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Introduction

Although everyone who takes a risk for gain, positive or otherwise,   should have TRADE SIZER before them, TRADE SIZER in no way seeks to provide a "System" for trading in itself.   Naturally you can and should test the superabundance of systems around before using them.

TRADE SIZER is a different concept. TRADE SIZER tests a "system" and tells the   user how much should be staked on a single "visit to the market" to ensure the   least commensurate risk for the highest "turbo charge" on gain. It even gives   the mathematical measure by which any "system" should be measured.

What the Trade Sizer comprises

Trade Sizer comprises an Excel 5 "Workbook"   There is an encrypted "engine" that performs the complex calculations; the second worksheet called "f calculation"   provides the space in which to enter data and it shows the results with a graph.   The third called "Show me" provides a numerical explanation of how the numbers perform and a platform for testing various scenarios. There are two graph pages showing   the "f curve" and "Trading Results" after they have been passed through the "Show me" sheet to illustrate the effects of your systems. Just "click" the Tab buttons at the bottom of your Spread sheet to move around. Remember to make a backup. The example data given carries no special significance to trading; it is there merely to illustrate how the various elements of **Trade Sizer** interact. However what the example does show is that the advantages of **f** trading are medium term and exponential. Disappointingly it may even show "other trading" to be more favourable especially when the random number in the "Other Trading" calculation falls low on the trade with the biggest loss. Trading a constant number of contracts will only pay off in the short term if the opening constant has been set right and the exponential effect of **f** trading has not had time to work through.

You are advised to take advantage of the buttons at the top of this screen to print out subjects of interest, move around and click on highlighted words for further explanations.

The pivot of Trade Sizer is the f calculation. Those who are familiar with the concept may pass over its explanation to the devices in **Trade Sizer** that may be used for fine tuning and further reducing risk or increasing performance.

f Calculation - Trade Sizer's Fulcrum

The origins of the ubiquitous **f** curve are obscure but the phenomenon, born out of computer calculation, is increasingly being harnessed by major financial houses and by wily small investors alike. It is a mathematical and immutable law that whenever you trade, you trade on the **f** curve. Given that;   it makes sense to know where you are on it.

The " **f** ", by the way, is always lower case. Upper case "F" has a meaning in statistical analysis.

For this reason alone, **Trade Sizer** has a practical value for all traders,   speculators and investors alike. It is however especially relevant to those who deal in a single commodity such as a "Future"or "Currency" or "Options".

The **f** calculation measures the positive and detrimental effects of "turbocharging" your trading. And it needs a computer bring it into existence.   It can not be calculated by mental arithmetic or sensed by gut feeling and/or experience.

It is precisely the opposite. It is a calculation that causes a trader to go to the market and the punter to the bookmaker with the lowest risk that will give the highest return. There is to my knowledge no way of staking that will bring a higher return without actually knowing the future with certainty.   Therefore by necessity any trader who uses the **f** will experience huge "draw downs".   But in the end he will achieve the highest possible return. If anyone out there on the Net has something better we would all like to know what it is. **f** trading is not for the faint of heart;   nor is it for those who can not stand heat.

What is **f** ?

Now we come to the essence of the **f**.   It is a near "constant" usually between zero and one by which we divide **the biggest loss on a single trade** in a series of trades from a system. Biggest loss on a single trade divided by **f**   gives an amount in dollars or currency that we call Optimal f in $.   We then divide our cash by that amount and we have the number of contracts for entry into the market.

How to use Trade Sizer

We take a "system" and test it for resilience. On the "f calculation" page we feed in the series of results of trading a market after commission and "slippage".

The "f calculation" page

Suppose for example you took 20 contracts and made three "pips" of $25 on each after commission and slippage. That would mean a profit of 3 x 25 x 20 being $1,500 on the transaction. The 3 x 25 is entered in the System Test area of the "f calculation" sheet and the 20 is entered on the "Show me" sheet in Other Trading.   Thus when you click the "Calc" button on the "f calculation" sheet the 75 is carried over to the "Show me" sheet and gets multiplied by the 20 to show up the $1,500 result.

The number of trades should certainly be no fewer than 30 trades and it could be up to 200 for better precision. After 200 trades, early trades should be phased out with the new trades being entered because markets and effectiveness of systems change. Trade Sizer then goes through and tests the outcome for trading those numbers with **f** set at one hundred levels between zero and one.   The results plot on the graph in the "f curve" chart.   The program then reads off the highest point in the graph to give the calculation of **f**.   It follows from this that if a trader trades beyond the end of the graph he will go bust with a certainty of "one" no matter how good his system is.   Such we know has happened in Singapore.   It can also be seen that an indifferent system staked optimally makes a lot more money that a good system staked indifferently.   To assist the systems tester other calculations are present.   Those who chase the end of the rainbow,   looking for even better "systems," should take note. It could be argued: "It ain't what you trade that counts; it's how you trade it."

System Test area

Given that a trader may want to test different systems and use random calculations and so forth,   to test different situations,   the columns beside the data entry column are designated System Test Area.   You may thus enter sets of figures in these columns,   push the "**Calc**" button and then not have them jumping around every time you hit "Enter" on the keyboard. Extensive columns of figures may be stored on the right hand side of the System Test Area.

"Correction" of biggest loss

A distortion of reality arises when "biggest loss" is not hit in a small sample of say 30 and it may not be hit in even 200 trades for that matter.   However a number approaching it should be present in a sample for the result to give confidence to the user.   Consider also that if you add a big loss to a small sample you will create distortion.   The author suggests the remedy of trimming down some of the other losses to compensate: mathematics is, after all, an art and not a science. By entering "corrected" and "uncorrected" streams side by side in the Data Test area and clicking "Calc" you will gain a perspective on the limits of where your trading should be. A careful arrangement of windows and results will give graphic detailed comparisons of outcomes.

The "Show me" page

Here, the series of trade data entered in the "f calculation" sheet reappears and can then be tested with the "Other trading scene" column: the right place to enter your historical volume of individual trades. Though it may seem laborious to dissect past performance in this manner, the results once done will be rewarding. This sheet draws from the "f calculation" sheet so that if you push a "Calc" button on the "f calculation" sheet, the **f** in cell C12 is automatically reset to give an accurate reading in the Trading Results graph. But if you change any of the parameters of **f** in C12, Active Risk, Trading Margin and Start Cash, the result will immediately be carried through to the Trading Results Graph.

Initially "Other Trading" is set on random amounts between one and 30 trades. You can put your actual trades and compare the results with what could have happened. From this column we can also "simulate" with the order of trading and test different scenarios with other sequences. The number of trades to take in the **f** Trading section has been rounded down in this sheet because it is not possible to trade fractions of a contract. Try randomizing the order of trades and see how little this affects the results of **f** trading. In actual trading they could be rounded further with little effect on results because the top of the f curve is fairly "flat".

Some sets of figures give a skewed curve on the "**f** graph" (push the tab at the bottom of your screen) and clearly it makes sense to err on the "up" slope of the graph rather than the "down" slope as the results on the upside risk less money for the same result. It will also be noticed that **f** tends to move a little as a system develops. Thus given the perils of going over the top and the quite wide band of values that sits at the top of the curve, a trader should keep a little to the left of the peak.

Additional data columns

The column "I" and upwards are completely free of formulae and may be used for extensive testing. Advanced Excel users are advised to take advantage of this space to process transactions and "link" in to the Data Test area and other sheets for their own purposes.

Active risk

By adjusting the amount of risk the level of security can be increased.   Thus if you set that risk at 50% of a starting point of say $20.000, only $10.000 dollars is put into the calculation.   As trading progresses it will only be that fraction of the Start cash that is put aside so that there is a case for periodically adjusting this number particularly after some successful trades because, as sure as anything can be sure, a bigger loss than the previous biggest loss is going to occur.   And if you have a larger amount tucked away the start up is going to be easier. Moreover there is a tendency for **f** calculations to generate incredible telephone numbers and so this instrument allows for reducing the risk whilst keeping the numbers within reason. If however you are totally confident of your system and the outrageous misfortunes that might come to pass you should set the active risk at 100% and stand by for stormy trading.

A manager of traders might utilize this device as being an equitable method of controlling activity depending on bullish, bearish and volatility sentiment of the market by saying, "Reset your active risk at a new level of ..."   When he does that he will be trading lost opportunity for increased security or the converse.

Another device for increasing security is of course to increase the biggest loss which would again tend to water down the trading activity. This device is so aggressive that true focus should be on the opposite end of the equation; by intense study on keeping biggest loss down.

Trading Margin

This box may be filled in on the Show me page.   It performs nothing in the **f** calculation and is placed there merely to remind the user that he can not usually make more trades than his broker's or boss's margin (or even his own comfort level) will allow. However if the margin is set at a level higher than f trading allows, it will "cut in" and restrict the results, putting up a "flag" showing the restricting factor beside the number of contracts to trade. Trading margins are set by brokers upon purely arbitrary lines taking into account all kinds of criteria, including unsystematic chaotic traders.

Performace Ratios

There are many numbers that can be easily extracted by the computer; consequently many money management programs include them.   Some traders find them useful and others find them interesting. Most Charting programs carry a few and some a gamut. The author finds them misleading and confusing because they look so attractive and reassuring. Most brilliant traders have a record where they have a lot of small losses and a few huge gains. Profit to loss ratios, largest number of wins or losses in a row, etc. are meaningless indicators of the merit of a trading system properly staked**. Geometric Mean is the finest indicator of a system.**   It carries a lot of decimal places and "looks" fairly meaningless but it takes account of the whole stream of trades and shows the true incremental gain of a single trade in a "system". The tiny decimals start to take on meaning when systems are compared as in the Systems Comparison graph in the "f calculation" page.   Although a trader might like to know that he is entering a system with high probability of being right or that his profit to loss ratio is highly respectable,   entering the results of such systems of measures into the Systems Entry columns of the "f calculation" sheet will demonstrate their deceptive values. Doubters should try putting the stream of results given as an "example" to start up the sheet and see how badly it comes out by most statistical analysis.

The advice given by systems designers is nearly always the same   "Keep it simple.   Overcomplicate it: and it will weaken."   The same applies to Money Management. As you come to test **Trade Sizer** you will learn the relevance and irrelevance of most measures,   especially as you concentrate on results given by Optimal **f** trading.

The practice of using f

Once you have established your Optimal **f**($) or other currency for each system, keep them side by your and use them to make your trading decisions.   It serves no purpose to redo the calculation after each transaction or run the calculations in "real time".   In the early stages **f** will bob about and simply provoke anxiety. A different **f** for each "system" tuned up once a week is adequate for most traders. Initially you should test your systems using different Stop Losses and run the resulting trades through **Trade Sizer** to get a feeling for how secure you really are,   how the bottom line moves and how the "system" itself can truly be optimized to meet your objectives.   A trader who does this will know that he is programmed to withstand the longest streak of losses but that the system will finance those,   and he will be ready for the biggest gains.

Further Development

The nature of this presentation is "open architecture" such that the user can open up his own spread sheets,   customize them in the way he wants with all his own special preferences and then "link" into Trade Sizer. Those "locked"   "hidden" and otherwise inaccessible cells are there to protect the user from first time tedious error and to hide various error messages. The rest of the **Trade Sizer** spread sheet is deliberately left open for the user to customize, extend, innovate, configure and adapt to whatever target seems appropriate.

The better file handling capabilities of Windows 95 means that Trade Sizer can be kept running along side data collection, charting and a few other applications without fear of "crashing".   Thus minor tuning to a system can be instantly reviewed.

Foreign language versions are in process and those who prefer reading in other languages are invited to enquire.

The author's aim is to bring powerful analysis to trading and to support **Trade Sizer.** Questions,   queries, suggestions, requests, criticism and tips for improving and optimizing **Trade Sizer** are openly invited. This invitation extends to experts and new players.

Trader Sizer is a true product of the information age. It focuses the mass market software of the Microsoft Corporation, a knowledge of the vicissitudes of the Markets, and the art form of mathematics on the end user at large. It delivers sophistication and quality without imposing the demands of Corporate paraphernalia and expense.   A modest   testing of the theses put forward in this file on actual data, should greatly enhance any user's perception of the real risk he takes.   The value of Trade Sizer far exceeds the humble and democratic couple of "pips" "ticks" or "tank of gasoline" of any trader's day that the author asks. Please register.

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"Excel" is a registered trade mark of the Microsoft Corporation

Backup: You are advised to keep a copy of Trade Sizer so that in the event of crashing the spread sheets you may restart again. If you reach such a point, always first try leaving without "saving"; the chances are that the freak data you entered will be cleared of the system.

This backup may prove crucial after you obtain passwords, alter critical formulae and then drift into error. A quick reload from disk is easier than downloading from the Net again.

Systems: At its simplest a "system" could be trading September pork bellies on the Chicago market using a "moving average".   Another "system" could be MACD divergence or a slow oscillator. We could even have different systems going on the same commodity on different time scales.   In such systems mixing, it pays to keep a check that you are not "long" on one system whist "short" on another; thus doing nothing except handing out a "spread", slippage and commission!

By extension of the notion of systems;   "System A" and "System B" could be Trader A and Trader B where their manager has the problem of setting the limit on trading from results by mathematical calculation rather than just "experience".

To those "Fundament" traders who are above "Technical Analysis" and "Systems Trading", and to those who trade on sentiment in the market there still remains the problem of quantifying the size of trade to take. Past history put through Trade Sizer will give a precise answer.

Stop Losses: Automatic selling or buying orders to clear a position. Typically a stop loss is filled a "tick" or "pip" or so outside its formal limit and occasionally in times of turbulence a bad "fill" is given.   Make them too tight and the first thing the market will do,   is go the wrong way to pick up the Stop Losses and then run the other way. Experienced traders counsel "Give yourself a bit of room"   However a study on the effect of wide Stop Losses on Trade Sizer will show **you should not worry about small losses. Concentrate on biggest loss**. You might for example give some thought to putting a "floor" under or a "ceiling" over biggest loss by taking an Option in the reverse direction but such remedies are beyond the scope of this document. Trading without a Stop Loss is at best sloppy and at worst undisciplined and expensive.

Resilience: Thus for example if a system works well for an hourly chart try testing it on 50 minutes an 80 minute charts and tinkering with the inputs of the indicators. A system that has been optimized to give brilliant results becomes suspect if minor tinkering cause dramatic changes in results.   If the results go sour then it is a sign of weakness.

Slippage: Slippage is the difference between the price when an order is made and the price at which the order if "filled". It is, in my experience,   an average of a pip or two and occasionally far worse. If you take your "system" numbers out of a computer, slippage starts when you get the signal and goes on through your hesitation until the order is "filled". It should be reduced when we get "electronic trading". Cumulatively and otherwise,   it is the largest single cost of trading.

Registration: is activated by purchase of passwords.

There are various levels of passwords encrypted in Excel. You find your status on "Protection" by pulling down the "Tools" menu at the top of the Excel sheet. The precise password you need is identified by the three last entries of Data in the "example" in the "f calculation" sheet as downloaded.   So that you may need to activate SIZER.ZIP again to get these numbers.

Password 1

This may greet you when you open Trade Sizer and offers you the "Read only" option. This is the Workbook "write" password and if you do not have it you will not be able to save your data.

Password 2

The f calculation sheet as downloaded allows three columns of 30 lines of data to be entered and data entered in the System Test are only. But if you had this password you would be able to unlock the LOCKED cells in this sheet.

Password 3

The "Show me" sheet has its own password but there is a great case for not even using it because if you accidentally upset one of the long formulae, you may never rescue yourself and have to load up all over again.   In addition there are error messages formatted in white particularly in row 255 and so forth. Therefore check that a cell is truly empty before you overwrite it. Thus said there is fertile ground for performing the most exhaustive tests on all kinds of criterion on this sheet for the Advanced user of Excel. So much easier than "Linking" Sheets and macros etc.   Thus Password 3 has a convenience value to those who want to develop on.

Other passwords.

The "f curve" and "Trading Results" graphs have their own passwords. They form an integral part of the program.   Thus these charts remain a part of Trade Sizer.

The basic calculations of the sheets which perform data handling are delicate, deeply embedded and encrypted.

Trade Sizer DISCLAIMER - Licence AGREEMENT

Users of Trade Sizer must accept this disclaimer of warranty: Trade Sizer is supplied as is.   The author disclaims all warranties, expressed or implied, including, without limitation, the warranties of merchantability and of fitness for any purpose. The author assumes no liability for damages, direct or consequential, which may result from the use of Trade Sizer."
Trade Sizer is a "shareware program" and is provided at no charge to the user for evaluation.   It is supplied free without passwords for evaluation. Feel free to share it with your friends, or pass it on to clients who clamour for money management programs, but please do not give it away altered or as part of another system. If you find this program could be useful and find that you would like to use Trade Sizer more fully,   you must make a registration payment of $59US or £39 Sterling to the author.   The $59US or £39 Sterling registration fee entitles you to Passwords 1 and 2 as outlined above in this section and will license one copy of Trade Sizer for use on any one computer at any one time.   Password 3 may be obtained by paying an additional $14US or £9 Sterling direct to the author. You must treat this Trade Sizer just like a book.   An example is that this software may be used by any number of people and may be freely moved from one computer location to another, so long as there is no possibility of it being used at one location while it's being used at another. Just as a book cannot be read by two different persons at the same time.

Commercial users of Trade Sizer must register and pay for their copies of Trade Sizer,   they may enter Site-License arrangements by contacting   the author.

How to register

You may either "Go"   SWREG on Compuserve and send the details of your payment with the last three data entries in the "example" column in the f calculation sheet to the author to receive Passwords 1 & 2. immediately. For this option take note of **Registration ID 8015.**

Or open up the Registration Form as set out in REGISTER.TXT which accompanies **Trade Sizer**. This form may be printed as it is and filled in by hand, for transmission by mail or fax. It may be lifted either into a word processor for completion and be faxed or it may be completed as it is and "attached" to an e-mail message. Please include the last three data entries in the "example" column in the f calculation sheet. You may need to light up SIZER.ZIP again to get these numbers (This will identify which password you need). It may also be that Trade Sizer has been revised or the Help improved or the layout or outputs changed, so that a fresh download is advised.

A method might be to pencil a ring around the total amount on registration form as completed, fax it to your bank with initials and a note saying "Do it".   This method spares the risk of putting any payment information into the Net and is available to those who do not have Compuserve access.

A fax will be answer immediately during London trading hours and e-mail is checked twice a day**.   As soon as your undertaking as stated above is received, you will be licensed and be sent Password 2 (Or passwords as paid for on SWREG).   Thus in about the time needed to take or clear a position in the Market, you could be up and running and seeing the power of Trade Sizer!**

But the program will not immediately write to disk without Password 1 so you may be somewhat inconvenienced.   When the payment is received or "cleared" you will be send Password 1 (and Password 3 if you require it.)

Please bear in mind that cheques clearing and the postal service combined can take up to three weeks to get a payment through. Bank transfers are quicker.

It only remains for me to thank you for reading this document and considering making the finest trade of your trading career by getting **Trade Sizer** and knowing that the number of contracts to take is not a matter of "common sense". It is a matter of precise calculation and the tool for that is at hand.

Peter Gardiner   22 October 1995

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PPR Pessimistic Profit Return.   Anything can be traded but if the PPR which is a complex calculation returns a value of less than 2 (2%) you are advised to look for another system. PPR is a valid "acid test" of any system.

GAT Geometric Average Trade shows what each single contract is theoretically bringing in.

Geometric Mean.   Purists will notice this powerful measure. A system that produces a high geometric mean should be favored. The bottom line of all systems analysis indicators.

TWR Terminal Wealth Rate is given to show how one unit of currency is multiplied by the trading. This figure is theoretical because it assumes trading in fractions of a trade.   Therefore the "bottom line" on the "Show me" page is more accurate and a lower figure, because rounds trades down.

Biggest loss on a single trade. Some managers, for example,   take three times the standard deviation of losses and consider this as their biggest loss for their calculations.. Such arbitrary risk setting may be good generalizations but are not to be compared with using real results. If our staking calculations are based upon biggest loss, then it makes sense to keep that figure as low as possible which calls for tightish <u>Stop Losses.</u>   The corollary is that we can reduce risk and water down trading by tinkering with this number.

Of course ultimately managing trading of any kind is about managing losses because without them we could all become billionaires.   Setting stop losses is the trader's biggest headache but running scenarios with various Stop Loss settings (adding "slippage" and worst case "slippage" for biggest loss) through **Trade Sizer** will give some startling illumination upon the exponential costs of taking bad losses.