

Note to Kyle...

Hi Kyle,

A quote from later in this missive is “I would be delighted to see you and your colleagues make a ton of money from being able to get done what I am having great difficulty in getting done relying on academia.” And I will phone you at 2 P.M. your time, or as soon thereafter as I get back home. In the meantime -

Thank you for phoning me. I really appreciate it. I also appreciate your candor. It really makes a difference in our making progress that will benefit FIS Applied Analytics, its affiliated organizations, and the nation.

My great concern, as is evident from what I have written, is with averting disaster for a lot of innocent people that will be devastated by a recession that might turn out to be the worst since the Great Depression. We can make a difference in mitigating it. Furthermore, if the way to do that is to provide assistance to your organizations, and they make a profit from that assistance, that is fine with me. I am glad to do it.

The piece that follows, “Revised Toward a Model Forecasting House Price Turning Points,” was written to foster a proposal from some colleagues for the project I see most critical to mitigating disaster. My apologies for the length, but as a retired academic I am accustomed to detail.

That lengthy piece is followed by my transmittal letter Joe Rabianski, who along with me and two others wrote the book on market analyses, *Real Estate Market Analysis: Techniques and Applications*, Prentice-Hall, Inc., 1988. My earlier co-author Mike Sumichrast, with whom I wrote *Housing Market: The Complete Guide to Analysis and Strategy for Builders, Lenders & Other Investors*, Dow Jones-Irwin, Inc., 1977 has gone to his reward. The letter to Joe refers to our relationship with the National Governors Association.

The short version of this one aspect relating to your data is that I want to see that the state regulators have the best analyses feasible to assist them in intervention. They are likely to intervene, with or without assistance. My fear is that if they botch it the flow of mortgage capital for future home ownership will be stifled and that the shorter run problems of impact on the economy will be ineffective.

Thus, if your product on forecasting prices becomes available to state governments, and they use it, it would be a significant contribution to society, aside from being profitable for your organizations.

Obviously, they are not the only market for such information and analyses. But, their affordable price points may be a lot less than those for the kind of products that Ralph Liu is developing, i.e., SWAPRENT and HELM etc.

Bob Edelstein is in the lead on our White Paper Task Force, and as you may have noted he has the lead project funded by HHI and its fellow funders. I haven't figured out how your organizations and ours can best work together, but I am thinking about it.

I have a 4 PM dentist appointment and need to keep it because we are going to our summer home soon and I have no time to reschedule. Supposedly I am retired. But, I will phone you at 2 P.M. your time (or as soon as I get back), as discussed, and maybe we can figure it out together.

I would be delighted to see you and your colleagues make a ton of money from being able to get done what I am having great difficulty in getting done relying on academia. Obviously I believe academia has a role to play and have gotten HHI to pony up \$100,000 to move that ahead. But it is the vehicle, not the objective.

There is a lot of material and it is doubtful that you could get to all of it before we talk, but we can get started and I will be glad to accommodate your schedule for a continuation tomorrow.

Maury

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Revised Toward a Model Forecasting House Price Turning Points - revised April 21, 2008

By Maury

Housing market models typically deal with forecasting the number of additional units to be supplied, usually by type of unit and tenure, and sometimes disaggregated by price categories. The traditional judgmental models deal with demand on a household formation basis and net immigration to the local area based upon employment growth and/or other economic base activity growth. The supply side is dealt with using stock and flow, the flow being new construction, conversions, and demolitions.

Since the annual flow is a small percentage of the standing stock, changes in demand, which may be volatile, may call forth even more volatile ranges in construction volume measured on a year to year basis. This volatility is reflected in cyclical construction activity that is highly dependent on prevailing house prices and costs of buildable land and construction.

The cyclical activity tends to feed on itself. The bidding for the stock that is undersupplied raises prices calling forth more construction. Rising volume tends to raise costs for land and construction. The peak of the cycle is generally forecasted based upon units rather than price.

Relatively little has been done in researching the psychological aspects of the demand feeding on itself. In some earlier boom periods buyers saving to buy a better house found that the acquisition costs rose more than the ability to buy. That led to a rush to

buy that exacerbated the price increase, changing tenure mix with home ownership increasing relative to renting. Supply adjustments may be made by converting rental units to condominiums intended for sale to owner occupants. But, the boom ends when there are too many units on the market.

The too many units on the market is an elusive concept. Some number of vacancies is necessary for the friction of transactions. Since the markets are typically local the focus is on a local supply. But, the supply has a quality distribution reflected in price and the demand, typically measured in number of units, also has a quality dimension. The demand may shift to larger more elaborate homes which is an increase in demand. That increase may be fueled by rising income and house price expectations. A reversal of expectations generates a reversal of demand.

Rational buyer behavior is a convenient assumption for the models, but it is quaint. Behavioral economics sheds additional light on consumer behavior. Misjudging the volatility of demand from irrational expectations on the upside is associated with overproduction. Home builder strategies vary; some builders get stuck with inventory overhang, but others building only from models on a pre-sold basis when excess supply is forecasted.

Forecasting a peak in prices is more complex than in units. The unit forecasts may rely on the fundamentals of households in the traditional analyses and segment the demand which is then compared with a bottom up supply and absorption analysis. The peak in number of units will be indicated by the slow absorption in the price category. The number of units aggregated from the forecasts in the various price categories will indicate a peak in construction volume.

The peak in prices may be reflected in an index. It is a composite of the price categories and thus requires forecasting the components and aggregating. It is more complex because incomes may be changing and the allocations to housing as a proportion of income may be changing. As complex as this may be, the downside forecast is likely to be even more difficult.

On the downside, which is our real concern at this point, the great issue is the inelasticity of supply. Adjusting supply on the upside requires large changes in productive capacity for small changes in aggregate supply. On the downside, all production can do is reduce additions to supply. The absorption is a function of demand which will have fallen, in part because some of the previous demand borrowed from the future.

It gets even worse in that the drop in demand may be exacerbated by the reduction of construction which reverberates through the local economy and changes expectations. The optimism that helped fuel the upside is gone; and, the pessimism of the downside moves buyers into a postponing mood. The result is a substantial reduction of buyers in the market.

Now, it is even worse because the subprime financing of the excessive boom not only exaggerated the demand but provided high loan to value ratios that result in negative equity in a price decline. Here is where the number of houses on the market comes to bear because prevailing prices are set at the margin. Prevailing price will be driven down

by foreclosure putting more houses on the market. The downturn in housing prices will ameliorated by letting homeowners who can no longer afford to own under the mortgage contracts they made stay in their house, even as a rental. Forecasting the turning point involves forecasting the defaults, the renegotiations, and the relief with whatever emergency measures are provided.

All this is leading up to the idea that developing a model that will forecast the turning points on local markets is a critical contribution to developing policy for intervening in the market. The analyses of turning points with and without intervention indicate a major variable in calculating the benefit of intervention.

The choices may be made without the calculations. The point is that the research will give better forecasts. The biggest point is that the policy needs a local focus unless you want to cut, burn, or poison healthy organisms. The cancer exists in some localities and needs aggressive treatment or it will spread. This needs to be read in conjunction with my latest essay in ASI/HF newsletter which is in the process of distribution. A copy is attached, but the footnote that follows is a modified excerpt that contains the cancer analogy.<sup>1</sup>

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<sup>1</sup> From my draft of Spring ASI/HF insert, footnotes deleted and some editing: **Anatomy of the Housing Market** If you are a believer in the concept of consilience as I am, then you will see that principles from diverse disciplines have commonalities that enable one to better understand the system in one discipline by applying principles learned in a different discipline. A brief overview of the housing market is provided here in the context of the human anatomy.

The key to being healthy is to maintain a proper balance in the system. Disease flourishes when the system gets out of balance. So one may ask what is a good strategy for dealing with maintaining health.

Now everyone has a working idea of what strategy is. But, in a technical sense I use it to mean policies pursued en route to an objective that are particularly concerned with overcoming the barriers to achieving the objective – solving the problems. In health we are accustomed to the curative approach; set the broken arm or cut out the diseased organ. There is also the preventive approach; inoculate against the disease. But the best is the perfective approach; live right such as with healthy foods and exercise and rely on the self corrections built into the system to keep it in balance.

The housing market got out of balance big time because the subprime mortgage availability and abuse facilitated a lot of buyers buying beyond their means and builders adding to the housing stock to meet the rising demand, both in quality and quantity. The market got drunk and it has an overhang; pun intended.

There is an excess supply of houses, some of which can be absorbed over a reasonable time, depending on the location. Housing markets are heavily local, second homes being an example of competition among localities. It is a little more complicated because cost and availability of housing may influence local economic growth which in turn influences the demand for housing. The Homer Hoyt Institute is supporting the research so that the forecasted outcomes of strategies can be enhanced in quality over what would it be without the rigorous research. It adds credibility because the quality of knowledge is really improved.

The shortcut is to follow my line of reasoning and then check out whatever you question. Housing is naturally cyclical because of a confluence of a number of conditions including that it is a long lived asset with annual production a small percentage of stock and a volatility of demand influenced substantially by the cost of mortgage credit. Furthermore, it is generally not mobile so that local market conditions may vary considerably from community to community, especially among communities with difference bases to the local economy. Most of the time the market is a pretty good mechanism for adjusting for excesses and shortages – it is sure better than relying on a tsar.

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In the present case, for most local markets in deep trouble, it is really dangerous to rely on the market to shake out the excess supply by using price. For most of us, if our child has ever had a high fever I'll bet that the vast majority of us gave the child a baby aspirin and maybe used cool water to constrain the fever as much as practicable. We did that because an excessive fever can cause a lot of damage. So it is with house price declines.

My great concern is with the cascading of the nature that occurred in Maple Heights, a suburb of Cleveland. The idea is that foreclosure begets more foreclosure. See one of the lead stories in this newsletter reporting on a study by Dr. Dubin at the Weimer School in January and which she is continuing, possibly in an effort to help identify turning points.

In the case reported in the New York Times story about Maple Heights, a family left the area, abandoned the house, because they no longer felt safe. The house wasn't over-financed. Houses with reasonable financing may get thrown into foreclosure because the decline in prices makes the debt greater than the value and the neighborhood is not attractive enough to warrant waiting it out.

Since owners of houses with debt exceeding the price available in the current market have an option value (meaning they can stay with the ownership), which coupled with the high transaction costs of relocating can provide substantial incentive for an owner of a home with a negative value on paper to wait it out. What needs to be done is to get rid of the cancer that is driving the prices down.

Cancer is a loaded word, and some people will take offense at it. But it fits. A dictionary that I use characterizes it as an invasive growth that may metastasize (transfer the cancer to other parts of the body) and "any evil condition or thing that spreads destructively."

The options are to cut, burn or poison. Cutting is obviously the surgery. Burning is the radiation. Poisoning is the chemotherapy. If one does not make one or more of the hard choices, the cancer spreads – it causes change in other parts of the system and can become deadly. In our analogy, the question is when does it pay to intervene with such drastic measures? [Tony, this is the big issue. We are working on developing relationships with state authorities that will make our research even more relevant.]

Some of the research the Homer Hoyt Institute is supporting is seeking to find out when it pays to intervene..in the housing debacle. However, to continue with the analogy, there are a variety of reactions when one is informed of tests revealing a cancer. Obviously it depends on the kind of cancer and the individual, but if it is real serious, the reaction might start with denial and/or shock. When any disbelief is counterbalanced and shock subsided the next reaction might be to ask "why me?" Then maybe whom can I blame? Sooner or later it makes sense to come to grips with reality, and that reality may be to cut, burn, or poison. In the case of the housing debacle it may mean extraordinary measures.

I like a minimax strategy, which is a strategy that maximizes gains within the constraints of acceptable risks. In the present case, that means not developing as permanent arrangements things that may need to be done on a temporary basis. Don't continue the heavy drugs after the disease is gone and be careful of habit-forming narcotics. So if strong measures are needed that are suitable for the short term but not long term, handle them in an appropriate manner.

As is discussed in the short essay of the market as an icon, we need to make substantial changes in order to get a more effective market. With the consortium's limited resources we are focusing on the triage situation, but the request for proposal (RFP) has some attention to the longer term issues. Indeed, we adjusted the RFP to attempt to get some preliminary research results in a timely manner. See the RFP presented elsewhere in this newsletter.

[end of footnote]

As to Senator Clinton's comment with which I opened the body of the discussion, it would be disastrous on a national scale, and maybe wasn't intended on that basis. I don't know. But, national policy is needed as well as state, and the Fed was right to pump some liquidity into the capital market. It is also right to use

It is time that we did something really useful with the research in helping emerging policy instead of like generals fighting wars of the past. The technology of wars changed, and so has the technology of housing economics. Our research support needs to make a significant difference in ameliorating the current crisis.

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An additional comment on strategy relevant to the desired model is in the following memo which I have edited: Draft of September 14, 2007 revised

**Foreclosure? The Right Way to Play the Suit May be the Wrong Way to Play the Hand:  
A Strategic Approach to Averting a Crash in the Housing Market and its Fallout**

Mortgage lenders, and representatives of mortgage lenders, consider foreclosure as an option when mortgage borrowers are in default. Mathematical models used to assess the profitability of the options may consider, in addition to foreclosure costs in legal expense and time, potential damage to the property and expected price to be realized. In order to reduce the costs the lender may offer cash for keys, i.e., a payment for a deed in lieu of foreclosure.

Each case may be considered on its merits, but what may turn out to be profitable on an individual case may be less profitable when considered as part of a portfolio of mortgages. The analogy to the card game of bridge is that the right way to play the suit may be the wrong way to play the hand.

In bridge, control of the hand in terms of constraining leads of the opposition, as well as timing, is critical in making the contract by taking a sufficient number of tricks. Taking the most tricks in a suit (spades, hearts, diamonds, or clubs), by having the highest card of the suit led or the highest trump, may be influenced by the way the suit is played. But, sometimes playing to maximize the number of tricks in a suit entails the risk of losing the lead to an opposing player who can defeat the contract by leading a suit damaging to the declarer (winner of the bid for the contract).

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monetary policy as best as it can to lessen the downturn and recession. The Fed was underwhelming in its oversight function of capital market institutional changes that led us into this mess. But, we can talk about that and fiscal policy later.

The moratorium on foreclosures idea occurred to me really early in the process. And it was buttressed by the actions of legal authorities in Ohio that denied foreclosures on securitized mortgages because of inadequate documentation. But that was a tool that I envisioned applied by states, probably in local areas that had been declared an economic disaster area on account of excessive foreclosures, and in order to prevent a cascading of foreclosures in the area (a metastasization to other houses in the locality) and to avoid a spread of the disease to other areas.

The analogy for foreclosures is that by foreclosing, or taking a deed in lieu of foreclosure, the lender adds another house to the local market and that market may already be flooded. The result may be to further depress already depressed prices and adversely affect the some of the rest of the mortgage portfolio, even in other geographical areas not competing with the houses in the subject property's market.

One may think that one more house on the market is not going to make enough difference to negate the mathematical model used to weigh the benefits and costs of becoming the owner of the property upon which their has been a default; the right way to play the suit. However, one should consider the classic case of the London's tragedy of the commons of medieval times in which everyone was free to graze on common land. The result was overgrazing so that the land was no longer suitable for grazing. No individual had an incentive to cut back on grazing their herd (the right way to play the suit) and there was no agreement at the time restraining the grazing. In later years such land came under ownership of a group of people who regulated the use among the common owners.

The idea here comes in two major parts. The first is to avoid a crash in the local market of a subject property. The second is to avoid a cascading of local market housing crashes. At first glance, many people will consider both cases as being remote possibilities, especially the latter.

Policy makers could wait until the possibilities seem less remote. The problem is that the longer the wait and the less remote the more difficult it becomes to avert. One could make mathematical calculations that would weigh the chances against the costs, but as with catastrophic events, even low probabilities are of little comfort if the catastrophe strikes. Thus, prudent decision makers, when insurance policies are not available or realistic, may take preventive action even with probabilities not favoring the odds of caution. The "go-for-broke" strategy takes the chance. The Minimax strategy constrains the level of risk and maximizes within those constraints.

In order to develop such a strategy it is essential to work with local data that identifies the high risk areas. The discussion which follows is a first step in developing such a strategy.

...TO BE DEVELOPED based upon concentration of defaults and foreclosures and presence of sub prime mortgages. Also, the consideration of policies to stave off foreclosures. That provides a series of projects.

That is an approach to the first part. The second part, cascading, is more difficult to tackle because of the problem of identifying tipping points before they happen. Forecasters do well in extrapolating from the past, but the turning points may arise in different patterns because of differences in people's responses, among other things. It may be a case of emergence.

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Memo to Joe Rabianski...

About SCRC

Toward a Model for Forecasting Turning Points revised April 21, 2008

Insert Don't Panic Draft 6

Norm's proposal

Hi Joe,

I tried to reach you by phone because I want to discuss the possibility of your doing a project for SCRC funded by HHI and its co-funders, Freddie Mac, Mortgage Bankers Association, and NAR.

Attached are some items. One is some stuff I wrote describing the research which in my personal opinion is the highest priority, "Toward a Model for Forecasting Turning Points revised April 21, 2008."

I want to discuss your submitting a proposal to demonstrate the methodology of identifying likely tipping points in house prices as in a local market and turning points to recovery. My thinking on what we need is elaborated in the latest insert to ASI/HF newsletter which is attached as "Insert Don't Panic Draft 6."

The closest proposal that we received was from a group headed by Norm Miller, with Stephanie Rauterkus as the ball carrier. That proposal has been approved. The start is being held up because of proposed data costs not realistic for our academic efforts. The proposed vendor is Applied Financial Technology (AFT). I have attached a copy of that proposal. Their data requirements are noted in the proposal. We may be able to work out the data availability if we can split the data costs between the two projects.

We are using a \$25,000 cap on individual projects because of funding resource limitations. Norm's project can be cut to \$12,500 and we would have another \$12,500 for the one I want to get a proposal on, subject to what happens on data costs and available funding. However, I would note that the project I want you to propose is, in my opinion, the most critical of all the projects,

As you will note from Norm's proposal, their study is of numerous localities to identify the impact of subprime lenders and predatory lending on neighborhoods. Your study would be an extension to develop a model suitable for numerous neighborhoods, but demonstrated for a few, or as many as you could handle in the time frame and budget.

I anticipate that there would be follow-up studies of localities that states would consider for intervention. We are working with the National Governors Association and others that I believe will carry forward the research results that we cause to be produced.

The time frame is as short as feasible. Since academic research is generally slow, and the crisis is now, SCRC has decided that the cornerstone of our program is the White Paper effort being led by Bob Edelstein. That paper will integrate and translate the research

supported by SCRC, and other relevant research into a generic strategy for policy. Different policy agents will adapt to their values and preferences, but the outcomes will be based on the best academic research doable in the available time. We will have to supplement that with analyses by leading academics and practitioners where the gaps exist. Filling the most critical gaps will set the priority for the next funded research.

As you will see by the enclosed About SCRC, we are looking to extend the program for a second year. We are in a recession despite the reported growth for the first quarter of 0.6%. Since we are developing relationships that I expect will have some authorities relying on the research product produced by SCRC and the crisis will be with us next year.

Best regards,  
Maury