

## Small Cap Index

### Historical overview



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## Summary

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**SUMMARY**

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**China Small Cap Index**

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- ▶ This report covers small caps in China from 1994 to the end of 1996. We have constructed a small cap index to reflect both the A & B shares and have combined the Shanghai and Shenzhen exchanges. We have done it this way as we feel that small cap indices can tell you something about the underlying economy of a country (as small caps tend to outperform at different parts of an economic cycle) as well as giving fund a yardstick against which to measure their funds' performance.
- ▶ We have compared the small caps against the JF China All Share Index (JF-CASI), which amalgamates all A and B shares and Shanghai and Shenzhen exchanges.
- ▶ China small caps are very closely correlated with the JF-CASI and indeed one would have done quite well investing in China small caps over the past three years, when small caps outperformed by 8%. We are still quite bullish about small caps against the main stocks. Those indicators which we have found to be very useful in other markets – the payout ratio and dividend yield (DY) relative to the big stocks – are giving bullish signs for China small caps.
- ▶ China small caps are very interesting in that we are starting to see a stratification of the market as small caps start to break away and follow their own beat. This is shown in the increased decline in the correlation coefficient for the small caps against the All Share Index over the past three years.
- ▶ Our current view of small caps in China is that they are being ignored in favour of the big caps even though they have better fundamentals. We expect the next 12 months or so to be the time when small caps will start to outperform the bigger stocks.

**P J King**  
**Pradeep Chokani**  
January 1997



## Preamble

## PREAMBLE

Many myths still exist about Asian culture, philosophy and stock markets. Some of these arise because of the huge (though diminishing) cultural gap mainly between the European and American view of the world and the traditional Asian approach to life. Others exist because of a genuine lack of information. This lack of information is a major stumbling block in the world of small cap investing.

At JF, increasing the information flow is one of our key objectives; in the area of small caps investing, it is our *raison d'être*. We have decided to tackle the information vacuum in two ways: top down and bottom up. Our top-down approach focuses on developing a series of small cap indices for each of the countries in Asia along with an overall Asian small cap index. We follow this up with a bottom-up analysis by our team of small cap specialists.

The functions of small cap indices are manifold: to expose the nature of the small cap market in each country; to give investors a well constructed and realistic yardstick against which to measure their stocks; to provide a benchmark for valuing small caps; to enable investors to develop a strategy for switching from big caps into small caps; and to gather data on the issue of whether the so-called small cap effect exists in Asia.

Because of inadequate data, our indices may not be 100% accurate, but we feel they are the best that can be achieved. In any case, they will be a vast improvement over what existed before and will become better defined and more accurate over time.

Our goal is to expose the qualities and characteristics of Asian small caps and bring this investment class into the international fold. We will publish a booklet on our small cap index for each country and on our overall Asian small cap index. Our indices are the most extensive and detailed in Asia. They cover every market in Asia and represent about 2,500 stocks. Where data is available, we provide a history (with comment) of the index for a period of up to eight years.

JF SMALL CAP PRODUCTS  
AND APPROACH

We believe that what the fund management community requires is a 'one-stop shop' broker who really understands both the nature of the markets and the management of the companies. Our aim at JF is to be that broker.

Our 12 small cap indices cover all the markets in Asia. They in turn make up the overall Asian Small Cap Index, which shows how real small caps in Asia have performed against the MSCI.

In our offices in each of the 12 countries we have analysts who are equipped with both local knowledge and good connections in the business community and who work hard to bring you up-to-date information, news and ideas which drive the small cap markets. This information, along with our view of the small cap index trends, appears weekly in our *Small Cap Monitor* for each country. The *Small Cap Monitor* has established itself as the premier channel for information on small caps in the region. No other broking house can offer the same depth and breadth of small cap information on a pan-Asian basis.

This year our analysts intend to spend most of their time searching out, from among the 2,500 small caps in Asia, those companies which have never been researched or visited and hence generally ignored by brokers. They will attempt to find those companies which will double or treble their share price over the next three to four years, as this is what small cap investors will ultimately be looking for.

Our aim is to provide you with the tools – the *Small Cap Index*, the weekly *Small Cap Monitor* and the *JiFi Note* – to help you keep your finger on the pulse of the small cap market.



## Small Caps – What are they?

## SMALL CAPS – WHAT ARE THEY?

There seem to be several different definitions of small cap stocks. Some investors say a small cap is a company with a market cap under such-and-such a figure in US\$, others say it is any company not in the main index. Some of these definitions are ethnocentric and, while they may be realistic (in that many brokers assume that the main investors in small caps are US and UK investment institutions), they are not logical or consistent. A small cap in one market may be a big cap in another market.

When investing in small caps, investors are trying to gain exposure to the rapidly growing (but risky) part of that economy – let's call it the entrepreneurial sector. Small companies are generally found in this sector because they can respond more quickly to change and are capable of finding, exploiting and defending niches within the economic environment.

Small caps, in whatever market, have similar characteristics. On the management lifecycle they are either at the entrepreneurial control stage or, at the upper end, close to the advent of the professional management stage. Thus, in management terms, they all suffer from the classic entrepreneur's dilemma – how to let the business grow while still keeping control.

There are many possible solutions to this, and all have their pros and cons. The Asian system (based on a family-oriented culture) is to keep control within the family, which is considered to be an extension of the entrepreneur him/herself, by turning family members into the leaders of the professional managers' stage of

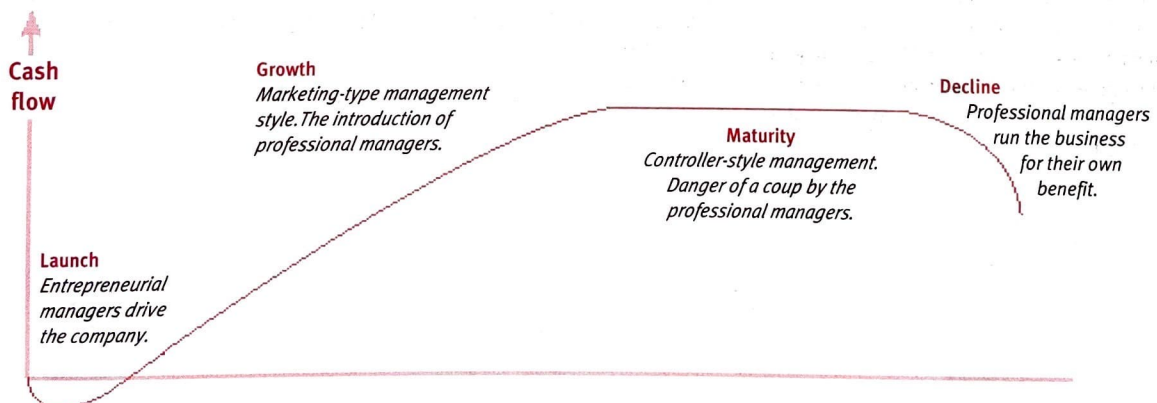
control. The problem with this, of course, is that it is much harder to fire your brother/sister for making a blunder than it is to fire an outsider. Hence, the general Darwinian rule of the survival of the fittest does not tend to take place in family-dominated cultures and so the company/organism is not optimised.

The combination of entrepreneurial management structure and small size means that, in these companies, decisions can be taken very quickly and carried out with minimal upheaval. The number of intermediaries between the decision-maker and the executioner is small, so there is little chance of inertia or misunderstanding. Corporate strategy can be formulated, changed and executed all in an instant. The downside is that there may not be anybody to put across the other side of the argument and save the entrepreneur from making mistakes. This is why we believe that the most important thing about small cap companies is the quality of the management. It is also essential to understand the strategy of the company and the guiding ideas of the entrepreneur. A clear sensible strategy will often act in place of the dissenting voice and save entrepreneurs from believing in their ability to walk on water.

### Idealised company lifecycle

The professional managers' stage of the company's lifecycle takes a small cap into the realms of the mid-caps and starts it on a path to becoming a big company and joining the ranks of the main index stocks. Ideally we should pick out those companies with entrepreneurial founders or managers and define these as the

Figure 1 The management lifecycle of a company





## Small Caps – What are they?

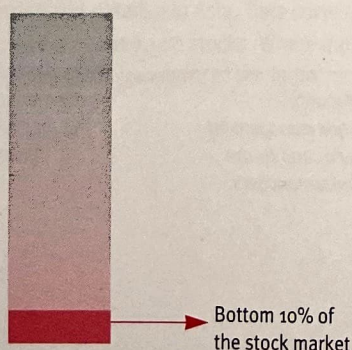
small cap stocks, but this is difficult to do in practice, because of both a lack of information (and agreement on definition) and the sheer volume of stocks.

In defining small caps, therefore, we need to make some simplifying assumptions. First, we assume that in each country those companies at the bottom of the stock market by market capitalisation are those most likely to exhibit the all-important entrepreneurial traits. A general rule of thumb is that the bottom 10% of a stock market by market capitalisation contains 80% of the number of companies in that market. Second, we assume that the monetary size of the market is not a key determinant of a company's management culture. We have already assumed that companies at the bottom of the market are, by definition, entrepreneurially driven, so using a blanket monetary cut-off value is meaningless and arbitrary as it will select mid-caps in some markets and even big caps in other markets.

**Building the small cap indices**

All the new JF small cap indices are weighted by market capitalisation, as we feel the closer an index is to representing real portfolios, the more meaningful it is. There are two basic ways of building indices and both have their faults. One is to choose by the number of stocks – e.g. the top 50, which will always reflect the biggest 50 stocks in a market, but the percentage of the market they represent will constantly change. The other way is to set the percentage of the market represented by small caps and then let the number of stocks in the index change.

We have chosen to build our indices on the principle that they should represent the bottom 10% of each market. This value will be struck once a year (on 1 January) and the chosen stocks will remain in the index for the full year.

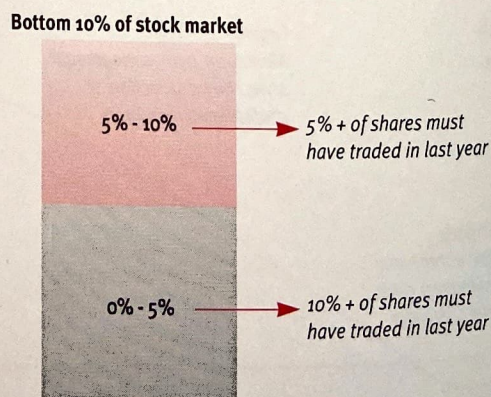
**Figure 2 Small caps are found at bottom of market**

When building an index, it is important to eliminate illiquid stocks as these affect the performance of an index by not moving – i.e. underperforming when the index is going up and outperforming when the index falls). With this in mind, we have used a screen to eliminate illiquid stocks. Our definition of illiquidity is based on the percentage of shares traded in the previous year (i.e. from 1 January to 31 December prior to the striking of the index). We split the bottom 10% of the market by market cap into two 5% groups. For the bottom 5% we eliminate all those stocks which have had less than 10% of the shares in issue traded during the past year. For the next 5% we eliminate those which have had less than 5% of the shares in issue traded during the past year. We thus expect to capture all the liquid companies in our indices.

**Value of indices**

Indices are a very valuable tool in the hands of the investor, helping with switching strategies, benchmarking and stock valuation. Indices help investors dispel some of their preconceived ideas and prejudices about the world of small caps. They enable investors to see on a daily basis what is happening in small caps in a particular country. Indices can often give timing indications for entering and leaving the small cap arena.

An index is also useful for valuing stocks on a PER basis. Stating that a small cap stock is at a discount or premium to the big stock index is meaningless as the latter is likely to be dominated by property companies and banks, while small companies are predominantly manufacturers. Hence one is comparing chalk with cheese and, not surprisingly, getting meaningless answers. It is more sensible to compare the PER of a small cap with that of its peer group.

**Figure 3 Screening out illiquid stocks**



## CHINA SMALL CAP INDEX

The China Small Cap Index will be available on Bloomberg, Datastream and Reuters and (in a downloadable format) on the JF Web Page.

The China Small Cap Index is a component of our overall Asian Small Cap Index. The various country weightings will be published monthly in our *Regional Small Cap Monitor*, enabling you to see (in

the correct weighting) which indices are outperforming or underperforming the Asian index. When analysing the China Small Cap Index we shall compare it with the JF-CASI and the MSCI. As investment management becomes more advanced in Asia it will tend to drift away from absolute performance and more towards relative performance, and the standard for Asia is becoming the MSCI (Far East, US\$, ex-Japan).

### China small caps

Year	No. of small cap stocks	Largest small cap	Market cap of the largest small cap stock Rmb m
FY94	80	Chongqing Titanium 'A'	743.54
FY95	128	Guangzhou Hengyun 'A'	559.07
FY96	149	Shai. New Asia 'B'	440.93

## 1994-1996 performance

## Performance changes 1994-1996

<b>Change in capital return</b>	<b>%</b>
JF-CHI-SCI	22.10
JF-CASI	14.80
MSCI	-4.89
<b>Change in total return</b>	<b>%</b>
JF-CHI-SCI	28.42
JF-CASI	20.22
MSCI	NA

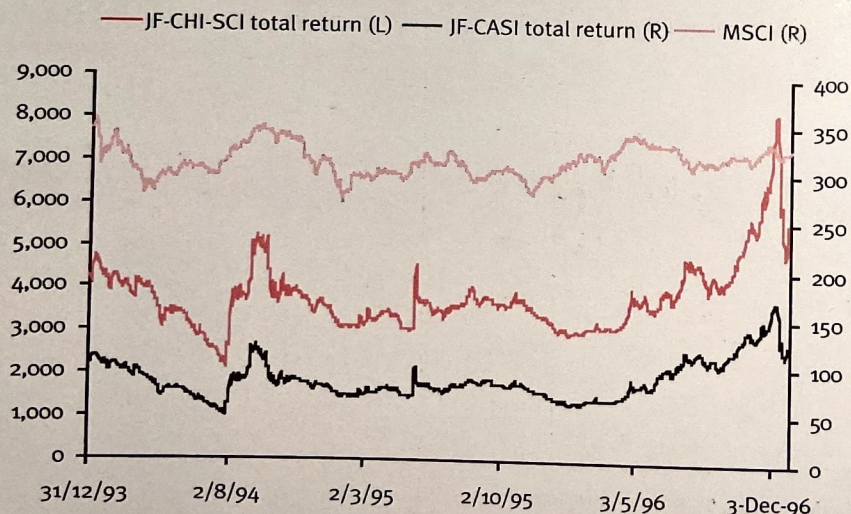
## Valuation 1994-1996

<b>Correlation between</b>	
JF-CHI-SCI and JF-CASI	
(capital return basis)	0.96
JF-CHI-SCI and MSCI	
(capital return basis)	0.05
	%
JF-CHI-SCI EPS growth	76.31
JF-CHI-SCI DPS growth	4,560.15
	%
JF-CASI EPS growth	25.00
JF-CASI DPS growth	808.42

Small caps have marginally outperformed in China over the past three years.

The overall conclusion is that investors in China have been ignoring the better fundamentals of the small caps in favour of the bigger companies. However, this is starting to change. Time is still on the side of the China small caps investor.

## Performance

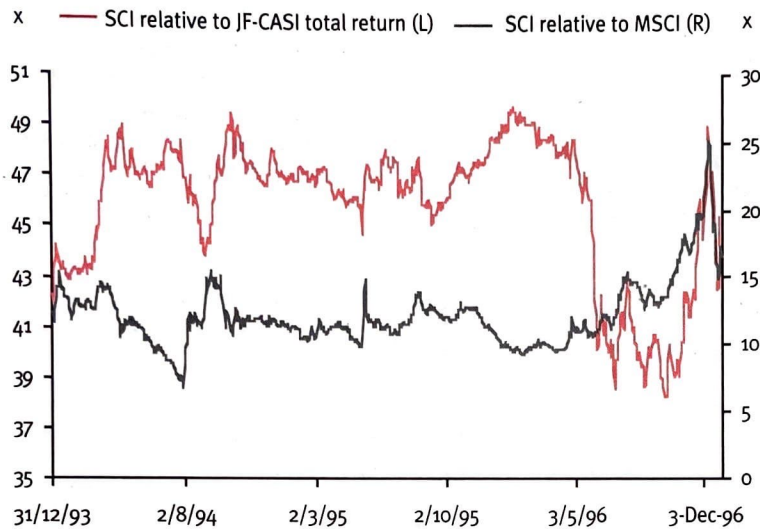


Though it may not seem so from the chart, the JF-CASI and the JF-CHI-SCI are very closely correlated with a coefficient of 0.97 – this is the highest correlation coefficient of all the Asian small cap indices. Small caps have outperformed for the past three years (though the bulk of the gain came in the last quarter of 1996), by around 8% on a total return basis. However, investors would have done better if they had avoided small caps in 1996.



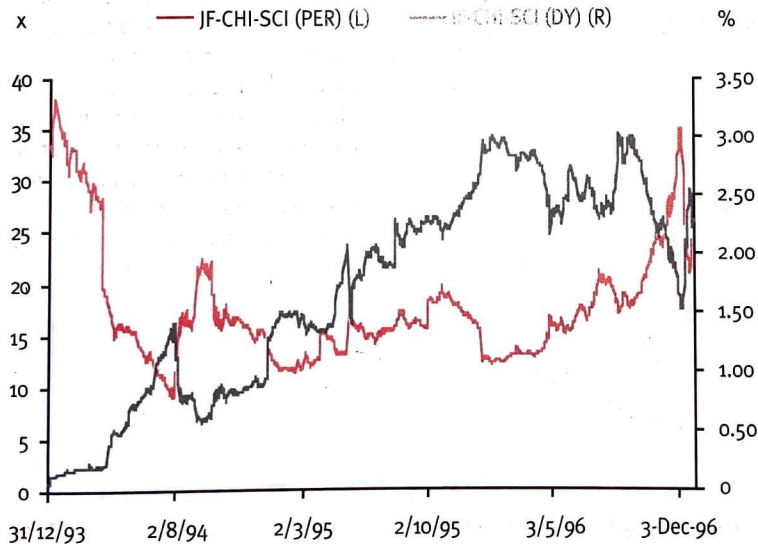
## 1994-1996 performance

## Relative performance



China small caps traded in a fairly narrow band with the JF-CASI until mid-1996. Since then, they seriously underperformed and then massively outperformed. A very volatile period for small caps indeed. The \$6m question is, where are China small caps headed next?

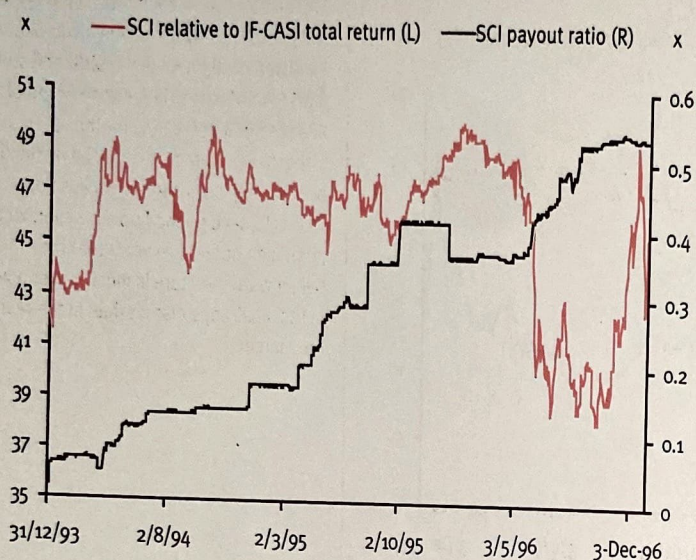
## SCI PER and DY



On a historical PER basis it would appear that small caps are around fair value. On an absolute DY basis, however, the small caps still look cheap.

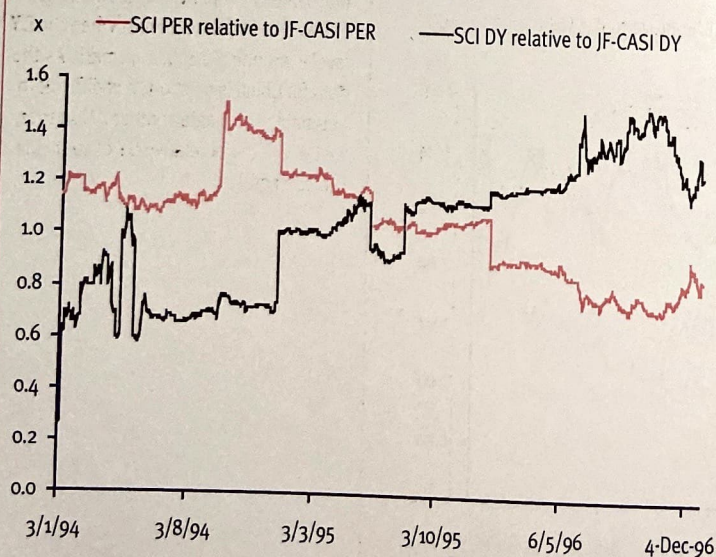
1994-1996 performance

## SCI relative performance and payout ratio



This is often an interesting graph for small cap indices as an increase/decrease in the payout is often reflected in the relative performance. In the case of China, it took a while for the rising payout ratio to be reflected in the relative performance. The graphs suggests that there is still a way to go for the small cap rally as the payout ratio has not significantly turned downwards.

## SCI DY and PER relative to JF-CASI

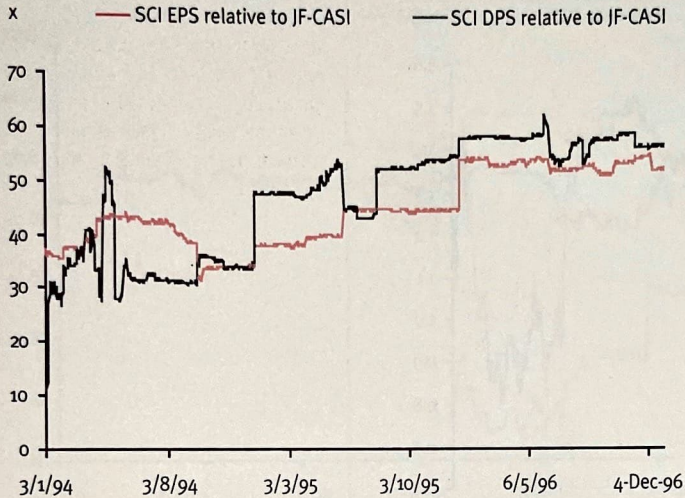


This graph can also be revealing as the relative DY often gives a good indication of how small caps will move next. In general, small caps give a higher dividend than the main stocks – this is one way of compensating for the higher risk of investing in small caps. Usually, when the small cap index DY falls below the main market DY, we are seeing the peak of the small cap rally. In China up until the end of 1995, small caps were below parity – thus, so the theory goes, they were bound to underperform. However, since then the ratio has climbed rapidly and is now close to its all-time high.



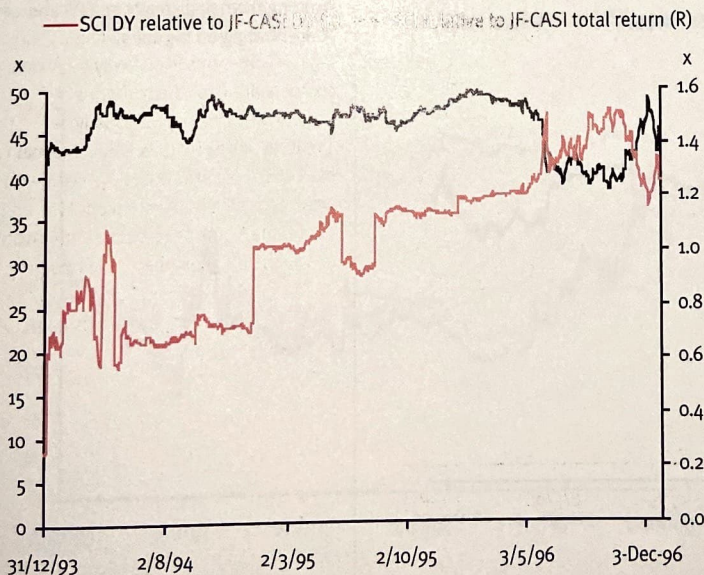
1994-1996 performance

## SCI EPS and DPS relative to JF-CASI



This graph reveals that contrary to the poor relative performance, the small caps EPS and DPS have been increasing against the JF-CASI as a whole. What we appear to be experiencing here is the birth of a stock market in which, as in the case of the birth of a planet, it takes time for the various strata to separate and cool. The distinction between big caps and small caps now seems to have opened up. However, what people do not realise yet is that the risk/reward structure is much better now in the small caps market than in the rest of the market.

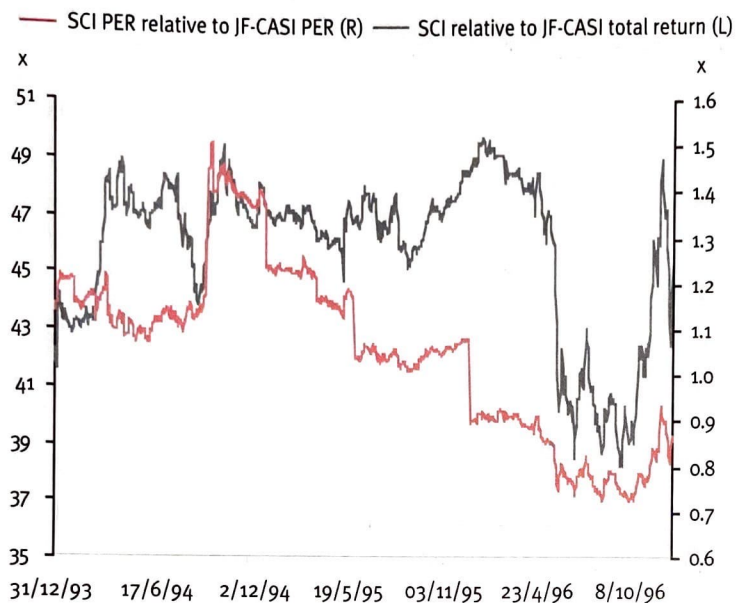
## Relative performance and DY



Traditionally, small caps peak relative to the main index when the DY relative falls much below the parity level. Small caps are usually at their cheapest when the DY level is around the 1.3x-1.5x mark. As the data for China is so short, it is difficult to determine the magic numbers. However, we believe that a relative DY of over 1.4x is meaningful.

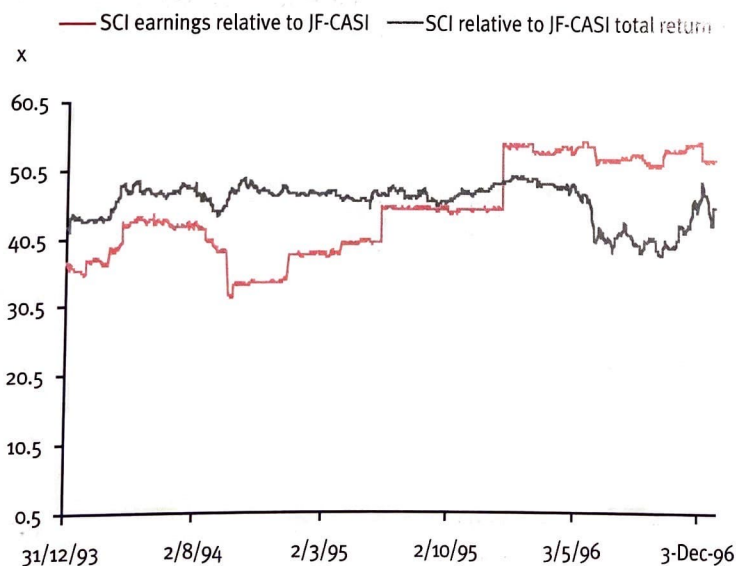
1994-1996 performance

## Relative PER



We feel that with a PER in the region of 0.8, China small caps have more upside than downside.

## Relative EPS

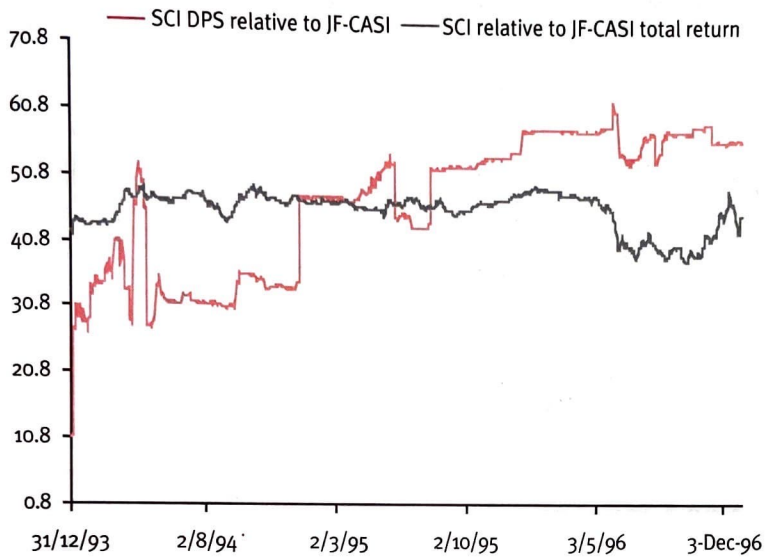


This is quite an interesting graph as it seems to suggest that the market is totally ignoring the rising small cap EPS and concentrating on big caps.



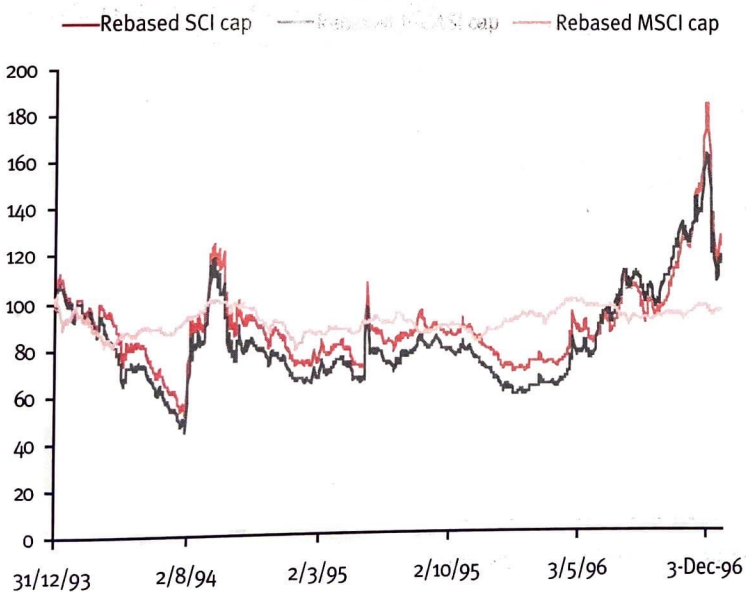
1994-1996 performance

## Relative DPS



Rising small cap DPS is another feature which is being overlooked by the market.

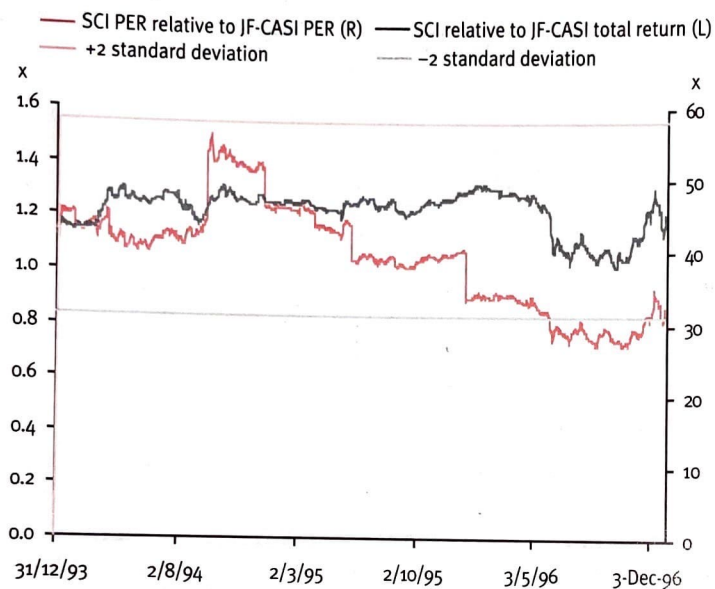
## Capital return rebased at 100



At all levels, China is on a roller coaster ride. However, the rewards have made it well worth it for investors.

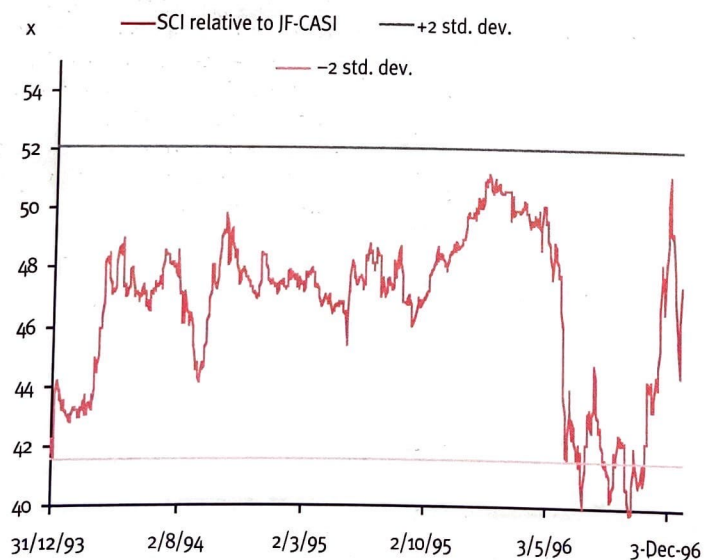
1994-1996 performance

## Relative PER, relative performance and 2 standard deviations



The PER relative is touching the 2 standard deviation line – usually a very bullish sign.

## Relative performance and 2 standard deviations

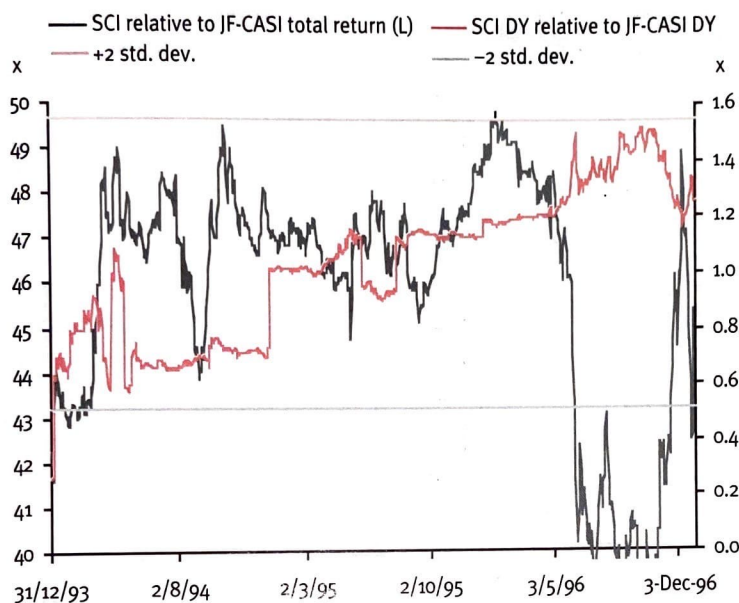


The trace falling outside the two standard deviation lines was a clear signal that outperformance was on the way. It nearly touched the line on the upside again suggesting a rerating – though a downward one this time.



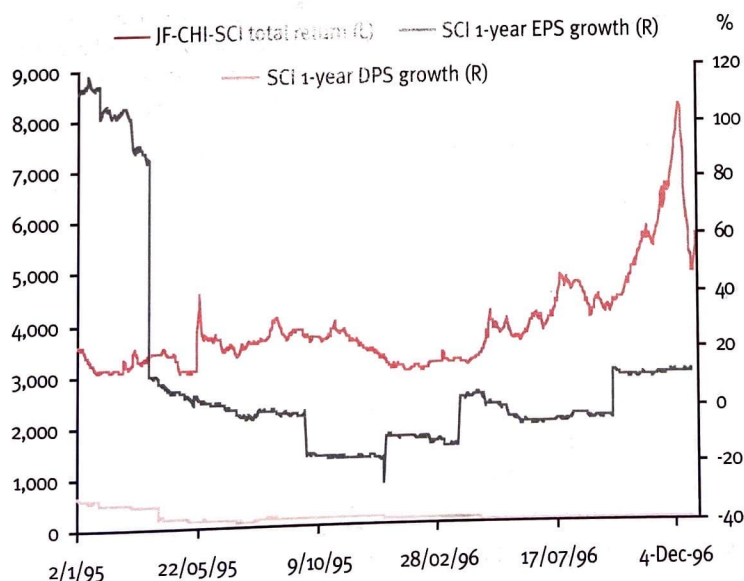
## 1994-1996 performance

## Relative DY, relative performance and 2 standard deviations



As the DY relative trace bounces off the 2 standard deviation line, the rerating (as predicted by the theory) starts in earnest.

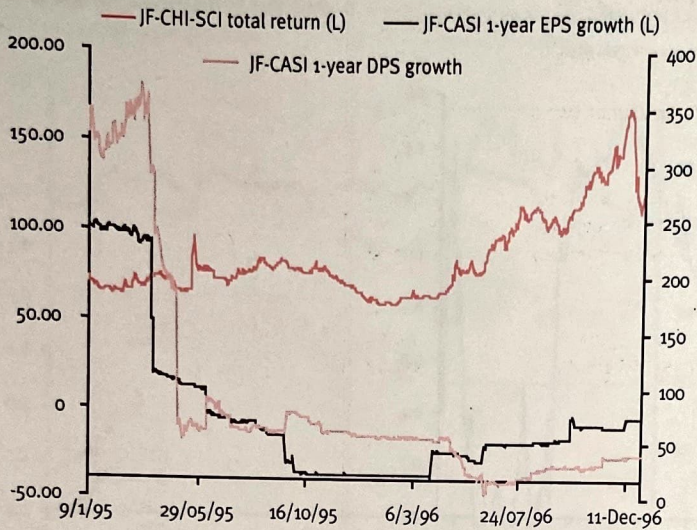
## SCI since 1995 and one-year EPS growth



There is a strong link between the small cap index and the growth in EPS. When EPS growth fell in September 1995, we saw a drop in the index soon after. The trough in the index corresponds with a 20% YoY decline in EPS growth. Similarly, the growth in EPS in April 1996 was followed by a sharp rise in the index; the recent rise in EPS growth was also reflected in the index.

## 1994-1996 performance

JF-CASI since 1995 and 1-year rolling growth



There does seem to be some overall correlation between the JF-CASI and earnings growth, although it is not very pronounced. The correlation was not much in evidence in 1995 when, despite a sharp fall off in earnings, the market still went up. However, as EPS growth went into negative territory, the index began to top out and fell until EPS started to fall at a slower rate. Note that the JF-CASI earnings growth is still in negative territory. Contrast this with the small cap index, which is back in positive territory—a possible explanation for the recent outperformance.



## 1994 performance

## Performance changes

Change in capital return	%
JF-CHI-SCI	-14.50
JF-CASI	-24.52
MSCI	-10.08

Change in total return	%
JF-CHI-SCI	-13.95
JF-CASI	-23.84
MSCI	NA

## JF-CHI-SCI

Number of constituents	80
Biggest company	Chongqing Titanium 'A'

Market cap cut off (Rmb m)	743.54
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## Valuation

## Correlation between

JF-CHI-SCI and JF-CASI	
(capital return basis)	0.98

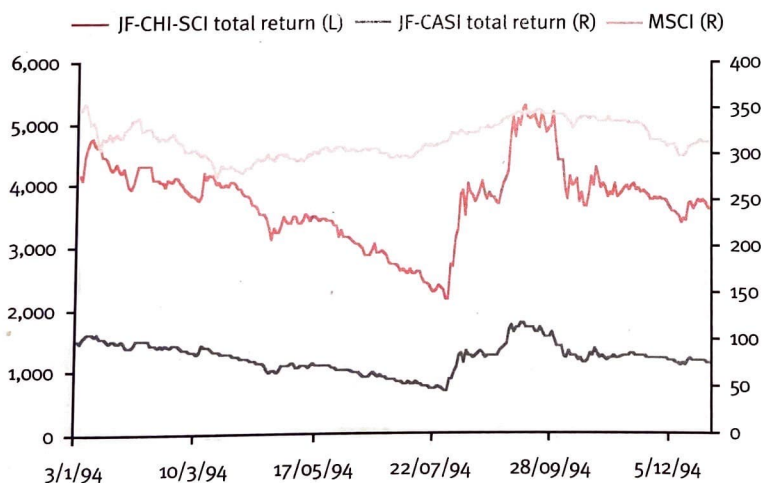
JF-CHI-SCI and MSCI	
(capital return basis)	0.10

JF-CHI-SCI EPS growth	%
JF-CHI-SCI DPS growth	91.36
JF-CHI-SCI average payout ratio	1,225.28
	0.10

JF-CASI EPS growth	%
JF-CASI DPS growth	101.03
	332.27

Small caps did well in 1994, outperforming the JF-CASI by around 10%.

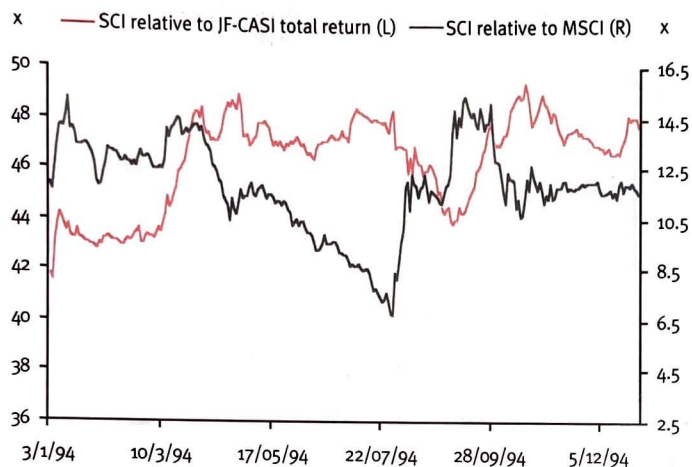
## Performance



This chart shows an unhappy birth for the SCI (its value fell by half), followed by a classic head and shoulders pattern. The JF-CASI followed a similar course, which is unsurprising considering the very high correlation coefficient of 0.98.

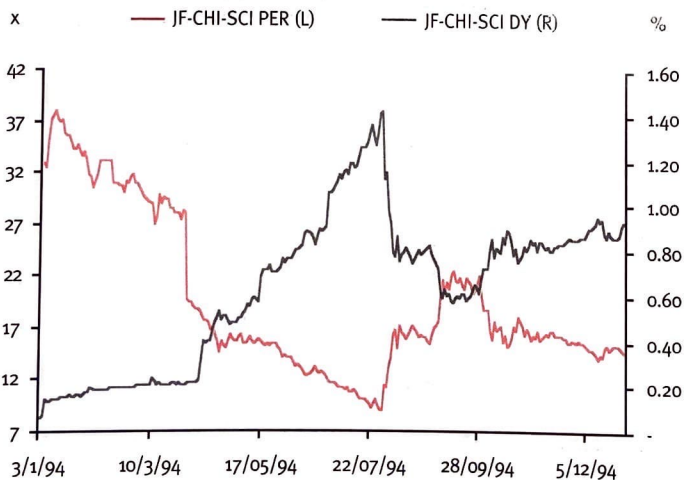
## 1994 performance

## Relative performance



The SCI's performance relative to the JF-CASI is almost the reverse of its performance relative to the MSCI.

## SCI PER and DY

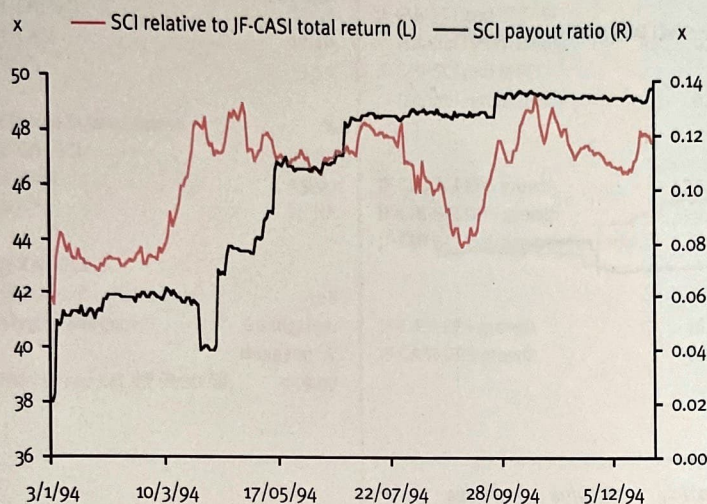


The PER fell from ridiculous levels at the start of the year to more normal levels by year end. The DY also increased from almost nothing; it ended the year at a fairly low level, but at least it is heading in the right direction.



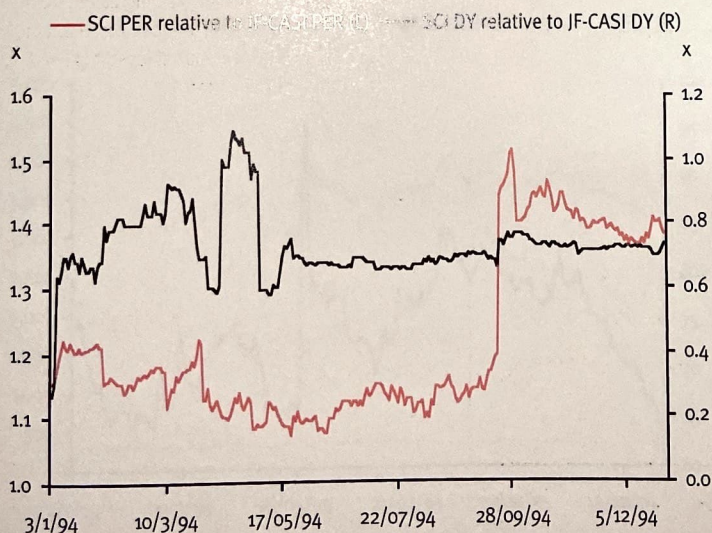
## 1994 performance

## SCI relative performance and payout ratio



For the first year, the small cap index obeyed the payout ratio rule – performance ran ahead of the payout ratio and then stalled as the payout ratio flattened out.

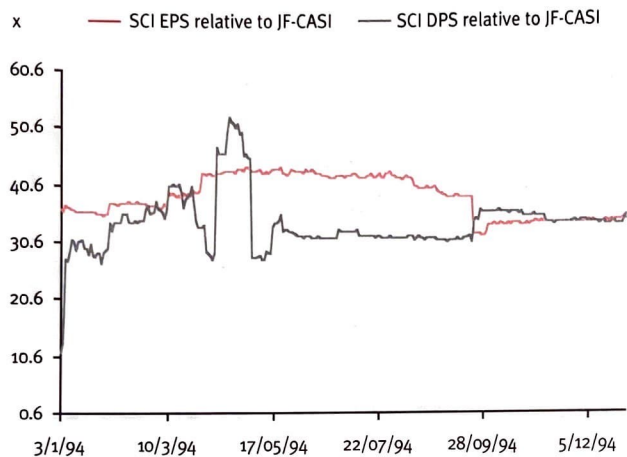
## SCI DY and PER relative to JF-CASI



PER relative levels rose in the case of small caps from near parity to being 40% ahead. The DY relative stayed fairly static for most of the year.

1994 performance

## SCI EPS and DPS relative to JF-CASI



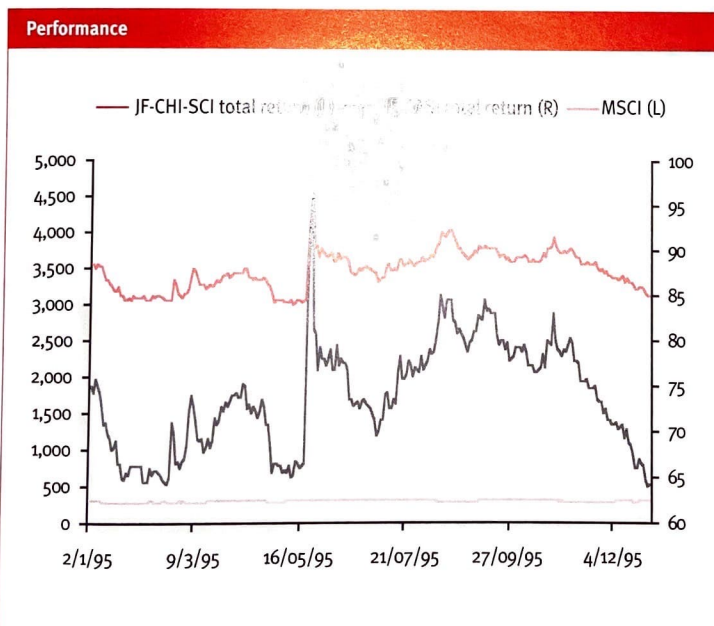
The EPS relative of the small cap index stayed within a fairly narrow band during the year.



## 1995 performance

Performance changes		Valuation	
<b>Change in capital return</b>		<b>Correlation between</b>	
JF-CHI-SCI	%	JF-CHI-SCI and JF-CASI	
JF-CASI	-15.45	(capital return basis)	0.97
MSCI	-17.46	JF-CHI-SCI and MSCI	
	-3.55	(capital return basis)	-0.05
<b>Change in total return</b>			
JF-CHI-SCI	%		
JF-CASI	-13.85	JF-CHI-SCI EPS growth	%
MSCI	-15.99	JF-CHI-SCI DPS growth	-25.53
	NA	JF-CHI-SCI average payout ratio	79.66
<b>JF-CHI-SCI</b>			0.29
Number of constituents	128		
Biggest company	Guangzhou	JF-CASI EPS growth	%
	Hengyun 'A'	JF-CASI DPS growth	-36.95
Market cap cut off (Rmb m)	559.07		56.93

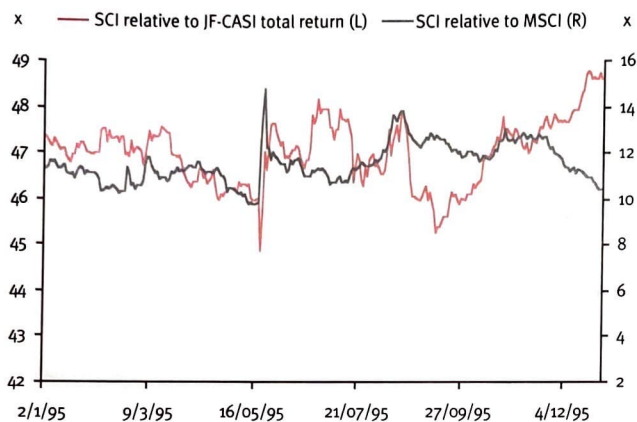
Another year of small relative outperformance against the JF-CASI.



This chart does not show it very well but, for the second year running, small caps had a correlation of 0.98, which by most standards is very high.

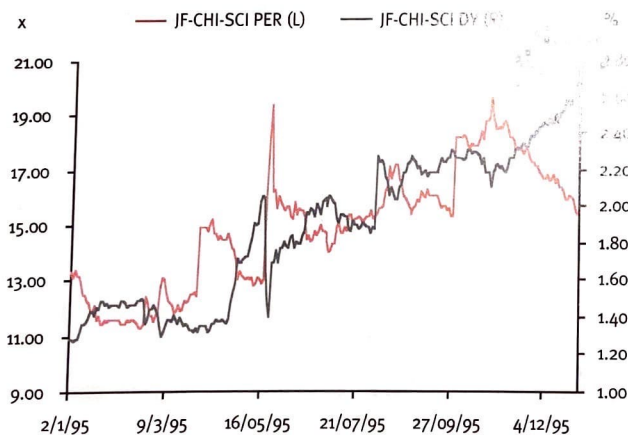
## 1995 performance

## Relative performance



This chart again shows the relative performance within a fairly narrow band.

## SCI PER and DY

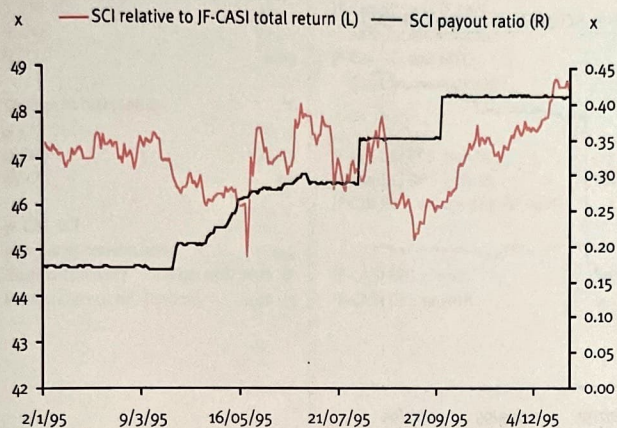


The DY is still increasing to near-sensible rates while the PER tries to stabilise between 15 and 13.



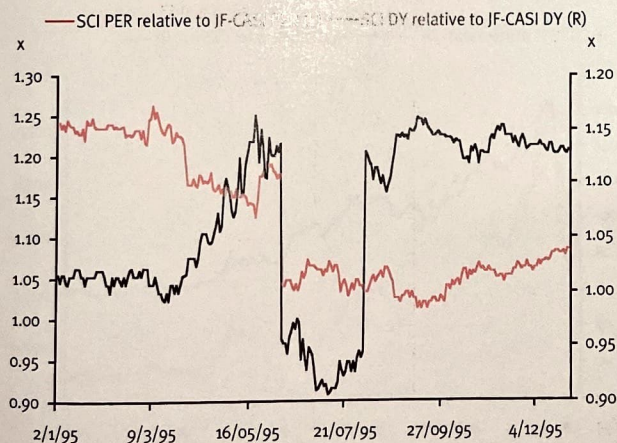
## 1995 performance

## SCI relative performance and payout ratio



While there is still a link between the payout ratio and the relative performance, the relationship is starting to break down.

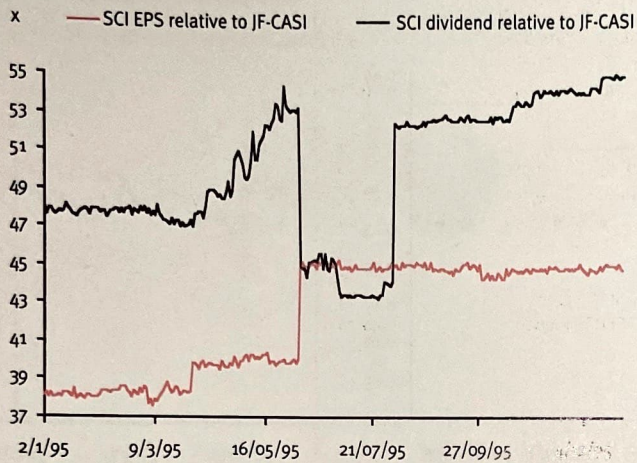
## SCI DY and PER relative to JF-CASI



The SCI PER relative is falling back to more realistic levels and, despite the plunge in July (probably a data error), it ends up back at a level which is close to 1.15x the JF-CASI DY.

1995 performance

## SCI EPS and DPS relative to JF-CASI



This chart shows the earnings and dividends of the small caps index continuing to increase over JF-CASI.



## 1996 performance

## Performance changes

Change in capital return	%
JF-CHI-SCI	75.71
JF-CASI	90.95
MSCI	8.00

Change in total return	%
JF-CHI-SCI	80.19
JF-CASI	94.69
MSCI	NA

## JF-CHI-SCI

Number of constituents	149
Biggest company	Shai new Asia 'B'
Market cap cut off (Rmb m)	440.93

## Valuation

## Correlation between

JF-CHI-SCI and JF-CASI	
(capital return basis)	0.90

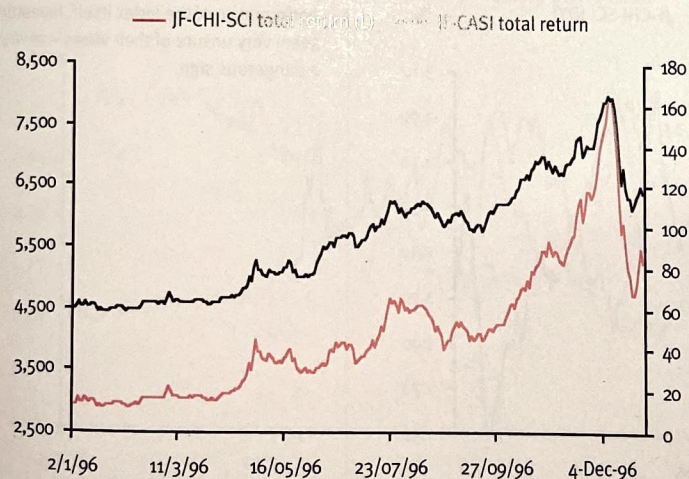
JF-CHI-SCI and MSCI	
(capital return basis)	0.04

JF-CHI-SCI EPS growth	%
JF-CHI-SCI DPS growth	-7.60
JF-CHI-SCI average payout ratio	36.40
	0.44

JF-CASI EPS growth	%
JF-CASI DPS growth	-3.82
	40.70

A good show by the JF-CASI this year; the index outperformed small caps by 15%.

## Performance



The close correlation between the SCI and the JF-CASI is starting to break down, although it is still high at 0.9.