F6g Risk, gambling, insurance etc

Forecasting

1. Totally fascinating, & not totally futile. Astronomy. We are always seeking forecasts. Some obviously do well at it, & grow rich.

Errors are well publicized. We always like to see the smart-ass fall on his face.
"Oh, yeah", a best seller in 1932. Irving Fisher, "new permanent plateau". Literary Digest poll.
RFF on resource scarcity. Bel Kaufman on shale oil.
WPPSS !

We know there must be many errors, otherwise how wealthy wd. be he whose great-grandfather put aside $1, 150 yrs. ago, at 6%.

$2^{10} = 1024$

$2^{20} \doteq 1000^2 = 1M$

$2^{30} \doteq 1000^3 = 1B$ etc.

Just avoiding those errors, earning simple steady returns, does a lot for you.

2. Naïve methods

a. Assume constancy, in $

This is why inflm. is such a factor, bcs. so many people kept on being surprised.

Assrs. using this method assume const. income. Even tho mkt. assumes rising. Hence, imbalance of assmts., leading to P-13.

b. Assume const. growth, in $

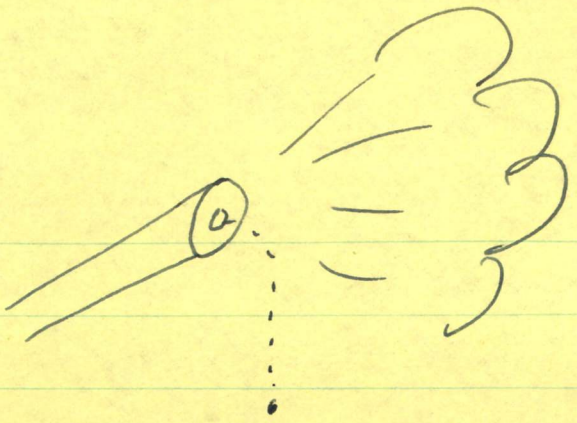
Housing specs. These specs. got trapped off base, bcs. you can't assume this, either.

c. Assume const real growth, "projection". Standard practice in utility + energy fields for years.

Promotional motive explains heavy use of this technique. Complex of many elements.

1. Lead time needed.
2. Promoters are not assuming any personal risk in overexpanding. They are only aware of the risk of service failure. "Requirements" is the codeword.
3. Ecs. of scale in sizing ahead of demand
4. Beat inflm. of costs.
5. advance land acqn. needed. O.C. doesn't appear in the budget.
6. Need to sell ideas to the public, in language they can understand.

Result:



Weaknesses:

No causal nexus.

No sensitivity to cycles, or i.r., or zoning.

No elem. of demand. "Needs", "regrets", "duty", etc.

No imagination on how "scarcity breeds substn."

To p. 3A

3. "Advanced naive"

Smoothing techniques.

Moving Ave.

Exponential smoothing.

4. What does work?

~~Astronomers forecast w. astonishing accuracy despite complexity, bcs. laws are understood, + few enough to be manageable.~~

Trends:

Secular. E.g. wtr, tree rings, we know probability of 50 yr. drought, etc.

Diffusion: e.g. fashions, move from lead areas to copycat areas. Embarrassment of 1st wife in Mo.

Cyclical: periodic boom + bust in livestock. Overexpansion in boom, coupled w. the complexity of a little endogenous capl. shift, as product becomes capl. + then v.v.

Regional booms, same thing on larger scale, where growth feeds on growth. Centuries of experience has shown this is too complex for most actors in mkt. to handle.
so. you can forecast w. it.

Seasonal: same as astronomy.
Peak demands.

"Barometric" or leading indicators

$\Delta M \rightarrow$ infln. Harwood, Brownie, worked on this alone.

Bldg. permits, housing starts
Backlog of orders — prodn. or ΔP
Inventories — runoff
Hi stock mkt — new issues

NBER uses 100 leading indicators

Glenn Johnson, '60

knowledge, managers -- decision makers -- tend to follow one of two procedures. They can try to maximize the average excess of returns over expenditures or of satisfactions over dissatisfactions or, alternatively, they can ignore averages and concentrate upon such possibilities as "making a killing" or of "surviving." The decision maker who concentrates upon making a killing is often "shooting for the moon" because if he does not make it he is going to go broke anyway. On the other hand, the decision maker who has something to lose in a risky situation may have a primary interest in survival. In such instances, he may select a course of action in which the worst which can happen would still permit the survival of his business. In between these two extremes, there are many possible strategies which may be more appropriate to the special situations in which individual farmers or decision makers find themselves. In situations of imperfect knowledge in which all real world decision makers find themselves, it is inappropriate to assume that all decision makers do or should maximize "average, expected net return." In some instances it is far more appropriate for managers to make decisions which guarantee survival. In other instances the right decision would include the possibility of making enough money to get out of an untenable, low income position.

Yet, I fear that farm management researchers, extension workers and extenders of credit to farmers often set up budgets and repayment schedules using normal prices and normal yields in an attempt to estimate normal or average, expected net income. After doing this for a series of alternatives, the alternative with the highest average expected net is often recommended. A sounder principle to follow is one of finding out enough about the situation which the borrower faces and the values which he holds to determine whether it would be appropriate for him to maximize average expected returns, shoot for the moon, or play it safe by guaranteeing survival.

Insurance and chance taking.-- An interest, however, in survival and in substantial gains does not necessarily preclude analyzing insurance and chance taking problems in terms of maximizing average expected net returns. There have been some interesting developments along this line in the theory of insurance and chance-taking which are worthwhile placing before you. For a long time, economists regarded insurance as the avoiding of risks and chance taking or gambling as the seeking of risks. So regarded, it was inconsistent for a man to simultaneously insure and take risks at unfair odds. Yet many of our obviously competent decision makers did both. This bothered people who worked with the theory of management. It should also bother people working in the field of agricultural credit as we would all like to see managers who are inclined to protect their present holdings with insurance but are, at the same time, willing to take some chances for important gains.

One of the great mathematicians of our time, Von Neumann collaborated with an economists named Morgenstern to develop a theory which makes it reasonable for a manager to simultaneously insure and gamble. Two other workers, one an economist and the other a mathematician have done much to ellaborate the findings of Von Neumann and Morgenstern. These two workers are Friedman and Savage from the University of Chicago. The theories which these men have developed and ellaborated have been checked and found reasonably valid among 1075 farmers located in seven midwestern states, North Dakota, Iowa, Kansas, Kentucky, Indiana, Ohio, and Michigan.

The theories state if a person attaches increasing importance to successive increases in income and increasing importance to successive decreases in income and try to maximize their average incomes over time, it is logical both to insure at unfair odds against large risks and take unfair risks for large gains. The point, in the case of the gains, is that the last dollars of a large gain can be worth enough more (in personal subjective terms) than the first dollars of that

The RAND Corporation
1700 MAIN ST. · SANTA MONICA · CALIFORNIA

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Professor Mason Gaffney
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College of Agriculture
Department of Agricultural Economics
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Dear Mase:

Many thanks for your kind and informative letter. I delayed replying because, apart from my normal lethargy, I was trying to work myself into a sufficiently equable frame of mind to read Eckstein's review. Jerry, as he always is, was broad-spirited enough to send Otto a note thanking him on the review. I guess I should write too, but I'm not up to it quite yet.

Of course, we are somewhat vulnerable at all Eckstein's points of attack. Even if we are, in some ultimate sense, really right on the points of issue, I am all too aware of many of the weaknesses -- of fact, of reasoning, and of presentation -- in our labored product. On the water law item, for example, I can't imagine Eckstein holding to the position he takes had he been familiar with as impressive an illustration and argument as that contained in your "Diseconomies..." paper. Incidentally, you really should send him a copy of that. If you haven't already sent the copy, you could twist the knife a bit by just saying that you're sending it to him at my request. Your position on the land value question saves you from any risk of being called a fundamentalist!

On this last front, and just to show how little of a fundamentalist I am, let me remind you that you never answered the question as to which citrus company to sell short. Incidentally, I was on a doctoral committee the other day in which the student had been working on agricultural trends in California. He alleged that citrus acreage was still declining (replantings are less than removals), and he wasn't anticipating any reversal of that trend.

Turning now to your comments on the risk question, I think I said that stocks yielding more than bonds was a "notorious" fact, which of course freed me from the need to provide evidence. Since you put me to the question, I must frankly say that I don't have the evidence at hand --

but I'm still convinced that the fact is notorious, unless of course one makes a peak-to-trough comparison of stock and bond yields. (I could look up the statistics, but then I wouldn't finish the letter today.) I would be inclined to explain boom psychology excesses in land and elsewhere not as representing illustrations of positive preference for risk (dispersion of return), but rather as being based upon cumulatively distorted evaluations of the mean level of future returns, in which case risk-bearing would really not be involved at all.

I think that your line of argument concerning lending costs (regarded as a special case of transaction costs) is quite correct, and I agree that in principle it leads to divergences among the equilibrium rates in isolated sub-markets. More work needs to be done here, certainly, to gauge the magnitude of this effect. In general, I consider the capital funds market to be one of our most perfect ones, and so have not worried myself much about this consideration -- perhaps I should have. The distinction between lender's risk and equity risk (and also the levered risk of the equity-holder after taking on a more-or-less risk-protected lender) is vital -- of course I so structured my simple model as to avoid this problem as well as such considerations as those arising out of the law of large numbers. Who's to take the courageous step of working these in?

Cordially,

Jack

Jack Hirshleifer
Economics Department

JH:lf

cc: Prof. J. W. Milliman
Indiana University
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Suppose one avoids risk.

If he intensifies & Δs i.g., he Δs σ of expectations for the one yr. of the higher intense inputs. (This can be expressed by making m c rise faster, the extra cost being the cost of higher liquidity cushions to offset risk.)

If he buys land title, he achieves thereby suddenly speed diversification of risk — thru time. Investing in inputs, he wins or loses on the turnover, just one chance. Investing in land title, one bad yr. balanced by one good year. The more so if he reduces intensity, & having now a higher ratio of land to inputs, so each year's return is surer, tho smaller.

The plungers do not buy land, then, except for fast turnover. In areas of supersession, plungers do find land titles attractive. This brings a new element into land mkt when mkt. is rising — plungers, w. + risk preference, and short term risk preference -- impatience for verdict types. In stable mkt they wd. plunge by intensive land use. In rising mkt they buy land.

Plungers buy & sell land faster than conservatives. This biases indices of land prices. Plungers deal in land of proximate prospects. 2 - 3% of the land may account for 50% the transactions, & may be atypical land.

Gambling.

Part of psych. is of a spectator sport. Relief from boredom, & enhances identification by passive spectators.

Land a good vehicle for this. Also common stocks.

Olmsted, The Slave States

p. 245

Gambling spirit, pay more than chances of winning. — for slaves, to fructify land.

Why gamble – ?

See Veblen, ch. 12 or so,
"The Belief in Luck".

Satisfies predatory instinct

Irrational to gamble & insure?

Maybe. But compartmentalization is observed in many human activities. Irrationality is very common. Why try to prove otherwise?

Gambling is old in govt. —
& has worked, sort of.

Old Roman republic,
days of Pyrrhus. They drew
lots to select landowners for
military service. Pratt, p. 51.

Could we ever pay taxes the
same way?

Evidently was partly volun-
tary, bcs ~~Decius Centus~~ Manius Curius
raised many protests by
his strict policy of confis-
cating property of refusers.

Gambling & insurance are contradictory from one view pt, but maybe that view is wrong. Are much the same from another view. You put up small sum, bet vs large co., for small chance of large payment. In neither case do you want get in position of finding strong, & make self liable for large payment.

Basically it is fncl accommodation between small & large. Small wants to avoid any risk of large loss, makes small payments

(over)

to achieve that. Large is willing risk large losses, for small steady gains.

Thus gambling of poor & rich is not on equal basis, but each gives other what he wants. Is not ∴ pure gambling, but fond ~~xxxx~~ dovetailing.

Watch, rich also provide location & facilities.

Issue: Should U.S. use its risk-free borrowing rate? Is same as a subsidy, use of tax power. (but in part is pooling of risk, diversification) If it did, wd. misallocate capital, maybe.

Answer: U.S. should allow for equity risk on each project, over X? — That is what a priv. investor wd. do, despite low borrowing rate. — X Not w. Lehnd, wd buy more.) But not necty thru i.r. That is a fallacy imposed by cap. mkts. But by specific risk discounts. And not necty discount — will return.

same issue — big corps borrow for less. ? If deny govts use of low i.r., do likewise for corps. Hirshleifer misses this. And big cities. Universal problem, whole spectrum of cap. mkts.

U.S. doesn't have lowest i.r. Those who plow back earnings use own money, even less. Also State & Local bonds.

(When mkt allows for lenders risk by higher i.r. isn't necty simple int. but at all. Shorter terms, with renewal charges e.g. is another way.)

Risk ✓

But no discount for dispersion of expectations. Indiv strong needn't do that. They pool such offsetting risks. That is why they run insurance cos., & gambling halls. That is great value of having U.S. do projects.

Fallacy of Hirshleifer to think of risk as purely negative, rather than as dispersion.

U.S. shd not discount uncertainty, but premium. Bcs. a, others must discount it, so is ~~need for~~ more cap. in works of hi dispersion; b. By definite action, create certainty for complementors.

Hi risk discount is another way to underdevelop sites, like mex. B/C.

Mgnl Δs are surely less certain.