

JAMES A. GRAASKAMP COLLECTION OF TEACHING MATERIALS

VII. INDUSTRY EDUCATIONAL COURSES - LONG TERM

A. EDUCARE

8. Correspondence from EDUCARE Participants and
Observers



SOCIETY OF REAL ESTATE APPRAISERS

AN INTERNATIONAL ORGANIZATION - HEADQUARTERS 7 SOUTH DEARBORN STREET, CHICAGO, ILLINOIS 60603, -PHONE: FINANCIAL 6-7422

March 2, 1971

Dr. James A. Graaskamp
Assistant Professor in Business
The Graduate School of Business
The University of Wisconsin
1155 Observatory Drive
Madison, Wisconsin 53706



Designates
SENIOR
RESIDENTIAL
APPRAISER



Designates
SENIOR
REAL ESTATE
APPRAISER

Dear Jim:

I understand your first EDUCARE Course was a success. In reporting on it, Roy Fisher asked us to furnish you with labels for the members of the Board of Governors and the Education Committee of the Society. These are enclosed.

The sheets are lightly gummed and can be cut apart for use as labels when you are ready, meanwhile, they are much easier to keep track of in this form.

Congratulations on a successful program.

Cordially,

James V. Morgan
Executive Vice President

JVM:cd
Enclosures

SCOTT APPRAISAL SERVICE INC.

REAL ESTATE APPRAISERS & CONSULTANTS

2509 BROWNCROFT BLVD.
P. O. BOX 9121
PANORAMA BRANCH
ROCHESTER, N. Y. 14625
PHONE - 381 - 5425
AREA CODE 716

July 27, 1971

Professor James A. Graaskamp
Graduate School of Business
1155 Observatory Drive
University of Wisconsin
Madison 53706

Dear Chief and Indians:

Dave and I enjoyed the Educare course very much and I want to express our appreciation for the meticulous care and planning that went into the program, as well as the excellent teaching and assistance provided to us.

You asked for criticisms or comments. We have no criticisms and only a few suggestions that I'll set forth below:

- 1 - I believe that we might be able to take in a little more information on Sunday night. Perhaps the film on computers although I realize some time on statistics should proceed this.
- 2 - I believe a suggestion to the incoming student to bring data on the Income Approach and mortgage information from a few appraisals from his own file could be helpful. We perhaps had more time than later students may have however making up data while facing the terminal does not always result in reasonable inputs and I further think that a comparison of the answers we came up with on our own appraisal as compared to the one produced by the computer would be very interesting.
- 3 - I realize it would result in extra work for Educare, but I believe that an official book of programs on G.E. Time Sharing would be desirable. I believe it should be in loose-leaf notebook form which would allow for the addition of later programs and revisions to the Table of Contents.

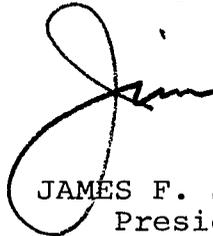
Professor James A. Graaskamp
University of Wisconsin

Page Two
July 27, 1971

As to suggested programs, I believe the one concerning a Wang Simulator would be most desirable and also a simple program on land residual and feasibility that would have total given input of project cost and mortgage data plus debt service and equity demands for the use of producing land value as a support and an application for variances or a change of zoning to permit greater density and/or intensity of use.

Thanks again for all your assistance and kindnesses.

Best regards -

A handwritten signature in black ink, appearing to read 'Jim', with a large, stylized initial 'J'.

JAMES F. SCOTT, S.R.A.
President
SCOTT APPRAISAL SERVICE, INC

JFS/lb

BERNARD CARMICHAEL, MAI-SREA

REAL ESTATE APPRAISER

102 WASHINGTON BLDG. • P. O. BOX 1062
MONTGOMERY, ALABAMA 36102
PHONE: 264-2476

July 28, 1971

Dr. James A. Graaskamp
Associate Professor in Business
Room 101, School of Business
University of Wisconsin
Madison, Wisconsin 53706

Dear Jim:

The EDUCARE course was great! I learned a lot, but not nearly enough. You have certainly excited my interest. Nearly everybody thought that you all have done a really fine job. If I had gotten nothing more from the course, it would have been worth my coming just to realize how important the computer is, not only to me, but to the entire profession.

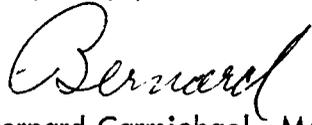
It is my intention to use what little influence I have in the Society and the Institute in helping to furnish a concerted effort to see that this knowledge saturates the profession. I think that both the Institute, the Society and the Counselors need to give this thing the hard sell because for the profession to really grow, we will have to turn to the computer. The best vehicle for this is EDUCARE, and I think that EDUCARE has made a wise choice in the selection of you and Bob Knitter, but we do need to give it the hard sell.

We need to get this course where nearly all of our appraisers can be persuaded to take it. The most important thing is to get them there once. Once exposed, those who do not see the urgent necessity for mastering this tool are probably appraisers who are going to die on the vine anyway, so we are not going to concern ourselves with them. But the appraisers who are going to grow, I think, will almost certainly see after the first trip to your fountain of knowledge that they must conquer this tool. So again, the big thing is getting them there. I find that your philosophical lectures fascinating and your talks on statistics and multiple regression most interesting, but I suspect that we would be better off if this came later.

The first step, I think, should be to shorten the course as much as we can possibly manage and really give the students the "nuts and bolts". Show them what this thing

is, what it costs, that it is within their capability to learn it, then turn them loose. Once that is done, I think that they will see the necessity for expanding their knowledge in this field. Then we can move deeper into statistics, multiple regressions and modern, decision-making tools.

Very truly yours,

A handwritten signature in cursive script that reads "Bernard".

Bernard Carmichael, MAI-SREA

bc/lks

MEREDITH H. JAMES, JR.
REAL ESTATE APPRAISALS
1515 WEST ALABAMA, HOUSTON, TEXAS 77006
AREA CODE 713 - PHONE 526-4101

August 6, 1971

Dr. James A. Graaskamp
School of Business
University of Wisconsin
Madison, Wisconsin 53706

Dear Jim,

I want to thank you and all your staff for making the EDUCARE course so interesting, informative, and thought-provoking. I hope there can be many more like it in the future.

One of the biggest benefits I got from the course was the "thought-stimulation", both in theory and in practical application. I got several ideas for some short, "every-day" programs plus a good insight into what the longer programs involve.

I was particularly pleased to find that you are using "HOSKOLD" capitalization. I have been trying to advocate HOSKOLD for many years, with little or no success. Perhaps a lecture or two on the basic "Mathematics of Capitalization" would help to bring out the fact that "HOSKOLD" is the general formula for all capitalization methods and that "Inwood" and "straight-line recapture" are simply special cases of the general HOSKOLD formula. (The attached sheet is some class-room material I used in a course in "Advanced Appraising" at the University of Houston in the early 1950's. You are welcome to adapt it to EDUCARE's course if you think it will help.)

The "thought-stimulation" was so great that I can't possibly put all my thoughts and comments in one short letter. Ideas such as: "Why not use 'discontinuous' discount rates as well as discontinuous income?" Or, "Can alternate income streams be compared by means of regression analysis techniques?" I will try to write you at length on some of these ideas at a later date.

Thanks again to you, Bob K., and all your staff for a wonderful job of covering so much ground in such a short time.

Sincerely,



Meredith H. James, Jr.

IDEA #1

Possible program for a training-aid in EDUCARE course I:

I. OUTPUT:

THIS IS A PROGRAM FOR COMPUTING THE CAPITALIZATION RATE APPLICABLE TO A LEVEL, PERIODIC INCOME STREAM. THE BASIC PREMISES ARE THAT THE INCOME WILL REMAIN LEVEL OVER THE LIFE OF THE INVESTMENT, THAT EACH PERIODIC PARTIAL RETURN OF CAPITAL WILL BE IMMEDIATELY RE-INVESTED AT THE STIPULATED RE-INVESTMENT RATE, AND THAT THE STIPULATED INTEREST RATES WILL REMAIN FIXED OVER THE LIFE OF THE INVESTMENT.

DO YOU WANT TO USE HOSKOLD, INWOOD, OR STRAIGHT-LINE CAPITALIZATION? (1 = HOSKOLD, 2 = INWOOD, 3 = ST. LINE)
ENTER 1, 2, or 3.

?

WHAT IS THE AMOUNT OF THE LEVEL ^{PERIODIC} PAYMENT?
?

FOR HOW LONG? (ENTER NUMBER OF PERIODS)
?

WHAT IS THE DESIRED RATE OF INTEREST ON THE INVESTMENT?
?

> HOW MANY PERIODS PER YEAR?

AT WHAT RATE WILL EACH PERIODIC PARTIAL RETURN OF CAPITAL BE RE-INVESTED? IE: WHAT IS THE RE-INVESTMENT RATE?
? RE-

(Possible replies: If Inwood is stipulated and $I(1) \neq I(2)$):

INWOOD CAPITALIZATION PRESUMES THAT EACH PARTIAL RETURN OF CAPITAL WILL BE IMMEDIATELY RE-INVESTED AT THE SAME RATE OF RETURN AS IS BEING EARNED BY THE SUBJECT INVESTMENT. IF THE RE-INVESTMENT RATE IS DIFFERENT FROM THE RATE BEING EARNED BY THE SUBJECT INVESTMENT, YOU MUST USE HOSKOLD.
DO YOU WANT TO USE HOSKOLD?

(If YES, proceed with the calculation. If NO, go back and repeat the input data questions. Force the student to set $I(1) = I(2)$ before the program will proceed with an INWOOD calculation.

(If Straight-line Capitalization is stipulated and re-investment is not = zero:

STRAIGHT-LINE CAPITALIZATION ASSUMES THAT EACH PARTIAL PERIODIC RETURN OF CAPITAL WILL BE PUT INTO A NON-INTEREST-BEARING CASH RESERVE THAT WILL EQUAL THE ORIGINAL INVESTMENT AT THE END OF THE LIFE OF THE INVESTMENT. THESE CASH RESERVES DO NOT EARN INTEREST UNDER THE STRAIGHT-LINE PREMISE.
DO YOU WANT TO USE HOSKOLD?

(If YES, proceed with the calculation. If NO, go back and repeat the data input questions. Force the student to set $I(2) = 0$ before the program will proceed with a straight-line calculation.)

The basic idea of this program is to force the student to match the input data with the capitalization method before the program will proceed with the calculation. If the input data does not fit the underlying premise of the selected capitalization method, the program will explain the underlying premises of the selected capitalization method and ask for new data.

A general HOSKOLD program could be used as a follow-up to this program. By naming it HOSKOLD, it would be a constant reminder that HOSKOLD is the general formula that fits all cases. Such a program would be an "automatic method selector" that would automatically select the proper capitalization method in accordance with the indicated re-investment rate.

Subsequent programs could introduce the student to the concepts of fluctuating, but periodic income; "negative income" and "internal rates of return"; "adjusted rates"; irregular, non-periodic income; etc.

There is no particular reason why the same discount rate should be applied to every portion of the prospective income. In fact, it is common practice to discount guaranteed minimum rentals at one rate and possible "overages" from percentage leases at a different rate. In the bond market, near-term money almost always commands a lower rate than long-term money. The use of variable rates of return would be in accordance with the actual market place.

"Ellwood" could easily be modified to provide for one rate on the cash-flow and another rate on the potential reversion. This would be more in accordance with the actual market practice than the standard Ellwood concept. (There is almost no market for long-term reversions.)

**CAPITALIZATION FORMULAS
(EQUAL ANNUAL PAYMENTS)**

FUTURE WORTH OF ONE DOLLAR
(For a deposit made at the beginning of the 1st year.)

Example: \$1.0000 deposited @ 5% for 5 years:

| | |
|---|-----------------------------|
| End of 1st year: | \$ 1.0000 x 1.05 = \$1.0500 |
| " " 2nd " : | 1.0500 x 1.05 = 1.1025 |
| " " 3rd " : | 1.1025 x 1.05 = 1.1576 |
| " " 4th " : | 1.1576 x 1.05 = 1.2155 |
| " " 5th " : | 1.2155 x 1.05 = 1.2763 |
| <hr/> | |
| Total of 5 deposits of \$1 ⁰⁰ each = | \$5.8019 |

$$(1) F = (1 + r)^n$$

where, r = rate of interest
n = number of years

FUTURE WORTH OF \$1.00 PER ANNUM = \$5.8019
(For deposits at the beginning of each year.)

$$(2) F = \frac{(1 + r)^n - 1}{r} \times (1 + r)$$

PRESENT WORTH OF ONE DOLLAR
(Due at the end of the year)

Example: \$1.0000 due each year for 5 years:

| | |
|---|----------------------------|
| Due in 1 years: | \$1.00 ÷ 1.0500 = \$.9524 |
| " " 2 " : | 1.00 ÷ 1.1025 = .9070 |
| " " 3 " : | 1.00 ÷ 1.1576 = .8638 |
| " " 4 " : | 1.00 ÷ 1.2155 = .8227 |
| " " 5 " : | 1.00 ÷ 1.2763 = .7835 |
| <hr/> | |
| Total of 5 payments of \$1 ⁰⁰ each = | \$4.3294 |

$$(3) F = \frac{1}{(1 + r)^n}$$

PRESENT WORTH OF \$1.00 PER ANNUM = \$4.3294
(Payments collectable at the end of each year. Inwood's Premise.)

$$(4) F = \frac{(1 + r)^n - 1}{r} \times \frac{1}{(1 + r)^n}$$

$$\text{or, } = \frac{1}{\frac{r}{(1 + r)^n - 1} + r}$$

FUTURE WORTH OF \$1.00 PER ANNUM = \$5.5256
(For deposits at the end of each year)

$$(5) F = \frac{(1 + r)^n - 1}{r}$$

AMORTIZATION RATE. (The amount which must be deposited at the end of each year in order to build up to \$1.00 = \$.1809

$$(6) F = \frac{r}{(1 + r)^n - 1}$$

PRESENT WORTH OF \$1.00 PER ANNUM = \$4.1954
(Payments collectable at the end of each year. Hoskold's Premise using a 3% re-investment rate.)

$$(7) F = \frac{1}{\frac{r'}{(1 + r')^n - 1} + R}$$

GENERAL FORMULA:

$$F = \frac{1}{D + I}$$

Straight-line

$$F = \frac{1}{sfo + i}$$

Hoskold Premise

$$F = \frac{1}{sfr' + R}$$

Inwood Premise

$$F = \frac{1}{sfr + r}$$

D = Depreciation Rate.
I = Interest Rate.

sfo = d = $\frac{1}{n}$

r' = "safe" rate
R = "Risk" rate

r = "risk" rate

i = int. rate = R - (d - sfr')

Where R = "Actual" rate
r' = "Reasonable" rate

August 16, 1971

Dr. James A. Graaskamp
202 N. Breese Terrace
Madison, Wisconsin

Dear Jim:

I'm writing this in Puerto Rico, so it will be delayed for a while in getting to you. I am trying to recast 201 to bring it and my text more nearly in conformity with each other, as well as adding more drill problems and exercises to the student reference. Then I plan to start on the 301 outline and session details. This is where the Educare course(s) comes into the picture. I wanted to make absolutely sure that the overlap between 301 and Educare was minimal, and yet that the SREA course sequence gave "successful students" a reasonable preparation to make most effective use of the tools provided through Educare.

I promised you to make some comments (and suggestions) about the course, so here goes. First, it is obvious that things still need a little tightening up. This was especially apparent on Wednesday afternoon and evening, but also applied to other evenings.

For a long time, people are going to attend the course with fire in their eyes and full of all sorts of ambition. Most of them are going to be owners or partners and, by God, they're going to get their money's and their time's worth. So you can work their asses off - provided you give them some formal time to "play": a little sightseeing, maybe some cards, and some swimming.

As an example of the modest frustration that a few felt, the group somehow was "ahead of schedule" enough to permit sightseeing time Tuesday afternoon, but somehow "behind schedule" by Wednesday morning. I believe you can do more of substance Sunday evening. Make starting time 4 p.m. ("or else") and start showing the films then, after the sign-in exercise.

I feel that several of the models and programs used were not sufficiently explored in their uses and implications: e.g., Rates, CIT, Hodges. Realmetrics wasn't really handled at all, the Minimod deserves much more treatment and use. What I am suggesting is more concentrated discussion of, and application with, the programs already in the system. Then it will really sell itself, and the discussion of "economics", costs, usage and the like can be deferred until Thursday morning. Frankly, I felt that there was too much "selling" interspersed in the discussions before Thursday. That time could better have been spent, in my opinion, in improving understanding of the use and applications of the programs - and on the machines.

August 16, 1971

Having said all this, I want you and Bob to know that I am already pushing the program as hard as I can, and will continue to do so. It is by far the best opportunity to bring designated appraisers up to the 1970's. I just want to see it even better (as I am sure you do) and financially as well as operationally successful. Between us (and please don't repeat this yet), I have already planted the suggestion that it might be a required course for all SREA (not SRA) applicants. I have just footnoted the Educare course in the manuscript for a reprint monograph of our participation loan series, even if you do take exception to some of the materials in it. I am going to hammer on Educare as an example of what the "profession" should do in a paper I am presenting in Miami in November. And I am supporting it as much as I can with SREA officialdom - including Bernard. So I'm sold.

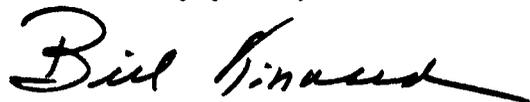
My own problem is that Connecticut is on a real austerity budget. In fact, we still have no mudget at all this fiscal year, and the legislature is still wrangling over taxes. So financing a terminal and "membership" out of university funds is presently out of the question. Every terminal on campus is hard-wired to our computer center's 360 system. And programming assistance is nil in the School of Business - again no funds.

Would a TWIX serve? One of our SBA projects has one.

Anyway, I'm still trying. So keep a user number available for me. It just can't happen for a while.

I hope these comments are helpful. You've got a good product that will certainly be even better as you go along and the system expands. I'll be in touch with you about November or December to start developing the cash flow seminar.

Cordially yours,



William N. Kinnard, Jr.
Associate Dean

cc: Bob Knitter

ja

From The Desk of
Meredith H. James, Jr.

HOSKOLD'S
GENERAL FORMULA
for discounting a
LEVEL, PERIODIC INCOME STREAM

$$R = \frac{1}{I_1 + SF_2}$$

where, R = Cap. Rate

I_1 = Risk Rate

SF_2 = SINKING FUND RE-
QUIREMENT AT I_2 .

I_2 = RE-INVESTMENT RATE

THEN, $VALUE = \frac{INCOME}{CAP. RATE}$

$$SF_2 = \frac{I_2}{(1+I_2)^N - 1}$$

1. STRAIGHT-LINE RECAPTURE:
IF $I_2 = 0$, LET $SF_2 = 1/N$

2. "INWOOD" CAPITALIZATION:

$$I_2 = I_1$$

$$R = \frac{1}{I_1 + SF_1} \equiv \frac{1}{I_2 + SF_2}$$

3. $I_2 \neq I_1$ = "HOSKOLD"

EDUCARE

p.o. box 631 / madison, wisconsin 53701 / phone (608) 256-2355

September 13, 1971

Mr. H. Robert Knitter
Dr. James A. Graaskamp ✓
The University of Wisconsin
Graduate School of Business
1155 Observatory Drive
Madison, Wisconsin 53706

Dear Bob and Jim:

Enclosed herewith is a copy of a letter from Larry Burke giving his impression of the course and suggestions in connection with its possible improvement.

Since this is one of the most constructive letters I have received, I am sending it on to you for your consideration.

With best regards, I am

Very truly yours,



John S. Schneider

JSS/lr

Enclosure

educational foundation for computer applications in the real estate industry, inc.

BURKE, HANSEN & HOMAN
REAL ESTATE APPRAISERS AND CONSULTANTS
111 WEST MONROE, SUITE 818 • PHOENIX, ARIZONA 85003
TELEPHONE (602) 254-5451

September 10, 1971 LARRY BURKE, M. A. I.
JOHN T. HANSEN, M. A. I.
JIM HOMAN, M. A. I.
WALTER J. STEVENS, M. A. I.

Mr. John Schneider, President
Educare
515 Fulton Federal Building
Atlanta, Georgia 30303

Dear John:

I attended the Educare session in Wisconsin in early August this year. Immediately thereafter, I went on a vacation and then to the FIG Congress in Germany. Consequently, I've been very slow in commenting about the Seminar.

As you probably recall, I was somewhat dubious about the need, though certainly willing to go along with your personal judgement. Consequently, when I arrived it was with something of a "show me" attitude.

I came away entirely convinced that this Seminar has fine potential. Of course, like any new seminar it will need improvement insofar as details are concerned. My quick comments so far as details are:

1. The course should be a full week long. It's rather pointless not to use Friday.
2. At this time the course is primarily concerned with the use of the computer and has not sufficiently developed the relationship between the computer and real estate valuation. In other words - not enough Grasskamp. I think an extra day from Grasskamp would help a great deal.
3. Scheduling sessions into the evening may be a little long for those of us who are over 30.
4. I would believe it would be highly appropriate to mail every registrant a copy of a well written book concerning computers and time-sharing, such as:

BASIC FOR BEGINNERS BY WILSON Y GATELY AND
GARY G. BITTER - McGraw-Hill Book Company

Mr. John Schneider, President
September 10, 1971
Page Two

If I had been able to run through this 121 page booklet before arriving I think it would have been only necessary to devote about half as much time to computer operations.

5. I think it's fine to have the various terminal companies send their representatives, but it would be much more appropriate for them to be there at non-class times. Maybe this would be a use for the evenings.

The Galbreath Mortgage Company is now known as Chemical Mortgage Company, a subsidiary of The Chase Manhattan Bank. The opinions expressed in this letter are not necessarily the opinions of Chemical Mortgage Company or The Chase Manhattan Bank.

The Galbreath Mortgage Company

101 EAST TOWN STREET

Columbus, Ohio

43215

DAVID S. COOK
PRESIDENT

TELEPHONE
614/228-3000

December 20, 1971

Dr. James A. Graaskamp
Associate Professor of Real Estate
Graduate School of Business
1155 Observatory Drive
Madison, Wisconsin 53706

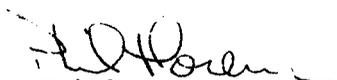
Dear Dr. Graaskamp:

Thank you for your letter of November 14th suggesting various time sharing firms to contact. Last week we installed our terminal and have been able to use and analyze the various programs available through EDUCARE. Omnimetrics, in our opinion, also gives maximum flexibility and we are in contact with them trying to get a handle on costs. Hopefully, by February 20th we will be familiar with various alternatives as a basis for discussing mutual needs for additional program development.

In recognition of your present speaking commitments through August of next year, we would like to invite you, at our expense, to address selected developers for, say a two day seminar sometime during the last quarter of calendar year 1972. We visualize two separate groups that would attend for one day. Perhaps we can discuss this in detail during the week of February 20th.

Sincerely,

THE GALBREATH MORTGAGE COMPANY


J. Philip Florence
Mortgage Loan Representative

JPF/plb



CANADA

Department of Public Works

EDUCARE
Ministère des Travaux publics

your file / votre dossier
our file / notre dossier

Ottawa, Ontario
K1A 0M2

July 5, 1972

Dr. J.A. Graaskamp,
c/o EDUCARE,
University of Wisconsin,
1155 Observatory Drive,
Madison, Wisconsin
U.S.A.
53706

Dear Dr. Graaskamp:

The Property Services Branch of the Department of Public Works is interested in exploring the area of Educare's MKTCOMP computer program as an aid to its appraisal process.

We are contemplating experimenting with MKTCOMP and multiple regression analysis in the appraisal of some seven hundred properties that are being expropriated for a new airport site on the outskirts of Toronto, Ontario.

Do you have any written literature on the MKTCOMP program other than that found in the EDUCARE course? We would appreciate receiving any literature we can on the development and operation of the MKTCOMP program.

Any help you can give us will be greatly appreciated.

Sincerely,

L.H. Howard,
Chief Appraiser,
Property Services Branch.

G. Paul Rollo:998-4940:cmg

August 8, 1972

Mr. Robert H. Knitter
533 S. Segoe Road
Madison, Wisconsin

Dear Bob:

As we discussed at the last Educare conference and on the telephone Monday morning, I have a little bit of a problem. My partner and I look forward to joining the Educare network as soon as we can solve the problem, which is this.

For a number of reasons (not the least of which is financial), we need for the Market Comparison program to be operable and accessible to us on a day to day basis. We plan to utilize it as an aid in my partner's rather extensive residential appraisal practice. We expect that, initially, we will utilize the program for from fifty to one hundred residences per month, although, depending on a number of factors, our optimum use may well work out to be from one hundred and fifty to two hundred per month. One of our main considerations is the storage charges for data files. We understand that this is G.E.'s charge and not Educare's. Nevertheless, we are not sure how the economics will work out in actual practice.

What we need is for the Market Comparison program to be altered so that parameters may be set in the search of the comparable sales file. This is explained very well in Dr. Cluttenberg's article "Computer Simulation of the Market Approach" in the January - February 1972 Edition of The Real Estate Appraiser, under the subheading Selection of Comparable Sales.

My initial idea is to be able to select comparables by:

- 1 - Price Range (high and low prices)
- 2 - Location code
- 3 - Age
- 4 - Quality rating
- 5 - Sale date

These modifications would make the program usable where there may be a file of two hundred to three hundred sales already in storage but only five to ten of which are truly comparable.

August 8, 1972
Mr. Robert E. Knitter
Page 2 - continued

You mentioned the possibility of utilization of the G.E. Program, Fleximist, however, the double charge necessary for accessing two programs for each appraisal would appear to make this a financially unfeasible solution. That is, if we are doing appraisals for \$35 and \$50 (depending on the client), we can scarcely afford a \$5 to \$6 per appraisal computer charge. The \$1 to \$2 charge per run, if this were all done in one program, does appear to be feasible. (Dr. Cluttenberg suggests this charge as average in his article)

I think you will agree this program has the widest possible application by potential users of Educare. Accordingly, I urge you to give the modification discussed herein, the highest possible priority.

Hope to see you again soon.

Very truly yours,



Robert J. Callaway, S.R.A., M.A.I.

RJC/lw

cc: James A. Graaskamp ✓
Norman Benedict
Roy R. Fisher, Jr.
Robert A. Steele
Ron Brown

REAL ESTATE COUNSELORS

SUITE SIXTEEN, SYLVANIA BUILDING, 403 N. SYLVANIA, FORT WORTH, TEXAS 76111
CODE 817-834-7151

September 7, 1972

Educare Computer Network, Inc.
Attention: H. R. Knitter
533 S. Segoe Road
Madison, Wisconsin 53711

Dear Bob:

I am enclosing a contract agreement for the Educare Computer Network.

It was my intention to handle this matter immediately after returning from the Educare Seminar in July, however, since that time I have been to San Francisco, Lake Tahoe, Pennsylvania, New York and a few other places. Time somehow has passed rapidly.

Today, however, I made contact with the GE time share people in Dallas and found that they definitely do supply the Fort Worth area with a direct line, and have arranged to get a terminal installed.

We hope to be able to coordinate the terminal installation and the beginning of our agreement with Educare both on October 2, 1972. I am leaving next week to teach a course in Puerto Rico and will not be back in the office until the 2nd of October.

At this point we hope to get going with some of the Educare programs and hopefully we will be able to substantially increase the scope of services to our clients and ultimately our net income.

Let me express to you again how much I enjoyed the Educare Seminar, and particularly your part in the presentations. I have no doubt that I will find it necessary to call on you and some of the others in Madison for some counsel and assistance as time goes on, and I am looking forward to attending the follow up to the Educare Seminar after I have had an opportunity to know what needs to be followed up.

At the present time I need to know what I must do to obtain a supply data input forms for the various programs available through Educare, and also need to know more about the programs available through GE. I assume that they can probably give me a catalog with detailed information about their library, however, if you have any suggestions along this line I would appreciate hearing them.

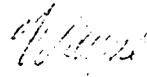
Educare Computer Network, Inc.

September 7, 1972

Page 2

We are particularly interested in programs that will handle multiple regression analysis, and we are very definitely interested in the land development program which you or Jim indicated would be available through Educare toward the end of this year. Any other good advice to a real beginner such as I would be most appreciated.

Sincerely,



Wayne D. Hagood, SREA, MAI, CRE

WDH:sg

Enc. 1

November 27, 1972

Mr. Robert Knitter
533 S. Segoe Road
Madison, Wisconsin 53711

Dear Bob:

As you are well aware, local participants in Educare greatly need the services of the local G.E. Representative. You assured us, at the time of the Educare Conference, that G.E. had made internal arrangements to compensate the local representative for servicing the local account.

The G.E. Representative in my area, Mr. Joe Ripkin, says that he has not received credit for our account. At my request, he requested credit for our account but was told that the Milwaukee office of G.E. did not allow this. Bob, obviously there is a slip up somewhere. I need the local man but he wants to be compensated for his efforts and I do not blame him. See what you can do on my behalf.

Thank you.

Very truly yours,

CALLAWAY AND PRICE, INC.



Robert J. Callaway, S.R.P.A., M.A.I.

P.S. As much as I enjoy talking to you guys, this calling Wisconsin is getting expensive.

cc: Dr. James A. Graaskamp ✓
Mr. Joe Ripkin

JOHN C. BYRAM, JR.
SUITE 2207 — COMMERCE TOWER
911 MAIN STREET
KANSAS CITY, MISSOURI 64105
(816) 474-8827

December 6, 1972

Mr. James A. Graaskamp
Associate Professor of Business
Graduate School of Business
1155 Observation Drive
Madison, Wisconsin, 53706

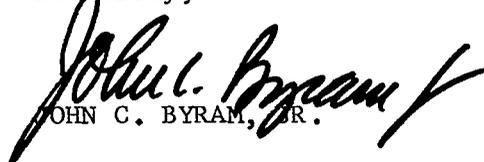
Dear Mr. Graaskamp,

I was pleased to receive your letter of November 20, and your expression of interest in the computerized HUD feasibility analysis. I have read numerous articles written by you and have a high regard for your abilities.

Enclosed is a short explanation of the HUD feasibility analysis and a couple of examples. A variation of this program is presently being used by several large HUD oriented mortgage companies (Associated Mortgage Companies, Advance Mortgage Company). This computer program incorporates all the popular HUD multi-family sections as well as the HUD section for nursing homes.

Dunlap Vanice and I have been providing this program and others to Real Estate people in Kansas City with limited success. We would like to cooperate with you, perhaps a trade for other real estate programs or possibly an opportunity to learn more about potential uses of a computer in the real estate field.

Sincerely,


JOHN C. BYRAM, JR.

JCB:Jr/vs

cc: Mr. Dunlap Vanice

INTRODUCTION AND PURPOSE

The purpose of this computer program is to determine the economic feasibility of a HUD insured multi-family housing project. This feasibility analysis is done by finding the relationship between the cost of a housing proposal and the amount of income necessary to pay operating expenses, debt service and return on invested capital. All calculations are based upon HUD manuals and guidelines.

The computer program will calculate and print out data for the FHA form 2013 (also known as FHA form 2264), and can be used for sections 207, 220, 221(d)4, 236 and 232 of the National Housing Act. Adjustments will be made for new construction or rehabilitation, or for a profit motivated, non-profit or a limited dividend ownership.

The problem may be based upon either the anticipated rent roll, in which case it will calculate the HUD allowable construction cost; it may be based upon the anticipated construction cost (or the mortgage amount) in which case the program will calculate the rent needed in order to support those costs, or it may be based upon the mortgage amount and will show the construction cost breakdown and rental needed to support that construction cost. In each case the appropriate figure for each line of the FHA form 2013 will be printed, although predetermined dollar figures may be substituted for title and recording fees, consultants fees, legal and organizational fees and non-realty items (for section 232-nursing homes).

DATA INPUTS FOR HUDPRO
HUDPRO

10 FHA Section _____ MTGOR _____ REN (TS) _____ PRO (POSED)
 COS (T) _____ MOR (TGAGE) _____ EXI (STING) _____

20 UNIT MIX _____

30 UNIT SIZE _____

40 COMMERCIAL INCOME _____, OCCUPANCY _____, EXPENSES _____, CONSTRUCTION TERM _____

50 TAXES _____, INSURANCE _____, LAND VALUE _____, LAND AREA _____, OTHER FEES _____

60 LAND INDEBTEDNESS _____, DISCOUNT _____, OFF-SITE CONSTRUCTION _____, EFFICIENCY _____

70 RENTS OR MTG. PER UNIT _____
 COST PER SQUARE FOOT _____

80 LINE NUMBER _____ SUBSTITUTED VALUE _____

90 LINE NUMBER _____ SUBSTITUTED VALUE _____

00 LINE NUMBER _____ SUBSTITUTED VALUE _____

10 1 - Note: The last entry in the file must be a line number followed by the number 1.

TOTAL STRUCTURES----- \$ _____

General Requirements ----- \$ _____

FEES-

Builder's Gen. Overhead

@ _____ % ----- \$ _____

Builder's Profit

@ _____ % ----- \$ _____

Arch. Fee-Design

@ _____ % ----- \$ _____

Arch. Fee-Supvr.

@ _____ % ----- \$ _____

Bond Premium ----- \$ _____

Other Fees ----- \$ _____

TOTAL FEES ----- \$ _____

TOT. for all Imprmts. (Lines 36c, 41, 42 & 49) \$ _____

Cost Per Gross Sq. Ft. ----- \$ _____

Estimated Construction Time ----- Months

CARRYING CHARGES & FINANCING-

▲ 53. Int. _____ Mos. @ _____ %
 on \$ _____ -- \$ _____

▲ 54. Taxes ----- \$ _____

▲ 55. Insurance ----- \$ _____

▲ 56. FHA Mtg. Ins. Pre. (0.5%) ----- \$ _____

▲ 57. FHA Exam. Fee (0.3%) ----- \$ _____

▲ 58. FHA Inspec. Fee (0.5%) ----- \$ _____

▲ 59. Financing Fee (%) ----- \$ _____

▲ 60. AMPO (%) ----- \$ _____

▲ 61. FNMA Fee (%) ----- \$ _____

▲ 62. Title & Recording ----- \$ _____

63. TOTAL CARRYING CHGS. & FINANCING -- \$ _____

LEGAL AND ORGANIZATION-

▲ 64. Legal ----- \$ _____

▲ 65. Organization ----- \$ _____

66. TOTAL LEGAL AND ORGANIZATION ----- \$ _____

▲ 67. Consultant Fee ----- \$ _____

68. Builder and Sponsor Profit & Risk ----- \$ _____

69. TOTAL EST. DEVELOPMENT COST (Excl. of

Land or Off-site Cost)(Line 50+63+66+67+68) \$ _____

70. LAND (Est. Market Price of Site)

_____ sq. ft. @ \$ _____ per sq. ft. \$ _____

71. TOTAL ESTIMATED REPLACEMENT

COST OF PROJECT (Add 69 + 70) ----- \$ _____

EXAMPLE NUMBER 1

A builder is considering the development of a 120 unit apartment project which will be financed under Section 221(d)4. The unit mix is expected to include 30 one-bedroom apartments with 750 square feet, 75 two-bedroom apartments with 900 square feet and 15 three-bedroom apartments with 1200 square feet. A check of comparable units in the area indicate that one-bedroom apartments could be rented for \$175 per month, two-bedroom units at \$205 per month, three-bedroom units should rent for \$265 per month, and income from coin-operated laundry should run around \$175 per month. Operating expenses including taxes and insurance are expected to cost \$850 per unit per annum; the occupancy level is projected at 93%, and a 18 month construction term is anticipated. The project is to be built on 360,000 square feet of land which will cost \$120,000. payable at the initial loan closing. Taxes during the construction period are projected at \$10,000, builders risk insurance will be \$12,000, and "other fees" (2013 form line #48) will be 3000. There are no off-site construction costs, there will be a 3% discount on the permanent loan, and it is expected that the rentable square foot area will be 83% of the gross building area (the efficiency). What construction costs could be supported by those rentals and how would the FHA form 2013 look?

The data inputs (or variables) would be arranged as follows (which corresponds to the data input form on page 5)

```

10 221 PM REN PRO
20 30 75 15 0 0
30 750 900 1200 0 0
40 175 .93 850 18
50 10000 12000 120000 360000 3000
60 120000 .03 0 .83
70 175 205 265 0 0
80 1
  
```

The preliminary output would be as follows

```

TYPE INPUT FILE NAME
? EXAMPLE
FHA SECTION 221
TOTAL STRUCTURES (LINE 41) 1480131.12
TOT. ALL IMPRMTS (LINE 50) 1636898.98
COST PER SQ. FT. (LINE 51) 12.58
TOT.PROJECT COST (LINE 71) 2192954.45
MORTGAGE AMOUNT (LINE 75) 1973659.01
TOT.CASH REQUIRD (LINE 83) 129527.99
  
```

| UNITS | AREA | RENT | TOTAL |
|-------|------|--------|----------|
| 30 | 750 | 175.00 | 5250.00 |
| 75 | 900 | 205.00 | 15375.00 |
| 15 | 1200 | 265.00 | 3975.00 |
| 0 | 0 | 0. | 0. |
| 0 | 0 | 0. | 0. |

The main output would be as follows: (line numbers correspond to the
FHA form 2013)

TYPE 1=PART C,2=PART F,3=PART G,4=PART H,5=TOTAL ,6=STOP

? 5

PART C (CONT.)

28.. 24600.00
30.. 175.00
31.. 24775.00
32.. 297300.00
33.. 130120.48
34.. 108000.00

PART F

30.. 297300.00
31.. .93
32.. 276489.00
33.. 102000.00
34.. 174489.00
35.. .37

PART G

41.. 1480131.12
42..(.020) 29602.62
43..(.020) 30194.67
45..(.040) 61597.14
46..(.013) 20532.38
47.. 11841.05
48.. 3000.00
49.. 127165.24
50.. 1636898.98
51.. 12.53
52.. 18.00
53.. 103628.94
54.. 10000.00
55.. 12000.00
56.. 19736.59
57.. 5920.98
58.. 9868.30
59.. 39473.18
60.. 0.
61.. 29604.89
62.. 6220.98
63.. 236453.84
66.. 11151.22
67.. 0.
68.. 188450.40
69.. 2072954.45

360000.00

.33

70.. 120000.00
71.. 2192954.45

PART H

72..2072954.45
73.. 120000.00
74..2192954.45
75..1973659.01
76.. 188450.40
77..2162109.41
78.. 30845.04
80...030 59209.77
81.. 39473.18
82.. 0.
83.. 129527.99

EXAMPLE 2

The builder concludes that he cannot build a semi-luxury apartment building for \$12.58 per gross square foot. In an attempt make the previous example feasible he decides to reduce the amount of rentable square feet area to 650 square feet for a one-bedroom, 850 square feet for a two-bedroom and 1100 square feet for three-bedroom apartment. He also decides he can build it in less time, in 15 months rather than 18 months and he can get more laundry income - \$300 per month rather than \$175 per month. The minimum cost per gross square foot which sounds reasonable is \$16.50, including architectural fees and overhead. What is the minimum rent which the builder must charge for these apartments assuming the remaining variables are the same as the preceding problem?

The data inputs (or variables) would be arranged as follows (which corresponds to the data input form on page 5)

```

10 221 PM COS PRO
20 30 75 15 0 0
30 650 850 1100 0 0
40 300 .93 850 15
50 10000 12000 120000 360000 3000
60 120000 .03 0 .83
70 16.50
80 1
    
```

The preliminary output would be as follows.

```

TYPE INPUT FILE NAME
? EXAMPLE
FHA SECTION 221
TOTAL STRUCTURES (LINE 41) 1792850.51
TOT. ALL IMPRMTS (LINE 50) 1982106.16
COST PER SQ. FT. (LINE 51) 16.49
TOT.PROJECT COST (LINE 71) 2594867.74
MORTGAGE AMOUNT (LINE 75) 2335380.97
TOT.CASH REQUIRD (LINE 83) 151267.85
    
```

| UNITS | AREA | RENT | TOTAL |
|-------|------|--------|----------|
| 30 | 650 | 178.16 | 5344.77 |
| 75 | 850 | 232.98 | 17473.28 |
| 15 | 1100 | 301.50 | 4522.50 |
| 0 | 0 | 0. | 0. |
| 0 | 0 | 0. | 0. |

The main output would be as follows: (line numbers correspond to the
FHA form 2013)

TYPE 1=PART C,2=PART F,3=PART G,4=PART H,5=TOTAL ,6=STOP

? 5

PART C (CONT.)

28.. 27340.54
30.. 300.00
31.. 27640.54
32.. 331686.49
33.. 120180.72
34.. 99750.00

PART F

30.. 331686.49
31.. .93
32.. 308468.44
33.. 102000.00
34.. 206468.44
35.. .33

PART G

41.. 1792850.51
42..(.020) 35857.01
43..(.020) 36574.15
45..(.040) 74611.27
46..(.013) 24870.42
47.. 14342.80
48.. 3000.00
49.. 153398.64
50.. 1982106.16
51.. 16.49
52.. 15.00
53.. 102184.59
54.. 10000.00
55.. 12000.00
56.. 23353.81
57.. 7006.14
58.. 11676.90
59.. 46707.62
60.. 0.
61.. 35030.71
62.. 7306.14
63.. 255265.93
66.. 12507.68
67.. 0.
68.. 224987.98
69.. 2474867.74

360000.00

.33

70.. 120000.00
71.. 2594867.74

PART H

72..2474867.74
73.. 120000.00
74..2594867.74
75..2335380.97
76.. 224987.98
77..2560368.95
78.. 34498.80
80...030 70061.43
81.. 45707.62
82.. 0.

ROBERT L. FOREMAN, M.A.I.
REAL ESTATE ANALYST - CONSULTING APPRAISER
901 DOVER DRIVE, SUITE 220
NEWPORT BEACH, CALIFORNIA 92660
(714) 642-7860

February 7, 1973

Mr. H. R. Knitter
Educare Computer Network, Inc.
533 S. Segoe Road
Madison, Wisconsin

Re: Change of Address, User Number, and Password

Dear Bob:

As you can see from the letterhead, I have left the Shattuck Company and have opened my own office. I have a terminal and will be using the Educare network. Bob Steele and Larry Brown of the Shattuck Company are attending the current session of Educare and will be wanting a user number. The present deposits on Account BCE97019 belong to the Shattuck Company.

I would like to have a new user number and password, or if I am to retain the same user number, a new password. Under either condition, I would like the password to be JEAN with the E being a control E. Also please bill me for the necessary deposits.

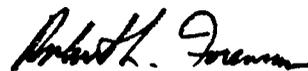
I had previously mentioned that we use a "tax disclaimer" in our limiting conditions whenever an after-tax investment analysis is included in our report. The wording is as follows:

"No representation is made that the assumptions relative to current tax provisions used in the investment analysis of this report will be acceptable to taxing authorities."

As for the source of higher quality paper for teletypes and high-speed terminals, we have found that in Los Angeles the Savel Commercial Stationery Company, 1216 Maple, Los Angeles, will supply almost any quality of paper in roll form if a sufficient quantity is ordered. We found that certain qualities are available only in a "10-ream" roll which does require re-rolling to smaller sections.

Give Jim Graaskamp and all the teaching assistants my best regards.

Cordially yours,



Robert L. Foreman, M.A.I.

RLF:le

MUSSETTER REALTY

INCORPORATED

POST OFFICE BOX 838

WILLIAMS COLUSA COUNTY CALIFORNIA 95987

(916) 473-2123

February 10, 1973

To: James Graaskamp, PhD ✓
H. R. Knitter, PhD

Educare, Inc.
P O Box 631
Madison, Wisconsin 53701

Gentlemen:

The following represents thought patterns evoked by two Old Granddads & water taken at 33,000 feet (flying home from the Educare conference, Feb 4-9, 1973). Incidentally, Bob, I made the 1:10 Northwest plane because it was 40 minutes late, so I was in Sacramento by 6:30 PST, Friday.

I commend you and the rest of the people who put on the seminar on getting maximum use of our time. This is a +++.

The spirit of courteous helpfulness on the part of instructors and grad students was very much appreciated by me and I'm sure by all.

Also, the pragmatic and inquisitive posture of all from the so-called 'ivory tower' was most refreshing.

I thought the substance and presentation of the lectures was on the right level and well planned.

The accommodations were excellent. I agree with the suggestion that prospective attendees should be advised in detail about these and also about Madison's prevailing temperatures and the mode of dress while attending. Also, it should be made clear that living quarters and class are in the same building and that a car is unnecessary.

It is evident that Madison is not only a beehive of advanced intellectual activity, but that it is also a place where politeness and honesty prevail.

Now that I have buttered you up with compliments, I have a few suggestions to offer.

First and foremost I believe more emphasis should be placed on regression and while warnings are certainly in order, I think too much time was spent on caveats and not enough on the other statistics which a good regression program produces. I can appreciate that statistics cannot be taught in 1 day, 1½ days, etc. However, it is my belief that the appraiser simply has to learn statistics and we are simply skirting the main issue until we tackle this problem head on. It is clear to me that application of statistical methods to appraisal data and problems is the way our business will become a true profession. This is for the estimation of V_p , Market Value. The other branch, investment analysis and forecasting, will have to be able to interpret and apply demographic

data that are available and already summarized statistically. Then, the programs of financial analysis will be applied through either sensitivity analysis or Bayesian density models for investors.

Perhaps it should be a requirement for admission to an advanced Educare Course that the prospective student take a one semester class or equivalent in introductory statistics at the University level within one year prior to attending Educare Course II.

If there is potential in Factor analysis and/or analysis of variance for solving some of appraisal's market data correlation problems, then we/you should get cracking on that too. Also, we need the fundamentals of time series analysis as applicable to business cycle influences on real estate markets.

Two. Data banks are necessary. Real estate submarkets should be defined. This is probably going to be done on the basis of competitiveness or substitutability between properties. But, what about the investor who just wants a real estate investment and doesn't care whether it is a shopping center, an apartment, or a free-standing commercial building? The larger the market size, the more important it is to have a national market data bank. I believe market size is a close function of total dollar size in the investment. Why not start today with a data bank of \$1 million dollar sales and higher? This would not require much storage. Then, if anybody wanted to, we could work downward to maybe \$500,000+.

For the 'everyday' property, appraisers are going to have to build their own data banks. In this connection, I suggest more disciplined sessions in the Course on selecting the critical variables which are to be included in the stored data. First, a compilation of variables could be developed via a brainstorming session using the matrix method. The original brainstormers should come from both the practicing appraisers and from the academic community. Out of this a logical ranking should evolve, for most major categories of real estate, e.g., single family residential, multiple, commercial retail, industrial, farm, ranch (i.e, grazing), mountain or wooded country, etc. It will be possible to group the variables, e.g., physical description variables such as square feet, age, soil index, legal aspects such as fractional interests, atypical title exceptions, financial variables including both the financing terms and the income, price variables to record total transaction price and to allocate that amount to real property, personal property, or other considerations, and time variables such as date of deal, date of recording etc. In addition, some might wish to consider a host of variables having to do with the characteristics of the buyer and seller. A further distinction or classification should be done on the basis of whether or not any variable is objective, subjective, or partly objective and partly subjective. A goal should be to minimize use and dependence on subjective variables.

Three. You should clarify the cost differential between external file storage and internal file storage. I have been told by SBC that internal files are not only much cheaper to store, but they are also processed 5 times as efficiently as are external files. I am not clear on what the difference is, other than the concept that language is compressed, but understand there is a difference. And, vive la differance!

Four. Give some thought to who is entitled to use market data banks, who will be entitled to use them, how to credit and debit each other automatically for accessing and contributing to data banks. Ideas - size of bank=(f)price of admission to latecomers, frequency of access=(f)monthly charge, try input tagged with initials of contributing user. Code degree of certainty of data, so tentative and unconfirmed data can be put in promptly and not lost. (There's another variable, really).

Five. Mr. Pennington from Nashville brought up another viewpoint to prediction, i.e., that it can and should be done on basis of expectations, rather than or in addition to historical indicators. This lines up with Ratcliff's statement that it is the appraiser's job to estimate how people will react to or with a property. What are the possibilities here?

Six. I hope the Chandler data bank (Memphis) will not be overlooked. This would seem to me to be a rich source for a graduate student. My thought is time series followed by regression and possibly other statistical treatments. Memphis has 750,000 people and Bill Chandler has a number of appraisers contributing to his bank so that all or nearly all single family residence sales are recorded (ranging from about 11,000 sales/year to 15,000/year). However, all sales recorded in the books do not contain all 52 variables collected by Chandler. I would estimate perhaps 25% of the sales are complete.

Seven. I believe it is clear that market data analysis is the best evidence of market value in the past or in the present or very near future. Wendt says it should be the central area of appraisal. Our problem as I see it has been subjectivity which presently is introduced at all levels of investigation, to-wit:

1. selection of variables to be measured and recorded
2. selection of the observations (sales) in the sample
3. adjustment procedure

Partial but very important answers to the problem of subjectivity are

1. stepwise multiple regression on carefully chosen variables
2. possibly set theory (Mktcomp) on selection of sales
3. multiple regression, factor analysis, or possibly analysis of variance for the adjustment procedure.

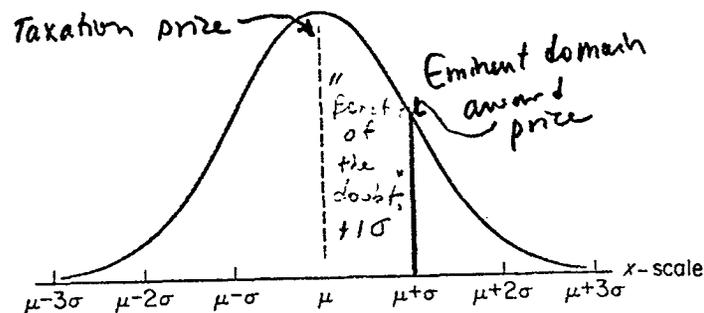
I will predict that it will wind up that 96% of real properties are amenable to scientific appraisal, i.e., use of statistical techniques. I think it is something like this: 80% of real properties are presently appraisable by multiple regression if we had the data banks on line; the remaining 20% in turn will be 80% mastered by relatively simple refinements of applications suggested above. This will leave a hard core of

about 4% of the real estate properties that will be very difficult or impossible to estimate as to value.

Eight. As for the objection that the standard error constitutes an admission by the appraiser of lack of certainty in his results, it is nevertheless the truth, and a mere claim that he can somehow on the basis of judgment or experience estimate closer than the standard error and the probability distribution indicate should not be allowed to stand.

This problem can be resolved by evolution of public policy, so that for purposes of taxation for instance, the policy will be to tax property on the basis of its mean predicted value, whereas, when taking property under eminent domain (when the shoe is on the other foot) public policy might be to pay a price equal to one standard deviation above the mean to give the benefit of the doubt to the owner who is losing irrevocably his right to the property. The foregoing is just intended as an example, not a recommendation as to what the policy determinations should be.

This would be a beautiful world for appraisers because then appraisers would just be called on to appraise, and it would be for the judge and/or jury to decide what part of the curve was morally right to select.



Academic skepticism as to appraisers' ability to produce regressions is not justified. I have a useful regression which relates three variables to selling price with 20 observations (sales), $R^2=.95$, F level = 107, t-values of 2, 7, and 16 for the three variables, and a standard error of $\pm\$48$ for a range of selling prices from \$425 to \$1167. I began with 7 sales and built up to 12, then 17 and now 20. The sales are from a subset of the local farm market. It is a useful regression because there are many similar properties to those in the sample that need to be appraised.

Now, I have some questions.

1. Would you ask the Network Educare users if they would be interested in a program which focuses income tax shelter + residual gain on Class A investors while it concentrates the current ordinary income on Class B investors in the same Limited Partnership (syndication)? This type of vehicle has become quite popular for both apartments and orchards in California. There was an excellent article by Sheldon Schwartz in Real Estate Review, Summer, 1971, describing the Limited Partnership vehicle for tax shelter investors. I enclose a brochure on an apartment with the A & B division of benefits among the Limited Partners.

2. How do I obtain the Investment Credit option in A. I. P.? Does the program permit insertion of the 20% first year bonus depreciation allowance? How/?

Please answer question #2 on the preceding page (how to get Investment Credit into AIP) as soon as possible.

Enclosed find check for \$65.00 representing first month's fee of \$15 plus deposit of \$50.00. Also find executed Contracts for Educare service.

I think your Course was well worth the expense of time and money, and I even look forward to attending an advanced Course some time in the future.

My best regards to you all.

Yours very truly,

MUSSETTER REALTY, INC.

A handwritten signature in cursive script that reads "Bob Mussetter". The signature is written in dark ink and has a long, sweeping horizontal line extending to the right from the end of the name.

Robert Mussetter

Enclosures:

- 1) Apartment brochure, Montecito North
- 2) Prospectus, Tejon Agricultural Partners, containing a number of interesting points. See in particular pages 28-30 in which appraisal procedures are described and in which designations of appraisers are specified (p.30). The A.R.A. designation is 'Accredited Rural Appraiser' which is given by the American Society of Farm Managers & Rural Appraisers.

SHATTUCK COMPANY



Realtors - Real Estate Counselors - Consulting Appraisers

5405 WILSHIRE BOULEVARD • LOS ANGELES, CALIFORNIA 90036

Telephones: 934-1188 OR 937-0690

CHAS. B. SHATTUCK (1900-1964)

KURT S. SHELGER
ROBERT A. STEELE

MEMBERS
AMERICAN INSTITUTE OF REAL ESTATE APPRAISERS
AMERICAN SOCIETY OF REAL ESTATE COUNSELORS

ROBERT L. FOREMAN
ROLLAND R. STEPHENS

MEMBERS
AMERICAN INSTITUTE OF REAL ESTATE APPRAISERS

March 26, 1973

Dr. James A. Graaskamp
Associate Professor in Business
Graduate School of Business
University of Wisconsin
1155 Observatory Drive
Madison, Wisconsin 53706

Dear Jim:

I did not realize that Bob Filley was also requesting to attend the April 8th through 13th EDUCARE Seminar. I would be delighted to serve as his sponsor.

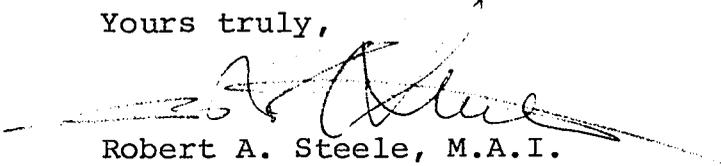
As you know I sent you a previous letter indicating my willingness to sponsor Clem Glass of the W. Ross Campbell firm. By this correspondence I assume that both men now intend to attend the course and I think that is a good thing.

Rolland Stephens and Jim Hammock of our office will also be at the April 8th through 13th Seminar. I hope that they get as much out of it as Larry Brown and I did. It was certainly a great pleasure.

By the way, I have sent the article I showed you to the Institute and have been told that it will appear in the next issue of the Appraiser.

Hope this letter finds you in the best of health.

Yours truly,



Robert A. Steele, M.A.I.

RAS:cr

MUSSETTER REALTY

INCORPORATED

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April 27, 1973

Professor James A. Graaskamp
School of Business
University of Wisconsin
1155 Observatory Drive
Madison, Wisconsin 53706

Dear Jim,

I am enclosing the article because I think two points are interesting. On page 3, see the discussion of equity build-up and appreciation.

On the front page, my hand-written note reflects the author's remarks that, the rate at which cash proceeds spun off during the holding period are reinvested makes no difference to the determination of the rate of return from the investment we are considering. This is in contradiction to many statements in scholarly journals. I can see that this is the correct position, because cash spun off is your return from the subject investment, and how you then reinvest the cash is another question.

Achtenhagen told us many textbooks are being re-written to correct this error, including Professor Van Horne's Financial Management & Policy.

How now, brown cow?

MUSSETTER REALTY, INC.

Best Regards,

Bob

THE EDITED AND REVISED VERSION OF
THIS PRELIMINARY DRAFT BY PROFESSOR STEPHEN H. ACHTENHAGEN
CAN BE FOUND AS:

PHD DISSERTATION TITLE: An Investor-Based Marketing Plan for Sales
of Real Property Investment Securities to
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CHAPTER FOUR: **The Rate of Return for Real Estate Limited
Partnership Syndications.** Pages 89-152
inclusive.

TABLE 4.8: **Computed IRR for Closed Out Syndications.**
Page 138.

SURVEY = decision criteria in order →
 \$5-10,000 equity input

- 1 reputation of promoters
- 2 long-term wealth building
- 3 safety
- 4 inflation
- 5 current cash income
- 6 tax shelter

SYNDICATIONS : , WHAT IS THE RATE OF RETURN FOR A PRIVATE INVESTOR?

Stephen H. Achtenhagen*
 Graduate School of Business
 Stanford University

What objective should an investor seek to maximize with his investments? The answer, of course, is up to each individual investor. Also, of course, we recognize that investments in real estate may be structured financially to accentuate cash flow, tax shelter, long term gain, etc. individually or in some combinations. For younger investors, emphasis on long term gain might seem to be appropriate; for persons near or at retirement age, emphasis on cash flow might be more appropriate. But most investors will probably agree that they would like to maximize the "rate-of-return" on their investments.

Rate of return, however, is a rather elusive concept. In the real estate industry, we hear of the accounting rate of return, the broker's rate of return, first year return, etc. Recently, the terminology "internal rate of return" ^{IRR} and "discounted cash flow rate of return" ^{DCFR} has begun to be used ^{recommended}

For common stock, Professor Van Horne¹ has stated that "The appropriate ex post measure of return on investment in a common stock is the discount rate that equates the present value of actual dividends received, as well as the present value of the price realized on the sale of the stock, with the original price paid for it. If the stock were purchased at time zero, the return for a holding period of "n" periods would be found by solving the following equation for "i".

$$P_0 = \sum_{t=0}^N \frac{D_t^*}{(1+i)^t} + \frac{P_N^*}{(1+i)^N}$$

where D* and P* are the actual dividend and actual market price at the respective periods." Note that the true rate of return calculation would require that the formula be amended to provide for personal income taxes paid on the dividends, the transaction costs of the sale in period "N", and the capital gains taxes on the sale. This formula has been applied to many common stock holdings over many different holding periods with rates of return approximating 9% resulting. Note that this 9% represents the return before taxes; stock market people generally do not talk about after-tax return. Similarly, if we applied the formula to a \$1000 deposit in a savings and loan today, we'd find that the discounted rate before taxes was 5% in the usual type of account.

But, what about real estate syndications? Isn't the nature of the returns on real estate too complicated to use Professor Van Horne's formula? Of course not! All that is necessary is to take cognizance of the investor's tax position for each time period in the evaluation. Appraisers and brokers both are willing to make assumptions about a property to arrive at its valuation - such as gross rents multiplier, capitalization rate, and the investor's required yield rate, etc. Therefore, as one additional short step in providing the clients of appraisers and brokers with additional useable information, the investor's marginal tax rate may be either assumed or verified by asking the investor directly.

Professor Van Horne's method of calculating the rate of return, shown above, is called the "Internal Rate of Return", or IRR, for short. To be useful on an

* Acknowledgement is given for assistance given by Steve Munson in the rough draft stage of portions of this paper.
 1. Footnotes at the end of the paper

Real investment rate makes no difference
 Not cash/cash IRR

ex ante basis (before the investment is made), there are only a few numbers that the appraiser or broker needs to supply. An estimated operating statement for the property needs to be made out for each year of the anticipated holding period, the yearly cash flow and tax benefit or cost tabulated, and the terminal distributions of cash and tax benefit or cost calculated for one or several sales prices. Given this set of yearly figures, the net cash position of the investor may be calculated for each year. This is the basic data from which the IRR calculation is made. It cannot be overemphasized that inclusion of income tax benefits and costs is of paramount importance. As will be seen in data presented later in this paper, including the tax effects can (and does!) do strange things to the actual rate of return realized by the investor in real estate syndicates.

Seldin and Swesnik² emphasize this point in their book by stating, "The situation is complicated in real estate because you really do not know how much you are earning until you have all the benefits, including proceeds of sale. You hear the terms "yield", "rate of return", "earnings," and "profit." These terms as applied to real estate are ambiguous. You cannot really know the (rate of return) until all monies are in the hands of the investor." And, remember, here we are speaking about net monies after taxes.

A small example will serve to illustrate the simplicity of the method. It is assumed that real estate professionals are thoroughly familiar with the calculation of an estimated operating statement for an income property showing both the cash flow and the tax loss (or cost) yearly to the investor, as well as the terminal distributions statement showing cash and tax costs distributed when a property is sold. From this information, set up the table shown below (which is obtained from a case that was written by the author for the Stanford Graduate School of Business.)

| <u>LUXURY APARTMENTS - CASH FLOWS</u> | | | | |
|---------------------------------------|------------------|--------------------|-----------------------------|---|
| <u>Year</u> | <u>Cash Flow</u> | <u>Taxes Saved</u> | <u>Net Net Cash Benefit</u> | <u>Assumptions</u> |
| 0 | -36843 | | -36,843 | 1. Investment in year 0 |
| 1 | 5712 | 3524 | 9,236 | 2. 50% marginal tax rate |
| 2 | 6624 | 2301 | 8,925 | 3. Tax effect occurs in year following accounting effect |
| 3 | 7689 | 1488 | 9,177 | |
| 4 | 8708 | 611 | 9,319 | |
| 5 | (9786 | -228 | (9,558 | 4. Ordinary (50%) tax rate applies to re-capture depreciation |
| | (44416 | | (44,416 | |
| 6 | | -1086) | | |
| | | -23780) | -24,866 | |

Now, given the right hand column of the table above, either manually calculate the IRR (examples of the calculation may be found in reference #3), or enter it in a computer programmed to calculate the IRR (see below)

```

NUMBER OF PERIODS AFTER PERIOD ZERO?      6
+ REPRESENTS A NET INFLOW, - REPRESENTS A NET OUTFLOW
INITIAL CASH FLOW IN PERIOD ZERO?          -36843
CASH FLOW IN FIRST PERIOD?                  9236
ARE ALL THE REST OF THE FLOWS THE SAME? NO
PERIOD 2      FLOW?      8925
PERIOD 3      FLOW?      9177
PERIOD 4      FLOW?      9319
PERIOD 5      FLOW?      53974
PERIOD 6      FLOW?     -24866

WHAT NEXT (IRR, PV, NEW OR STOP)?      IRR
THE INTERNAL RATE OF RETURN IS      20.24      PERCENT
    
```

It probably should be mentioned, in passing, that if re-financing occurs during any year of the holding period, the cash obtained in this manner is merely added to all other cash for that year so that the right hand column again represents the total cash received by the investor in any one year.

Also, in regard to the so-called "equity income" - that so-called income supposed to be derived from the equity build-up in the mortgage payments - there is no argument that amortization occurs. But the equity is not available to the investor until the property is sold, and even then, he may not get it all due to capital gains taxes. Further, using the present value techniques, any equity buildup today is not worth as much several years hence when the property is sold. Thus, the position is taken that it is just plain misleading the investor to show equity build-up as a yearly type of income for rate-of-return calculation purposes. The only legitimate method to handle this situation is to let the equity build-up automatically show up when the terminal (at time of sale) cash flow and tax calculations are performed.

The same comments that were made above in regard to equity build-up also apply to yearly appreciation, or growth in market value year-by-year. This, too, will automatically show up in the terminal calculations. A rate-of-return must not be imputed to it on a yearly basis.

What are the advantages of using the Internal Rate of Return? For real estate calculations, the IRR can show, according to Victor Lyon³:

1. Cash is more valuable than mortgage reduction
2. Cash flow received in early years is more valuable than in later years
3. Higher interest rates on mortgages may be more beneficial than a lower rate
4. A purchase price above market and resale loss may be more beneficial than a purchase price below market and lower interest rate.
5. "First users" benefit greatly by expensing construction costs and by use of accelerated depreciation under some conditions
6. A high bracket investor may find it better to sell and pay the tax in order to obtain higher present value of tax losses in the new project due to the new project's higher basis.

Also, and by far the major advantage of using IRR on an ex ante basis, is the fact that IRR can and does give the investor a rational basis for deciding between alternative investments, given that he does not (or cannot) wish to invest in all alternatives simultaneously. IRR gives a valid yardstick for evaluating the relative "goodness" of various property investment alternatives on a rate-of-return basis. There are some shortcomings to the use of IRR, to be sure. Principal shortcomings are that if the estimates lives of the alternative properties are different, use of IRR may give a different selection rule for the alternatives than does the manual present value method. Also, when using the computer, multiple rates of return may be inherent in the data but may not be calculated by the computer (this may occur when there is more than one change of sign from plus to minus over the years in the cash flows)

IRR FOR ACTUAL SYNDICATIONS

The approach that was taken in the calculation of the internal rate of return for the various real estate syndications was quite simple. The first step, and not by any means the easiest, was to identify those properties that had been resold or closed out. That is, a real estate syndicate was formed for the purpose of holding a particular piece of property, but at some point in time, it was sold by the partnership syndicate to another party, and after the sale, the cash proceeds of the sale were distributed to the syndicate members. In some cases, the syndicate not only received cash, but also a note, and, in those cases, the analysis was performed assuming both a holding of the note for its term and also

the sale of the note for its face value at the time of the closing. After determining that the property had been resold, the syndicator, usually the general partner, was contacted to obtain financial information. The only information that was required was the following:

1. The annual cash flow into or out of the investor's hands. This includes his original contribution as well as subsequent cash distributions.
2. The terminal distribution of cash to the investor resulting from resale of the property.
3. The annual "tax loss" or taxable income. If this figure is negative, then all of the cash distribution in item #1 above is non-taxable; if the figure is positive, then there is some income which is taxable to the investor.
4. The tax obligations of the investor as a result of the resale. Under this heading, we must know the amount of the recaptured depreciation which will be taxed at ordinary income tax rates of the investor, as well as the amount of capital gains which will be taxed at the capital gain rate of the investor.

Items #1 and #2 are the cash distributions while items #3 and #4 are the tax considerations. For the purpose of this paper, items #3 and #4 were manipulated using the assumptions shown below. The result was that a stream of net net cash flow was obtained, and from this cash stream the internal rate of return was calculated.

The following assumptions were made:

1. Cash flow, either positive or negative, was applied in the year in which it was received or spent by the investor without regard to the month of the year.
2. Tax shelter and taxes paid were always recognized in the year following the accounting recognition. That is, if an investor received tax shelter as a result of property operations and depreciation in one year, the tax benefit thereof would be available to him in the following year when he filed his tax return.
3. The marginal tax bracket of the investor was assumed to be 0%, 15%, 30%, and 50%. Thus, when taxes were due, they were calculated at, say, the 50% rate, and the investor credited with only half of the tax shelter as a cash benefit. Further, when tax losses were allocated to the investor, it was assumed that he had other, outside income to be sheltered at the respective tax rates used.
4. All capital gains were taxed at a 25% rate, except those subject to recapture, which were taxed at ordinary rates.

The table on the following page gives the internal rate of return percentages for fifteen actual syndications. Note the wide variation in percentages, as well as the fact that in some cases, the high bracket investor did not do as well as the low bracket investor!

Footnotes:

1. Van Horne, James C., Financial Management and Policy. Englewood Cliffs New Jersey: Prentice-Hall, Inc. Chapter 3, pp. 23-57. 1970.
2. Seldin, Maury, and Richard H. Swesnik, Real Estate Investment Strategy. New York: Wiley-Interscience, 1970. pp. 84-5.
3. Lyon, Victor L. (M.A.I.), "DCF or IRR: A Better Yardstick," Real Estate Today publ. by NIREB, November, 1972, Volume 5, Number 6, pp. 40-53.

VARIOUS PROJECTS

INTERNAL RATE OF RETURN

| (1) PROJECT NUMBER | (2) YEARS HELD | (3) IRR @ | (4) Fed + State | (5) marginal income tax rate | (6) VARIOUS TAX RATES | (7) |
|-------------------------------|----------------------|--------------|--------------------|---------------------------------|--------------------------|-----|
| | | 0% | 15% | 30% | 50% | |
| 1A | CASH-OUT | 17.21% | 16.27% | 15.39% | 13.88% | ↓ |
| 1B | LOAN | 15.05 | 12.97 | 11.94 | 11.27 | ↓ |
| 2 | 9 | 8.55 | 9.91 | 11.64 | 16.73 | |
| 3 | 5 | 70.38 | 74.36 | 77.87 | 82.42 | |
| 4 | 3 | 15.07 | 24.14 | 33.17 | 45.20 | |
| 5 | 6 | 30.12 | 39.47 | 51.01 | 68.76 | |
| 6 | 8 | 13.64 | 13.51 | 13.37 | 13.17 | ↓ |
| 7 | 16 | 11.33 | 11.48 | 11.63 | 11.89 | |
| 8 | 14 | 11.98 | 11.94 | 11.90 | 11.84 | ↓ |
| 9 | 9 | 8.61 | 9.57 | 10.68 | 12.74 | |
| 10 | 7 | 5.22 | 4.15 | 2.80 | 0.25 | ↓ |
| 11 | 8 | 13.15 | 14.25 | 15.48 | 17.34 | |
| 12A | CASH-OUT | 52.16 | 51.47 | 50.75 | 49.73 | ↓ |
| 12B | LOAN | 37.95 | 36.55 | 35.01 | 32.70 | ↓ |
| 13 | 16 | 11.16 | 11.24 | 11.34 | 11.49 | |
| 14 | 10 | 1.61 | 1.22 | 0.72 | -0.27 | ↓ |
| 15 | 5 | 33.69 | 34.08 | 34.48 | 35.06 | |
| COLUMN MEAN, \bar{x} | | 14.54% | 15.70% | 17.04% | 19.16% | |
| COL. STD. DEV., σ RISK | | 9.52 | 10.97 | 13.61 | 18.37 | |
| RETURN/RISK, \bar{x}/σ | | 1.52 | 1.48 | 1.25 | 1.04 | |

Acknowledgement is given for the assistance of Bill Potts in the calculation of figures appearing in this table, although the basic data was provided by the author and responsibility for its accuracy rests with the author alone.



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D. G. Dycke

Tel. 966-5685

March 11, 1974

Professor James A. Grasskamp,
School of Business,
1155 Observatory Drive,
University of Wisconsin,
Madison,
Wisconsin 53706

Dear Sir:

We refer to the attached schedule and would appreciate receiving
further details concerning Educare Computer Applications Courses.

At the same time we would like to receive information on any other
Real Estate Seminars which may be available.

Yours truly,

D. G. Dycke,
Manpower Planning and Development Officer.

1974 Schedule

EDUCARE
COMPUTER APPLICATIONS

1974 Schedule of EDUCARE Course 1

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Course 1 has two objectives; first, it provides training in the use and application of a time-sharing computer terminal to the appraisal and counseling office. Secondly, it suggests the potential of the computer terminal to effect the practice of real estate over the next decade so that professionals can begin to modify the educational policies, programs, and accreditation standards in their professional organizations.

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For details write Professor James A. Grasskamp,
School of Business, 1155 Observatory Drive, University
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May 19-24

Southern Methodist University, Dallas, Texas

For details write Professor Sydney C. Reagan, School of
Business, Southern Methodist University, Dallas, Texas
75222.

Each course will begin at 6:00 p.m. on Sunday and end at
12:00 n. on Friday

FACULTY: Professor Robert Knitter
Professor James A. Grasskamp
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8 August 1974

Professor James A. Grasskamp
School of Business
1155 Observatory Drive
University of Wisconsin
Madison, Wisconsin 53706

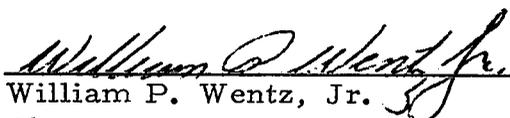
Dear Professor Grasskamp:

During my recent introduction to Course 6 at the University of Delaware, Ron Brown, M. A. I., our instructor, informed the class of the availability of Educare and its worth to the appraisal profession.

Because of the modern approach to the assessment field being undertaken in Montgomery County, it is my opinion that Educare would have much to offer.

Therefore, I will appreciate any information that you can give me relating to the scope and cost of the program.

Very truly yours,



William P. Wentz, Jr.
Chairman

WPW, Jr. :meg