An analysis of the relative performance of Japanese and foreign money management

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Abstract: Foreign investment management firms have recently started to play a major role in the investment trust business in Japan. In terms of assets under management, their size and market share have almost doubled in the past two years. In part, the relative success of foreign managed firms in attracting market share may be attributed to the fact that Japanese investment trusts have underperformed benchmarks in quite a dramatic fashion over the past two decades. This is at best indirect evidence that Japanese funds underperform their foreign counterparts. In a recent paper (Brown, Goetzmann, Hiraki, Otsuki and Shiraishi 2001) we show that the underperformance can be attributed almost entirely to the unique tax environment of Japanese investment trusts. In this paper we examine the relative performance issue directly by looking at week by week returns for the period January 23, 1998 through to January 14, 2000. Contrary to popular perception, Japanese managers actually outperformed their foreign counterparts over this period of time. Perhaps this indicates that Japanese managers are more skillful. However, the evidence suggests that they happened to be in the right place at the right time. We attribute the superior performance to the asset allocation decision, rather than to any superior skill in selecting securities.

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I. Introduction

The investment trust business in Japan has grown very substantially over the last few years. In the period from January 1998 to January 2000 alone assets of open-type equity funds grew by 61 per cent. As indicated in Figure 1, a large part of that increase can be attributed to the increase in assets under management by foreign owned investment trusts. Foreign investment management firms have recently started to play a major role in the investment trust business in Japan. Over the period from 1998 to 2000 their

market share almost doubled[1], with over 71 per cent of this growth coming from net inflow of funds, particularly in 1998 (Figure 2). Much of this increase in market share can no doubt be traced to aggressive marketing by foreign owned firms and the purchase by foreigners of traditional Japanese asset managers[2]. However, at least part of this increase can be attributed to the fact that Japanese investment trusts have underperformed benchmarks in quite a dramatic fashion over the past two decades[3].

The purpose of this paper is to examine the conduct and performance of Japanese funds relative to their foreign counterparts. The fact that Japanese investment trusts have underperformed benchmarks does not show that Japanese funds underperform their foreign counterparts. In a recent paper (Brown, Goetzmann, Hiraki, Otsuki and Shiraishi 2001) (BGHOS) we show that the reported underperformance can be attributed almost entirely to the unique tax environment of Japanese investment trusts. Foreign investment trusts have taken a significant market share of the Japanese investment trust industry in the last three years. For this reason, it is possible to

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[1]From January 23, 1998 to January 14, 2000 the number of foreign managed trusts grew from 184 to 364. The market share of foreign managed funds also increased from 10.5% of assets under management in 1998 to 17.8% in 2000.

[2]Merrill's investment trust business grew from ¥1.31Billion to ¥4.40Billion in assets under management from 1998 to 2000 with the acquisition of Yamaichi's franchise.

[3]This underperformance was documented in Cai, Chan and Yamada (1997). These authors were careful in the way they explained their findings. However journalists were quick to attribute this poor relative performance to mismanagement by Japanese investment trust managers with articles such as "Japanese investment trusts: Punting in the dark" (*Economist* January 22, 1994).

analyze their relative performance in the same investment environment by analyzing week by week returns for the period January 23, 1998 through to January 14, 2000. Contrary to popular perception, Japanese managers actually outperformed their foreign counterparts over this period of time. Perhaps this indicates that Japanese managers are more skillful. However, the evidence suggests that there are significant differences in the behavior of Japanese managers. Foreign investment trusts are a little more adventurous in their asset allocation decisions. The evidence suggests that Japanese managers happened to be in the right place at the right time.

The paper is organized as follows. Section II describes the data and methodology used in our analysis. Section III reports the results. The conclusion discusses the implications of our findings and directions for future research.

II Data and Methodology

II.1 Data

The data used in our study derives from a database of daily fund valuations provided by QUICK Corporation for 2234 open-type funds from January 23, 1998 through January 14, 2000. Total fund values are given as well as net asset value per share (NAV). From this data are constructed 103 weekly holding period rates of return. Returns are computed using NAV computed at the end of each week as well as dividends paid during that week, per unit of investment trust contract. QUICK Corp. also provided the

thirty-one narrowly classified Investment Trust Association (ITA) categories. As in BGHOS (2001) we use this data to construct 9 broader classifications using the Monthly Report for January 2000 issued by Kinyu Data Systems (KDS), which is basically the same as the one used by the ITA. For the purpose of benchmark comparison we use a money market rate based on the end of week percentage return quoted for 3 month Japanese CD's, a Japanese domestic fixed income return given as the percentage weekly change in the Nikko Research Center Domestic Bond Index, a Japanese domestic equity return given as the percentage weekly change in the value-weighted Equity Index of all firms listed on the both 1st and 2nd section of Tokyo, Osaka and Nagoya and finally a foreign equity return given as the percentage change in the end of week MSCI World Equity Index excluding Japan converted into Japanese yen.

II.2 Methodology

Following BGHOS (2001) two distinct methods of analysis were used to study the performance attributes of investment trusts currently operating in Japan. In the first place we use a returns-based classification algorithm developed in Brown and Goetzmann (1997) [BG] to group the Japanese funds in our sample into a few parsimonious categories. This procedure is referred to as "Generalized Style Classification" (GSC). The objective of this procedure is to use past returns to determine a natural grouping of funds that has some predictive power in explaining the future cross-sectional dispersion in fund returns. If there are K such styles the *ex post* total return in period *t* for any fund *j* can be represented as:

$$R_{jt} = \mu_{Jt} + \varepsilon_{jt}$$

where μ_{Jt} is the expected return for style J conditional upon the factor realization I_t[4]. If the idiosyncratic return component ε_{jt} has zero mean *ex ante* and is uncorrelated across securities, the classification into styles will suffice to explain the cross-sectional dispersion of fund returns to the extent that μ_{Jt} differs across styles. The algorithm used in BG assigns funds to styles in such a way as to maximize the explanatory power of this equation, allowing for time-varying and fund-specific residual return variance. As explained in BGHOS (2001) this procedure accounts for tax dilution effects to the extent that the tax dilution effect is common across funds in a particular style and hence impounded in μ_{Jt}. Note that this approach also justifies the common procedure of forming style benchmarks for performance evaluation by value-weighting returns within each style category[5].

Once funds are allocated to styles, it is possible to determine the source of returns by examining the relationship between style benchmark returns $\hat{\mu}_{Jt}$ and proxies for factor

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[4]Observe that $R_{jt} = \mu_{Jt} + \varepsilon_j$ is equivalent to $R_{jt} = \alpha_{Jt} + \beta_{Jt}I_t + \varepsilon$ where $\mu_{Jt} = \alpha_{Jt} + \beta_{Jt}$ allowing for time varying expected return and beta that are conditional on multivariate factor realizations I_t.

[5]To see this, note that the style benchmark $\hat{\mu}_{Jt}$ given as the value-weighted average return within each style category, $\hat{\mu}_{Jt} = \sum_{j \in J} w_{jt} R_{jt}$, is an unbiased estimator of the true expected return conditional on the factor realizations as of date t: $E(\hat{\mu}_{Jt} - \mu_{Jt}) = E(\sum_{j \in J} w_{jt} \varepsilon_{jt}) = 0$.

realizations I_t. This regression corresponds to a procedure developed in Sharpe (1992), and recently applied to mutual funds (Brown and Goetzmann, 1997) and hedge funds (Fung and Hsieh, 1997). In this method, passive indices are used in a multi-factor linear model as benchmarks. The model constrains weights on these passive indices to be positive and sum to one, while also allowing an unconstrained intercept.

$$R_{Jt} = a_{Jt} + \sum_{k=1}^{K} b_{Jk} I_{kt} + \varepsilon_{Jt}$$

$$s.t.$$

$$\sum_{k=1}^{K} b_{Jk} = 1$$

$$b_{Jk} \geq 0 \ \forall \ k$$

We can then infer time-varying expected return and sensitivity of the benchmark to factors using $\hat{\alpha}_{Jt} = \sum_{j \in J} w_{jt} \hat{a}_j$ and $\hat{\beta}_{Jt} = \sum_{j \in J} w_{jt} \hat{b}_j$.

Although we do not replicate the "conditional" performance measurement procedures (c.f. Ferson and Schadt, 1996), we do allow for time-varying exposure to factors both by allowing the value weights w_{jt} to change and by estimating the model using only 12 weeks of data. However, since implied sensitivity is assumed constant over three months, this technology may not credit managers with timing skill. For this reason, the use of style benchmarks is preferable to this regression based approach to performance measurement.

III. Results

Contrary to popular perception, Japanese funds actually outperformed their foreign competition over the period from 1998 through to the end of 1999. The relative performance of Japanese and foreign funds is presented in Figure 3, with the Japanese firms earning an annualized total return of 10.79 percent over the period, as opposed to 3.64 percent for foreign firms over the same period[6].

To examine in some greater depth the differences between Japanese and foreign owned funds, we examined the time-varying sensitivity of Japanese funds and foreign funds to four asset classes found to be useful benchmarks of Japanese fund investment performance in BGHOS (2001). To do this we regressed fund returns on these four asset class returns constraining the sum to equal one, allowing for a constant term. Japanese and foreign implied asset weights were obtained as a weighted average of individual fund coefficients, where the weights were based on the asset value of each fund. These weights were computed on the basis of a rolling six week interval of the data, and the results plotted as Figures 4 and 5. Inspection of these Figures reveals that there are distinct differences between Japanese and foreign funds. The Japanese implied asset allocation is reasonably stable over the entire time period. A little more than 60 percent of Japanese funds are invested in Japanese domestic equity, with the remaining shares

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[6]Most of the positive return can be attributed to the second half of 1999. In that period the change in tax treatment of investment fund income that occurred in March 31, 2000 was widely anticipated. Measuring returns from one year prior to the change in tax treatment to the end of our data on January 14, 2000 the annualized return reported by Japanese firms was 29.07% as opposed to 9.32% for foreign firms.

equally divided between foreign equity, domestic bond and money market asset classes. On the other hand, there is considerable time variation in the foreign-owned sector asset allocations. Foreign-owned funds were invested about equally in fixed income and equity securities, with about a 10 per cent allocation to Japanese equities in 1998. However, as illustrated in Figure 5, both fixed income and foreign equity shares diminished throughout 1999, while Japanese equity increased to about 40 percent of the total by year end.

The fact that Japanese aggregate asset allocations appeared to remain relatively constant throughout the two year period does not necessarily imply consistency in style of management. The broad aggregate asset class allocation may easily obscure changes in allocation within each asset class. Furthermore, to the extent that BGHOS (2001) identified at least one style of Japanese management to be related to the specific details of the investment trust tax procedures, we would expect changes in style to occur in anticipation of the tax law changes that were scheduled to come into effect on March 31, 2000. We examined the asset management style using style benchmarks derived by the GSC procedure described in the previous Section, and by traditional style benchmarks. We find that the asset management styles of Japanese-owned funds were distinctly different from the styles of foreign-owned funds, and that these styles changed over the period of study.

We applied the Brown and Goetzmann algorithm to weekly return data for 2216 funds

with at least 6 weeks of data for the period January 23, 1998 through January 14, 2000, and were able to extract at most eight distinct management styles from this data. The time varying sensitivity of the style benchmark returns to broad asset classes is illustrated in Figure 6. As illustrated, these styles are quite distinct both in terms of asset allocation and the way in which average allocations change through time. In addition funds tend to group together that have a common fund management ownership and stated fund objective.

An analysis of this data suggests the following style identifications:

GSC1   Domestic Equity

GSC2   Balance/International Limited Funds

            ---   characterized by North-American (78) funds and Daiwa-managed
                    (96 out of 97) Limited funds

GSC3   International

GSC4   Focused Equity Limited Funds

            ---   Dominated by equity funds managed by non-Big Three firms. All
                    28 Limited funds are foreign-owned

GSC5   Balanced Cash/Currency

GSC6   C.B. Funds

            ---   Most C.B. funds are included in this category; including many
                    Cash and (Non-equity) Derivative funds

GSC7   Index (Nikkei 225)

GSC8   Pure Cash

        ---   More cash oriented than GSC6

In Figure 7 we illustrate the sensitivity of Japanese and foreign owned firms to these style benchmarks. The fund returns are regressed on the eight style benchmarks with coefficients constrained to be positive and add to one, allowing for a constant term (alpha), using twelve weeks of data. Not only are the allocations more detailed than in Figures 4 and 5, these style benchmarks account for any non-stationarity caused by market timing, and as explained in BGHOS (2001) account for tax-dilution effects. We now see a clear picture emerging. The high returns of the Japanese managed funds may be attributed to the fact that many index-type funds (GSC 7) were changing style to active equity management (GSC 1). What is not clear in this Figure is that both of the Limited fund-involved styles (GSC2 and GSC4) are less significant closer to the end of the sample period. We believe that this is a response to widely anticipated changes in the tax law that came into effect on March 31, 2000. To the extent that this change was widely anticipated, it would have reduced the importance of the tax-based Limited fund investment style described by BGHOS (2001). However, there may be other explanations for this change in investment style, including a growing importance of performance competition among managers and expected large inflows of funds from post office savings and from other sources.

On the other hand, as illustrated in Figure 8, the relatively poor performance of the

foreign owned funds is partly to be explained by the fact that many of these funds were switching from a broadly based International style (GSC3) in which they may have had a comparative advantage into the same narrowly focussed domestic Japanese equity style (GSC1) at the same time that Japanese managers were concentrating on this style. It would be interesting to speculate whether this change was made in anticipation of the new laws relating to income realized on investment fund transactions.

A similar picture emerges when we do the analysis again using the more traditional style benchmarks (Figures 9 and 10). Index funds are moving into general equity in the case of Japanese funds, and in the case of foreign-owned funds, international and balanced funds are giving way also to domestic equity funds.

In Table 1 we report performance measures for Japanese and foreign investment funds given the two style benchmarks we have used. As noted before, these style benchmarks account for any residual tax dilution effect, and also allow for the possibility that managers adopt dynamic trading strategies that cause expected return and factor exposures to vary through the estimation period. The estimation procedure also allows for the possibility of style shift within each non-overlapping 12 week estimation period. The results show that the high returns for Japanese investment trusts were associated with significant positive performance in excess of style benchmarks over the 1998-99 period, and that consistent with the performance numbers reported in Figure 3, the abnormal positive performance was concentrated in the last half of 1999, perhaps in

anticipation of the tax law changes of 2000. However, we cannot conclude from this evidence that the Japanese managers were relatively more skillful than their foreign counterparts. Foreign managers also experienced positive performance over the same period (of a similar order of magnitude although not statistically significant). Since the evidence shows clearly that both Japanese and foreign managers changed style significantly over the latter half of 1999 and are becoming more similar, the positive performance of both Japanese and foreigners alike is probably more to be attributed to their being in the right place at the right time than to any particular or special skill acquired in the last half of 1999.

IV. Conclusion

Japanese investment trusts have underperformed benchmarks in quite a dramatic fashion over the past two decades. This widely publicised fact has shaken public confidence in the industry, the third largest investment trust business in the world outside of the United States and France. It has also opened the door to foreign competition, and foreign-owned funds increased in size over 70 per cent from new investments in 1998 alone. The perception is obviously that foreign owned funds are more successful than their home-grown competition. If true, this result would be most interesting indeed. In the past, foreign-owned funds specialized in international investments for which they had some comparative advantage. But recently they have been investing more heavily in the Japanese domestic equity market, and are employing large numbers of Japanese managers to construct and monitor these portfolios.

The fact that Japanese investment trusts underperform benchmarks is at best indirect evidence that Japanese funds also underperform their foreign counterparts. In a recent paper BGHOS (2001) show that the underperformance can be attributed almost entirely to the unique tax environment of Japanese investment trusts. In this paper we examine the relative performance issue directly by looking at week by week returns for the period January 23, 1998 through to January 14, 2000. Contrary to popular perception, Japanese managers actually outperformed their foreign counterparts over this period of time. Perhaps this indicates that Japanese managers are more skillful. However, the evidence suggests that they happened to be in the right place at the right time. We attribute the superior performance to the asset allocation decision, rather than to any superior skill in selecting securities.

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Table 1:

Performance measures for Japanese and foreign owned funds estimated on the basis
of eight non-overlapping 12 week periods 1998-99

12 weeks ending	Eight GSC Style Benchmarks			Nine traditional style benchmarks		
	Japanese funds	Foreign funds	*Difference*	Japanese funds	Foreign funds	*Difference*
05-Jun-98	-0.0328%	0.0013%	*-0.0341%*	-0.0184%	0.1687%	*-0.1871%*
28-Aug-98	-0.0388%	-0.1202%	*0.0814%*	-0.0262%	-0.0594%	*0.0333%*
20-Nov-98	0.0707%	0.0902%	*-0.0195%*	0.0388%	-0.1413%	*0.1801%*
12-Feb-99	0.0054%	-0.0007%	*0.0060%*	0.0331%	0.0319%	*0.0011%*
07-May-99	0.1584%	0.0727%	*0.0857%*	0.1786%	-0.0195%	*0.1981%*
30-Jul-99	0.0834%	0.0919%	*-0.0085%*	0.0511%	0.0140%	*0.0372%*
22-Oct-99	0.0773%	0.1196%	*-0.0423%*	0.0611%	0.0357%	*0.0254%*
14-Jan-00	0.0814%	0.1699%	*-0.0885%*	0.1817%	0.2008%	*-0.0191%*
Average	**0.0506%**	**0.0531%**	***-0.0025%***	**0.0625%**	**0.0289%**	***0.0336%***
t-value	(2.13)	(1.66)	*(-0.12)*	(2.24)	(0.73)	*(0.79)*

Numbers in this table give the weighted average of alpha measures for all funds in
each ownership category, where the weights are proportional to the total assets under
management in each fund. The individual fund alphas are estimated from the

regression equation $R_{jt} = \alpha_j + \sum_{J} \beta_{Jj} \hat{\rho}_{Jt} + \varepsilon_{jt}$ where the coefficients β_{Jj} are constrained to

be positive and to sum to one, and the factors $\hat{\rho}_{Jt}$ are the style benchmarks given in
the first panel by the 8 GSC style benchmarks and in the second panel by the 9
traditional style categories. Note that if the fund's style is constant over the 12 week
estimation period ending in the last date given left hand column, the factor loadings
β_{Jj} are equal to one where fund *j* belongs to style J and are zero otherwise. This
constrained regression therefore allows for the possibility of style shift over the
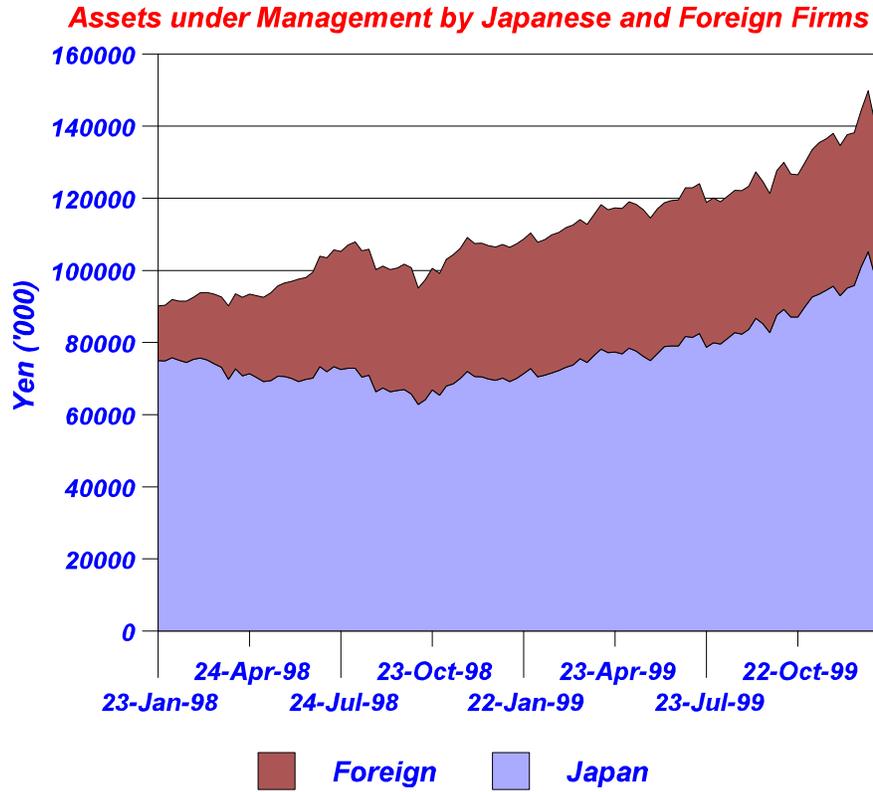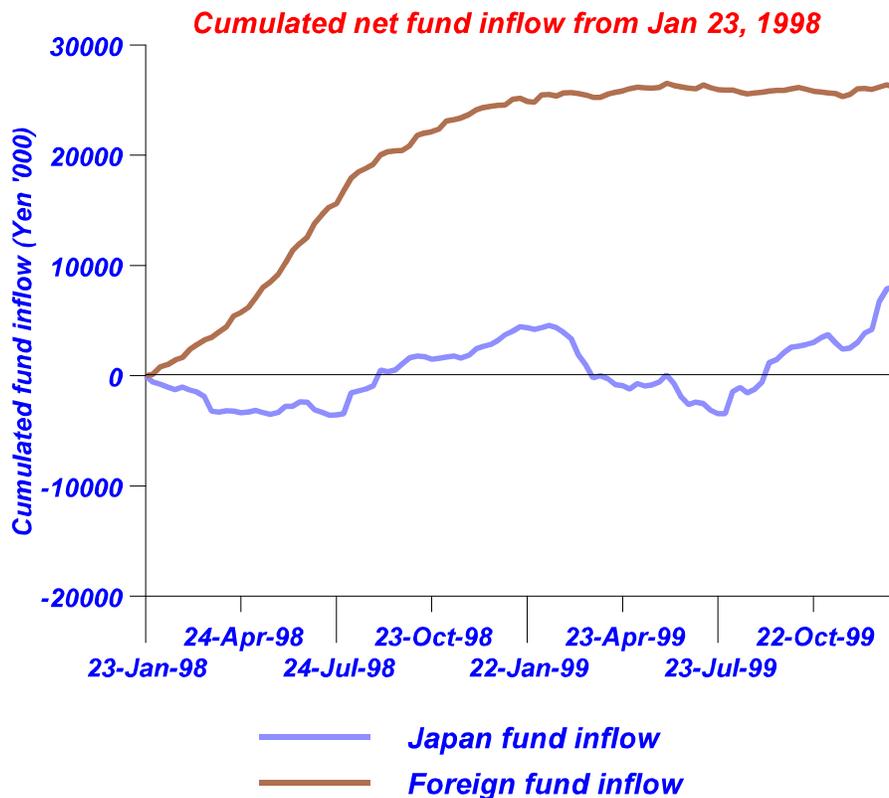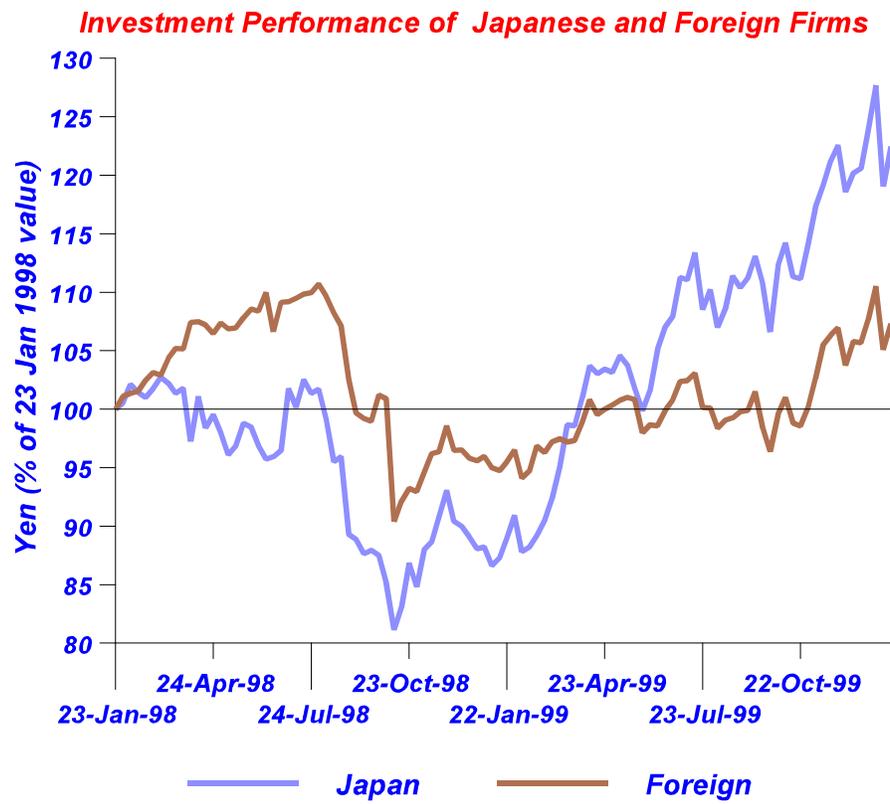estimation period.

Figure 1

Assets under Management by Japanese and Foreign Firms

Legend: Foreign, Japan

Figure 2

Cumulated net fund inflow from Jan 23, 1998

Legend: Japan fund inflow, Foreign fund inflow

Figure 3

Investment Performance of Japanese and Foreign Firms

Japan   Foreign

Figure 4: Implied asset allocation by Japanese funds

Japanese Funds

Japan Debt
Foreign Equity
Money Market
Japan Equity
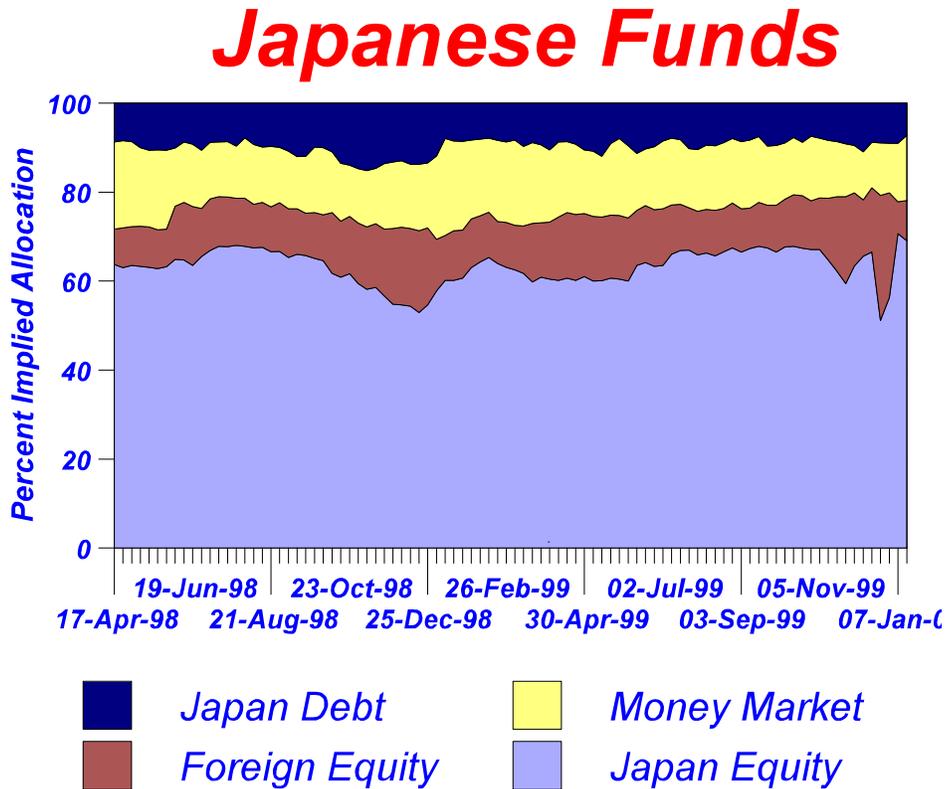
Figure 5: Implied asset allocation by foreign funds

Foreign Funds

Japan Debt
Foreign Equity
Money Market
Japan Equity
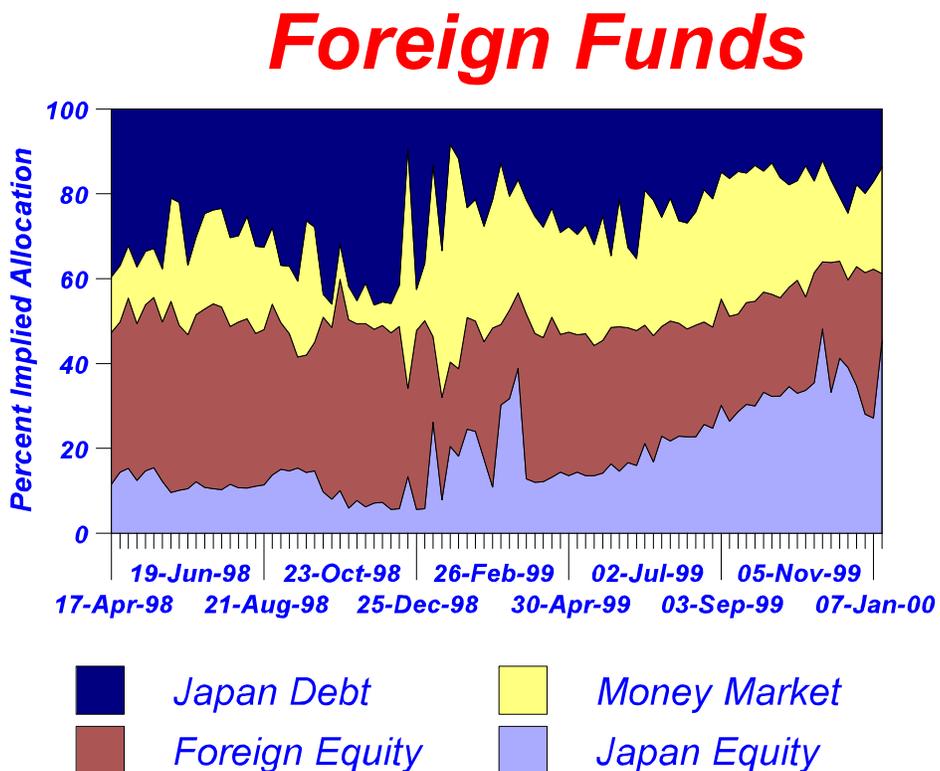
Figure 6: Implied asset allocation within each style
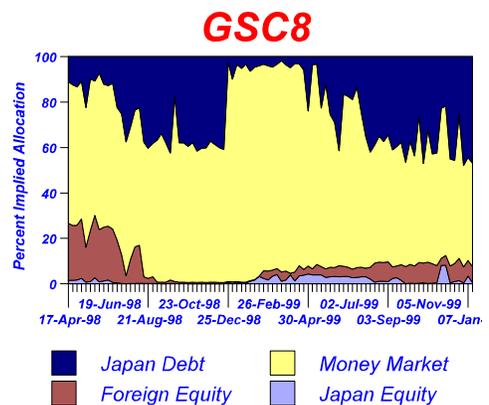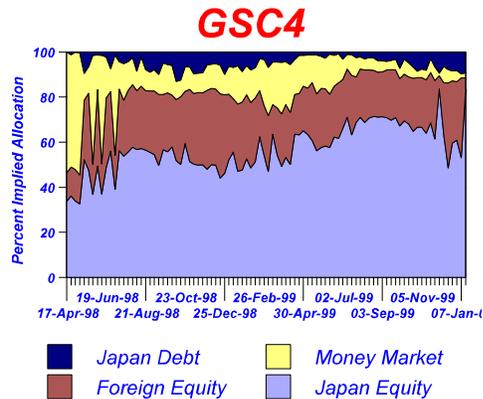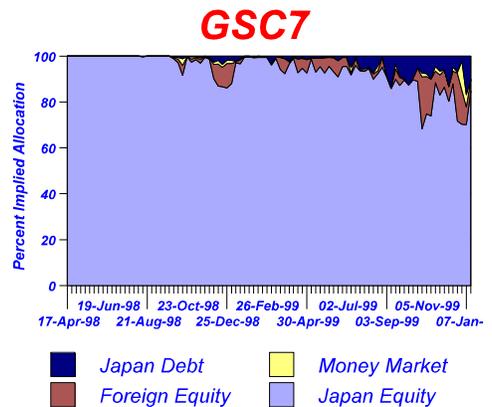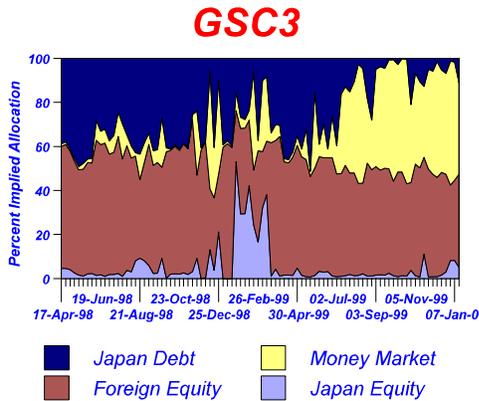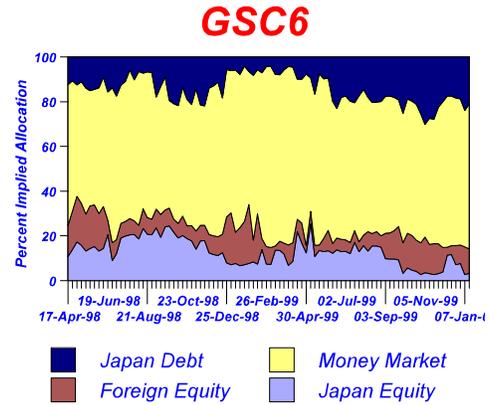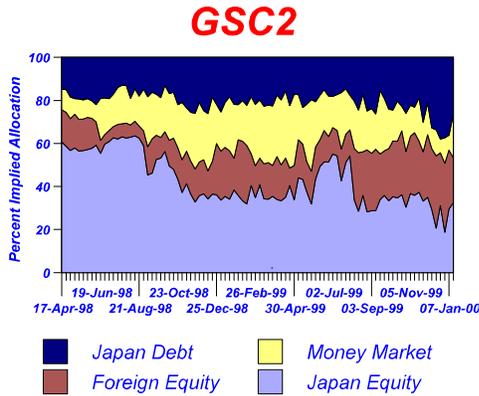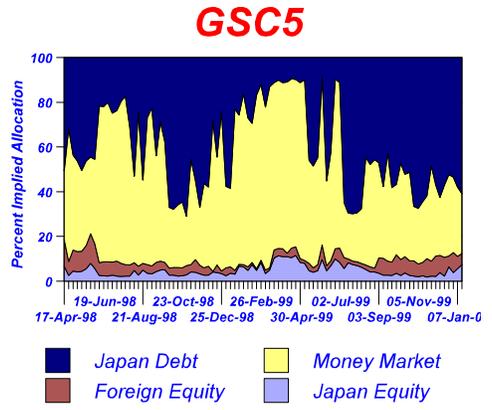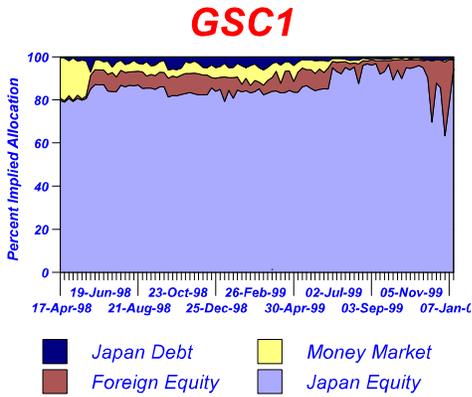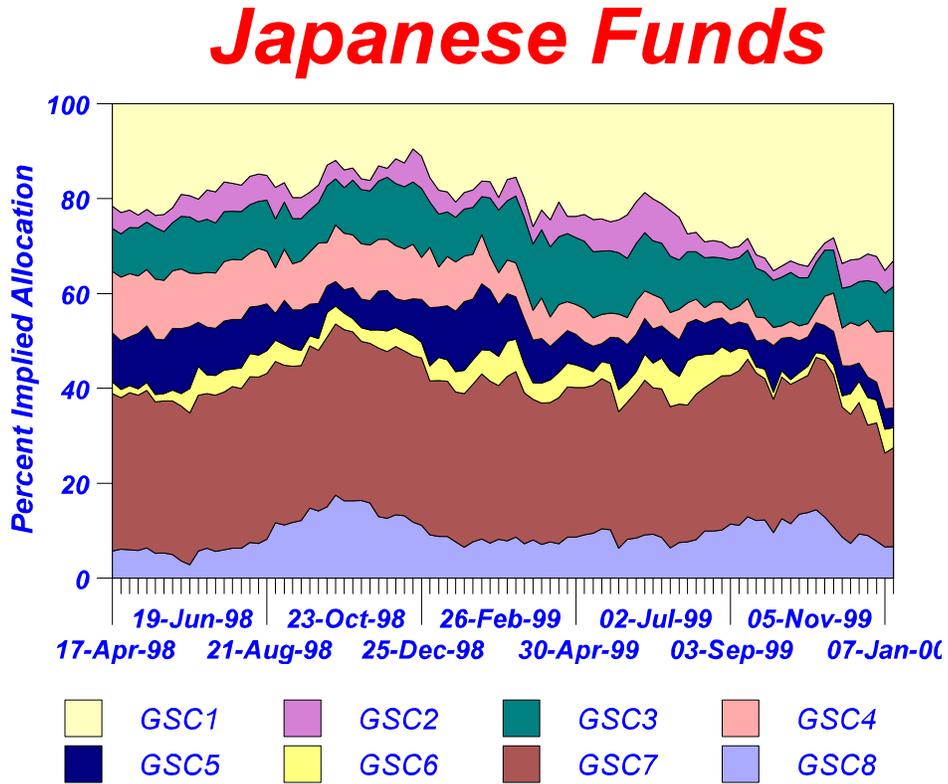
Figure 7: Breakdown of Japanese funds by GSC style benchmarks

Japanese Funds

Figure 8: Breakdown of Foreign funds by GSC style benchmarks
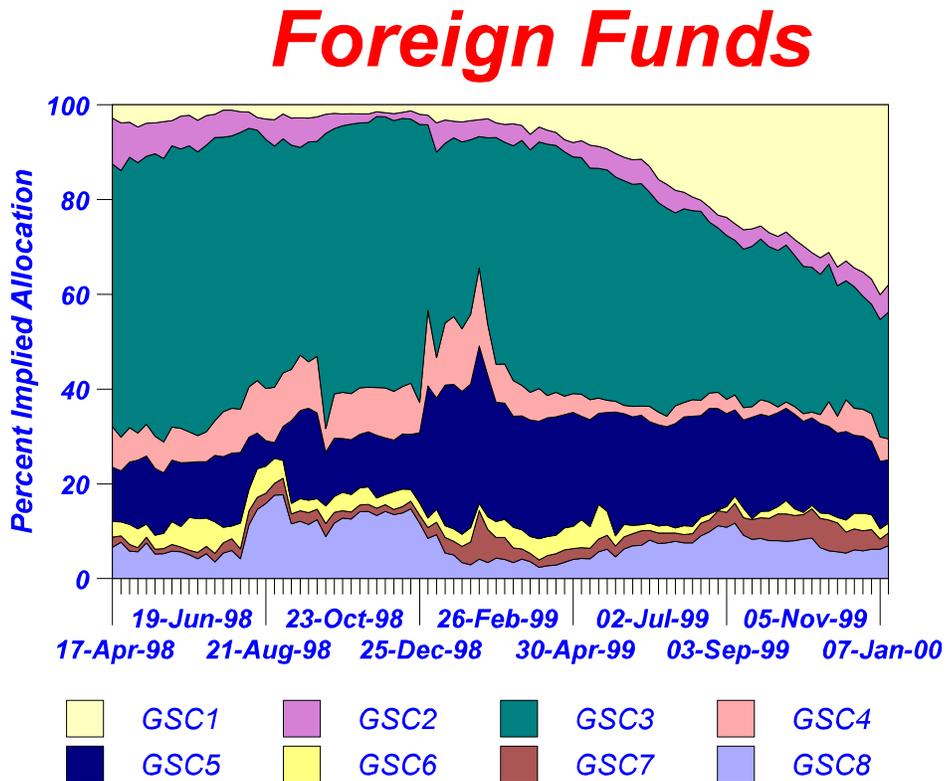
Foreign Funds

Figure 9: Breakdown of Japanese funds by traditional style benchmarks
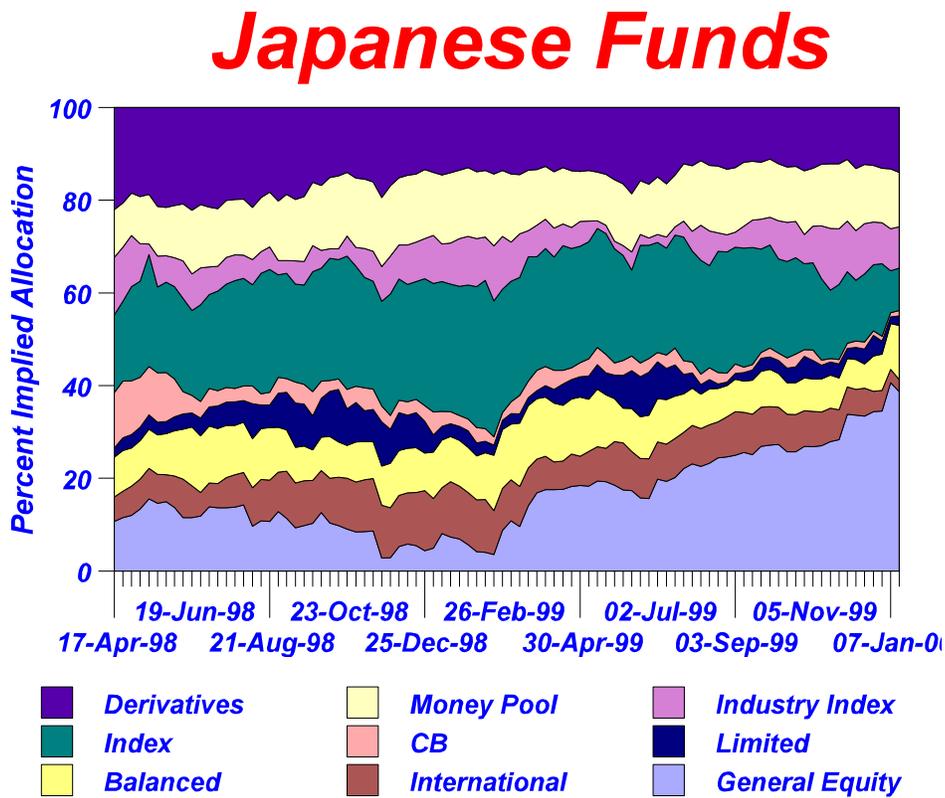
Japanese Funds

Figure 10: Breakdown of Foreign funds by traditional style benchmarks

Foreign Funds