Changes In Share Index

The Sydney Stock Exchange
Share Price Index was recently expanded with the introduction of a new composite series known as Group 19. The new group represents the All Ordinary Share Price Index less the Mining Group, the influence of which has been most evident in the past seven years.

The Sydney Index was constructed as a research project by Associate Professor D. McL. Lamberton, of the University of New South Wales, when he was on the staff of the University of New England in the mid-1950s. Funds for the work were provided by the Sydney Stock Exchange, the Life Offices Association for Australia, The Stock Exchange of Melbourne, the Bank of N.S.W. and the Commercial Banking Co. of Sydney Ltd. Additional grants were made from research funds by the University of New England.

The aim of the Index was to examine changes in share prices on the Sydney Stock Exchange since 1875. However, the initial range of figures published in 1958 covered the period July, 1936, to December, 1957.

The Sydney Stock Exchange Research & Statistical Bureau has carried on the calculation of the index on a daily basis since the beginning of 1958.

Subsequently, figures back to 1875 in two series have been published by the Research Bureau.

Dr. Lamberton explained the theory and reasoning behind the present index in his book "Share Price Indices in Australia" (Law Book Co. of Australasia, 1958).

In December, 1963, the members of the Sydney Stock Exchange decided to install an electronic data processing system to handle broker to broker accounting, broker to client accounting and the production of a range of market statistics not readily available prior to this time.

The existing list of companies was then classified according to these sub-groups and where the number of companies was insufficient to justify a separate series, these were combined with other companies to make up reasonably compatible groups.

Originally over 100 such groups were derived but these have been rationalised to make a total of 53 sub-groups to supplement the existing 14 broad categories.

The smallest number of securities in any one sub-group is four and the largest 74.

The ultimate intention is to publish the following series daily, all calculated by the Exchange's E.D.P. System:

1. 200 Stock Index consisting of 14 industry groups and four composite groups.
2. 1,000 Stock Index, consisting of 14 industry groups, 53 sub-groups and four composite groups.

Bases for the new sub-groups are being established from July 1.

The Exchange is not able to backdate the new sub-groups because of the enormous amount of tabulating involved and the absence of reliable records in some instances.

A listing of the expanded industry classification to be used by the Sydney Stock Exchange will be found at the end of this article.

It is intended that the com-
posite groups derived from the 200 stock index and the 1,000 stock index should be compatible as the same method of calculation will be used in both instances. The two 14 industry group indexes will not necessarily be compatible unless the sample is a true picture of the whole group.

In view of the considerable amount of testing that will be required it is unlikely that the new series will be published before the end of the year.

The Sydney indexes compare favorably with leading overseas series, both on the basis of theory and coverage of the market.

Most widely accepted stock market indicators have a common feature — they attempt to measure changes in aggregate market value. The Sydney index does this as the weighting given to each stock is the number of issued ordinary shares.

The coverage of the market resulting from the expanded range of industry sub-groups will provide Australian investors with more specific industry information than that available in most other markets at the present time.

The most comprehensive stock index published in the U.K. is the Financial Times—Actuaries Index. This series uses 635 shares having a market capitalisation of over £514 million. A total of thirty-eight subdivisions and two composite groups are calculated daily.

Further reading:


In the U.S.A. a number of stock price indexes are available. The most widely known index is the Dow Jones, but a much more comprehensive and statistically acceptable series is the Standard & Poor's 500 Common Stock Index. Three indexes are provided, the 425 Industrials, the 50 Utilities and the 25 Railroads.

Commission 4 at the Second Congress of the European Federation of Financial Analysts Societies in July, 1963, laid down five characteristics which should be found in an acceptable and reliable index of stock prices.

These were:

(a) The number of constituents should be large enough to permit subdivision according to any grouping (1) significant for analysis and (2) fully representative of the market as a whole and of each sub-group. Only actively traded stocks should be included.

(b) An arithmetic index weighted by market capitalisation was generally best.

(c) The principles of construction should obviate frequent general revision of the index. Perhaps most helpful is a method of construction which allows for the introduction at any time of new constituents satisfying the rules for inclusion and also allows for the greater influence of companies whose capital grows. A popular method is the use of a weighted arithmetic mean, the weights being proportionate to market capitalisation, and changes in the weights or in the constituents being allowed for by a "chaining principle".

(d) The index should be published daily.

(e) The technical problems connected with accrued dividends, rights issues, additions and deletions should be

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**INDUSTRY CLASSIFICATION**

1. Banks, Insurance, Trustee
   (a) Banks (b) Insurance (c) Trustee.
2. Other Finance
   (a) Hire Purchase. (b) Investment. (c) Other Finance.
3. Pastoral
4. Transport & Communication
   (a) Land & Air: (b) Sea.
5. Trade & Services
   (a) Retail & Wholesale
   (b) Accommodation
   (c) Newspapers & Publishers
   (d) Television Stations
   (e) Printers, Stationers, Office Equipi.
   (f) Other Services
6. Food, Drink, Tobacco
   (a) Food
   (1) Flour Millers, Bread, Pastry &
      Cake Manufacturers.
   (2) Meat. (3) Sugar. (4) Other Food.
   (b) Drink
   (1) Breweries & Vinters
   (2) Aerated Waters
   (c) Tobacco
7. Textiles & Clothing
   (a) Textiles, (b) Clothing.
8. Chemicals, Paper, Glass, Rubber
   (a) Chemicals, Plastics, Paints,
      Fertilisers, Glass
   (b) Paper
   (1) Manufacturers. (2) Merchants.
   (3) Packaging.
   (c) Rubber
   (d) Leather
9. Steel & Engineering
   (a) Heavy Engrs., Rolling Stock, etc.
   (b) Steel Manufacturers & Merchants
   (c) Machinery Manufacturers &
      Distributors
   (d) Light Engineering, Sheet Metal
      Workers, etc.
10. Building & Construction
    (a) Building Materials Manufacturers
    (b) Building Materials Suppliers
    (c) Builders
    (d) Land Developers
11. Electrical Sales & Manufacturing
    (a) Domestic Appliance Manufacturers
    (b) Electrical & Electronic Equipment
12. Automobile Industry
    (a) Automobile Manufacturers, Parts
      & Accessories
    (b) Vehicle Distributors
13. Mining
    (a) Silver, Lead, Zinc, Copper. (b) Tin
    (c) Rutile, Zircon. (d) Gold.
    (e) Oil Exploration. (f) Uranium.
    (g) Miscellaneous
14. Fuel, Light, Power
    (a) Oil & Petroleum. (b) Coal.
    (c) Gas & Electricity
15. All Ordinary Index (Groups 1-14 incl.)
16. Ordinary, less Financial
    (Groups 3-14 incl.)
17. Industrial Index (Groups 6-14 incl.)
18. Preference Index
19. Ordinary, less Mining Index
    (Groups 1-14, less 13)
NEW INDEX

(Continued from Page 6)

solved on the principle that continuity both of the overall index and the sub-indices is maintained.

The Sydney index in its present form meets the requirements in all respects except that dividends are not provided for and no adjustments are made. Provision for dividend adjustments is being made in the new index referred to below.

The Sydney index is unique in Australia so far as item (c) is concerned.

Chained Type Method

The chained type method of calculation has several advantages over the common alternative method of linking each day's index back to an original base. A chained index has the advantage that continuity is maintained and a time series of some economic and historic value is produced.

The regular reweightings of the industry groups ensures that the series keeps in step with changes in the relative importance of the various sectors in the official list of companies.

New weightings were introduced in 1950, 1955, 1960 and 1963. The latest reweighting took place on July 1, 1966, and by using the E.D.P. system new weights will be introduced at least every 6 months in the future.

Method of Adjusting

The method of adjusting the index to make allowance for new issues to shareholders with tradeable rights is made in a similar fashion to a common technique for adjusting earnings and dividend series. An assumption is made that sufficient rights are sold to take up shares at no additional cost to the shareholder.

As a result the index for each industry and composite series may be used as a yardstick against which the performance of individual stocks can be measured when adjusted on the same basis.

The inflexible character of the present industry groupings is a matter which has caused the Exchange some concern in recent years.

As a result of discussions with Mr. H. P. Brown, Professorial Fellow in Economic Statistics in the Research School of Social Sciences in the Australian National University, initial steps have been taken for the development of a completely new share price index, which will enable greater flexibility in application.

New Index Grouping

The new index will be based on the sum of indexes for every company on the list. These individual company indexes will then be capable of being grouped in any desired combination and thus will give an unlimited number of share price indexes.

Indexes will be available for specific purposes simply by selecting the companies concerned, for example, an index could be compiled for all companies having a market value in excess of a certain figure or an index of all companies whose interests are dependent upon substantial tariff protection.

The combination of individual company indexes will enable analysts to make more accurate assessments of performances than has been possible in the past.

The Sydney Stock Exchange is determined to provide the market with as much useful information as possible and steps will be taken to improve and widen the scope of the Share Price Index and other statistical series when the need arises.

Library:

REFERENCE DATA AVAILABLE

The following are the reports on hand published by either the Melbourne or Sydney Branch of the Society. Other reports as they are produced will be added to the library.

Australian Guarantee Corp.
Broken Hill Pty. Co. Limited
A. J. Chown Holdings
Dodge Consolidated
Commonwealth Industrial Gases
Federated Industries
L. J. Hooker
Mayne Nickless
Motels of Australia
Roela Industries
Taubmans Industries
Walters Limited

Industry Reports
Meat Industry.

Other Publications
Life Office Investment in Australia—a report by an Advanced Study Group of the Insurance Institute of N.S.W.
Investment Management—Harry Sauvain.
Investing for a Financial Institution—Fergus J. McDiarmid.
The Australian Security Analysts' Journal.

Further Journals, books and other publications will be added as time progresses. Any suggestions to improve the scope of the library would be appreciated.