method according to claim 53, wherein said creating said portfolio, said purchasing, said selling, and said managing are performed by at least one of: a same entity as, or one or more separate entities other than, the index provider.

56. A computer-implemented method for construction of an index and portfolio of financial objects based upon cash flow, sales, book value, and any dividends of the financial objects, the computer-implemented method comprising:

creating, by at least one computer, an index of the financial objects, comprising:

selecting, by the at least one computer, a plurality of selected financial objects to be placed in said index wherein said selecting comprises:

selecting, by the at least one computer, financial objects to be placed in said index based upon a cash flow, or a ratio of said cash flow, of an entity associated with a given financial object,

selecting, by the at least one computer, the financial objects to be placed in said index based upon sales, or a ratio of said sales, of the entity associated with the given financial object,

selecting, by the at least one computer, the financial objects to be placed in said index based upon a book value, or a ratio of said book value, of the entity associated with the given financial object, and

selecting, by the at least one computer, the financial objects to be placed in said index based upon any dividends, or a ratio of said any dividends, of the entity associated with the given financial object; and

weighting, by the at least one computer, said plurality of selected financial objects placed in said index,

wherein said weighting comprises:

weighting, by the at least one computer, said selected financial objects placed in said index based upon a cash flow, or a ratio of said cash flow, of an entity associated with a given financial object,

weighting, by the at least one computer, said selected financial objects placed in said index based upon sales, or a ratio of said sales, of the entity associated with the given financial object,

weighting, by the at least one computer, said selected financial objects placed in said index based upon a book value, or a ratio of said book value, of the entity associated with the given financial object, and

weighting, by the at least one computer, said selected financial objects placed in said index based upon any dividends, or a ratio of said any dividends, of the entity associated with the given financial object; and

creating, by the at least one computer, at least one portfolio of financial objects based on said index comprising:

purchasing, by the at least one computer, said selected financial objects placed in said index in proportion to said weightings based upon said cash flow, said sales, said book value, and said any dividends, or said ratio of said cash flow, said ratio of said sales, said ratio of said book value, and said ratio of said any dividends, and placing said purchased financial objects into said at least one portfolio.

57. The computer-implemented method of claim 56, wherein the computer implemented method comprises:

creating, by the at least one computer, said index of financial objects, and said at least one portfolio of financial objects based on said index wherein said weightings are based upon at least one of: any ratio of at least one accounting data, any ratio of at least one accounting data per share, or any manipulation of at least one accounting data, wherein the at least one accounting data is contained within a company financial report.

58. The computer implemented method of claim 56, wherein the computer implemented method comprises:

managing, by the at least one computer, said index, and said at least one portfolio of financial objects based on said index comprising:

altering, by the at least one computer, said at least one portfolio based on said index as the at least one accounting data concerning the entities of the financial objects changes or said plurality of selected financial objects placed in said index change over time.

59. The computer implemented method of claim 58, wherein said altering comprises at least one of:

altering based on at least one of: changes in said weightings of financial objects in said index or changes in said financial objects that are placed in said index; or

altering at the time of at least one of: when, or after, at least one entity associated with a given financial object of said index reports its accounting information.

60. The computer-implemented method of claim 56, wherein said financial object comprises:

at least one unit of interest in at least one of:

an asset;

a liability;

a tracking portfolio;

a financial instrument or a security, wherein said financial instrument or said security denotes a debt, an equity interest, or a hybrid;

a derivatives contract, including at least one of:

a future, a forward, a put, a call, an option, a swap, or any other transaction relating to a fluctuation of an underlying asset, notwithstanding the prevailing value of the contract, and notwithstanding whether such contract, for purposes of accounting, is considered an asset or liability;

a fund; or

an investment entity of any kind, including an interest in, or rights relating to at least one of:

a hedge fund, an exchange traded fund (ETF), a fund of funds, a mutual fund, an investment vehicle, or any other pooled or separately managed investments.

61. The computer-implemented method of claim 56, further comprising:

quarterly rebalancing the index.

* * * * *

EXHIBIT B

US007792719B2

(12) **United States Patent**
Arnott

(10) **Patent No.: US 7,792,719 B2**
(45) **Date of Patent: Sep. 7, 2010**

(54) **VALUATION INDIFFERENT NON-CAPITALIZATION WEIGHTED INDEX AND PORTFOLIO**

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G06Q 40/00 (2006.01)

(52) **U.S. Cl.** ..... **705/35**; 705/36 R; 705/37

(58) **Field of Classification Search** ..... 705/35, 705/36, 36 R

See application file for complete search history.

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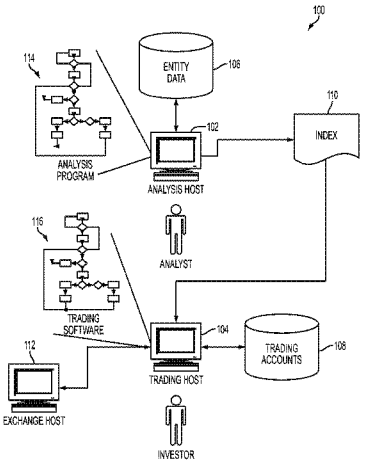
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(57) **ABSTRACT**

A passive investment system based on indices created from various metrics is disclosed. The indexes may be built by selecting and weighting securities by an objective measure of scale such as accounting metrics rather than market capitalization weighting, price weighting or equal weighting. Various financial, accounting, and non-financial metrics may be used to build an index. Additionally, a combination of financial non-market capitalization metrics may be used along with non-financial metrics to create passive investment systems. Once the index is built, it may be used as a basis to purchase securities for a portfolio.

88 Claims, 3 Drawing Sheets



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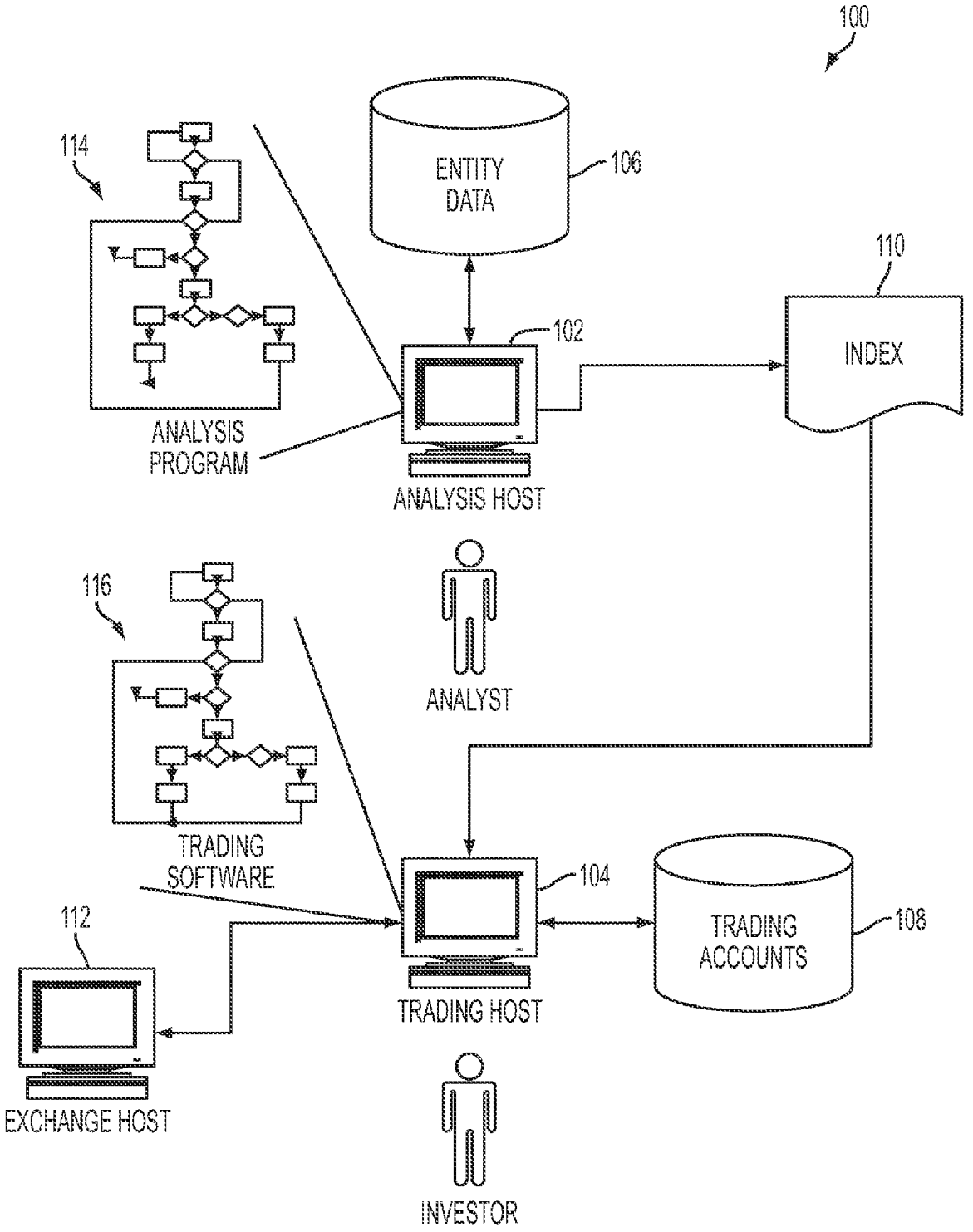

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FIG. 1

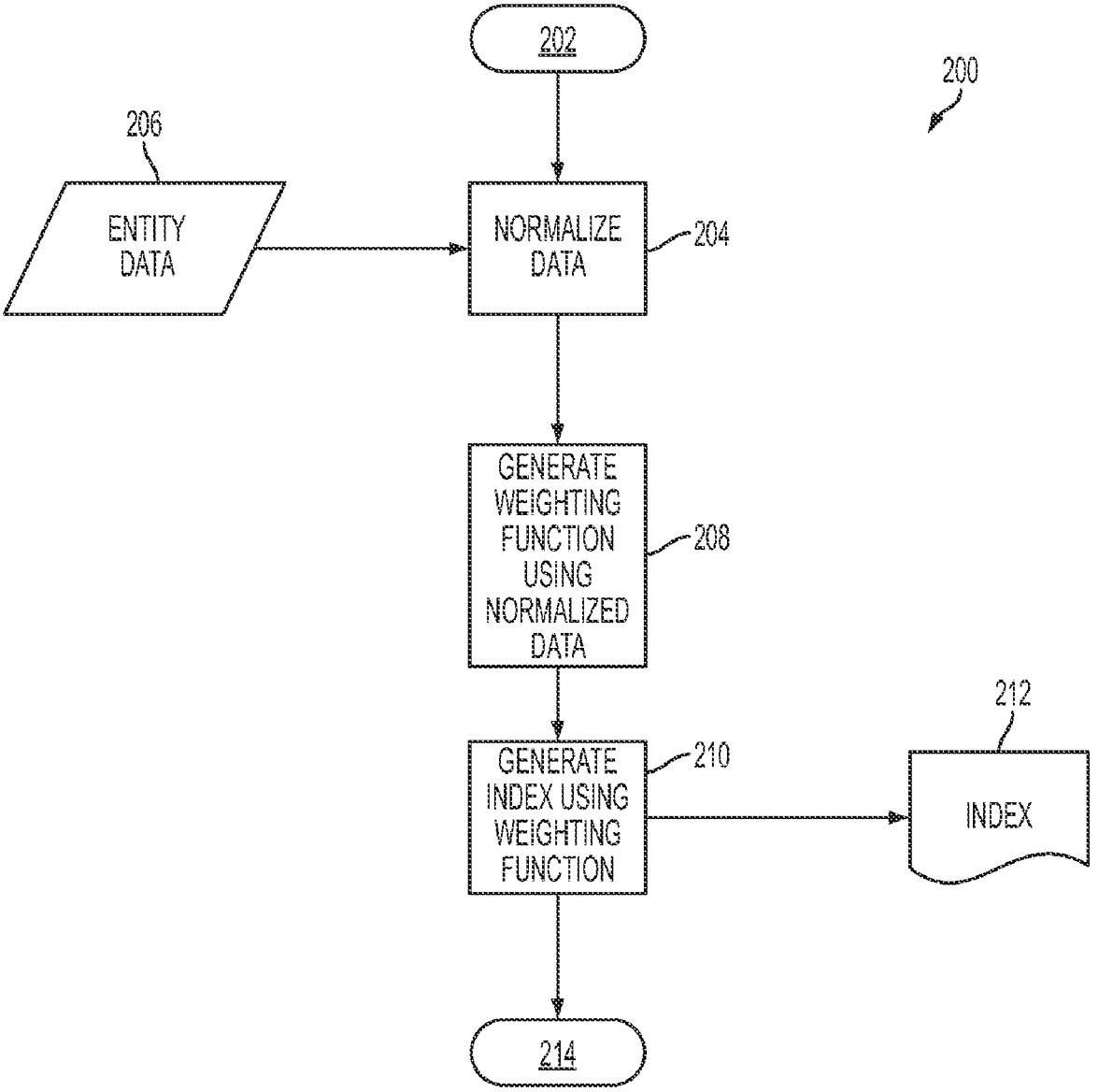

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FIG. 2

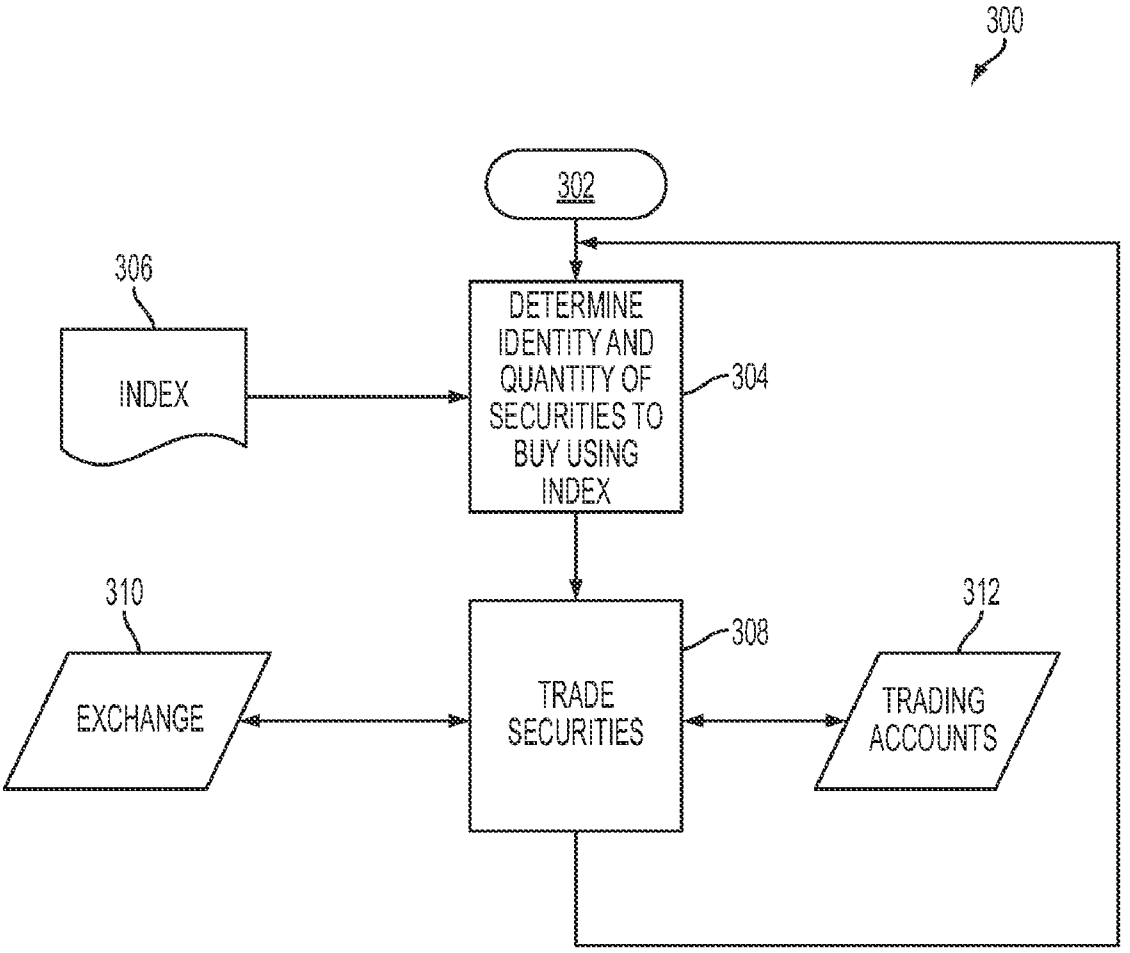

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FIG. 3

VALUATION INDIFFERENT NON-CAPITALIZATION WEIGHTED INDEX AND PORTFOLIO

CROSS-REFERENCE TO RELATED APPLICATIONS

The present application is a non-provisional application claiming priority to U.S. Provisional Patent Application No. 60/541,733 entitled, "Securities Indexing," to Arnott, filed Feb. 4, 2004, the contents of which is incorporated herein by reference in its entirety.

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention pertains generally to securities investing and more specifically to construction and use of passive portfolios and indexes.

2. Related Art

Conventionally, there are various broad categories of securities portfolio management. One conventional securities portfolio management category is active management wherein the securities are selected for a portfolio individually based on economic, financial, credit, and/or business analysis; on technical trends; on cyclical patterns; etc. Another conventional category is passive management, also called indexing, wherein the securities in a portfolio duplicate those that make up an index. The securities in a passively managed portfolio are conventionally weighted by relative market capitalization weighting or equal weighting. Another middle ground conventional category of securities portfolio management is called enhanced indexing, in which a portfolio's characteristics, performance and holdings are substantially dominated by the characteristics, performance and holdings of the index, albeit with modest active management departures from the index.

The present invention relates generally to the passive and enhanced indexing categories of portfolio management. A securities market index, by intent, reflects an entire market or a segment of a market. A passive portfolio based on an index may also reflect the entire market or segment. Often every security in an index is held in the passive portfolio. Sometimes statistical modeling is used to create a portfolio that duplicates the profile, risk characteristics, performance characteristics, and securities weightings of an index, without actually owning every security included in the index. (Examples could be portfolios based on the Wilshire 5000 Equity Index or on the Lehman Aggregate Bond Index.) Sometimes statistical modeling is used to create the index itself such that it duplicates the profile, risk characteristics, performance characteristics, and securities weightings of an entire class of securities. (The Lehman Aggregate Bond Index is an example of this practice.)

Indexes are generally all-inclusive of the securities within their defined markets or market segments. In most cases indexes may include each security in the proportion that its market capitalization bears to the total market capitalization of all of the included securities. The only common exceptions to market capitalization weighting are equal weighting of the included securities (for example the Value Line index or the Standard & Poors 500 Equal Weighted Stock Index, which includes all of the stocks in the S&P 500 on a list basis; each stock given equal weighting as of a designated day each year) and share price weighting, in which share prices are simply added together and divided by some simple divisor (for example, the Dow Jones Industrial Average). Conventionally,

passive portfolios are built based on an index weighted using one of market capitalization weighting, equal weighting, and share price weighting.

Advantages of passive investing include: a low trading cost of maintaining a portfolio that has turnover only when an index is reconstituted, typically once a year; a low management cost of a portfolio that requires no analysis of individual securities; and no chance of the portfolio suffering a loss—relative to the market or market segment the index reflects—because of misjudgments in individual securities selection.

Advantages of using market capitalization weighting as the basis for a passive portfolio include that the index (and therefore a portfolio built on it) remains continually 'in balance' as market prices for the included securities change, and that the portfolio performance participates in (i.e., reflects) that of the securities market or market segment included in the index.

The disadvantages of market capitalization weighting passive indexes, which can be substantial, center on the fact that any under-valued securities are underweighted in the index and related portfolios, while any over-valued securities are over weighted. Also, the portfolio based on market capitalization weighting follows every market (or segment) bubble up and every market crash down. Finally, in general, portfolio securities selection is not based on a criteria that reflects a better opportunity for appreciation than that of the market or market segment overall.

SUMMARY OF THE INVENTION

An exemplary embodiment of the present invention is directed to a new method, system and computer program product for passive investing that is based on indexes which are built with metrics other than market capitalization weighting, share price weighting or equal weighting. Among these metrics are various financial data of the company issuing securities, including but not limited to book value, sales, revenue, earnings, earnings per share, income, income growth rate, dividends, dividends per share, earnings before interest, tax, depreciation and amortization, etc. In another exemplary embodiment, other nonfinancial and non-market capitalization metrics can be used as the basis for compiling an index, such as, e.g., but not limited to, an index of companies with chief executive officers (CEOs) having graduated from a particular university.

A common element included in an exemplary embodiment of the present invention, which is entirely missing from conventionally available forms of index construction, is that the indexes of the present invention are "valuation-indifferent." That is, conventional indexes do not take account of classical valuation ratios, which causes the conventional indexes to create a natural tendency to over-weight the over-valued and under-weight the under-valued securities in the conventional indexes and portfolios based on them. While this cause also holds true for equal weighting, we exclude that as an already-extant (and trivial) exception.

The use of these non-market capitalization metrics according to the exemplary embodiment of the present invention, allows the construction of indexes and resulting passive portfolios that better reflect the economic scale and/or long-term growth potential of the individual securities within a market or market segment than do conventional capitalization weighting, share price weighting, or equal weighting. The non-market capitalization metrics according to an exemplary embodiment of the present invention, allow construction of indexes and resulting passive portfolios that offer to an investor who wishes to participate in a market or market segment a choice of passive portfolio alternatives with different risk

characteristics. The indexes and portfolios based on them according to the exemplary embodiment of the present invention, also provide these additional advantages while maintaining the conventional benefits of passive investing. In historical testing, these non-market capitalization metrics are found to outperform the conventional capitalization-weighted indexes over extended periods of time, with similar or lower portfolio risk.

Overall, the availability of non-market capitalization indexes, and the passive and enhanced index portfolios based on them, have the potential to reduce investment costs through more widespread use of low-cost passive and enhanced-index investing. The present invention has the potential to improve investment returns versus the securities markets through the use of a securities weighting framework which is not subject to a natural tendency to overemphasize over-valued securities and underemphasize under-valued securities. The present invention also has the potential to reduce portfolio volatility through the use of securities weighting criteria that are less reflective of 'irrational exuberance.' An exemplary embodiment of the present invention also has the potential to offer 'customized' passive portfolios as each metric may have its own specific performance and risk characteristics.

An exemplary embodiment of the present invention sets forth a system, method, and computer program product for constructing a non-capitalization weighted portfolio of assets. In an exemplary embodiment, the method may include: (a) gathering data about a plurality of assets; (b) selecting a plurality of assets to create the index of assets; and (c) weighting each of the plurality of assets selected in the index based on an objective measure of scale of each of the plurality of assets, wherein the weighting may include: (i) weighting at least one of the plurality of assets; and (ii) weighting other than weighting based on market capitalization, equal weighting, and/or share price weighting.

In one exemplary embodiment, (c) may include weighting each of the plurality of assets, where each of the assets may include a stock; a commodity; a futures contract; a bond; a mutual fund; a hedge fund; a fund of funds; an exchange traded fund (ETF); a derivative; or a negative weighting on any asset.

In one exemplary embodiment, (c) may include weighting each of the plurality of assets, where each of the assets may include a stock.

In one exemplary embodiment, (c) may include weighting each of the plurality of assets, where each of the assets may include a commodity.

In one exemplary embodiment, (c) may include weighting each of the plurality of assets, where each of the assets may include a futures contract.

In one exemplary embodiment, (c) may include weighting each of the plurality of assets, wherein each of the assets may include a bond.

In one exemplary embodiment, (c) may include weighting each of the plurality of assets, where each of the assets may include a mutual fund.

In one exemplary embodiment, (c) may include weighting each of the plurality of assets, where each of the assets may include a hedge fund.

In one exemplary embodiment, (c) may include weighting each of the plurality of assets, where each of the assets may include a fund of flunds.

In one exemplary embodiment, (c) may include weighting each of the plurality of assets, where each of the assets may include an exchange traded fund (ETF).

In one exemplary embodiment, (c) may include weighting each of the plurality of assets, where each of the assets may include a derivative.

In one exemplary embodiment, (c) may include a negative weighting on any asset.

In one exemplary embodiment, the negative weighting may be performed for purposes of establishing, or measuring, performance for any security, a portfolio of assets, a hedge fund, and/or a long/short position.

In one exemplary embodiment, (c) may include weighting based on the objective measure of scale, where the objective measure of scale may include a measure of company size associated with each of the plurality of assets.

In one exemplary embodiment, the measure of company size may include one or more of: gross revenue, sales, income, earnings before interest and tax (EBIT), earnings before interest, taxes, depreciation and amortization (EBITDA), number of employees, book value, assets, liabilities, and/or net worth.

In one exemplary embodiment, (c) may include weighting based on the objective measure of scale, where the objective measure of scale includes a measure relating to an underlying asset itself.

In one exemplary embodiment, the asset may include a municipality, a municipality issuing bonds, or a commodity.

In one exemplary embodiment, the objective measure of scale associated with the asset may include one or more of: revenue, profitability, sales, total sales, foreign sales, domestic sales, net sales, gross sales, profit margin, operating margin, retained earnings, earnings per share, book value, book value adjusted for inflation, book value adjusted for replacement cost, book value adjusted for liquidation value, dividends, assets, tangible assets, intangible assets, fixed assets, property, plant, equipment, goodwill, replacement value of assets, liquidation value of assets, liabilities, long term liabilities, short term liabilities, net worth, research and development expense, accounts receivable, earnings before interest, taxes, dividends, and amortization (EBITDA), accounts payable, cost of goods sold (CGS), debt ratio, budget, capital budget, cash budget, direct labor budget, factory overhead budget, operating budget, sales budget, inventory method, type of stock offered, liquidity, book income, tax income, capitalization of earnings, capitalization of goodwill, capitalization of interest, capitalization of revenue, capital spending, cash, compensation, employee turnover, overhead costs, credit rating, growth rate, tax rate, liquidation value of company, capitalization of cash, capitalization of earnings, capitalization of revenue, cash flow, and/or future value of expected cash flow.

In one exemplary embodiment, (c) may include weighting each of the assets in the index based on the objective measure of scale, where the objective measure may include a ratio of any combination of the objective measures of scale of the asset other than ratios based on weighting the assets based on market capitalization, equal weighting, or share-price weighting.

In one exemplary embodiment, the ratio of any combination of the objective measures of scale may include one or more of: current ratio, debt ratio, overhead expense as a percent of sales, and/or debt service burden ratio.

In one exemplary embodiment, the objective measure of scale may include a demographic measure of the asset.

In one exemplary embodiment, the demographic measure of scale may include one or more of: employees, floor space, office space, location, and/or other demographics of an asset.

In one exemplary embodiment, the measure of company size may include one or more demographic measure of the asset.

In one exemplary embodiment, the demographic measure of the asset may include one or more of a non-financial metric, a non-market related metric, a number of employees, floor space, office space, and/or other demographics of the asset.

In one exemplary embodiment, (c) may include weighting based on the objective measure of scale, where the objective measure of scale may include a geographic metric.

In one exemplary embodiment, the geographic metric may include a geographic metric other than gross domestic product (GDP) weighting.

In one exemplary embodiment, the method may include a passive investing method that may include: constructing the portfolio of assets according to the index.

In one exemplary embodiment, the portfolio of assets may include one or more of: a fund; a mutual fund; a fund of funds; an asset account; an exchange traded fund (ETF); a separate account, a pooled trust; and/or a limited partnership.

In one exemplary embodiment, the method may further include: selecting a plurality of assets for trading according to the index; and trading one or more of said plurality of assets based on said weighting of the index.

In one exemplary embodiment, the trading may include: rebalancing the portfolio based on the index.

In one exemplary embodiment, rebalancing may include: rebalancing on a periodic basis.

In one exemplary embodiment, rebalancing may include: rebalancing based on the assets reaching a threshold.

In one exemplary embodiment, the method may further include applying rules associated with the index.

In one exemplary embodiment, the method of constructing the non-market capitalization weighted portfolio may be used for one or more of: investment management, and/or investment portfolio benchmarking.

In one exemplary embodiment, the method may include an enhanced index investing method. The method may include constructing the portfolio of assets in a fashion in which at least one of holdings, performance, or characteristics, are substantially similar to the index.

In one exemplary embodiment, the method may be a computer-implemented method and (a) may include: gathering data using computerized databases.

In one exemplary embodiment, (c) may include weighting based on a non-market capitalization financial metric associated with each of the plurality of assets, and a non-financial metric associated with each of said plurality of assets.

In another exemplary embodiment, a system for constructing a non-capitalization weighted portfolio of assets may include: means for gathering data about a plurality of assets; means for selecting a plurality of assets to create the index of assets; and weighting means for weighting each of said plurality of assets selected in the index based on an objective measure of scale of said each of said plurality of assets, wherein said weighting means may include: means for weighting at least one of said plurality of assets; and means for weighting other than weighting based on at least one of market capitalization, equal weighting, or share price weighting.

In yet another exemplary embodiment, a non-capitalization weighted portfolio of assets construction system, may include: a processor adapted to gather data about a plurality of assets; adapted to select a plurality of assets to create the index of assets; adapted to weight each of the plurality of assets selected in the index based on an objective measure of scale of the each of said plurality of assets; adapted to weight at least one of the plurality of assets; and adapted to weight other than based on at least one of market capitalization, equal weighting, or share price weighting.

In another exemplary embodiment, a machine readable medium that provides instructions which when executed by a computing platform, cause the computing platform to perform operations may include a method of constructing a non-capitalization weighted portfolio of assets, the method may include: (a) gathering data about a plurality of assets; (b) selecting a plurality of assets to create the index of assets; and (c) weighting each of said plurality of assets selected in the index based on an objective measure of scale of said each of said plurality of assets, wherein said weighting comprises: (i) weighting at least one of said plurality of assets; and (ii) weighting other than weighting based on at least one of market capitalization, equal weighting, or share price weighting.

Further features and advantages of the invention, as well as the structure and operation of various embodiments of the invention, are described in detail below with reference to the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

The foregoing and other features and advantages of the invention will be apparent from the following, more particular description of exemplary embodiments of the invention, as illustrated in the accompanying drawings. In the drawings, like reference numbers generally indicate identical, functionally similar, and/or structurally similar elements. The drawing in which an element first appears is indicated by the leftmost digits in the corresponding reference number. A preferred exemplary embodiment is discussed below in the detailed description of the following drawings:

FIG. **1** is a deployment diagram of an index generation and use process in accordance with an exemplary embodiment of the present invention;

FIG. **2** is a process flow diagram of an index generation process in accordance with an exemplary embodiment of the present invention; and

FIG. **3** is a process flow diagram of an index use process in accordance with an exemplary embodiment of the present invention.

DETAILED DESCRIPTION OF EXEMPLARY EMBODIMENTS OF THE PRESENT INVENTION

Various exemplary embodiments of the invention are discussed in detail below including a preferred embodiment. While specific implementations are discussed, it should be understood that this is done for illustration purposes only. A person skilled in the relevant art can recognize that other components and configurations may be used without parting from the spirit and scope of the invention.

FIG. **1** depicts an exemplary deployment diagram of an index generation and use process in accordance with an exemplary embodiment of the present invention. According to the exemplary embodiment, an analyst may use a computer system to generate an index. The analyst may do so by using analysis software to examine data about entities offering different kinds of securities that may be traded by investors. An example of an entity that may be offering securities may be a publicly held company whose shares trade on an exchange. However, the present invention also applies to any entity that may have any type of security that may be traded where information about the entity and/or its security is available (or capable of being made available) for analysis.

In an exemplary embodiment, once an index has been generated by an analyst using the entity date, the index may be used to build investment portfolios. An investor, advisor, manager or broker may then manage the purchased securities as a mutual fund for a plurality of individual and institutional investors. Alternatively, the purchased securities may be managed for one or more investors. In the latter case, securities may be purchased based on the index for inclusion in an individual or an institutional investor's portfolio.

FIG. **2** depicts an exemplary process flow diagram of an index generation process in accordance with an exemplary embodiment of the present invention. In an exemplary embodiment, to generate an index, an analyst using analysis software may access entity data about various entities that have securities that are traded. For example, publicly traded companies must disclose information about certain financial aspects of their operations. This information may be aggregated for a plurality of entities. Market sectors and corresponding indices may then be identified and generated using the aggregate data.

In slightly more detail, an index may be generated by normalizing entity data for a particular non-market capitalization metric. The normalized entity data may be used to generate a weighting function describing the contribution of each entity to a business sector as defined by the metric, in an exemplary embodiment. An index may be generated using the weighting function. Once an index is generated, according to an exemplary embodiment, the index may be used to track the business sector defined by the metric or to create a portfolio of securities offered by the entities whose information was used to generate the index.

For example, in an exemplary embodiment of the invention a method of constructing a non-capitalization weighted portfolio of assets may include, e.g., gathering data about various assets; selecting a group of assets to create the index of assets; and weighting each of the group of assets selected in the index based on an objective measure of scale of each member of the group of assets, where the weighting may include weighting all or a subset of the group of assets, and weighting based on other than market capitalization, equal weighting, or share price weighting.

In one exemplary embodiment, the weighting of each member of the group of assets, may include weighting assets of any of various types. Examples of various types of assets may include, e.g., but not limited to, a stock type; a commodity type; a futures contract type; a bond type; a mutual find type; a hedge fund type; a fund of funds type; an exchange traded fund (ETF) type; and a derivative type assets. The weighting may also include, e.g., but not limited to, a negative weighting on any of the various types of assets.

According to exemplary embodiments of the present invention, the index may be weighted based on an objective measure of scale, where the objective measure of scale may include a measure relating to an underlying asset itself. The asset may include a municipality, a municipality issuing bonds, or a commodity. An objective measure of scale associated with the asset may include any combination of: revenue, profitability, sales, total sales, foreign sales, domestic sales, net sales, gross sales, profit margin, operating margin, retained earnings, earnings per share, book value, book value adjusted for inflation, book value adjusted for replacement cost, book value adjusted for liquidation value, dividends, assets, tangible assets, intangible assets, fixed assets, property, plant, equipment, goodwill, replacement value of assets, liquidation value of assets, liabilities, long term liabilities, short term liabilities, net worth, research and development expense, accounts receivable, earnings before interest, taxes, dividends, and amortization (EBITDA), accounts payable, cost of goods sold (CGS), debt ratio, budget, capital budget, cash budget, direct labor budget, factory overhead budget, operating budget, sales budget, inventory method, type of stock offered, liquidity, book income, tax income, capitalization of earnings, capitalization of goodwill, capitalization of interest, capitalization of revenue, capital spending, cash, compensation, employee turnover, overhead costs, credit rating, growth rate, tax rate, liquidation value of company, capitalization of cash, capitalization of earnings, capitalization of revenue, cash flow, and/or future value of expected cash flow.

Ratios too may be used. In an exemplary embodiment, the weighting of assets in the index based on objective measures of scale, may include a ratio of any combination of the objective measures of scale of the asset other than ratios based on weighting the assets based on market capitalization, equal weighting, or share-price weighting. For example, the ratio of any combination of the objective measures of scale may include, e.g., but not limited to, current ratio, debt ratio, overhead expense as a percent of sales, or debt service burden ratio.

In an exemplary embodiment, the portfolio of assets may include, e.g., but not limited to, one or more of, a fund; a mutual fund; a fund of funds; an asset account; an exchange traded fund (ETF); a separate account, a pooled trust; or a limited partnership.

In an exemplary embodiment, a measure of company size may include one of, or a combination of one or more of gross revenue, sales, income, earnings before interest and tax (EBIT), earnings before interest, taxes, depreciation and amortization (EBITDA), number of employees, book value, assets, liabilities, or net worth.

In one exemplary embodiment, the measure of company size may include a demographic measure of the asset. The demographic measure of the asset may include, e.g., one of, or any combination of one or more of a non-financial metric, a non-market related metric, a number of employees, floor space, office space, or other demographics of the asset.

In an exemplary embodiment, weighting may be based on the objective measure of scale, where the measure may include a geographic metric. The geographic metric in an exemplary embodiment may include a geographic metric other than gross domestic product (GDP) weighting.

FIG. **3** depicts an exemplary process flow diagram of an index use process in accordance with an exemplary embodiment of the present invention. An index may be received from an index generation process and may be used to determine the identity and quantity of securities to purchase for a portfolio, according to an exemplary embodiment. The securities may be purchased from an exchange or other market and may be held on account for an investor or group of investors. The index may be updated on, e.g., but not limited to, a periodic basis and may be used as a basis to rebalance the portfolio, according to an exemplary embodiment. According to another exemplary embodiment, the portfolio can be rebalanced when, e.g., a pre-determined threshold is reached. In this way, a portfolio may be created and maintained based on a non-market capitalization index.

Rebalancing can be based on assets reaching a threshold condition or value. For example, but not limited to, rebalancing may occur upon reaching a threshold such as, e.g., 'when the portfolio of assets increases in market value by 20%,' or 'when the assets on a sub-category within the portfolio exceed 32% of the size of the portfolio,' or 'when a U.S. President is elected from a different party than the incumbent,' etc.

The present invention, in an exemplary embodiment may be used the non-market capitalization weighted portfolio may be used for investment management, or investment portfolio benchmarking.

An exemplary embodiment of the invention may be implemented on a computing device(s), processor(s), computer(s) and/or communications device(s).

The computer, in an exemplary embodiment, may comprise one or more central processing units (CPUs) or processors, which may be coupled to a bus. The processor may, e.g., access main memory via the bus. The computer may be coupled to an input/output (I/O) subsystem such as, e.g., but not limited to, a network interface card (NIC), or a modem for access to a network. The computer may also be coupled to a secondary memory directly via bus, or via a main memory, for example. Secondary memory may include, e.g., but not limited to, a disk storage unit or other storage medium. Exemplary disk storage units may include, but are not limited to, a magnetic storage device such as, e.g., a hard disk, an optical storage device such as, e.g., a write once read many (WORM) drive, or a compact disc (CD), or a magneto optical device. Another type of secondary memory may include a removable disk storage device, which may be used in conjunction with a removable storage medium, such as, e.g. a CD-ROM, or a floppy diskette. In general, the disk storage unit may store an application program for operating the computer system referred to commonly as an operating system. The disk storage unit may also store documents of a database (not shown). The computer may interact with the I/O subsystems and disk storage unit via bus. The bus may also be coupled to a display for output, and input devices such as, but not limited to, a keyboard and a mouse or other pointing/selection device.

In this document, the terms "computer program medium" and "computer readable medium" may be used to generally refer to media such as, e.g., but not limited to removable storage drive, a hard disk installed in hard disk drive, and signals, etc. These computer program products may provide software to computer system. The invention may be directed to such computer program products.

References to "one embodiment," "an embodiment," "example embodiment," "various embodiments," etc., may indicate that the embodiment(s) of the invention so described may include a particular feature, structure, or characteristic, but not every embodiment necessarily includes the particular feature, structure, or characteristic. Further, repeated use of the phrase "in one embodiment," or "in an exemplary embodiment," do not necessarily refer to the same embodiment, although they may.

In the following description and claims, the terms "coupled" and "connected," along with their derivatives, may be used. It should be understood that these terms are not intended as synonyms for each other. Rather, in particular embodiments, "connected" may be used to indicate that two or more elements are in direct physical or electrical contact with each other. "Coupled" may mean that two or more elements are in direct physical or electrical contact. However, "coupled" may also mean that two or more elements are not in direct contact with each other, but yet still co-operate or interact with each other.

An algorithm is here, and generally, considered to be a self-consistent sequence of acts or operations leading to a desired result. These include physical manipulations of physical quantities. Usually, though not necessarily, these quantities take the form of electrical or magnetic signals capable of being stored, transferred, combined, compared, and otherwise manipulated. It has proven convenient at times, principally for reasons of common usage, to refer to these signals as bits, values, elements, symbols, characters, terms, numbers or the like. It should be understood, however, that all of these and similar terms are to be associated with the appropriate physical quantities and are merely convenient labels applied to these quantities.

Unless specifically stated otherwise, as apparent from the following discussions, it is appreciated that throughout the specification discussions utilizing terms such as "processing," "computing," "calculating," "determining," or the like, refer to the action and/or processes of a computer or computing system, or similar electronic computing device, that manipulate and/or transform data represented as physical, such as electronic, quantities within the computing system's registers and/or memories into other data similarly represented as physical quantities within the computing system's memories, registers or other such information storage, transmission or display devices.

In a similar manner, the term "processor" may refer to any device or portion of a device that processes electronic data from registers and/or memory to transform that electronic data into other electronic data that may be stored in registers and/or memory. A "computing platform" may comprise one or more processors.

Embodiments of the present invention may include apparatuses for performing the operations herein. An apparatus may be specially constructed for the desired purposes, or it may comprise a general purpose device selectively activated or reconfigured by a program stored in the device.

While various embodiments of the present invention have been described above, it should be understood that they have been presented by way of example only, and not limitation. Thus, the breadth and scope of the present invention should not be limited by any of the above-described exemplary embodiments, but should be defined only in accordance with the following claims and their equivalents. While this invention has been particularly described and illustrated with reference to a preferred embodiment, it will be understood to those having ordinary skill in the art that changes in the above description or illustrations may be made with respect to formal detail without departing from the spirit and scope of the invention.

What is claimed is:

1. A method of constructing an index of assets (I), the method implemented by at least one analysis host processor, the at least one analysis host processor comprising at least one computer processor, the method comprising:

(a) accessing by the at least one analysis host processor of one or more databases storing and permitting retrieval of data (D) about a plurality of entities (E) and a plurality of corresponding assets (A) each issued by or having been issued by at least one of the plurality of entities (E);

(b) receiving by the at least one analysis host processor at least one objective measure of scale (O) regarding one or more of the plurality of said assets, or one or more of the plurality of said entities (E) associated with said corresponding assets (A);

(c) retrieving by the at least one analysis host processor one or more of said data (D) about said plurality of said entities (E) and said corresponding assets (A);

(d) selecting by the at least one analysis host processor a selection from said plurality of said assets (A) and said entities (E) to comprise a plurality of constituent index assets (IA) comprising the index of assets (I), wherein said selecting comprises:

(i) selecting by the at least one analysis host processor said one or more data (D) to be a quantitative data (Q) reflecting the amount of said at least one objective

measure of scale (O) associated with each of said entities, wherein said at least one objective measure of scale (O) is substantially independent of the market prices (P) of any of said assets (A) and is substantially independent of a market capitalization (MC) of any of said entities (E),

wherein said at least one objective measure of scale (O) comprises a measure of size (SZ) of each said entity (E) associated with each said given asset (A), and wherein said measure of the size (SZ) of each said entity (E) corresponding to each said asset (A) comprises at least one of:

a demographic measure of a said entity (E) associated with said asset (A);

a financial metric of a said entity (E) associated with said asset (A);

a metric from information disclosures of a publicly traded entity; or

a metric from information about a said entity (E) associated with said asset (A);

(ii) ranking by the at least one analysis host processor said entities (E) based upon at least one of a said quantitative data (Q) associated with the at least one objective measure of scale (O) of each of said entities (E); and

(iii) selecting by the at least one analysis host processor said selection from said plurality of said assets (A) or said entities (E) to comprise said plurality of constituent index assets (IA) based on said ranking; and

(e) calculating by the at least one analysis host processor proportional weights for the index of assets to be objective measure of scale weights (OW) substantially independent of the market prices (P) of any of said assets (A) and substantially independent of a market capitalization (MC) of any of said entities (E), wherein said calculating comprises:

(i) adding by the at least one analysis host processor the quantitative data (Q) of each of said at least one objective measure of scale (O) for all of said constituent index assets (IA) to yield a sum total quantitative data (SUMQ) for said at least one objective measure of scale (O); and

(ii) determining by the at least one analysis host processor a relative size of the quantitative data (Q) of a said at least one objective measure of scale (O) for each said constituent index asset (IA) as a proportion of said sum total quantitative data (SUMQ) for said at least one objective measure of scale (O) to yield the objective measure of scale weight (OW) of each of the constituent index assets (IA) comprising the index of assets (I),

wherein said at least one objective measure of scale (O) comprises a measure of size (SZ) of each said entity (E) associated with each said given constituent index asset (IA), and wherein said measure of the size (SZ) of each said entity (E) corresponding to each said constituent index asset (IA) comprises at least one of:

a demographic measure of a said entity (E) associated with said constituent index asset (IA);

a financial metric of a said entity (E) associated with said constituent index asset (IA);

a metric from information disclosures of a publicly traded entity; or

a metric from information about a said entity (E) associated with said constituent index asset (IA).

2. The analysis host implemented method according to claim **1**, wherein each of said assets comprises at least one of a stock; a commodity; a futures contract; a bond; a municipal bond; a corporate bond; a mutual fund; a hedge fund; a fund of funds; an exchange traded fund (ETF); or a derivative.

3. The analysis host implemented method according to claim **1**, wherein each of said assets comprises a stock.

4. The analysis host implemented method according to claim **1**, wherein each of said assets comprises a commodity.

5. The analysis host implemented method according to claim **1**, wherein each of said assets comprises a futures contract.

6. The analysis host implemented method according to claim **1**, wherein each of said assets comprises a bond.

7. The analysis host implemented method according to claim **1**, wherein each of said assets comprises a mutual fund.

8. The analysis host implemented method according to claim **1**, wherein each of said assets comprises a hedge fund.

9. The analysis host implemented method according to claim **1**, wherein each of said assets comprises a fund of funds.

10. The analysis host implemented method according to claim **1**, wherein each of said assets comprises an exchange traded fund (ETF).

11. The analysis host implemented method according to claim **1**, wherein each of said assets comprises a derivative.

12. The analysis host implemented method according to claim **1**, wherein said (e) comprises performing a negative weighting on any of said assets.

13. The analysis host implemented method according to claim **12**, wherein said performing said negative weighting comprises at least one of: establishing or measuring performance, for at least one of: any security; a portfolio; a hedge fund; or at least one of: a long or a short position.

14. The analysis host implemented method according to claim **1**, wherein said objective measure of scale comprises a measure relating to at least one of an underlying attribute of one of the assets, or the entity associated with the asset.

15. The analysis host implemented method according to claim **1**, wherein said entity comprises at least one of: a company; a municipality; a municipality issuing bonds; a country; or an issuer of the asset.

16. The analysis host implemented method according to claim **1**, wherein said objective measure of scale comprises at least one of a mathematical transformation of at least one objective measure of scale, or a ratio of any combination of objective measures of scale relating to one or more of said assets and the ratio is not based on any one of: weighting said one or more assets based on market capitalization; equal weighting; or weighting in proportion to the price of said one or more assets.

17. The analysis host implemented method according to claim **16**, wherein said ratio of any combination of said objective measures of scale comprises at least one of:

a current ratio,

a debt ratio,

an overhead expense as a percent of sales, or

a debt service burden ratio.

18. The analysis host implemented method according to claim **1**, wherein said (e) comprises weighting based on said objective measure of scale, wherein said objective measure of scale comprises an economic indicator.

19. The analysis host implemented method according to claim **1**, wherein said objective measure of scale comprises a measure tied to a particular geography associated with the assets.

20. The analysis host implemented method of claim **1**, wherein the method comprises constructing a portfolio of assets based upon the index of assets (I).

21. The analysis host implemented method of claim 20, wherein the portfolio of assets comprises at least one of:
a fund;
a mutual fund;
a fund of funds;
an asset account;
an exchange traded fund (ETF);
a separate account;
a pooled trust; or
a limited partnership.

22. The analysis host implemented method according to claim 20, further comprising:
selecting the portfolio of assets for trading according to the index of assets (I); and
trading via at least one trading host processor one or more of said portfolio of assets based on said selecting or said weighting of the constituent index assets (IA) of the index of assets (I).

23. The analysis host implemented method according to claim 22, wherein said trading comprises: rebalancing the portfolio of assets based on the index of assets (I).

24. The analysis host implemented method according to claim 23, wherein said rebalancing is performed on a periodic basis.

25. The analysis host implemented method according to claim 23, wherein said rebalancing is based upon the constituent index assets (IA) crossing a threshold value.

26. The analysis host implemented method according to claim 22, further comprising: applying one or more rules associated with the index of assets (I).

27. The analysis host implemented method according to claim 1, wherein the method of constructing the index is used for at least one of: investment management; or investment portfolio benchmarking.

28. The analysis host implemented method of claim 1, wherein the method further comprises an enhanced valuation indifferent non-capitalization weighted index investing method, comprising:
constructing a portfolio of assets in a fashion in which at least one of: holdings; performance; or characteristics, are substantially similar to the index of assets (I).

29. The analysis host implemented method according to claim 1, wherein said (a) comprises: gathering data about the plurality of entities using computerized databases.

30. The analysis host implemented method according to claim 1, wherein said objective measure of scale comprises a non-financial metric.

31. The analysis host implemented method according to claim 1, wherein the analysis host implemented method comprises at least one of: a passive investing method; an active investing method; or an enhanced type of active investing method.

32. The analysis host implemented method according to claim 1, wherein said measure of the size (SZ) of each said entity (E) corresponding to each said asset (A) comprises at least one of:
revenue of a said entity (E) associated with said asset (A);
gross revenue of a said entity (E) associated with said asset (A);
profitability of a said entity (E) associated with said asset (A);
sales of a said entity (E) associated with said asset (A);
total sales of a said entity (E) associated with said asset (A);
foreign sales of a said entity (E) associated with said asset (A);
domestic sales of a said entity (E) associated with said asset (A);
net sales of a said entity (E) associated with said asset (A);
gross sales of a said entity (E) associated with said asset (A);
profit margin of a said entity (E) associated with said asset (A);
operating margin of a said entity (E) associated with said asset (A);
retained earnings of a said entity (E) associated with said asset (A);
earnings per share of a said entity (E) associated with said asset (A);
book value of a said entity (E) associated with said asset (A);
book value adjusted for inflation of a said entity (E) associated with said asset (A);
book value adjusted for replacement cost of a said entity (E) associated with said asset (A);
book value adjusted for liquidation value of a said entity (E) associated with said asset (A);
dividends of a said entity (E) associated with said asset (A);
assets of a said entity (E) associated with said asset (A);
tangible assets of a said entity (E) associated with said asset (A);
intangible assets of a said entity (E) associated with said asset (A);
fixed assets of a said entity (E) associated with said asset (A);
property of a said entity (E) associated with said asset (A);
plant of a said entity (E) associated with said asset (A);
equipment of a said entity (E) associated with said asset (A);
goodwill of a said entity (E) associated with said asset (A);
replacement value of assets of a said entity (E) associated with said asset (A);
liquidation value of assets of a said entity (E) associated with said asset (A);
liabilities of a said entity (E) associated with said asset (A);
long term liabilities of a said entity (E) associated with said asset (A);
short term liabilities of a said entity (E) associated with said asset (A);
net worth of a said entity (E) associated with said asset (A);
research and development expense of a said entity (E) associated with said asset (A);
accounts receivable of a said entity (E) associated with said asset (A);
earnings before interest and tax (EBIT) of a said entity (E) associated with said asset (A);
earnings before interest, taxes, dividends, and amortization (EBITDA) of a said entity (E) associated with said asset (A);
accounts payable of a said entity (E) associated with said asset (A);
cost of goods sold (CGS) of a said entity (E) associated with said asset (A);
debt ratio of a said entity (E) associated with said asset (A);
budget of a said entity (E) associated with said asset (A);
capital budget of a said entity (E) associated with said asset (A);
cash budget of a said entity (E) associated with said asset (A);
direct labor budget of a said entity (E) associated with said asset (A);
factory overhead budget of a said entity (E) associated with said asset (A);
operating budget of a said entity (E) associated with said asset (A);

sales budget of a said entity (E) associated with said asset (A);
inventory method of a said entity (E) associated with said asset (A);
type of stock offered of a said entity (E) associated with said asset (A);
liquidity of a said entity (E) associated with said asset (A);
book income of a said entity (E) associated with said asset (A);
tax income of a said entity (E) associated with said asset (A);
capitalization of earnings of a said entity (E) associated with said asset (A);
capitalization of goodwill of a said entity (E) associated with said asset (A);
capitalization of interest of a said entity (E) associated with said asset (A);
capitalization of revenue of a said entity (E) associated with said asset (A);
capital spending of a said entity (E) associated with said asset (A);
cash of a said entity (E) associated with said asset (A);
compensation of a said entity (E) associated with said asset (A);
employee turnover of a said entity (E) associated with said asset (A);
overhead costs of a said entity (E) associated with said asset (A);
credit rating of a said entity (E) associated with said asset (A);
growth rate of a said entity (E) associated with said asset (A);
tax rate of a said entity (E) associated with said asset (A);
liquidation value of entity of a said entity (E) associated with said asset (A);
capitalization of cash of a said entity (E) associated with said asset (A);
capitalization of earnings of a said entity (E) associated with said asset (A);
capitalization of revenue of a said entity (E) associated with said asset (A);
cash flow of a said entity (E) associated with said asset (A),
a demographic measure of a said entity (E) associated with said asset (A);
a measure relating to a demographic attribute of a said entity (E) associated with said asset (A);
a non-financial metric of a said entity (E) associated with said asset (A);
a non-market related metric of a said entity (E) associated with said asset (A);
number of employees of a said entity (E) associated with said asset (A);
floor space of a said entity (E) associated with said asset (A); or office space of a said entity (E) associated with said asset (A); and
wherein said measure of the size (SZ) of each said entity (E) corresponding to each said constituent index asset (IA) comprises at least one of:
revenue of a said entity (E) associated with said constituent index asset (IA);
gross revenue of a said entity (E) associated with said constituent index asset (IA);
profitability of a said entity (E) associated with said constituent index asset (IA);
sales of a said entity (E) associated with said constituent index asset (IA);
total sales of a said entity (E) associated with said constituent index asset (IA);
foreign sales of a said entity (E) associated with said constituent index asset (IA);
domestic sales of a said entity (E) associated with said constituent index asset (IA);
net sales of a said entity (E) associated with said constituent index asset (IA);
gross sales of a said entity (E) associated with said constituent index asset (IA);
profit margin of a said entity (E) associated with said constituent index asset (IA);
operating margin of a said entity (E) associated with said constituent index asset (IA);
retained earnings of a said entity (E) associated with said constituent index asset (IA);
earnings per share of a said entity (E) associated with said constituent index asset (IA);
book value of a said entity (E) associated with said constituent index asset (IA);
book value adjusted for inflation of a said entity (E) associated with said constituent index asset (IA);
book value adjusted for replacement cost of a said entity (E) associated with said constituent index asset (IA);
book value adjusted for liquidation value of a said entity (E) associated with said constituent index asset (IA);
dividends of a said entity (E) associated with said constituent index asset (IA);
assets of a said entity (E) associated with said constituent index asset (IA);
tangible assets of a said entity (E) associated with said constituent index asset (IA);
intangible assets of a said entity (E) associated with said constituent index asset (IA);
fixed assets of a said entity (E) associated with said constituent index asset (IA);
property of a said entity (E) associated with said constituent index asset (IA);
plant of a said entity (E) associated with said constituent index asset (IA);
equipment of a said entity (E) associated with said constituent index asset (IA);
goodwill of a said entity (E) associated with said constituent index asset (IA);
replacement value of assets of a said entity (E) associated with said constituent index asset (IA);
liquidation value of assets of a said entity (E) associated with said constituent index asset (IA);
liabilities of a said entity (E) associated with said constituent index asset (IA);
long term liabilities of a said entity (E) associated with said constituent index asset (IA);
short term liabilities of a said entity (E) associated with said constituent index asset (IA);
net worth of a said entity (E) associated with said constituent index asset (IA);
research and development expense of a said entity (E) associated with said constituent index asset (IA);
accounts receivable of a said entity (E) associated with said constituent index asset (IA);
earnings before interest and tax (EBIT) of a said entity (E) associated with said constituent index asset (IA);
earnings before interest, taxes, dividends, and amortization (EBITDA) of a said entity (E) associated with said constituent index asset (IA);
accounts payable of a said entity (E) associated with said constituent index asset (IA);

cost of goods sold (CGS) of a said entity (E) associated with said constituent index asset (IA);
debt ratio of a said entity (E) associated with said constituent index asset (IA);
budget of a said entity (E) associated with said constituent index asset (IA);
capital budget of a said entity (E) associated with said constituent index asset (IA);
cash budget of a said entity (E) associated with said constituent index asset (IA);
direct labor budget of a said entity (E) associated with said constituent index asset (IA);
factory overhead budget of a said entity (E) associated with said constituent index asset (IA);
operating budget of a said entity (E) associated with said constituent index asset (IA);
sales budget of a said entity (E) associated with said constituent index asset (IA);
inventory method of a said entity (E) associated with said constituent index asset (IA);
type of stock offered of a said entity (E) associated with said constituent index asset (IA);
liquidity of a said entity (E) associated with said constituent index asset (IA);
book income of a said entity (E) associated with said constituent index asset (IA);
tax income of a said entity (E) associated with said constituent index asset (IA);
capitalization of earnings of a said entity (E) associated with said constituent index asset (IA);
capitalization of goodwill of a said entity (E) associated with said constituent index asset (IA);
capitalization of interest of a said entity (E) associated with said constituent index asset (IA);
capitalization of revenue of a said entity (E) associated with said constituent index asset (IA);
capital spending of a said entity (E) associated with said constituent index asset (IA);
cash of a said entity (E) associated with said constituent index asset (IA);
compensation of a said entity (E) associated with said constituent index asset (IA);
employee turnover of a said entity (E) associated with said constituent index asset (IA);
overhead costs of a said entity (E) associated with said constituent index asset (IA);
credit rating of a said entity (E) associated with said constituent index asset (IA);
growth rate of a said entity (E) associated with said constituent index asset (IA);
tax rate of a said entity (E) associated with said constituent index asset (IA);
liquidation value of entity of a said entity (E) associated with said constituent index asset (IA);
capitalization of cash of a said entity (E) associated with said constituent index asset (IA);
capitalization of earnings of a said entity (E) associated with said constituent index asset (IA);
capitalization of revenue of a said entity (E) associated with said constituent index asset (IA);
cash flow of a said entity (E) associated with said constituent index asset (IA),
a demographic measure of a said entity (E) associated with said constituent index asset (IA);
a measure relating to a demographic attribute of a said entity (E) associated with said constituent index asset (IA);
a non-financial metric of a said entity (E) associated with said constituent index asset (IA);
a non-market related metric of a said entity (E) associated with said constituent index asset (IA);
number of employees of a said entity (E) associated with said constituent index asset (IA);
floor space of a said entity (E) associated with said constituent index asset (IA); or
office space of a said entity (E) associated with said constituent index asset (IA).

33. The analysis host implemented method according to claim **1**, wherein at least one of: said measure of the size (SZ) of each said entity (E) corresponding to each said asset (A) comprises a future value of expected cash flow of a said entity (E) associated with said asset (A); or

said measure of the size (SZ) of each said entity (E) corresponding to each said constituent index asset (IA) comprises a future value of expected cash flow of a said entity (E) associated with said constituent index asset (IA).

34. The analysis host implemented method according to claim **1**, further comprising: generating a subset of said data to obtain said plurality of said assets (A) and said plurality of said entities (E).

35. The analysis host implemented method according to claim **34**, wherein said generating the subset comprises generating a sector.

36. The analysis host implemented method according to claim **34**, wherein said generating the subset comprises generating a subcategory of said entities or assets, to obtain said plurality of said entities, or said plurality of said assets.

37. The analysis host implemented method according to claim **34**, wherein said generating said subset of said data by the at least one analysis host processor comprises selecting based on at least one of: a metric of liquidity of said assets, or any metric of size of said entities.

38. The analysis host implemented method according to claim **37**, wherein said generating said subset of said data by said selecting comprises selecting a subset of said assets or said entities at least one of, before, during, or after said selecting of said (d).

39. The analysis host implemented method according to claim **1**, further comprising:

selecting a portion of at least one of said assets or said entities based on any criterion to obtain said plurality of said entities, or said plurality of said assets.

40. The analysis host implemented method according to claim **1**, further comprising constructing said index further comprising at least one of:

minimizing trading costs;
minimizing turnover;
minimizing management costs;
avoiding misjudgments in selection;
avoiding following a market bubble;
taking account of classical valuation ratios;
constructing a valuation indifferent index; or
reducing portfolio volatility.

41. The computer-implemented method according to claim **1**, further comprising constructing a portfolio based on an index of assets, the method comprising:

f) receiving the index of assets from an index provider, where the index provider previously constructed the index of assets and stored the index of assets on at least one analysis host,

the at least one analysis host comprising at least one processor, and a memory coupled to said at least one processor, wherein said analysis host is configured to:

access one or more databases storing and permitting retrieval of data (D) about a plurality of entities (E) and a plurality of corresponding assets (A) each issued by or having been issued by at least one of the plurality of entities (E);

receive at least one objective measure of scale (O) regarding one or more of the plurality of the assets or one or more of the plurality of the entities (E) associated with the corresponding assets (A);

retrieve one or more of the data (D) about the plurality of the entities (E) and the corresponding assets (A);

generate a subset of the data to obtain the plurality of the assets (A) or the plurality of the entities (E) based on at least one criterion;

select a selection from the plurality of the assets (A) or the entities (E) to comprise a plurality of constituent index assets (IA) comprising the index of assets (I), wherein said select comprises wherein said analysis host is configured to:

select the one or more data (D) to be a quantitative data (Q) reflecting the amount of the at least one objective measure of scale (O) associated with each of the entities, wherein the at least one objective measure of scale (O) is substantially independent of the market prices (P) of any of the assets (A) and is substantially independent of a market capitalization (MC) of any of the entities (E),

wherein the at least one objective measure of scale (O) comprises a measure of size (SZ) of each the entity (E) associated with each the given asset (A), and wherein the measure of the size (SZ) of each the entity (E) corresponding to each the asset (A) comprises at least one of:

a demographic measure of a the entity (E) associated with the asset (A);

a financial metric of a the entity (E) associated with the asset (A);

a metric from information disclosures of a publicly traded entity; or

a metric from information about a the entity (E) associated with the asset (A);

rank the entities (E) based upon at least one of the quantitative data (Q) associated with the at least one objective measure of scale (O) of each of the entities (E); and

select the selection from the plurality of the assets (A) and the entities to comprise the plurality of constituent index assets (IA) based on the ranking; and

calculate proportional weights for the index of assets to be objective measure of scale weights (OW) substantially independent of the market prices (P) of any of the assets (A) and substantially independent of a market capitalization (MC) of any of the entities (E), wherein said calculate comprises wherein said analysis host is configured to:

add the quantitative data (Q) of each of the at least one objective measure of scale (O) for all of the constituent index assets (IA) to yield a sum total quantitative data (SUMQ) for the at least one objective measure of scale (O); and

determine a relative size of the quantitative data (Q) of a the at least one objective measure of scale (O) for each the constituent index asset (IA) as a proportion of the sum total quantitative data (SUMQ) for the at least one objective measure of scale (O) to yield the objective measure of scale weight (OW) of each of the constituent index assets (IA) comprising the index of assets (I),

wherein the at least one objective measure of scale (O) comprises a measure of size (SZ) of each the entity (E) associated with each the given constituent index asset (IA), and wherein the measure of the size (SZ) of each the entity (E) corresponding to each the constituent index asset (IA) comprises at least one of:

a demographic measure of a the entity (E) associated with the constituent index asset (IA);

a financial metric of a the entity (E) associated with the constituent index asset (IA);

a metric from information disclosures of a publicly traded entity; or

a metric from information about a the entity (E) associated with the constituent index asset (IA);

g) purchasing a portfolio of assets by at least one trading host comprising at least one processor and at least one memory coupled to said at least one processor, said portfolio of assets comprising the plurality of constituent assets of the index of assets in proportion to the constituent weights of the index of assets received; and

h) altering said portfolio of assets by said at least one trading host comprising said at least one processor, when the index of assets received from the index provider changes over time, said altering comprising at least one of:

i) purchasing by said at least one trading host any new constituent assets of the index of assets over time;

ii) purchasing by said at least one trading host any additional constituent assets based on changes in the constituent weights of the constituent assets making up the index of assets over time;

iii) selling by said at least one trading host any previous constituent assets no longer components of the index of assets over time; or

iv) selling by said at least one trading host any previous constituent assets necessitated by changes in the calculated weights of the index of assets over time.

42. A system for constructing an index of assets (I), comprising:

at least one analysis host comprising at least one computer processor; and

at least one memory coupled to said at least one processor, wherein said analysis host is configured to:

access by the at least one processor one or more databases storing and permitting retrieval of data (D) about a plurality of entities (E) and a plurality of corresponding assets (A) each issued by or having been issued by at least one of the plurality of entities (E);

receive by the at least one processor at least one objective measure of scale (O) regarding one or more of the plurality of assets (A), or one or more of the plurality of entities (E) associated with said corresponding assets (A);

retrieve by the at least one processor one or more of said data (D) about said plurality of said entities (E) and said corresponding assets (A);

select by the at least one processor a selection from said plurality of said assets (A) or said entities (E) to comprise a plurality of constituent index assets (IA) comprising the index of assets (I), wherein said select comprises wherein said analysis host is configured to:

select by the at least one processor said one or more data (D) to be a quantitative data (Q) reflecting the

amount of said at least one objective measure of scale (O) associated with each of said entities, wherein said at least one objective measure of scale (O) is substantially independent of the market prices (P) of any of said assets (A) and is substantially independent of a market capitalization (MC) of any of said entities (E),

wherein said at least one objective measure of scale (O) comprises a measure of size (SZ) of each said entity (E) associated with each said given asset (A), and wherein said measure of the size (SZ) of each said entity (E) corresponding to each said asset (A) comprises at least one of:

a demographic measure of a said entity (E) associated with said asset (A);

a financial metric of a said entity (E) associated with said asset (A);

a metric from information disclosures of a publicly traded entity; or

a metric from information about a said entity (E) associated with said asset (A);

rank by the at least one processor said entities (E) based upon at least one of a said quantitative data (Q) associated with the at least one objective measure of scale (O) of each of said entities (E); and

select by the at least one processor said selection from said plurality of said assets (A) or said entities (E) to comprise said plurality of constituent index assets (IA) based on said ranking; and

calculate by the at least one processor proportional weights for the index of assets to be objective measure of scale weights (OW) substantially independent of the market prices (P) of any of said assets (A) and substantially independent of a market capitalization (MC) of any of said entities (E), wherein said calculate comprises wherein said analysis host is configured to:

add by the at least one processor the quantitative data (Q) of each of said at least one objective measure of scale (O) for all of said constituent index assets (IA) to yield a sum total quantitative data (SUMQ) for said at least one objective measure of scale (O); and

determine by the at least one processor a relative size of the quantitative data (Q) of a said at least one objective measure of scale (O) for each said constituent index asset (IA) as a proportion of said sum total quantitative data (SUMQ) for said at least one objective measure of scale (O) to yield the objective measure of scale weight (OW) of each of the constituent index assets (IA) comprising the index of assets (I),

wherein said at least one objective measure of scale (O) comprises a measure of size (SZ) of each said entity (E) associated with each said given constituent index asset (IA), and wherein said measure of the size (SZ) of each said entity (E) corresponding to each said constituent index asset (IA) comprises at least one of:

a demographic measure of a said entity (E) associated with said constituent index asset (IA);

a financial metric of a said entity (E) associated with said constituent index asset (IA);

a metric from information disclosures of a publicly traded entity; or

a metric from information about a said entity (E) associated with said constituent index asset (IA).

43. The system according to claim **42**, wherein said measure of the size (SZ) of each said entity (E) corresponding to each said asset (A) comprises at least one of:

revenue of a said entity (E) associated with said asset (A);

gross revenue of a said entity (E) associated with said asset (A);

profitability of a said entity (E) associated, with said asset (A);

sales of a said entity (E) associated with said asset (A);

total sales of a said entity (E) associated with said asset (A);

foreign sales of a said entity (E) associated with said asset (A);

domestic sales of a said entity (E) associated with said asset (A);

net sales of a said entity (E) associated with said asset (A);

gross sales of a said entity (E) associated with said asset (A);

profit margin of a said entity (E) associated with said asset (A);

operating margin of a said entity (E) associated with said asset (A);

retained earnings of a said entity (E) associated with said asset (A);

earnings per share of a said entity (E) associated with said asset (A);

book value of a said entity (E) associated with said asset (A);

book value adjusted for inflation of a said entity (E) associated with said asset (A);

book value adjusted for replacement cost of a said entity (E) associated with said asset (A);

book value adjusted for liquidation value of a said entity (E) associated with said asset (A);

dividends of a said entity (E) associated with said asset (A);

assets of a said entity (E) associated with said asset (A);

tangible assets of a said entity (E) associated with said asset (A);

intangible assets of a said entity (E) associated with said asset (A);

fixed assets of a said entity (E) associated with said asset (A);

property of a said entity (E) associated with said asset (A);

plant of a said entity (E) associated with said asset (A);

equipment of a said entity (E) associated with said asset (A);

goodwill of a said entity (E) associated with said asset (A);

replacement value of assets of a said entity (E) associated with said asset (A);

liquidation value of assets of a said entity (E) associated with said asset (A);

liabilities of a said entity (E) associated with said asset (A);

long term liabilities of a said entity (E) associated with said asset (A);

short term liabilities of a said entity (E) associated with, said asset (A);

net worth of a said entity (E) associated with said asset (A);

research and development expense of a said entity (E) associated with said asset (A);

accounts receivable of a said entity (E) associated with said asset (A);

earnings before interest and tax (EB IT) of a said entity (E) associated with said asset (A);

earnings before interest, taxes, dividends, and amortization (EBITDA) of a said entity (E) associated with said asset (A);

accounts payable of a said entity (E) associated with said asset (A);

cost of goods sold (CGS) of a said entity (E) associated with said asset (A);
debt ratio of a said entity (E) associated with said asset (A);
budget of a said entity (E) associated with said asset (A);
capital budget of a said entity (E) associated with said asset (A);
cash budget of a said entity (E) associated with said asset (A);
direct labor budget of a said entity (E) associated with said asset (A);
factory overhead budget of a said entity (E) associated with said asset (A);
operating budget of a said entity (E) associated with said asset (A);
sales budget of a said entity (E) associated with said asset (A);
inventory method of a said entity (E) associated with said asset (A);
type of stock offered of a said entity (E) associated with said asset (A);
liquidity of a said entity (E) associated with said asset (A);
book income of a said entity (E) associated with said asset (A);
tax income of a said entity (E) associated with said asset (A);
capitalization of earnings of a said entity (E) associated with said asset (A);
capitalization of goodwill of a said entity (E) associated with said asset (A);
capitalization of interest of a said entity (E) associated with said asset (A);
capitalization of revenue of a said entity (E) associated with said asset (A);
capital spending of a said entity (E) associated with said asset (A);
cash of a said entity (E) associated with said asset (A);
compensation of a said entity (E) associated with said asset (A);
employee turnover of a said entity (E) associated with said asset (A);
overhead costs of a said entity (E) associated with said asset (A);
credit rating of a said entity (E) associated with said asset (A);
growth rate of a said entity (E) associated with said asset (A);
tax rate of a said entity (E) associated with said asset (A);
liquidation value of entity of a said entity (E) associated with said asset (A);
capitalization of cash of a said entity (E) associated with said asset (A);
capitalization of earnings of a said entity (E) associated with said asset (A);
capitalization of revenue of a said entity (E) associated with said asset (A);
cash flow of a said entity (E) associated with said asset (A),
a demographic measure of a said entity (E) associated with said asset (A);
a measure relating to a demographic attribute of a said entity (E) associated with said asset (A);
a non-financial metric of a said entity (E) associated with said asset (A);
a non-market related metric of a said entity (E) associated with said asset (A);
number of employees of a said entity (E) associated with said asset (A);
floor space of a said entity (E) associated with said asset (A); or
office space of a said entity (E) associated with said asset (A); and

wherein said measure of the size (SZ) of each said entity (E) corresponding to each said constituent index asset (IA) comprises at least one of:

revenue of a said entity (E) associated with said constituent index asset (IA);
gross revenue of a said entity (E) associated with said constituent index asset (IA);
profitability of a said entity (E) associated with said constituent index asset (IA);
sales of a said entity (E) associated with said constituent index asset (IA);
total sales of a said entity (E) associated with said constituent index asset (IA);
foreign sales of a said entity (E) associated with said constituent index asset (IA);
domestic sales of a said entity (E) associated with said constituent index asset (IA);
net sales of a said entity (E) associated with said constituent index asset (IA);
gross sales of a said entity (E) associated with said constituent index asset (IA);
profit margin of a said entity (E) associated with said constituent index asset (IA);
operating margin of a said entity (E) associated with said constituent index asset (IA);
retained earnings of a said entity (E) associated with said constituent index asset (IA);
earnings per share of a said entity (E) associated with said constituent index asset (IA);
book value of a said entity (E) associated with said constituent index asset (IA);
book value adjusted for inflation of a said entity (E) associated with said constituent index asset (IA);
book value adjusted for replacement cost of a said entity (E) associated with said constituent index asset (IA);
book value adjusted for liquidation value of a said entity (E) associated with said constituent index asset (IA);
dividends of a said entity (E) associated with said constituent index asset (IA);
assets of a said entity (E) associated with said constituent index asset (IA);
tangible assets of a said entity (E) associated with said constituent index asset (IA);
intangible assets of a said entity (E) associated with said constituent index asset (IA);
fixed assets of a said entity (E) associated with said constituent index asset (IA);
property of a said entity (E) associated with said constituent index asset (IA);
plant of a said entity (E) associated with said constituent index asset (IA);
equipment of a said entity (E) associated with said constituent index asset (IA);
goodwill of a said entity (E) associated with said constituent index asset (IA);
replacement value of assets of a said entity (E) associated with said constituent index asset (IA);
liquidation value of assets of a said entity (E) associated with said constituent index asset (IA);
liabilities of a said entity (E) associated with said constituent index asset (IA);
long term liabilities of a said entity (E) associated with said constituent index asset (IA);

short term liabilities of a said entity (E) associated with said constituent index asset (IA);
net worth of a said entity (E) associated with said constituent index asset (IA);
research and development expense of a said entity (E) associated with said constituent index asset (IA);
accounts receivable of a said entity (E) associated with said constituent index asset (IA);
earnings before interest and tax (EBIT) of a said entity (E) associated with said constituent index asset (IA);
earnings before interest, taxes, dividends, and amortization (EBITDA) of a said entity (E) associated with said constituent index asset (IA);
accounts payable of a said entity (E) associated with said constituent index asset (IA);
cost of goods sold (CGS) of a said entity (E) associated with said constituent index asset (IA);
debt ratio of a said entity (E) associated with said constituent index asset (IA);
budget of a said entity (E) associated with said constituent index asset (IA);
capital budget of a said entity (E) associated with said constituent index asset (IA);
cash budget of a said entity (E) associated with said constituent index asset (IA);
direct labor budget of a said entity (E) associated with said constituent index asset (IA);
factory overhead budget of a said entity (E) associated with said constituent index asset (IA);
operating budget of a said entity (E) associated with said constituent index asset (IA);
sales budget of a said entity (E) associated with said constituent index asset (IA);
inventory method of a said entity (E) associated with said constituent index asset (IA);
type of stock offered of a said entity (E) associated with said constituent index asset (IA);
liquidity of a said entity (E) associated with said constituent index asset (IA);
book income of a said entity (E) associated with said constituent index asset (IA);
tax income of a said entity (E) associated with said constituent index asset (IA);
capitalization of earnings of a said entity (E) associated with said constituent index asset (IA);
capitalization of goodwill of a said entity (E) associated with said constituent index asset (IA);
capitalization of interest of a said entity (E) associated with said constituent index asset (IA);
capitalization of revenue of a said entity (E) associated with said constituent index asset (IA);
capital spending of a said entity (E) associated with said constituent index asset (IA);
cash of a said entity (E) associated with said constituent index asset (IA);
compensation of a said entity (E) associated with said constituent index asset (IA);
employee turnover of a said entity (E) associated with said constituent index asset (IA);
overhead costs of a said entity (E) associated with said constituent index asset (IA);
credit rating of a said entity (E) associated with said constituent index asset (IA);
growth rate of a said entity (E) associated with said constituent index asset (IA);
tax rate of a said entity (E) associated with said constituent index asset (IA);
liquidation value of entity of a said entity (E) associated with said constituent index asset (IA);
capitalization of cash of a said entity (E) associated with said constituent index asset (IA);
capitalization of earnings of a said entity (E) associated with said constituent index asset (IA);
capitalization of revenue of a said entity (E) associated with said constituent index asset (IA);
cash flow of a said entity (E) associated with said constituent index asset (IA),
a demographic measure of a said entity (E) associated with said constituent index asset (IA);
a measure relating to a demographic attribute of a said entity (E) associated with said constituent index asset (IA);
a non-financial metric of a said entity (E) associated with said constituent index asset (IA);
a non-market related metric of a said entity (E) associated with said constituent index asset (IA);
number of employees of a said entity (E) associated with said constituent index asset (IA);
floor space of a said entity (E) associated with said constituent index asset (IA); or
office space of a said entity (E) associated with said constituent index asset (IA).

44. The system according to claim **42**, wherein at least one of: said measure of the size (SZ) of each said entity (E) corresponding to each said asset (A) comprises a future value of expected cash flow of a said entity (E) associated with said asset (A); or said measure of the size (SZ) of each said entity (E) corresponding to each said constituent index asset (IA) comprises a future value of expected cash flow of a said entity (E) associated with said constituent index asset (IA).

45. A computer-implemented index construction system, comprising:

at least one analysis host comprising at least one processor; and

at least one memory coupled to said at least one processor, wherein said analysis host is configured to:

access one or more databases storing and permitting retrieval of data (D) about a plurality of entities (E) and a plurality of corresponding assets (A) each issued by or having been issued by at least one of the plurality of entities (E);

receive at least one objective measure of scale (O) regarding one or more of the plurality of said assets, or one or more of the plurality of entities (E) associated with said corresponding assets (A);

retrieve one or more of said data (D) about a plurality of said entities (E) and said corresponding assets (A);

select a selection from said plurality of said assets (A) or said entities (E) to comprise a plurality of constituent index assets (IA) comprising the index of assets (I), wherein said select comprises wherein said analysis host is configured to:

select said one or more data (D) to be a quantitative data (Q) reflecting the amount of said at least one objective measure of scale (O) associated with each of said entities, wherein said at least one objective measure of scale (O) is substantially independent of the market prices (P) of any of said assets (A) and is substantially independent of a market capitalization (MC) of any of said entities (E),

wherein said at least one objective measure of scale (O) comprises a measure of size (SZ) of each said entity (E) associated with each said given asset (A), and wherein said measure of the size (SZ) of each

said entity (E) corresponding to each said asset (A) comprises at least one of:

a demographic measure of a said entity (E) associated with said asset (A);

a financial metric of a said entity (E) associated with said asset (A);

a metric from information disclosures of a publicly traded entity; or

a metric from information about a said entity (E) associated with said asset (A);

rank said entities (E) based upon at least one of a said quantitative data (Q) associated with the at least one objective measure of scale (O) of each of said entities (E); and

select said selection from said plurality of said assets (A) or said entities (E) to comprise said plurality of constituent index assets (IA) based on said ranking; and

calculate proportional weights for the index of assets to be objective measure of scale weights (OW) substantially independent of the market prices (P) of any of said assets (A) and substantially independent of a market capitalization (MC) of any of said entities (E), wherein said calculate comprises wherein said analysis host is configured to:

add the quantitative data (Q) of each of said at least one objective measure of scale (O) for all of said constituent index assets (IA) to yield a sum total quantitative data (SUMQ) for said at least one objective measure of scale (O); and

determine a relative size of the quantitative data (Q) of a said at least one objective measure of scale (O) for each said constituent index asset (IA) as a proportion of said sum total quantitative data (SUMQ) for said at least one objective measure of scale (O) to yield the objective measure of scale weight (OW) of each of the constituent index assets (IA) comprising the index of assets (I),

wherein said at least one objective measure of scale (O) comprises a measure of size (SZ) of each said entity (E) associated with each said given constituent index asset (IA), and wherein said measure of the size (SZ) of each said entity (E) corresponding to each said constituent index asset (IA) comprises at least one of:

a demographic measure of a said entity (E) associated with said constituent index asset (IA);

a financial metric of a said entity (E) associated with said constituent index asset (IA);

a metric from information disclosures of a publicly traded entity; or

a metric from information about a said entity (E) associated with said constituent index asset (IA).

46. The computer implemented index construction system according to claim **45**, further comprising:

at least one trading host comprising at least one processor, and at least one memory coupled to said at least one processor, said at least one trading host configured to:

select a plurality of assets for trading according to the index of assets; and

trade one or more of said plurality of assets based on said select or said calculation of weights of the constituent index assets of the index.

47. A computer-implemented index construction system according to claim **45**, wherein said measure of the size (SZ) of each said entity (E) corresponding to each said asset (A) comprises at least one of:

revenue of a said entity (E) associated with said asset (A);

gross revenue of a said entity (E) associated with said asset (A);

profitability of a said entity (E) associated with said asset (A);

sales of a said entity (E) associated with said asset (A);

total sales of a said entity (E) associated with said asset (A);

foreign sales of a said entity (E) associated with said asset (A);

domestic sales of a said entity (E) associated with said asset (A);

net sales of a said entity (E) associated with said asset (A);

gross sales of a said entity (E) associated with said asset (A);

profit margin of a said entity (E) associated with said asset (A);

operating margin of a said entity (E) associated with said asset (A);

retained earnings of a said entity (E) associated with said asset (A);

earnings per share of a said entity (E) associated with said asset (A);

book value of a said entity (E) associated with said asset (A);

book value adjusted for inflation of a said entity (E) associated with said asset (A);

book value adjusted for replacement cost of a said entity (E) associated with said asset (A);

book value adjusted for liquidation value of a said entity (E) associated with said asset (A);

dividends of a said entity (E) associated with said asset (A);

assets of a said entity (E) associated with said asset (A);

tangible assets of a said entity (E) associated with said asset (A);

intangible assets of a said entity (E) associated with said asset (A);

fixed assets of a said entity (E) associated with said asset (A);

property of a said entity (E) associated with said asset (A);

plant of a said entity (E) associated with said asset (A);

equipment of a said entity (E) associated with said asset (A);

goodwill of a said entity (E) associated with said asset (A);

replacement value of assets of a said entity (E) associated with said asset (A);

liquidation value of assets of a said entity (E) associated with said asset (A);

liabilities of a said entity (E) associated with said asset (A);

long term liabilities of a said entity (E) associated with said asset (A);

short term liabilities of a said entity (E) associated with said asset (A);

net worth of a said entity (E) associated with said asset (A);

research and development expense of a said entity (E) associated with said asset (A);

accounts receivable of a said entity (E) associated with said asset (A);

earnings before interest and tax (EBIT) of a said entity (E) associated with said asset (A);

earnings before interest, taxes, dividends, and amortization (EBITDA) of a said entity (E) associated with said asset (A);

accounts payable of a said entity (E) associated with said asset (A);

cost of goods sold (CGS) of a said entity (E) associated with said asset (A);

debt ratio of a said entity (E) associated with said asset (A);

budget of a said entity (E) associated with said asset (A);

capital budget of a said entity (E) associated with said asset (A);
cash budget of a said entity (E) associated with said asset (A);
direct labor budget of a said entity (E) associated with said asset (A);
factory overhead budget of a said entity (E) associated with said asset (A);
operating budget of a said entity (E) associated with said asset (A);
sales budget of a said entity (E) associated with said asset (A);
inventory method of a said entity (E) associated with said asset (A);
type of stock offered of a said entity (E) associated with said asset (A);
liquidity of a said entity (E) associated with said asset (A);
book income of a said entity (E) associated with said asset (A);
tax income of a said entity (E) associated with said asset (A);
capitalization of earnings of a said entity (E) associated with said asset (A);
capitalization of goodwill of a said entity (E) associated with said asset (A);
capitalization of interest of a said entity (E) associated with said asset (A);
capitalization of revenue of a said entity (E) associated with said asset (A);
capital spending of a said entity (E) associated with said asset (A);
cash of a said entity (E) associated with said asset (A);
compensation of a said entity (E) associated with said asset (A);
employee turnover of a said entity (E) associated with said asset (A);
overhead costs of a said entity (E) associated with said asset (A);
credit rating of a said entity (E) associated with said asset (A);
growth rate of a said entity (E) associated with said asset (A);
tax rate of a said entity (E) associated with said asset (A);
liquidation value of entity of a said entity (E) associated with said asset (A);
capitalization of cash of a said entity (E) associated with said asset (A);
capitalization of earnings of a said entity (E) associated with said asset (A);
capitalization of revenue of a said entity (E) associated with said asset (A);
cash flow of a said entity (E) associated with said asset (A),
a demographic measure of a said entity (E) associated with said asset (A);
a measure relating to a demographic attribute of a said entity (E) associated with said asset (A);
a non-financial metric of a said entity (E) associated with said asset (A);
a non-market related metric of a said entity (E) associated with said asset (A);
number of employees of a said entity (E) associated with said asset (A);
floor space of a said entity (E) associated with said asset (A); or office space of a said entity (E) associated with said asset (A); and

wherein said measure of the size (SZ) of each said entity (E) corresponding to each said constituent index asset (IA) comprises at least one of:
revenue of a said entity (E) associated with said constituent index asset (IA);
gross revenue of a said entity (E) associated with said constituent index asset (IA);
profitability of a said entity (E) associated with said constituent index asset (IA);
sales of a said entity (E) associated with said constituent index asset (IA);
total sales of a said entity (E) associated with said constituent index asset (IA);
foreign sales of a said entity (E) associated with said constituent index asset (IA);
domestic sales of a said entity (E) associated with said constituent index asset (IA);
net sales of a said entity (E) associated with said constituent index asset (IA);
gross sales of a said entity (E) associated with said constituent index asset (IA);
profit margin of a said entity (E) associated with said constituent index asset (IA);
operating margin of a said entity (E) associated with said constituent index asset (IA);
retained earnings of a said entity (E) associated with said constituent index asset (IA);
earnings per share of a said entity (E) associated with said constituent index asset (IA);
book value of a said entity (E) associated with said constituent index asset (IA);
book value adjusted for inflation of a said entity (E) associated with said constituent index asset (IA);
book value adjusted for replacement cost of a said entity (E) associated with said constituent index asset (IA);
book value adjusted for liquidation value of a said entity (E) associated with said constituent index asset (IA);
dividends of a said entity (E) associated with said constituent index asset (IA);
assets of a said entity (E) associated with said constituent index asset (IA);
tangible assets of a said entity (E) associated with said constituent index asset (IA);
intangible assets of a said entity (E) associated with said constituent index asset (IA);
fixed assets of a said entity (E) associated with said constituent index asset (IA);
property of a said entity (E) associated with said constituent index asset (IA);
plant of a said entity (E) associated with said constituent index asset (IA);
equipment of a said entity (E) associated with said constituent index asset (IA);
goodwill of a said entity (E) associated with said constituent index asset (IA);
replacement value of assets of a said entity (E) associated with said constituent index asset (IA);
liquidation value of assets of a said entity (E) associated with said constituent index asset (IA);
liabilities of a said entity (E) associated with said constituent index asset (IA);
long term liabilities of a said entity (E) associated with said constituent index asset (IA);
short term liabilities of a said entity (E) associated with said constituent index asset (IA);
net worth of a said entity (E) associated with said constituent index asset (IA);

research and development expense of a said entity (E) associated with said constituent index asset (IA);
accounts receivable of a said entity (E) associated with said constituent index asset (IA);
earnings before interest and tax (EBIT) of a said entity (E) associated with said constituent index asset (IA);
earnings before interest, taxes, dividends, and amortization (EBITDA) of a said entity (E) associated with said constituent index asset (IA);
accounts payable of a said entity (E) associated with said constituent index asset (IA);
cost of goods sold (CGS) of a said entity (E) associated with said constituent index asset (IA);
debt ratio of a said entity (E) associated with said constituent index asset (IA);
budget of a said entity (E) associated with said constituent index asset (IA);
capital budget of a said entity (E) associated with said constituent index asset (IA);
cash budget of a said entity (E) associated with said constituent index asset (IA);
direct labor budget of a said entity (E) associated with said constituent index asset (IA);
factory overhead budget of a said entity (E) associated with said constituent index asset (IA);
operating budget of a said entity (E) associated with said constituent index asset (IA);
sales budget of a said entity (E) associated with said constituent index asset (IA);
inventory method of a said entity (E) associated with said constituent index asset (IA);
type of stock offered of a said entity (E) associated with said constituent index asset (IA);
liquidity of a said entity (E) associated with said constituent index asset (IA);
book income of a said entity (E) associated with said constituent index asset (IA);
tax income of a said entity (E) associated with said constituent index asset (IA);
capitalization of earnings of a said entity (E) associated with said constituent index asset (IA);
capitalization of goodwill of a said entity (E) associated with said constituent index asset (IA);
capitalization of interest of a said entity (E) associated with said constituent index asset (IA);
capitalization of revenue of a said entity (E) associated with said constituent index asset (IA);
capital spending of a said entity (E) associated with said constituent index asset (IA);
cash of a said entity (E) associated with said constituent index asset (IA);
compensation of a said entity (E) associated with said constituent index asset (IA);
employee turnover of a said entity (E) associated with said constituent index asset (IA);
overhead costs of a said entity (E) associated with said constituent index asset (IA);
credit rating of a said entity (E) associated with said constituent index asset (IA);
growth rate of a said entity (E) associated with said constituent index asset (IA);
tax rate of a said entity (E) associated with said constituent index asset (IA);
liquidation value of entity of a said entity (E) associated with said constituent index asset (IA);
capitalization of cash of a said entity (E) associated with said constituent index asset (IA);
capitalization of earnings of a said entity (E) associated with said constituent index asset (IA);
capitalization of revenue of a said entity (E) associated with said constituent index asset (IA);
cash flow of a said entity (E) associated with said constituent index asset (IA),
a demographic measure of a said entity (E) associated with said constituent index asset (IA);
a measure relating to a demographic attribute of a said entity (E) associated with said constituent index asset (IA); 1
a non-financial metric of a said entity (E) associated with said constituent index asset (IA);
a non-market related metric of a said entity (E) associated with said constituent index asset (IA);
number of employees of a said entity (E) associated with said constituent index asset (IA);
floor space of a said entity (E) associated with said constituent index asset (IA); or
office space of a said entity (E) associated with said constituent index asset (IA).

48. The computer-implemented index construction system according to claim **45**, wherein at least one of:
said measure of the size (SZ) of each said entity (E) corresponding to each said asset (A) comprises a future value of expected cash flow of a said entity (E) associated with said asset (A); or
said measure of the size (SZ) of each said entity (E) corresponding to each said constituent index asset (IA) comprises a future value of expected cash flow of a said entity (E) associated with said constituent index asset (IA).

49. The computer-implemented index construction system according to claim **45**, wherein each of said assets comprises at least one of a stock; a commodity; a futures contract; a bond; a municipal bond; a corporate bond; a mutual fund; a hedge fund; a fund of funds; an exchange traded fund (ETF); or a derivative.

50. The computer-implemented index construction system according to claim **45**, wherein each of said assets comprises a stock.

51. The computer-implemented index construction system according to claim **45**, wherein each of said assets comprises a commodity.

52. The computer-implemented index construction system according to claim **45**, wherein each of said assets comprises a futures contract.

53. The computer-implemented index construction system according to claim **45**, wherein each of said assets comprises a bond.

54. The computer-implemented index construction system according to claim **45**, wherein each of said assets comprises a mutual fund.

55. The computer-implemented index construction system according to claim **45**, wherein each of said assets comprises a hedge fund.

56. The computer-implemented index construction system according to claim **45**, wherein each of said assets comprises a fund of funds.

57. The computer-implemented index construction system according to claim **45**, wherein each of said assets comprises an exchange traded fund (ETF).

58. The computer-implemented index construction system according to claim **45**, wherein each of said assets comprises a derivative.

59. The computer-implemented index construction system according to claim **45**, wherein said calculate comprises

wherein said analysis host is configured to perform a negative weighting on any of said assets.

60. The computer-implemented index construction system according to claim **59**, wherein said analysis host is configured to perform said negative weighting comprises wherein said analysis host is configured to at least one of: establish or measure performance, for at least one of: any security; a portfolio; a hedge fund; or at least one of: a long or a short position.

61. The computer-implemented index construction system according to claim **45**, wherein said objective measure of scale comprises a measure relating to at least one of an underlying attribute of one of the assets, or the entity associated with the asset.

62. The computer-implemented index construction system according to claim **45**, wherein said entity comprises at least one of: a company; a municipality; a municipality issuing bonds; a country; or an issuer of the asset.

63. The computer-implemented index construction system according to claim **45**, wherein said objective measure of scale comprises at least one of: a mathematical transformation of at least one objective measure of scale, or a ratio of any combination of objective measures of scale relating to said assets or said entities.

64. The computer-implemented index construction system according to claim **63**, wherein said ratio of said any combination of said objective measures of scale comprises at least one of:

a current ratio,

a debt ratio,

a overhead expense as a percent of sales, or

a debt service burden ratio.

65. The computer-implemented index construction system according to claim **45**, wherein said calculate comprises wherein said analysis host is configured to weight based on said objective measure of scale; wherein said objective measure of scale comprises an economic indicator.

66. The computer-implemented index construction system according to claim **45**, wherein said objective measure of scale comprises a measure tied to a particular geography associated with the assets.

67. The computer-implemented index construction system according to claim **45**, further comprising wherein said analysis host is configured to construct a portfolio of assets based upon the index of assets (I).

68. The computer-implemented index construction system of claim **67**, wherein the portfolio of assets comprises at least one of:

a fund;

a mutual fund;

a fund of funds;

an asset account;

an exchange traded fund (ETF);

a separate account;

a pooled trust; or

a limited partnership.

69. The computer-implemented index construction system according to claim **67**, further comprising wherein said analysis host is configured to:

select the portfolio of assets for trading according to the index of assets (I); and

trade via at least one trading host processor one or more of said portfolio of assets based on said selecting or said weighting of the constituent index assets (IA) of the index of assets (I).

70. The computer-implemented index construction system according to claim **69**, wherein said analysis host is configured to trade comprises wherein said analysis host is configured to rebalance the portfolio of assets based on the index of assets (I).

71. The computer-implemented index construction system according to claim **70**, wherein said analysis host is configured to rebalance on a periodic basis.

72. The computer-implemented index construction system according to claim **70**, wherein said analysis host is configured to rebalance based upon the constituent index assets (IA) crossing a threshold value.

73. The computer-implemented index construction system according to claim **69**, further comprising wherein said analysis host is configured to:

apply one or more rules associated with the index of assets (I).

74. The computer-implemented index construction system according to claim **45**, wherein the index construction system is used for at least one of: investment management; or investment portfolio benchmarking.

75. The computer-implemented index construction system of claim **45**, wherein the index construction system further comprises wherein said analysis host is configured to enhance valuation indifferent non-capitalization weighted index investing, comprising wherein said analysis host is configured to:

construct a portfolio of assets in a fashion in which at least one of: holdings; performance; or characteristics, are substantially similar to the index of assets (I).

76. The computer-implemented index construction system according to claim **45**, wherein said access comprises wherein said analysis host is configured to: gather data about at least one of the plurality of assets or the plurality of entities using computerized databases.

77. The computer-implemented index construction system according to claim **45**, wherein said objective measure of scale comprises a non-financial metric.

78. The computer-implemented index construction system according to claim **45**, wherein the system comprises at least one of: a passive investing system; an active investing system; or an enhanced type of active investing system.

79. The computer-implemented index construction system according to claim **45**, further comprising wherein said analysis host is configured to:

generate a subset of said data to obtain said plurality of said assets (A) and said plurality of said entities (E).

80. The computer-implemented index construction system according to claim **79**, wherein said analysis host is configured to generate the subset comprises wherein said analysis host is configured to generate a sector.

81. The computer-implemented index construction system according to claim **79**, wherein said analysis host is configured to generate the subset comprises wherein said analysis host is configured to generate a subcategory.

82. The computer-implemented index construction system according to claim **45**, further comprising wherein said analysis host is configured to:

select a portion of at least one of said assets or said entities based on any criterion to obtain said plurality of said entities or said plurality of said assets.

83. The computer-implemented index construction system according to claim **45**, further comprising wherein said analysis host is configured to construct said index further comprising wherein said analysis host is configured to at least one of:

minimize trading costs;

minimize turnover;

minimize management costs;

avoid misjudgments in selection;

avoid following a market bubble;
take account of classical valuation ratios;
construct a valuation indifferent index; or
reduce portfolio volatility.

84. The system according to claim **45**, wherein said analysis host is configured to select comprises wherein said analysis host is configured to select based on at least one of a liquidity of said assets or any metric of size of said entities.

85. A computer program product embodied on a machine readable storage medium that provides instructions which when executed by at least one analysis host processor, causes said at least one analysis host processor to perform operations comprising a method of constructing an index of assets, the method comprising:

(a) accessing by the at least one analysis host processor of one or more databases storing and permitting retrieval of data (D) about a plurality of entities (E) and a plurality of corresponding assets (A) each issued by or having been issued by at least one of the plurality of entities (E);

(b) receiving by the at least one analysis host processor at least one objective measure of scale (O) regarding one or more of the plurality of said assets, or one or more of the plurality of entities (E) associated with said corresponding assets (A);

(c) retrieving by the at least one analysis host processor one or more of said data (D) about said plurality of said entities (E) and said corresponding assets (A);

(d) selecting by the at least one analysis host processor a selection from said plurality of said assets (A) or said entities (E) to comprise a plurality of constituent index assets (IA) comprising the index of assets (I), wherein said selecting comprises:

(i) selecting by the at least one analysis host processor said one or more data (D) to be a quantitative data (Q) reflecting the amount of said at least one objective measure of scale (O) associated with each of said entities, wherein said at least one objective measure of scale (O) is substantially independent of the market prices (P) of any of said assets (A) and is substantially independent of a market capitalization (MC) of any of said entities (E),

wherein said at least one objective measure of scale (O) comprises a measure of size (SZ) of each said entity (E) associated with each said given asset (A), and wherein said measure of the size (SZ) of each said entity (E) corresponding to each said asset (A) comprises at least one of:

a demographic measure of a said entity (E) associated with said asset (A);

a financial metric of a said entity (E) associated with said asset (A);

a metric from information disclosures of a publicly traded entity; or

a metric from information about a said entity (E) associated with said asset (A);

(ii) ranking by the at least one analysis host processor said entities (E) based upon at least one of a said quantitative data (Q) associated with the at least one objective measure of scale (O) of each of said entities (E); and

(iii) selecting by the at least one analysis host processor said selection from said plurality of said assets (A) or said entities (E) to comprise said plurality of constituent index assets (IA) based on said ranking; and

(e) calculating by the at least one analysis host processor proportional weights for the index of assets to be objective measure of scale weights (OW) substantially independent of the market prices (P) of any of said assets (A) and substantially independent of a market capitalization (MC) of any of said entities (E), wherein said calculating comprises:

(i) adding by the at least one analysis host processor the quantitative data (Q) of each of said at least one objective measure of scale (O) for all of said constituent index assets (IA) to yield a sum total quantitative data (SUMQ) for said at least one objective measure of scale (O); and

(ii) determining by the at least one analysis host processor a relative size of the quantitative data (Q) of a said at least one objective measure of scale (O) for each said constituent index asset (IA) as a proportion of said sum total quantitative data (SUMQ) for said at least one objective measure of scale (O) to yield the objective measure of scale weight (OW) of each of the constituent index assets (IA) comprising the index of assets (I),

wherein said at least one objective measure of scale (O) comprises a measure of size (SZ) of each said entity (E) associated with each said given constituent index asset (IA), and wherein said measure of the size (SZ) of each said entity (E) corresponding to each said constituent index asset (IA) comprises at least one of:

a demographic measure of a said entity (E) associated with said constituent index asset (IA);

a financial metric of a said entity (E) associated with said constituent index asset (IA);

a metric from information disclosures of a publicly traded entity; or

a metric from information about a said entity (E) associated with said constituent index asset (IA).

86. The computer program product embodied on a machine readable storage medium of claim **85**, the method further comprising:

selecting a plurality of assets for trading according to the index of assets; and

trading one or more of said plurality of assets based on said selecting or said calculating of said objective measure of scale weights of the constituent index assets of the index.

87. The computer program product embodied on a machine readable storage medium according to claim **85**, wherein said measure of the size (SZ) of each said entity (E) corresponding to each said asset (A) comprises at least one of:

revenue of a said entity (E) associated with said asset (A);
gross revenue of a said entity (E) associated with said asset (A);
profitability of a said entity (E) associated with said asset (A);
sales of a said entity (E) associated with said asset (A);
total sales of a said entity (E) associated with said asset (A);
foreign sales of a said entity (E) associated with said asset (A);
domestic sales of a said entity (E) associated with said asset (A);
net sales of a said entity (E) associated with said asset (A);
gross sales of a said entity (E) associated with said asset (A);
profit margin of a said entity (E) associated with said asset (A);
operating margin of a said entity (E) associated with said asset (A);
retained earnings of a said entity (E) associated with said asset (A);
earnings per share of a said entity (E) associated with said asset (A);

book value of a said entity (E) associated with said asset (A);
book value adjusted for inflation of a said entity (E) associated with said asset (A);
book value adjusted for replacement cost of a said entity (E) associated with said asset (A);
book value adjusted for liquidation value of a said entity (E) associated with said asset (A);
dividends of a said entity (E) associated with said asset (A);
assets of a said entity (E) associated with said asset (A);
tangible assets of a said entity (E) associated with said asset (A);
intangible assets of a said entity (E) associated with said asset (A);
fixed assets of a said entity (E) associated with said asset (A);
property of a said entity (E) associated with said asset (A);
plant of a said entity (E) associated with said asset (A);
equipment of a said entity (E) associated with said asset (A);
goodwill of a said entity (E) associated with said asset (A);
replacement value of assets of a said entity (E) associated with said asset (A);
liquidation value of assets of a said entity (E) associated with said asset (A);
liabilities of a said entity (E) associated with said asset (A);
long term liabilities of a said entity (E) associated with said asset (A);
short term liabilities of a said entity (E) associated with said asset (A);
net worth of a said entity (E) associated with said asset (A);
research and development expense of a said entity (E) associated with said asset (A);
accounts receivable of a said entity (E) associated with said asset (A);
earnings before interest and tax (EBIT) of a said entity (E) associated with said asset (A);
earnings before interest, taxes, dividends, and amortization (EBITDA) of a said entity (E) associated with said asset (A);
accounts payable of a said entity (E) associated with said asset (A);
cost of goods sold (CGS) of a said entity (E) associated with said asset (A);
debt ratio of a said entity (E) associated with said asset (A);
budget of a said entity (E) associated with said asset (A);
capital budget of a said entity (E) associated with said asset (A);
cash budget of a said entity (E) associated with said asset (A);
direct labor budget of a said entity (E) associated with said asset (A);
factory overhead budget of a said entity (E) associated with said asset (A);
operating budget of a said entity (E) associated with said asset (A);
sales budget of a said entity (E) associated with said asset (A);
inventory method of a said entity (E) associated with said asset (A);
type of stock offered of a said entity (E) associated with said asset (A);
liquidity of a said entity (E) associated with said asset (A);
book income of a said entity (E) associated with said asset (A);
tax income of a said entity (E) associated with said asset (A);
capitalization of earnings of a said entity (E) associated with said asset (A);
capitalization of goodwill of a said entity (E) associated with said asset (A);
capitalization of interest of a said entity (E) associated with said asset (A);
capitalization of revenue of a said entity (E) associated with said asset (A);
capital spending of a said entity (E) associated with said asset (A);
cash of a said entity (E) associated with said asset (A);
compensation of a said entity (E) associated with said asset (A);
employee turnover of a said entity (E) associated with said asset (A);
overhead costs of a said entity (E) associated with said asset (A);
credit rating of a said entity (E) associated with said asset (A);
growth rate of a said entity (E) associated with said asset (A);
tax rate of a said entity (E) associated with said asset (A);
liquidation value of entity of a said entity (E) associated with said asset (A);
capitalization of cash of a said entity (E) associated with said asset (A);
capitalization of earnings of a said entity (E) associated with said asset (A);
capitalization of revenue of a said entity (E) associated with said asset (A);
cash flow of a said entity (E) associated with said asset (A),
a demographic measure of a said entity (E) associated with said asset (A);
a measure relating to a demographic attribute of a said entity (E) associated with said asset (A);
a non-financial metric of a said entity (E) associated with said asset (A);
a non-market related metric of a said entity (E) associated with said asset (A);
number of employees of a said entity (E) associated with said asset (A);
floor space of a said entity (E) associated with said asset (A); or
office space of a said entity (E) associated with said asset (A); and

wherein said measure of the size (SZ) of each said entity (E) corresponding to each said constituent index asset (IA) comprises at least one of:

revenue of a said entity (E) associated with said constituent index asset (IA);
gross revenue of a said entity (E) associated with said constituent index asset (IA);
profitability of a said entity (E) associated with said constituent index asset (IA);
sales of a said entity (E) associated with said constituent index asset (IA);
total sales of a said entity (E) associated with said constituent index asset (IA);
foreign sales of a said entity (E) associated with said constituent index asset (IA);
domestic sales of a said entity (E) associated with said constituent index asset (IA);
net sales of a said entity (E) associated with said constituent index asset (IA);
gross sales of a said entity (E) associated with said constituent index asset (IA);

profit margin of a said entity (E) associated with said constituent index asset (IA);
operating margin of a said entity (E) associated with said constituent index asset (IA);
retained earnings of a said entity (E) associated with said constituent index asset (IA);
earnings per share of a said entity (E) associated with said constituent index asset (IA);
book value of a said entity (E) associated with said constituent index asset (IA);
book value adjusted for inflation of a said entity (E) associated with said constituent index asset (IA);
book value adjusted for replacement cost of a said entity (E) associated with said constituent index asset (IA);
book value adjusted for liquidation value of a said entity (E) associated with said constituent index asset (IA);
dividends of a said entity (E) associated with said constituent index asset (IA);
assets of a said entity (E) associated with said constituent index asset (IA);
tangible assets of a said entity (E) associated with said constituent index asset (IA);
intangible assets of a said entity (E) associated with said constituent index asset (IA);
fixed assets of a said entity (E) associated with said constituent index asset (IA);
property of a said entity (E) associated with said constituent index asset (IA);
plant of a said entity (E) associated with said constituent index asset (IA);
equipment of a said entity (E) associated with said constituent index asset (IA);
goodwill of a said entity (E) associated with said constituent index asset (IA);
replacement value of assets of a said entity (E) associated with said constituent index asset (IA);
liquidation value of assets of a said entity (E) associated with said constituent index asset (IA);
liabilities of a said entity (E) associated with said constituent index asset (IA);
long term liabilities of a said entity (E) associated with said constituent index asset (IA);
short term liabilities of a said entity (E) associated with said constituent index asset (IA);
net worth of a said entity (E) associated with said constituent index asset (IA);
research and development expense of a said entity (E) associated with said constituent index asset (IA);
accounts receivable of a said entity (E) associated with said constituent index asset (IA);
earnings before interest and tax (EBIT) of a said entity (E) associated with said constituent index asset (IA);
earnings before interest, taxes, dividends, and amortization (EBITDA) of a said entity (E) associated with said constituent index asset (IA);
accounts payable of a said entity (E) associated with said constituent index asset (IA);
cost of goods sold (CGS) of a said entity (E) associated with said constituent index asset (IA);
debt ratio of a said entity (E) associated with said constituent index asset (IA);
budget of a said entity (E) associated with said constituent index asset (IA);
capital budget of a said entity (E) associated with said constituent index asset (IA);
cash budget of a said entity (E) associated with said constituent index asset (IA);
direct labor budget of a said entity (E) associated with said constituent index asset (IA);
factory overhead budget of a said entity (E) associated with said constituent index asset (IA);
operating budget of a said entity (E) associated with said constituent index asset (IA);
sales budget of a said entity (E) associated with said constituent index asset (IA);
inventory method of a said entity (E) associated with said constituent index asset (IA);
type of stock offered of a said entity (E) associated with said constituent index asset (IA);
liquidity of a said entity (E) associated with said constituent index asset (IA);
book income of a said entity (E) associated with said constituent index asset (IA);
tax income of a said entity (E) associated with said constituent index asset (IA);
capitalization of earnings of a said entity (E) associated with said constituent index asset (IA);
capitalization of goodwill of a said entity (E) associated with said constituent index asset (IA);
capitalization of interest of a said entity (E) associated with said constituent index asset (IA);
capitalization of revenue of a said entity (E) associated with said constituent index asset (IA);
capital spending of a said entity (E) associated with said constituent index asset (IA);
cash of a said entity (E) associated with said constituent index asset (IA);
compensation of a said entity (E) associated with said constituent index asset (IA);
employee turnover of a said entity (E) associated with said constituent index asset (IA);
overhead costs of a said entity (E) associated with said constituent index asset (IA);
credit rating of a said entity (E) associated with said constituent index asset (IA);
growth rate of a said entity (E) associated with said constituent index asset (IA);
tax rate of a said entity (E) associated with said constituent index asset (IA);
liquidation value of entity of a said entity (E) associated with said constituent index asset (IA);
capitalization of cash of a said entity (E) associated with said constituent index asset (IA);
capitalization of earnings of a said entity (E) associated with said constituent index asset (IA);
capitalization of revenue of a said entity (E) associated with said constituent index asset (IA);
cash flow of a said entity (E) associated with said constituent index asset (IA),
a demographic measure of a said entity (E) associated with said constituent index asset (IA);
a measure relating to a demographic attribute of a said entity (E) associated with said constituent index asset (IA);
a non-financial metric of a said entity (E) associated with said constituent index asset (IA);
a non-market related metric of a said entity (E) associated with said constituent index asset (IA);
number of employees of a said entity (E) associated with said constituent index asset (IA);
floor space of a said entity (E) associated with said constituent index asset (IA); or
office space of a said entity (E) associated with said constituent index asset (IA).

88. The computer program product embodied on a machine readable storage medium according to claim **85**, wherein at least one of:

said measure of the size (SZ) of each said entity (E) corresponding to each said asset (A) comprises a future value of expected cash flow of a said entity (E) associated with said asset (A); or

said measure of the size (SZ) of each said entity (E) corresponding to each said constituent index asset (IA) comprises a future value of expected cash flow of a said entity (E) associated with said constituent index asset (IA).

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