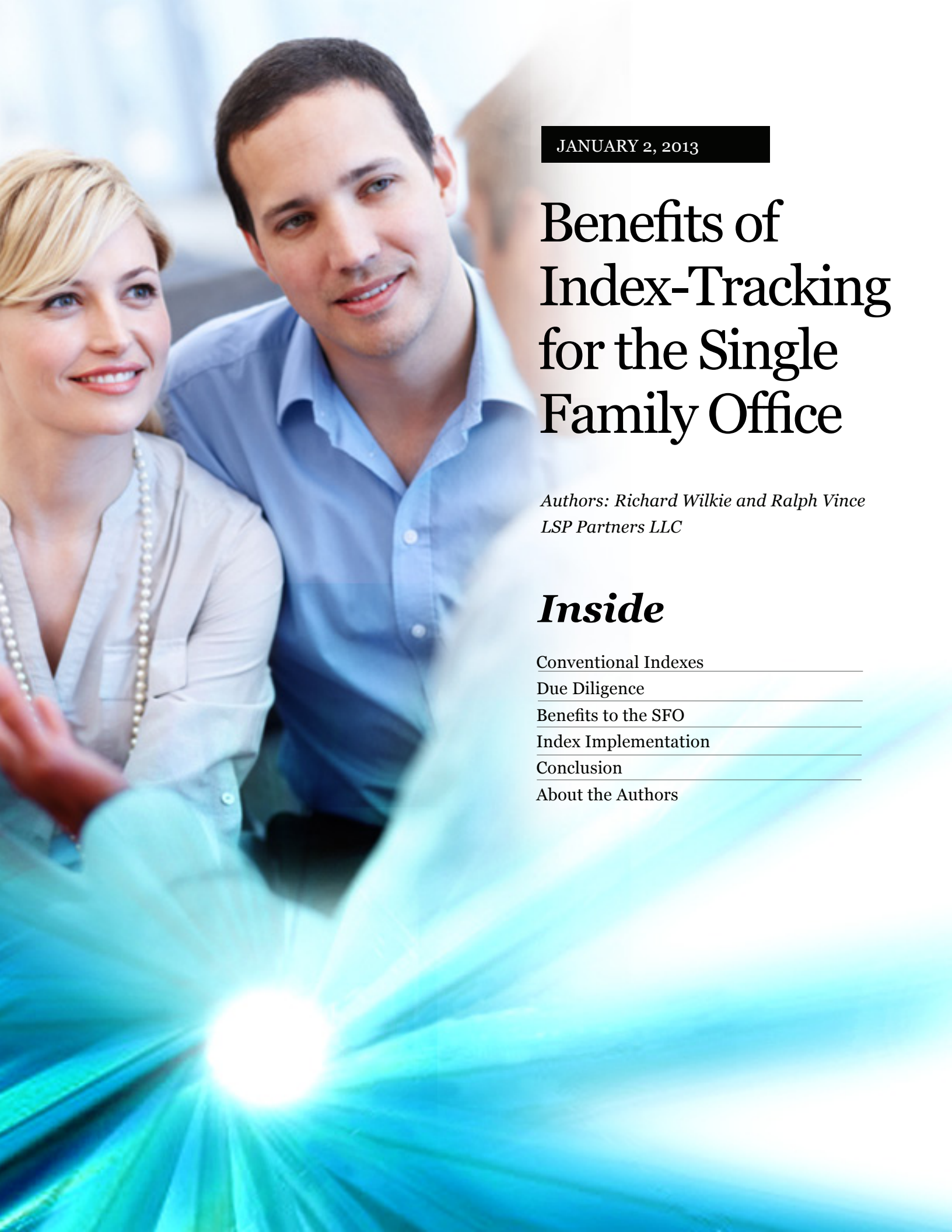

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Benefits of Index-Tracking for the Single Family Office

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Inside

Abstract: Presented is a method Single Family Offices (SFOs) might implement internally resulting in numerous benefits to the SFO. The method involves tracking a published "index," usually comprised of equities. The implementation is performed essentially by clerical staff and thereby achieving professional results internally at minimal cost. Discussed herein is a further description of this process, procedures for implementation and an enumeration of the many benefits of the index-tracking process. Additionally, an index of the Authors' construction (specifically targeted to these ends) is presented.

Through necessary diversification, SFOs end up as a *de facto* index of their invested components, minus the deduction of heavy fees. At the typical fee structure of 2 & 20, a 10% return the first year with a given fund manager will cost the investor upwards of 356 basis points. Thus, a 10% return is reduced to a 6.44% return.

Contrast this with the typical fees on a self-implemented index of roughly one-tenth the fees of this example. If one had been paying 10 basis points per quarter, one would have seen a gain of 316 basis points simply on fees alone. Versus a fund of funds, the gain by indexing is even greater.

Clearly, the easiest gain an investor can make is in the compression of fees. Self-implemented indexing is a mechanism to achieve this. If one can find an index to track that provides hedge fund style returns, the gains in fees accrue to the investor. The exercise then is to find the best performing indexes.

Our experience at the Abu Dhabi Investment Authority, the world's largest Sovereign Wealth Fund (ADIA), was that successful hedge funds and CTAs either quickly accumulated assets and reached capacity limits thus closing to new investors, or failed to achieve critical mass in assets and were forced to close. The window of opportunity for investors to invest with the typical fund was only a handful of years. Indexing was an obvious alternative solution.

With only a handful of portfolio managers outperforming the broad indexes each year, it can only be a matter of time before indexing becomes mainstream (even notable economists like Burton Malkiel have proffered considerable academic justification buttressing the notion of the difficulty of outperforming the indexes longer-term).

The prime concerns for ADIA were: transparency, low fees and performance. What we needed was not just an index, a benchmark index, but a better benchmark index – a benchmark index that could also rival hedge-fund style returns.

This paper will address not only these issues but also the many other benefits of building and implementing an internal indexing operation for the Family Office.

Conventional Indexes

The S&P 500 is perhaps the most widely known and accepted benchmark index for Portfolio Managers. For the family office seeking solely to mirror the returns of the S&P 500 Index the easiest solution is to invest directly in a low cost S&P index fund.

Conventional indexes however, have limitations. As most are either price or capitalization weighted, they tend to unjustly overweight certain stocks. No consideration is given to the sizing of positions. The other obvious limitation is performance - investors will never achieve better returns than the underlying index. While a good selection of both hedge funds and CTAs may readily outperform conventional passive indexes, the problem lies in manager selection and due diligence as we shall see below.

Although these conventional indexes tend to be very widely known, there is no monopoly on creating and publishing better indices which can be either invested in or easily replicated.

One such fund is the PowerShares FTSE RAFI US 1000 Portfolio based on the FTSE RAFI US 1000 Index. Here is an excellent example of an index fund that outperforms conventional benchmark indices. This fund invests at least 90% of its assets in the common stocks that comprise the Index. The index is designed to track the performance of the largest U.S. equities, selected based on four fundamental measures of firm size: book value, cash flow, sales and dividends. The 1000 equities with the highest fundamental strength are weighted by their fundamental scores. This fund is rebalanced quarterly and reconstituted annually with the rebalance in March.

LSP Partners also has a better passive index model with an upward bias that competes not only with conventional indexes but also with hedge funds while maintaining an average cash balance of 50% or greater. While the SFO cannot invest directly in an LSP Index Fund, the weightings can be licensed from LSP Partners thereby providing a method of gaining complete safety of capital and control of costs.

It would not be practical to manage the 1000 issues in the RAFI fund even if they were available, nor would it be practical, given the low fees for index funds, to license the index weightings for the S&P 500 Index or the Russell 2000 Index. The LSP Equal Sector Index (ES50) on the other hand, comprised of only 50 of the most liquid stocks, lends itself well to an internally managed indexing program. Whereas something like the FTSE RAFI US 1000 Index is packaged as an ETF, the LSP ES50 Index is presented in its raw form, implemented directly by the SFO. There is no need for the middleman and the additional fees when one can implement an index directly.

One key difference between conventional indexes and indexes such as the ES50 index from LSP Partners is position sizing (In other words, given a basket of stocks whereby a position must be held in all stocks at all times, how does one alter the relative weightings through time to achieve above average returns? The “selection” part of the exercise has been removed, supplanted with relative-weighting of automatically-selected components and thus a “benchmark,” i.e. something to compare performance to when trading the same components).

The second difference is that conventional indexes are always fully invested, attempting to replicate the actual market whereas the LSP ES50 index maintains a rather large cash position in order to dynamically adjust position size. Again the RAFI 1000 fund is another example of a superior and somewhat passive index that simply rebalances quarterly and maintains a 10% cash reserve. Although the RAFI PRF Index is offered as an ETF, it is a vast improvement upon conventional indexes.

Due Diligence

Initial and on-going due diligence on hedge funds and CTAs can be not only daunting but expensive and time consuming. As we have all witnessed, even top accounting firms have been unable to identify fraudulent activities. Coupled with the fact that the hedge fund industry experiences a high rate of attrition, survivor bias and a litany of funds that close only to open under different names makes for a treacherous terrain.

Indexing, on the other hand, requires but a minimal amount of exploratory due diligence mainly to determine whether the index provider is truly publishing a daily index and not a trading system thinly disguised as a passive index.

Benefits to the SFO

Reduced fees. Rather than a 2 & 20 type fee basis (or even paying for an onboard portfolio manager) one is typically paying considerably less through indexing. Vanguard can create an S&P 500 mirror index for less than 5 basis points. In the case of the LSP Indexes, pricing is on a sliding scale with the high end at 10 basis points per quarter, and reduced as a function of scale. So, rather than say, "2 & 20" one would be at "0.4 and 0."

B. Liquidity. Being self-directed, there is no lockup period. Therefore there are no redemption restrictions. In the case of the LSP Indexes, the indexes are all in highly liquid, blue-chip stocks (specifically, the 5 highest cap stocks of ten different industry segments, to replicate your typical trust fund. Further in the case of LSP, typically the sum of the weightings is in the 40-70% area, and therefore, typically, 30-60% of amount designated to the indexes is in cash-equivalents with immediate liquidity). This is as opposed to conventional indexes which are always fully invested.

C. Custody. When a SFO does self-directed indexing, the funds are custodied at whatever financial institution the SFO desires. There is no potential for a Madoff-type situation.

D. Transparency. The SFO knows at all times what the funds are invested in and what the market values of those funds are.

E. Key-man issues. The SFO is not subject to key-man issues, such as retirement or any other issues which may befall an individual. The indexing rules are not contingent upon any one man, nor subject to change at any person's discretion. Indexes persist and can be utilized by future generations with relative ease.

F. Capacity Constraints. Unlike hedge funds or CTAs, indexes such as the S&P 500 or LSP ES50 have virtually no capacity constraints. One of the problems with attempting to discern good hedge fund managers is they need to be discovered early, before they close to new investment. This type of episode is non-existent in the indexing world.

We witnessed the gamut of good and bad fund managers at the Abu Dhabi Investment Authority. We had the good fortune of interviewing numerous hedge fund managers and CTAs and having them spill the story on precisely what they were doing. We were able to get a very good idea of what various managers were doing, how they were doing it, what worked and what didn't. Over the years it became readily apparent that building an internal index operation would not only save vast amounts in fees but also in manpower. Indexing directly solves the 3 big problems – *transparency, low fees and performance*.

We began working with the idea of indexing back then (today, ADIA, the world's largest sovereign wealth fund, is nearly 100% indexed). In 2010 we entered into an agreement with Dow Jones Indexes to provide the LSP Equal Sector 50 Index. This index was actually designed by Dow Jones Indexes so as to be a "torture test" of the algorithm underlying the index. By being in the top 5 capitalized companies in their 10 various industry sectors, the index has thus had positions in such issues as GM, AIG, Enron, WorldCom, and Lehman -- virtually any disaster that occurred during the past decade. Despite having lost either entirely or nearly entirely on all these components, the performance still exceeds that of the other large benchmarks. Any trust fund would be quite satisfied with such performance.

Most indexes suffer survivorship bias (e.g. the Dow Jones Industrials didn't have to trade Woolworth, or Johns Manville, or International Harvester all the way down, they were able to swap out to another security). In the real world this cannot be done. The LSP ES50 does NOT have the survivorship fallacy/luxury. It is a real index for real tracking, and as you can see from the website, it outperforms all other benchmark equity indexes.

Though the index was constructed and due diligence performed on the underlying algorithm as well as on us personally by Dow Jones Indexes, 2012 saw S&P Indexes and Dow Jones Indexes merge. This afforded us the opportunity to break from them and obtain full intellectual property rights -- in a world of fee compression we have obtained a clear advantage by virtue of this break.

Index Implementation

As mentioned above, the easiest solution may be to simply invest directly in a low cost S&P index fund, as opposed to trying to replicate the actual S&P 500 Index. However, a SFO wishing to manage all aspects of an internal indexing operation may be more inclined to license the actual index weightings. The benefit here would be to achieve superior performance. Essentially, the SFO would “subscribe” to the LSP ES50 index. An index is merely a list of components (in this case, various equities, but the idea is extensible to anything) and their respective weightings. Typically, this is done as an end-of-day download by clerical staff at the SFO. Thus, each day the SFO obtains a list of components and weightings (the weightings will typically fluctuate as the value of the various components in the index changes daily). An index comprised of 50 issues is infinitely more practical and less prone to errors for a SFO than the 2000 stocks in the Russell 2000 Index or even the 500 in the S&P Index.

The implementation is very straightforward, typically performed within a simple spreadsheet. Suppose, for the sake of simplicity, a particular equity received a weighting of .0067 yesterday. The weighting today may change to .00663 due merely to mark-to-market price changes in the components within the index. The spreadsheet may consist of a row with each component followed by its weighting, and the third column simply the total value of the account tracking the index coming into that day, multiplied by the weighting of the components, and that value divided by the closing price of that component thus resulting in the number of shares that should be carried in that component. (Thus, this third column will not necessarily change as the weighting changes. In the LSP Indexes implementation, we also put in another column, labeled either true or false, for each weighting, to designate if an actual change in position size has occurred. This is done for the sake of convenience and simplicity in implementation. When such an occurrence happens on a given row, the user is thus notified to amend their number of shares for that component).

Of note -- the sum of the weightings, if fully invested, should equal 1.0. Anything less than 1.0 would have the difference comprised of cash-equivalents (this is the case with LSP Indexes).

Conclusion

There are 3 options available for the SFO wishing to add an internal indexing strategy:

- Invest directly in a low cost conventional index fund.
- Invest directly in a superior index fund such as the RAFI 1000.
- License the daily index weightings and replicate a superior index internally.

Given the benefits mentioned above, it becomes readily apparent that an internally managed indexing program can not only be cost effective for the SFO, but it's also an investment that can survive multiple generations. By utilizing an index with risk metrics that meet family office objectives, an indexing strategy can be easily implemented while providing ample liquidity as well as providing a solution for the three big issues - *transparency, low fees and performance*. The easiest and immediate performance gain a SFO can make is by way of fee compression. To learn more, see: http://lspindexes.com

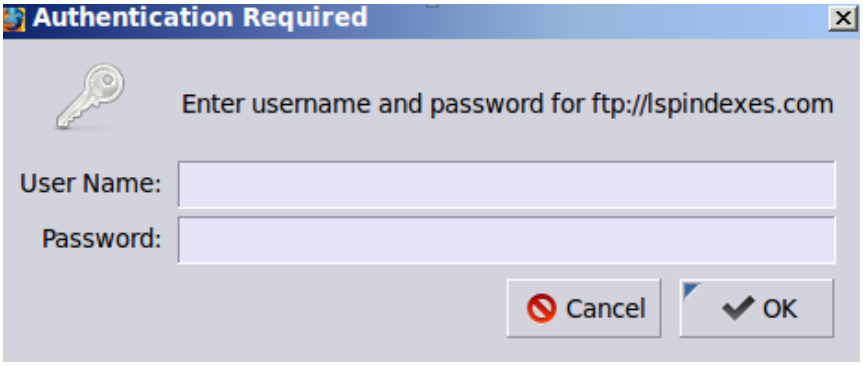
Appendix

Spreadsheet Example

We will demonstrate the ease of tracking an index for the SFO. An end of day download is performed by clerical staff at the SFO through a simple ftp connection.

Let's assume a typical end-of-day index download. In this case, the download is for the LSP ES50 Index as of the close of November 7, 2012. Clerical staff merely points their browser to: ftp://lspindexes.com/es50basic

And obtain a sign-on dialog:



Upon entering their username and password, the daily index file is downloaded and can be loaded into a simple spreadsheet like Excel.

The example below shows this. Columns A through D are all obtained from importing the downloaded file into the spreadsheet. Column E is where the work occurs to translate the file into the SFO's stock positions so as to be tracking the index.

Thus, cell E1 would contain the daily, mark-to-market total equity in the account allocated to tracking the index. Every row on column E corresponding to a position would thus have the formula:

=E1*C6/B6

beginning on row 6 and for each row that had a position. Literally, this means "Today's total equity times the weighting divided by the stock price for each component."

Appendix

The following day, staff need only make certain the number of shares comport to that shown in Column E for each component (rounding or flooring to the integer number of shares). The process is simple and straightforward. In this example, as one can see with the LSP downloads, Column D alerts the clerical staff to when a position has been adjusted through the weighting algorithm. (In this case, only the row for DUK is designated as true, and hence staff must be certain to bring the position for DUK to 272 shares the following day. All other positions remain unchanged. Positions changes tend to occur rarely. Typically there is about one position change roughly every week or two).

A	B	C	D	E
LSPES50_2012-11-06 Daily Order Report as of 20121107				5000000
Index Value =	18380.41			
Issue	Last	Weight	Traded	
AAPL	558.0019	0.0100183098	false	89.7694951134
ABT	64.53	0.0035810194	false	277.4693485323
AIG	32	0.0095405931	false	1490.7176764286
BA	70.11	0.0108328604	false	772.5617155214
BMY	32.62	0.0063889766	false	979.3035830553
BRK-B	85.5554	0.0061907591	false	361.7982681843
C	36.05	0.0107480744	false	1490.7176764286
CMCSA	36.58	0.0056520615	false	772.5617155214
COP	56.77	0.0058374818	false	514.134381104
CSCO	17.21	0.011544863	false	3354.1147719643
CTL	37.92	0.0058591081	false	772.5617155214
CVX	107.51	0.0058491627	false	272.0287730709
D	49.88	0.0034736116	false	348.1968295308
DD	43.83	0.0106830269	false	1218.6889033577
DIS	50.08	0.0062939188	false	628.3864657938
DOW	30.29	0.0110742261	false	1828.0333550365
DUK	62.94	0.0034242982	true	272.0287730709
EXC	31.43	0.0030437517	false	484.2112160662
FCX	39.29	0.0112865391	false	1436.3119218144
FTR	4.491	0.0095144533	false	10592.8004233812
GE	21.13	0.0065411876	false	1547.8437187735
GOOG	667.12	0.0105255984	false	78.8883441906
HD	61.99	0.0063742381	false	514.134381104
IBM	191.35	0.0060381139	false	157.7766883811
JNJ	70.34	0.0034442107	false	244.8258957638
JPM	40.48	0.0101748337	false	1256.7729315876
KO	36.72	0.0035560472	false	484.2112160662
MCD	86.86	0.0036860334	false	212.1824429953
MMM	89.38	0.006418878	false	359.0779804536
MO	31.4	0.0033141809	false	527.7358197576
MRK	44.46	0.0056601788	false	636.5473289859
MSFT	29.08	0.0061544442	false	1058.1919272458
NEE	68.05	0.0033320804	false	244.8258957638
NEM	48.74	0.0095462513	false	979.3035830553
OXY	77.4536	0.0107455	false	693.6733713308
PEP	68.99	0.0033781077	false	244.8258957638
PFE	24.17	0.0034058166	false	704.5545222537
PG	68.06	0.0033325701	false	244.8258957638
PM	86.36	0.0062019949	false	359.0779804536
PX	109.08	0.0063500003	false	291.0707871859
S	5.62	0.0107719368	false	9583.5736752882
SLB	70.13	0.0108359506	false	772.5617155214
SO	42.8	0.0030969932	false	361.7982681843
T	33.6382	0.0032575987	false	484.2112160662
UPS	73.0046	0.0060372429	false	413.4837350678
UTX	77.68	0.011157271	false	718.1559609072
VZ	43.2198	0.00324494	false	375.3997068379
WFC	32.91	0.0115128725	false	1749.145010846
WMT	73.11	0.0034207401	false	233.944744841
XOM	88.18	0.0058049743	false	329.1548154158
LSP Cash Component	1	0.6618421181		3309210.59040004

Authors

LSP Partners, LLC *was founded by Richard Wilkie and Ralph Vince who were co-workers at the Abu Dhabi Investment Authority, the world's largest sovereign wealth fund. In this capacity, they had access to the universe of hedge fund and investment programs. In 2010, Dow Jones Indexes entered into a Joint Marketing Agreement with LSP Partners to license their proprietary LSP Indexes. In 2012 Standard and Poors and Dow Jones Indexes merged. The merger afforded LSP Partners the opportunity to branch off on their own and provide the LSP Indexes on a competitive basis around the world. http://lspindexes.com*

Ralph Vince *is a computer programmer and trading systems expert who has been programming trading systems for fund managers, sovereign wealth funds and staking systems for "professional gamblers," since the early 1980s. He has served on the Board of Directors of the Market Technician's Association of New York and has written numerous books and professional papers on money management for trading and introduced new statistical techniques that are in widespread use throughout the industry today. He is a recognized authority on position sizing in trading*

Richard Wilkie *began his career as a commodity broker in Canada in the early 1980s. He accepted the position of Marketing Manager at the Toronto Stock Exchange in 1985 and later joined Heinold Asset Management as Portfolio Manager in Chicago in 1987. He then transferred to Abu Dhabi to work as Senior Investment Manager with the Abu Dhabi Investment Authority in the Alternative Investments Department reviewing trading strategies until 2001. He has worked as an independent financial consultant and private investor since 2001.*

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