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Die Beleggings-ontleders Tydskrif

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This issue in brief

An underlying symmetry on price charts
Long term study of trends on price charts using specially developed software, has shown that prices do not change direction at random; instead, prices display a distinct preference to change trend or direction at points on the price chart which correspond with a distinct preference for certain gradients. By itself, a preference for certain gradients does not prescribe future behaviour tightly enough to be of great value to the technical analyst. However, the presence of other, more complex structures on price charts reveals an underlying symmetry in the behaviour of the price that can be used to anticipate future price behaviour. This paper summarizes the more pertinent results of this phenomenon. Some examples are given to illustrate how in knowledge of the ground rule and of the higher order symmetries can be used for trading decisions. The findings presented here do not agree with elements of the Random Walk Hypothesis, but support the concept of emergent order implicit in complex adaptive systems.

Die Modellering van Heteroskedastisiteit in Daaglikse Rand/Dollar Wisselkoersbewegings: 1987-1992
'n Nuwe groep van modelle, bekend as Outoregressiewe Voorwaardelike Heteroskedastisiteitsmodelle (OVH), is sedert 1982 ontwikkel. Dié modelle maak dit nou moontlik dat voorwaardelike variansies van tydreekse gemodelleer kan word. Dit is bekend dat die verdelings van wisselkoersdata swaarder eindoppervlaktes as wat onder die normaalverdeling verwag word, het. Die OVH-modelle is geskik en spesifiek ontwikkel om voorsiening vir leptokurtose te maak. In die artikel word van die verdelingseienskappe van die Suid-Afrikaanse Rand/Dollar wisselkoerse met behulp van die OVH-model ondersoek. 'n Buite-steekproef doeltreffendheidsontleding word ook gedoen.

Modelling Systematic Risk and return using accounting-based information
The study explored the linkages between the financial parameters of a firm derived from reported accounting data, and systematic risk as described by estimated market beta coefficients. The relationships between financial variables and risk proposed by previous theoretical and empirical research were tested for 135 JSE-listed Industrial companies, in each of three consecutive 5-year periods. Correlation analysis and stepwise multiple regression were used to establish significant explanatory beta models. Strong positive associations with risk were found for measures of firm growth, profitability, leverage and the variabilities of earnings and cashflows. Significant negative relationships emerged for liquidity, stock turnover and dividend yield. Secondly, the linkages between the same financial parameters and observed equity returns were tested in a multifactor asset-pricing model for the same sample. Measures of firm growth, profitability and size were positively correlated to share returns, while the variabilities of earnings and cashflows as well as debtors' collection period were negatively related. For both betas and equity returns, correlations with financial parameters improved for portfolios of shares. Several of the significant financial variables were derived from cashflow-based data, as opposed to standard accrual-accounting values. While significant regression models emerged for risk and return in each of the 5-year analysis periods, they were non-stationary across the periods. Consequently, fairly poor predictive performance was observed for the models over consecutive time intervals. Nevertheless, it was apparent that certain classes of fundamental financial data were strongly related to beta as a measure of systematic risk, and to *ex post* share returns.

The supply and demand effect of block transactions on share prices
The effect of supply and demand on the pricing of shares was investigated by analysing block transactions on the JSE. A sample of 291 block transactions was selected from the period 1 June 1993 to 1 June 1994 from the Financial and Industrial sectors and analysed using an event time methodology. The study compares the reaction of share prices of large block transactions with the expected price, as predicted using the market model. The analysis period covered twenty days before and twenty days after the block transaction. The data was subdivided into buyer induced trades and seller induced trades, the distinction being made on the sign of the market model residual (positive – buyer induced trade, negative – seller induced trade). The results show that there is a statistically significant increase/decrease in the share price for buyer/seller induced trades. A relationship between the size of the block trade and the absolute value of the price change was also found. Price reversals immediately after both buyer and seller induced trades were noted. Support was found for the price pressure hypothesis and the information hypothesis; no support for the substitution hypothesis was found. The results also support the weak and semi-strong forms of the Efficient Markets Hypothesis. Evidence was found to indicate that share prices are affected by supply and demand.

The Investment Analysts Journal

Forty-third issue – Winter 1996

The purpose of the editorials of this Journal is to provide readers with critical and evaluative comment on current issues of relevance to the field of investment and portfolio management. In this respect there can be no more important matter than the release this month (June) of the government's macroeconomic strategy document entitled *Growth, Employment and Redistribution*. To avoid misunderstanding, because of any critical comment that follows, it is necessary to say at the outset, and without ambiguity, that this is a reasonable document and one which deserves the support of those who accept that the restructuring of the South African economy is necessary for a variety of reasons, economic and political, domestic and external. It is a measure of the maturity of the ANC that it has been able to reformulate its position on macroeconomic strategy so completely and still remain loyal to the essential purposes of poverty alleviation, inequality reduction and development that brought it to power two years ago. To be sure, it has succeeded in marrying these concerns with the requirements of structural adjustment better than either business or labour in their two documents released earlier in the year. The business document, *Growth for All*, commissioned by the South Africa Foundation, contained much that was valuable but was too understating of the seriousness of the political problems posed by mass unemployment and extreme inequality for policy formulation in the real world. It was also abrasive in its 'If you want to get it right you had better listen to me!' approach. Little surprise, therefore, that the labour document went to the other extreme as if deliberately to counterbalance such business posturing. All that cost the country dear in the loss of the rand's exchange value and took the economic debate briefly back to the worst confrontational moments of 1989 when a still banned ANC was saying that redistribution and growth were mutually exclusive strategic alternatives and politics dictated a preference for the former compared with the latter. We thought we had got to the point where all parties accepted that growth and redistribution were inseparable and that the path to either one could not exclude the path to the other. The virtue of the government's strategy document is that once again growth and redistribution are brought together, and in an authoritative way, being linked by the requirement of sustainability. Without this neither can have credibility. It is useful to recall more specifically the reasons why the South African economy has to be restructured. It is not just an economy in need of reform after the apartheid era. There are three overriding considerations, viz

(i) Both its real GDP and employment growth must be raised to a level in excess of the growth rate of population. Currently, less than 15 per cent of new entrants to the labour market (about 375 000 per annum) are being absorbed by the formal sector. Without a recovery in growth, and this cannot happen without a restructuring of domestic expenditure away from consumption and towards saving and investment, unemployment and the social breakdown (including crime) that goes with it will increase to unmanageable proportions.

(ii) The mining sector of the country's economy is based on a wasting mineral endowment. The sector has now

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Die hoofartikels van hierdie tydskrif is daarop gerig om die lesers van kritiese en evaluatiewe kommentaar oor aktuele sake op die gebied van beleggings- en portefeuljebestuur te voorsien. In hierdie verband is daar sekerlik nie 'n belangwekkender aangeleentheid nie as die bekendmaking vandeesmaand (Junie) van die regering se dokument oor 'n makro-ekonomiese beleidstrategie, getitel *Growth, Employment and Redistribution*. Om enige misverstand te voorkom wat uit moontlike kritiese kommentaar in hierdie hoofartikel kan voortvloei, word dit reg aan die begin ondubbelsinnig gestel dat hierdie dokument redelik is en die ondersteuning verdien van almal wat meen dat die herstrukturering van die Suid-Afrikaanse ekonomie om 'n verskeidenheid redes – ekonomies en polities, binnenslands en buitelands – noodsaaklik is. Dit dui op 'n mate van volwassenheid aan die kant van die ANC wat sy standpunt oor die makro-ekonomiese strategie ingrypend herformuleer het, maar steeds getrou gebly het aan essensiële doelwitte, soos die uitwissing van armoede, gelykberegting en ontwikkeling, wat hom twee jaar gelede aan die bewind geplaas het. Om die waarheid te sê, die ANC het beter daarin geslaag om hierdie kwessies met die vereistes vir strukturele aanpassings te versoen as wat die sake- of arbeidsektor vroeër vanjaar in hul twee dokumente dit kon regkry. Die sakesektor se dokument, *Growth for All*, wat in opdrag van die Suid-Afrika Stigting saamgestel is, het weliswaar waardevolle inligting bevat, maar het die erns van die politieke probleme as gevolg van massa-werkloosheid en die uiterste ongelykheid in beleidsformulering in die werklike lewe grootliks onderbeklemtoon. Dit het ook aanstoot gegee met sy benadering: "As jy dit wil reg doen, sal jy vir my moet luister!" Geen wonder dus dat die arbeidsektor se dokument na die ander uiterste oorgehel het asof dit doelbewus so 'n toedrag van sake in die sakewêreld wou teenwerk nie. Dit alles het die land baie duur te staan gekom, want die rand se wisselkoerswaarde het geval en die ekonomiese debat is kortstondig verplaas na die ergste konfrontasie-oomblikke van 1989 toe 'n verbanne ANC gesê het dat herverdeling en groei twee wedersyds uitsluitende strategiese alternatiewe is en politici 'n voorkeur vir eersgenoemde bo laasgenoemde uitgespreek het. Ons het gedink ons het die stadium bereik dat alle partye dit eens is dat groei en herverdeling onlosmaaklik aan mekaar verbonde is en dat die pad na een van die twee nie die pad na die ander een moet versper nie. Die voortreflikheid van die regering se strategiedokument is daarin geleë dat groei en herverdeling weer eens saamgevoeg en boonop gekoppel is aan die vereiste van volhoubaarheid. Hiersonder sou nie een van die twee geloofbaar gewees het nie. Dit sal loon om die redes in herinnering te roep waarom die Suid-Afrikaanse ekonomie herstruktureer moet word. Hervorming was nie slegs vanweë die apartheidsera noodsaaklik nie. Daar is drie ander belangrike oorwegings, naamlik:

(i) Die groei in sowel die BBP as werkverskaffing moet tot op 'n vlak bo die bevolkingsgroeikoers verhoog word. Tans word minder as 15 persent van alle nuwe toetreders tot die arbeidsmark (ongeveer 375 000 per jaar) in die formele arbeidsektor geabsorbeer. Sonder 'n herstel van groei – en dit kan nie gebeur sonder 'n klemverskuiwing in binnelandse besteding sodat verreached a mature phase and over the next 50 years must be expected to go into decline with that becoming more rapid as time passes, and more obvious in the downphases of the business cycle. As a source of foreign exchange earnings it has to be replaced by secondary and tertiary activities the planning of which is a long term matter and cannot be delayed.

(iii) The global economy is itself restructuring and South Africa must accommodate to the associated changes if it is to maintain international viability. There are a number of aspects to global economic restructuring, eg secular shifts away from mineral-based exporters linked a process of deindustrialisation in the developed world, rapid technological change especially in the area of information technology and the emergence of a global web economy in which the nationality of product output is confused by the dispersion of component production across countries.

To be part of such a world system, South Africa must adapt or die. Its recognition of this imperative is clearly spelled out in the government's macroeconomic strategy. Also, there is evidence that an important turnaround has begun to happen helped by a cyclical recovery in the economies of the country's main trading partners, the United States, Britain, Germany and Japan, and by the lifting of economic sanctions. The effects of this have been enormous especially with regard to an easing of the previously severe balance of payments constraint, although it has not been without increased capital account volatility. Since 1993, real GDP growth has recovered led by a recovery in domestic capital formation, and this stands a reasonable chance of being carried further if the government now moves ahead in implementing its strategy and if the global business cycle continues to be supportive.

The most important thing about the government's new macroeconomic strategy is its commitment to a broad, integrated vision for the economy for the objectives it has set for itself are all attainable if it acts with sufficient resolution. A serious weakness of the strategy is its failure to acknowledge the uncertainty of its econometric projections linked as they must inevitably be to global cyclical fluctuations. Also, there is no acknowledgement of the extent to which the performance of the South African economy is dependent on forces totally beyond the control of the government because they are sourced exogenously. Put more simply, it is possible to be confident that this new strategy will succeed only if the global economy continues to grow between now and the end of the century. Were the major countries mentioned above to lapse back into recession, reaching the real GDP and job creation targets of 6 per cent and 400 000 per annum respectively in the year 2 000 might prove to be difficult and would become impossible were such a recession to be more pervasive.

However, the most disappointing feature of the government's strategy document is its inflation projection which more-or-less sketches an unchanged scenario between now and the year 2 000. With the targets just referred to, this implies the retention of a belief, which should be discredited by now even in South Africa, that there is a trade-off between sustainable job creation and a policy-led debacement of the currency. By projecting so high a level of South African inflation when trading partner inflation continues (as it most likely will) at around 3 per cent or even less, the document could be interpreted as arguing

bruik plek maak vir besparing en belegging nie – sal werkloosheid en die gepaardgaande maatskaplike agteruitgang (waaronder misdaad) 'n onbeheerbare omvang aanneem.

(ii) Die mynsektor van die land se ekonomie is op kwynende mineraalbronne aangewese. Hierdie sektor verkeer tans in sy versadigde fase en sal na verwagting oor die volgende 50 jaar 'n afwaartse fase deurmaak wat mettertyd al hoe sneller gaan verloop en veral opvallend in die afwaartse fase van die sakesiklus sal wees. As 'n verdiener van buitelandse valuta moet dit vervang word deur sekondêre en tersiêre aktiwiteite waarvan die beplanning 'n langtermyn-taak is wat nie durf uitgestel kan word nie.

(iii) Aangesien ook die wêreldekonomie tans herstruktureer word, moet Suid-Afrika die daaruit voortspruitende veranderings akkommodeer indien hy internasionaal lewenskragtig wil bly. Die globale ekonomiese hervorming word onder meer gekenmerk deur 'n stadige verskuiwing weg van mineraalgebaseerde uitvoer, gepaard met 'n proses van de-industrialisasie in die ontwikkelde lande, snelle tegnologiese verandering op die gebied van veral die inligtingstegnologie en die opkoms van 'n wêreldwye ekonomiese netwerk waarin die nasionaliteit van produksie-opbrengs oorskadu word deur die verspreiding van komponenteproduksie oor lande heen.

Indien Suid-Afrika deel van so 'n wêreldwye stelsel wil wees, sal hy hom moet aanpas, anders sal hy ten gronde gaan. Dat die land wel deeglik die noodsaaklikheid hiervan besef, blyk duidelik uit die regering se makro ekonomiese strategie. Ook is daar tekens van 'n belangrike ommekeer te bespeur. Dit word gerugsteun deur 'n sikliese herstel in die ekonomieë van die land se vernaamste handelsvennote, te wete die Verenigde State van Amerika, Brittanje, Duitsland en Japan, en deur die opheffing van ekonomiese sanksies. Die uitwerking hiervan is enorm, veral ten opsigte van 'n verslapping van die eens streng beperkings op die betalingsbalans, hoewel dit nie sonder toenemende kapitaalvloei onbestendigheid plaasgevind het nie. Sedert 1993 het die reële BBP-groei herstel en is dit opgevolg deur 'n herstel in binnelandse kapitaalvorming. Al hierdie ontwikkelinge het 'n redelike kans om nog verder gevoer te word mits die regering nou dadelik sy strategie begin toepas en die globale sakesiklus dit steeds ondersteun.

Die belangrikste kenmerk van die regering se nuwe makro-ekonomiese strategie is die feit dat hy hom verbind tot 'n breë, geïntegreerde visie vir die ekonomie, omrede al doelwitte wat hy vir homself gestel het, haalbaar is indien hy met die nodige vasberadenheid optree. 'n Ernstige leemte in die strategie is naamlik dat dit nie agslaan op die onsekerheid van sy ekonometriese projeksies, wat uiteraard aan die globale sikliese skommelings onderhewig is nie. Ook word nie voldoende rekening gehou nie met die mate waarin die prestasie van die Suid-Afrikaanse ekonomie afhanklik is van kragte wat totaal buite beheer van die regering is omdat hulle van 'n eksogene oorsprong is. Eenvoudiger gestel: Daar kan met stelligheid aanvaar word dat hierdie nuwe strategie sal slaag, maar slegs indien die wêreldekonomie aanhou groei tussen nou en die einde van die eeu. Indien die belangrike ekonomieë wat hierbo genoem is, weer 'n resessie sou beleef, sal dit moeilik wees en selfs onmoontlik raak om die doelwitte van 'n reële BBP en werkskepping van onderskeidelik 6% en 400 000 per jaar teen die jaar 2 000 te verwesenlik indien so 'n resessie meer verspreid blyk te wees.

that a steady erosion of the exchange value of the rand is going to be necessary in order to preserve the country's international competitiveness. It would have been preferable had inflation been set lower as a prime objective with the intermediate target of a lower fiscal deficit being linked to it. As the strategy presently is formulated, the prime objectives are real GDP growth and job creation, and the inflation projection is simply a residual.

All this notwithstanding, one must applaud the new course upon which the government has set the economy. Clearly, it is going to become something quite different from what it has been for the past 100 years. Until now, the South African economy has been primarily a supplier of raw materials into the world system receiving in exchange capital goods needed for industrial development. Its main global linkages have been with the developed countries of North America, Western Europe and Japan. In the immediate aftermath of the lifting of sanctions, these linkages are logically being strengthened. But that is in the short run only. In the medium to long run the linkages are going to change especially if manufacturing exports and tourism are going to replace mineral exports as the main source of foreign exchange. Here, the Indian Ocean Rim initiative takes on a special importance as does an emerging relationship with China, South-East Asia and the Middle-East. Latin America, too, holds out promise, not to mention Africa itself with which South Africa already has substantial, and rapidly growing, ties. It is not often realised that India alone, a country mistakenly thought of as poor, has a middleclass (ie around 250 million) as large as the entire population as the United States. It is an exciting new world, and one South Africa is well positioned to penetrate if it can get its act together. The government's macroeconomic strategy is a indication that it realises this. Now it must persuade its coalition partners to go along with it despite their understandable reserve concerning the short term costs of the necessary structural adaptation.

THE EDITOR

Die teleurstellendste aspek van die regering se strategiedokument is egter die inflasieprojeksie wat 'n min of meer onveranderde scenario tussen nou en die jaar 2 000 skets. Met inagneming van die voorgenoemde doelwitte veronderstel dit die aanwesigheid van 'n opvatting – wat teen hierdie tyd selfs nie in Suid-Afrika gehuldig moes gewees het nie – dat daar 'n verband tussen volhoubare werkskepping en 'n beleidsgerigte daling in die rand se wisselkoerswaarde is. In die lig daarvan dat Suid-Afrika se inflasie op so 'n hoë vlak geprojekteer word wanneer die inflasie van sy handelsvennote rondom 3% of selfs laer neig (wat na alle waarskynlikheid die geval sal wees), kan die dokument geïnterpreteer word as sou die regering van die standpunt uitgaan dat 'n volgehoue erodering van die waarde van die rand noodsaaklik sal wees ten einde die land se internasionale mededingendheid te behou. Dit sou meer aanvaarbaar gewees het as die inflasie laer as die hoofdoelwit geprojekteer is met as tussentydse doelwit 'n kleiner fiskale tekort daaraan gekoppel. Aangesien die strategie tans geformuleer word, is die vernaamste doelwitte groei in die BBP en werkskepping terwyl die inflasieprojeksies bloot 'n bysaak is.

Hoe ook al sy, 'n mens moet die nuwe rigting waarin die regering die ekonomie stuur, verwelkom. Dit is duidelik dat die ekonomie heelwat verskillend daar gaan uitsien as in die afgelope 100 jaar. Tot op hede het die Suid-Afrikaanse ekonomie hoofsaaklik grondstowwe aan die wêreldsisteem gelewer in ruil vir kapitaalgoedere wat vir nywerheidsontwikkeling noodsaaklik was. Sy vernaamste internasionale handelsbande was met die ontwikkelde lande van Noord-Amerika, Wes-Europa en Japan. Dit is logies dat hierdie bande onmiddellik na die opheffing van sanksies verstewig is. Dit geld egter net vir die kort termyn. Hierdie situasie gaan op medium- en lang termyn verander, veral wanneer vervaardigingsuitvoere en toerisme mineraaluitvoer as die vernaamste bron van buitelandse valuta vervang. In hierdie verband is die aanvoor-gesprekke met lande aan die soom van die Indiese Oseaan van besondere belang, asook die ontluikende verhoudinge met China, Suidoos-Asië en die Midde-Ooste. Daarbenewens hou Latyns-Amerika groot belofte in en moet daar nie vergeet word van Afrika met wie Suid-Afrika reeds aansienlike en vinnig groeiende betrekkinge handhaaf nie. Iets wat dikwels uit die oog verloor word, is dat Indië alleen – 'n land wat allerweë as arm gereken word – 'n middelklas (ongeveer 250 000 miljoen lede) het wat so groot soos die ganse bevolking van die Verenigde State is. Dit is 'n opwindende nuwe wêreld en Suid-Afrika is goed geposisioneer om 'n vastrapplek daar te verkry mits hy sy kaarte reg speel. Die regering se makro-ekonomiese strategie is 'n aanduiding daarvan dat hy dit terdeë besef. Nou moet hy dit net aan sy koalisievennote verkoop wat, begryplikerwys, hul voorbehoude het weens die korttermynkoste verbonde aan die noodsaaklike strukturele aanpassings.

DIE REDAKTEUR