REAL ESTATE ISSUES

Volume 15
Number 1
Spring/Summer 1990

Published by the **American Society of Real Estate Counselors** of the NATIONAL ASSOCIATION OF REALTORS®

The President Speaks

CRE: The Preeminent Real Estate Counseling Designation

The Counselor of Real Estate designation (CRE) from the American Society of Real Estate Counselors stands for PREEMINENCE in the field of real estate counseling and consultation. The CRE is dedicated to serve, ethically and expertly, the needs of the real estate industry and the general public. Through faithful adherence to the Society's Standards of Professional Practice, Code of Ethics and persistent educational efforts, the members strive to broaden their intellectual horizons and professionalism.

The complexities of today's real estate and financial markets illustrate the practical need to utilize a Counselor's services. Consider these few examples. After an extended period of great development and growth, many real estate markets are overbuilt; vacancy problems are serious; and failures and foreclosures are real concerns. In this environment, advising investors and users of real estate requires the wisdom and expertise of able practitioners. The CRE approach is networking. When a client engages the services of a CRE, he has secured not only an expert in the industry, but also a nationwide network of Counselors ready and willing to offer their advice and varied experience.

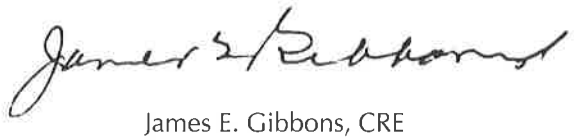
The savings and loan crisis has created an abundance of problems. The assets of these failed institutions have been placed in the hands of the Resolution Trust Corporation (RTC), a U.S. government entity, for speedy disposition. The RTC is mandated to accomplish this disposition without resorting to the dumping of assets and without taking back any financing. The latter requirement is particularly vexing since so many S&Ls, formerly the source of mortgage money, no longer are in the market. In this difficult atmosphere, there are huge obstacles in the way of RTC dispositions. But, with the plethora of assets being handled, the investors might find acquisition opportunities well worth the struggle. These are a sampling of the complex situations where a Counselor's advice is beneficial.

In recent years, the U.S. ceased being an exporter of capital and became the big borrower. Much of our budget deficit has been financed by selling U.S. Treasuries to foreign investors, particularly the Japanese. Interest rates on these securities must be kept high enough to interest these purchasers. Even though Federal Reserve might want to moderate money rates to spur a slowing economy, the desire for foreign finance may be a countervailing influence.

Recently the Japanese and West German economies experienced inflationary pressures causing monetary authorities to react with higher interest rates. To maintain a competitive position in global markets, U.S. rates have been pushed upward creating volatility in yields on U.S. Treasuries. Since mortgage rates correlate closely with long maturity Treasury paper, the result is an unsteadiness in the cost of funds for real estate investment.

In this scenario, the CRE will be called upon to provide financing advice to investors in existing ventures or in proposed development. This is no simple task, but the CRE has the supportive network of his fellow members in investment banking, mortgage banking and other related financial areas.

These examples relate the story of the American Society of Real Estate Counselors and the CRE in today's economy. By providing their judgment, integrity and experience, the CRE stands out as the preeminent authority in real estate counseling.



James E. Gibbons, CRE
President
American Society of Real Estate Counselors

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THE AMERICAN SOCIETY OF REAL ESTATE COUNSELORS

The American Society of Real Estate Counselors, a professional affiliate of the NATIONAL ASSOCIATION OF REALTORS®, was formed in 1953 to establish professional standards for those who provide the public with expert, independent real estate advice for compensation. Membership is by invitation only. The privilege of using the respected CRE (Counselor of Real Estate) designation obligates the Counselor to a strict Code of Ethics and Standards of Professional Practice.

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Call for Manuscripts

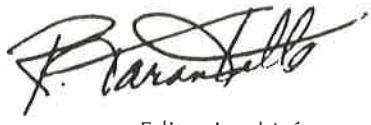
Many of our readers find themselves in a constantly changing environment analyzing real estate projects or the markets where they must survive. New questions always are being raised whose answers often are found in the thoughts and ideas of our colleagues. *Real Estate Issues* serves as a medium to process problem solving communication.

To serve the needs of our readers, we encourage you to submit manuscripts on current topics of interest to further understand today's real estate issues. Topics for you to consider include:

- Innovations in the development and leasing of retail centers
- Creative marketing solutions for property owners in overbuilt office markets
- Finding development opportunities in ethnic communities
- Solutions to the changing real estate needs of the health care industry
- Efficient use integration in mixed-use projects
- Critical factors confronting the residential real estate markets nationally, regionally or locally
- New development concepts to tap an aging population
- Counseling assignment case studies of fellow CREs

As real estate professionals and academics, we hold in common a mutual interest in the dynamics of real estate resources and markets. Most importantly, we hope to encourage your input on any topic which you consider deserves the interest of our U.S. and international readers.

Please forward your manuscript submissions to *Real Estate Issues,* Managing Editor, 430 N. Michigan, Chicago, IL 60611.



Editor in chief

BOYD T. BARNARD, CRE, RECEIVES 1990 LANDAUER AWARD

Boyd T. Barnard, CRE

In recognition of his demonstrated outstanding professionalism in real estate and for furthering the ideals of the American Society of Real Estate Counselors and the CRE (Counselor of Real Estate) designation, Boyd T. Barnard, CRE, of Philadelphia, has been awarded the 1990 James D. Landauer Award.

Barnard, along with Roland Rodrock Randall, CRE, was a founder of the Society in 1953. He served as president in 1966.

Barnard's career with Jackson-Cross Company is long and illustrious, having served both as president and chairman of the board. He resigned as an officer and director in 1981 and now acts as a consultant to the Philadelphia-based national real estate brokerage, counseling and management company.

Outside the Society, Barnard served as president of the National Association of Real Estate Boards, now the National Association of Realtors (NAR), the American Institute of Real Estate Appraisers and the Urban Land Institute. He also was president and chairman for 10 years of the Central Business District Council. He recently was honored in Philadelphia by NAR in recognition of his years of service in the real estate profession on both national and international levels. Barnard is an honorary member of the Royal Institution of Chartered Surveyors of Great Britain, the only American ever to achieve this distinction.

In addition to his career as a real estate counselor, Barnard also is a lifelong music lover. He is a professional cornet and trumpet player who has donated much time to the advancement of music and music scholarship. Among his many directorships are the Philadelphia Orchestra and the Academy of Music, the Theodore Presser Company, the Curtis Institute of Music and the Musical Fund Society, a foundation dedicated to the education of amateur musicians. In 1989, he was awarded their doctorate degree, an award he considers his highest honor. Barnard established the Barnard Fund for the Advancement of Music at Swarthmore College, his alma mater, and also received an honorary Doctor of Laws from that institution.

The Landauer Award is named for the late James D. Landauer, CRE, who was instrumental in the establishment of the Society and the preeminence of the real estate counseling profession. Other recipients have included CREs Roland Rodrock Randall (1986), James E. Gibbons (1987), Roy P. Drachman (1988) and John Robert White (1989).

MANHATTAN TRANSFER: A CASE STUDY

How an in-city move became a cross country happening.

by William D. Farrell

In November of 1984, Rubloff Inc. of Chicago was contacted by the law firm of Seyfarth, Shaw, Fairweather & Geraldson to evaluate and comment on their leasehold situation at 520 Madison Avenue, the Continental-Illinois Building between 53rd and 54th Streets in Manhattan. Their main problem was the office overhead (especially the rent, operating expenses and real estate taxes) was too high for the operation. They asked for suggestions on how money could be saved within the parameters of the lease.

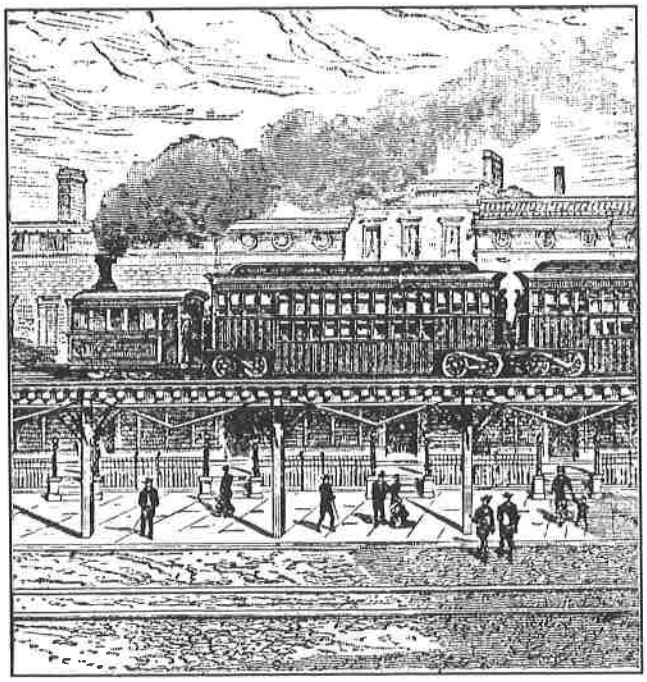
Typical for New York, the lease was voluminous and virtually unintelligible to anyone who had not been trained in espionage! The current lease was for a period of 15 years from 1982 with a base rent of about $42 per square foot. The then payable operating expense and tax increases were $10 per square foot and there was an occupancy tax of 8% as well as CPI adjustments. There were options to renew and options for further space at some future dates.

The total area under lease was about 39,000 square feet (two full floors) but the occupied area was 24,500 square feet (one and 1/4 floors). Sublettings had been made of 4,000 square feet and 9,000 square feet and there was a small area of 1,400 square feet which was not built out.

Substantial leasehold improvements had been made to the space by Seyfarth, Shaw when they took the lease. The improvements totaled about $1,500,000, of which $1,200,000 remained unamortized. The information that Seyfarth, Shaw needed can be summarized as follows:

William D. Farrell, *senior vice president, Rubloff Corporate Real Estate Services, formerly was a partner in one of Dublin, Ireland's leading real estate companies, where he was responsible for the consulting department. Farrell is an accredited member of the Valuers Institute in Ireland and has lectured on varied real estate topics to numerous organizations.*

This article is printed with the permission of Mr. Farrell from his presentation at the workshop, "Corporate Clients and The Counselor," sponsored by the American Society of Real Estate Counselors.



1. The value of the current leasehold position, both on the open market and to other tenants in the building should they be interested.
2. An estimation of the future value of the leasehold interest.
3. Realistic options to the current space should they decide to relocate.

Preliminary Work

In order to prepare the initial report, a number of tasks had to be performed. These included the obvious (inspection of the premises, meetings with building ownership, overall midtown Manhattan office evaluation) and also some that were not quite so obvious (functional use of the premises, i.e., number of square feet per attorney; cost of reconfiguring space).

Investigation found the premises were capable of holding 28 to 30 attorneys. This meant that the inherent design or configuration of the space was very inefficient as there was a total of 850 square feet per attorney which was considerably in excess of the national average of 600 to 650 square feet. Having ascertained this, the next stop was to perform a cost calculation of reconfiguring the space to make it more economical (for instance, subleasing the balance of the partial floor and consolidating everything into one floor). While this proved to be a viable option, the savings it created were more than outweighed by the inconvenience and actual costs. The real problem was that the rent being paid for the building was over $50 per square foot, whereas alternative space was available for less than $35 per square foot. From this $35 gross number, a new buildout, rent free period and a new base year for taxes and operating expenses could be negotiated. The payout numbers were particularly telling: 520 Madison Avenue was projected to cost over $2 million per annum—a similar space in another new building would cost less then $800,000 per annum.

In doing the evaluation of the Manhattan office market, physical perimeters were drawn. The selected area ranged from 57th Street on the north end to 40th Street on the south end and from 3rd Avenue on the east side to 6th Avenue on the west side. A number of local real estate brokers were contacted for information on properties which were capable of housing Seyfarth, Shaw, Fairweather & Geraldson. From these brokers it was learned that such likely deals eventually would be struck and factored into our evaluation. It also became apparent that the amount of square footage occupied by Seyfarth, Shaw (24,500 square feet) could be replaced by an efficient 20,000 square feet. Therefore, not only the rental rate changed from over $50 per square foot to less then $35 per square foot but also 4,500 square feet was excluded. The saving in occupancy tax further reduced the commitment.

In conjunction with a market assessment of available spaces, the likely market for the existing space needed to be ascertained should it be offered for sublease. Again, through brokerage contacts in New York, this was accomplished.

One month later, the following information was determined.

1. The lease at 520 Madison Avenue was a marketable lease since there was a market for the building and a sublease could be arranged, albeit at a reduced rent.
2. Other tenants in the building should be approached to see if they required the space. The report pointed out that there was a prohibition in the lease against subleasing to other tenants in the building but, in reality, landlords would rather waive this restriction than take a chance of losing another large tenant in the building to whom they could not give expansion space. Since there was no direct space available, we felt that a sublease to an existing tenant would be allowed.
3. Less expensive office space could be found for Seyfarth, Shaw. While the less expensive space would be at somewhat less glamorous addresses, it was nonetheless possible to reduce occupancy costs substantially.

   A number of financial analyses also were presented showing total costs, possible savings and relocation costs. The total savings were estimated to be $750,000 per annum for 11 years. The reason for not saving even more money was that the rent for 520 Madison Avenue was now above market—therefore, a loss would have to be taken to achieve the estimated savings.

Hire A Consultant

In presenting this report to Seyfarth, Shaw it also was suggested that they retain a real estate consultant to advise them throughout any further transactions or negotiations they intended to do in New York. Equally, that someone should not be a broker who had a vested interest in seeing that a transaction was done.

Seyfarth, Shaw mulled over this advice for a month or so. I then received a phone call asking me to meet with them again to see how we would proceed toward getting rid of the 520 Madison Avenue lease and finding other accommodations. I explained that my function would be that of a "quarterback" who would take over the responsibility to make sure the various tasks were done to get rid of the space. This situation would be monitored from beginning to end.

The Assignment

After that meeting, I went to New York and interviewed three or four real estate brokers to ascertain the best people to act for Seyfarth, Shaw. The requirements were: 1) to sublease the office space at 520 Madison Avenue and; 2) to find new accommodations, probably on the 3rd Avenue corridor of Manhattan. Taking this one step further, I recommended to Seyfarth, Shaw that they employ two brokers: one who was an expert in leasing space and one who was an expert in acting for tenants and did not represent space. I thought that the best people to represent Seyfarth, Shaw in finding new space were the Peregrine White Company and that the best people to represent the space at the 520 Madison Avenue building were the Edward S. Gordon Company.

Because the requirements were so closely interrelated, I had a joint meeting with the representative from each company and it was decided that they would act in tandem and divide any fees earned from the two deals between themselves. Therefore, everybody was working toward the same end and each had a financial incentive to assist the other.

My next suggestion to Seyfarth, Shaw was that they employ a space planner to determine the number of square feet which would currently be required in well-planned space. Several space planners were interviewed and Environetics was retained to prepare this program.

In the meantime, the representative of the Edward S. Gordon Company and the Peregrine White Company got together and developed a marketing plan for the space at 520 Madison Avenue, and I inspected about 20 buildings on Seyfarth, Shaw's behalf in Manhattan. From this list of 20 buildings, five or six were of interest. These buildings were inspected by partners at Seyfarth, Shaw, and 757 3rd Avenue was designated as the most desired. Interestingly, the leasing agent for this building was the Edward S. Gordon Company and, while they also were acting for Seyfarth, Shaw, their main thrust was to sublease the space at 520 Madison Avenue.

However, because the Edward S. Gordon Company was acting for Seyfarth, Shaw, it was possible for us to stay informed of any leasing activity at 757 3rd Avenue and to make sure the new space being considered was not leased to someone else without our knowledge.

The space at 520 Madison Avenue was marketed and presented to all New York City brokers. There were a number of interested parties who fell by the wayside for various reasons but, in September, Chevron declared a strong interest in the premises.

Their broker, from Cushman and Wakefield, traveled from San Francisco to New York with the head of leasing for Chevron to inspect the premises. As a result, they sent a letter of offer which, after some refinement, was acceptable.

At this juncture, it was necessary for me to do a presentation to all Seyfarth, Shaw partners (about 100) and explain the impact of a sublease to Chevron and a move to less expensive quarters. This was done with slides, overheads and printed books with all figures. Unanimously, it was agreed to go forward.

Enter The Twilight Zone

The next phase can best be described as the twilight zone. A sublease was submitted to the attorney for Chevron in San Francisco. The Chevron leasing representative came to New York in October with the original sublease. He brought another sublease which was totally different. He said his sublease was the one he really wanted to use. This sublease was found to be totally unacceptable for a variety of reasons, and we then met in the Seyfarth, Shaw conference room for some 12 hours to try and resolve the issues. When this meeting was finished, we felt that the main issues had been resolved and that it was time to seek a lease from 757 3rd Avenue.

The lease for 757 3rd Avenue presented its own problems but none that were unsurmountable. There was one moment when we thought the whole deal would die because of a misunderstanding. It had to do with a lease buyout option. No landlord wants to give this, but the landlord was shown that it would be very unlikely to cost him anything and therefore it was accepted.

Meanwhile, the finalization of the sublease from Chevron was taking an inordinately long period of time. Sometime in the middle of November, we were informed by the people at Chevron that, unless a lease was concluded by year's end, and unless they could have occupancy of the space at 520 Madison Avenue by the middle of March, the deal was off. The dates were certainly achievable from our point of view but the manner of communicating with the Chevron attorneys was causing delays.

The owner of 757 3rd Avenue knew his lease was subject to our concluding a satisfactory sublease with Chevron. In order to get one of the problems out of the way, we finalized the lease with 757 3rd Avenue and put in what amounted to a self-destruct clause. The lease was signed on the basis that, if we so determined, the lease could be canceled by the 3rd of January but if not, it would be binding.

With that problem over, we then were able to focus totally on the Chevron situation. Toward the middle of December, a conference call was arranged among a number of parties including the brokers in New York, Andy Laidlaw (the Seyfarth, Shaw managing partner) and myself in Chicago, the attorneys acting for Seyfarth, Shaw in New York, the Chevron representative and the Chevron attorneys in San Francisco.

My recollection is that the first conference call went on for about five hours and all matters seemed to be resolved. The Seyfarth attorneys in New York redrafted the sublease, making the specific changes requested by Chevron, and submitted a revised document to the Chevron attorneys in San Francisco. The following day we had a request for another conference call and the same parties convened for another five-hour session. The interesting part of this session was that it seemed as if the first session had never taken place! The attorneys in San Francisco were asking for their own changes, which had been made two days before, to be changed again. However, there seemed to be some good will on each side and eventually wording was agreed on for each clause of the sublease.

The new sublease was then submitted to San Francisco and was signed by Chevron. The sublease was then sent to Chicago, where it was signed by Seyfarth, Shaw.

Self Destruction On The Brink

The only outstanding issue left was the consent of the landlord. All during the negotiations, we had kept Tishman Speyer informed of progress and had sought their permission to sublease to Chevron. Needless to say, they had no problem with Chevron's ability to pay the rent (even though the rent was being paid to Seyfarth, Shaw) and they had no problem with the occupancy by Chevron. However, because of the self-destruct nature of the lease which was signed at 757 3rd Avenue and with Chevron's requirements that the lease be completed by year's end, it was imperative that the landlord sign his permission portion of the lease immediately.

There was only one person in the landlord's office empowered to sign the sublease and he was going out of the country the day after Christmas and would not be in New York until the 6th of January. Therefore, the sublease had to be signed that day, which was Christmas Eve. His office did not know where he was; nobody could find him; they

didn't know if he would phone in again before Christmas and, quite frankly, things got a bit scary.

Finally, the Cushman & Wakefield broker from New York found him shopping on 5th Avenue. He was probably only one of eight million people on 5th Avenue, but he was found. He returned to his office and signed the sublease.

From then on everything progressed satisfactorily. The space at 757 3rd Avenue was built out on time and under budget. Seyfarth, Shaw moved in the middle of March. Chevron immediately took occupation of the space at 520 Madison Avenue.

One of the interesting points of this entire transaction was that two very successful and eminent brokers in New York were able to work together to conclude the deal. The spirit of cooperation was a joy to behold and, through proper management and planning, everything came together to the benefit of Seyfarth, Shaw.

The figures involved are somewhat startling. The savings to Seyfarth, Shaw over an 11-year period amount to over $8,500,000. The actual rent differential between 520 Madison Avenue and 757 3rd Avenue is $14,500,000, but because 520 Madison Avenue was subleased at less than cost, the resultant savings are less.

THE BALLARD AWARD MANUSCRIPT SUBMISSION INFORMATION

The editorial board of *Real Estate Issues (REI)* is accepting manuscripts in competition for the 1990 Ballard Award. The competition is open to members of the American Society of Real Estate Counselors and other real estate professionals. The $500 cash award and plaque is presented in November during the Society's annual convention to the author(s) whose manuscript best exemplifies the high standards of content maintained in the journal. Any articles published in *REI* during the 1990 calendar year (Spring/Summer and Fall/Winter editions) are eligible for consideration and must be submitted by August 1, 1990.

Contributor Information for *Real Estate Issues*

The journal is published twice a year (Spring/Summer and Fall/Winter), and reaches a lucrative segment of the real estate industry as well as an impressive cross section of professionals in related industries.

Subscribers to *Real Estate Issues* are primarily the owners, chairmen, presidents and vice presidents of real estate companies, financial corporations, property companies, banks, management companies, libraries and Realtor© boards throughout the country; professors and university personnel; and professionals in S&Ls, insurance companies and law firms.

Real Estate Issues is published for the benefit of the CRE (Counselor of Real Estate) and other real estate professionals, planners, architects, developers, economists, politicians, scientists and sociologists. It focuses on approaches, both theoretical and empirical, to timely problems and topics in the field of real estate. Manuscripts are invited and should be addressed to:

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Review Process
All manuscripts are reviewed by three members of the editorial board with the author's name(s) kept anonymous. When accepted, the manuscript with the recommended changes are returned to the author for revision. If the manuscript is not accepted, the author is notified by letter.
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Deadlines
All manuscripts to be considered for the Spring/Summer edition must be submitted by February 1; for the Fall/Winter edition by August 1.

Manuscript Preparation
1. All submitted materials, including abstract, text and notes, are to be typed **double-spaced** with wide margins. No page limit is imposed. Submit five copies of the manuscript, accompanied by a 50- to 100-word abstract and a brief biographical statement.

2. All notes, both citations and explanatory, are to be numbered consecutively in the text and placed at the end of the manuscript.

3. Illustrations are to be considered as figures, numbered consecutively and submitted in a form suitable for reproduction. Type figure legends **double-spaced** on a separate page.

4. Number all tables consecutively and type double-spaced on separate pages. All tables are to have titles.

ROME: ANALYSIS OF THE CITY AND ITS URBAN DEVELOPMENT

Modern urban development in Rome can be considered in terms of a "succession of ages." Urban sprawl dominated the post-war years, as whole residential districts were constructed by private interests. In the '70s, new residential areas were constructed with public funds.

The '70s also marked the beginning of an illegal suburban sprawl. Huge districts arose without government approval; this has been a constraint on the city's development.

The striking lack of city services (some minor, some absolutely essential) has led to vital economic resources being wasted. This emergency situation has been counter-productive to long-term investment. Much of the public-sector financial resources have been deployed in setting up essential primary services (aqueducts, sewage systems, lighting, etc.) and in resolving all the problems and errors which serious planning could have avoided.

This situation has been the background for a long debate on the role of the State and its relationship with its capital city, and on the need for channeling financial reserves on an effective overall basis.

This renewal of interest at the State level, and the economic and financial implications of the operation, have had the effect of arousing attention and expectations on the part of venture capital groups and both private and public sector interests. Some estimates at the municipal offices in Rome have set the level of investments for the three year period 1989-1991 at no less than £. 10 trillion.

The whole future of the city needs to be seen in this framework. Demand for new housing persists, as does demand for services and urban networks. Two different solutions exist: old-style urban expansion; and re-evaluating priorities on a global basis.

City officials cannot seem to provide precise guidelines in either direction.

Features Of The Rome Area

The city of Rome is very extensive. At 1,508 sq.km. it is eight times the size of Milan and thirteen times the size of Naples. The metropolitan area has 3.4 million inhabitants. In the early 1980's the population level fell slightly, but to a far lesser extent than the levels in Milan and Turin.

The service sector comprises 77% of Rome's income. The city owes its stability to the predominance of the public sector which acts as a buffer, carrying the city through periods of economic difficulty; but, conversely, it acts as a heavy restraint to any significant recovery process during phases of expansion. With a weak manufacturing base and a top-heavy public administration, the economic life of Rome has not been driven to commerce and industry by the service industries, as is evident in other large urban areas.

In the period from 1971 to 1981, the province of Rome dropped 40 places (from 11th to 51st) in per capita income for Italian provinces.

New trends are developing: there is a marked growth in research and development activities; there is a growing trend in "high technology" manufacturing (mostly electronics and telecommunications). Factories and plants are located in the eastern quadrant (Tiburtina Valley).

The long-awaited restructuring of marketable services and of the public administration leads us to believe that the processes of technological innovation, computerization and reorganization will be very closely connected.

Rome will play a fundamental role in the systematization of the national economy, acting not only as a representative and decision-maker, but also as a producer. Rome has 54,000 hectares of land for urban use, less than 20% of its total surface area; plus another 9,000 hectares of land already allocated for specific uses.

The proportion of land for public use has increased in the last ten years, from 111 to 160 sq.m. per inhabitant. The growth in the urbanization of land arises from three factors:

(a) increase in non-residential use resulting not only from manufacturers moving away from the center, and to local large-scale community facilities, but also to activities which are not immediately concerned with manufacturing (low-level such as depots, unloading areas, plants; and high-level activities sports and leisure complexes);
(b) low population density, arising from requests for more extensive and personal housing accommodation to

This article, "Rome: Analysis of the City and Its Urban Development," is published with the permission of Economia Immobiliare, *(No. 3, 1989): 43-49, Associazione Italiana Consultanti Immobiliari.*

be provided in less built-up areas; (c) under-use of urbanized areas, arising when speculators wish to avoid the taxes and fees levied in more built-up areas.

The Housing Market

The Rome market is the most important in Italy, and has increased substantially over the last few years. 1988 saw a 13% increase in sales contracts over the preceding year, a fact which cannot be rivalled by any other Italian city, where the increase has only been in prices but not in real terms of volume of sales.

There is still a steady flow of "newcomers" onto the housing market in the capital, even if less than in the past. Therefore the number of sales remains high.

The market has been active in all sectors, with a particularly positive trend in the central area, where there have been massive price increases of as much as 120% and more. In other zones price increases have been more conservative: an average of 15% during the course of the year.

Forecasts for the latter end of 1989 are good, because demand remains strong across all market sectors, with only a few indications of "fatigue" towards the end of September-October.

Asking prices for high prestige central areas may go up yet again as they have risen less than in other Italian cities (Milan, Florence, Turin) during 1988. In other areas (non-central) prices should rise about one point more than the real rate of inflation.

The Office Space Market

Office Space Occupancy Levels

In 1985, the office occupancy level in the region of Lazio reached 1,909,856 units: 1,391,977 (73%) in the service sector, which had an estimated average annual increase of 50,000 new jobs per year during 1985-1990. Since 80% of the region's service industry is located in Rome, approximately 40,000 new jobs open per year in the service industry just in the city of Rome.

According to our estimates, 40% of the new jobs are in private and public management/administrative offices.

TABLE 1

Province of Rome	% Increases in Occupied Office Space	
Area	**Services Sector**	**Public Administration**
City of Rome -CENTER-	12.7	60.2
NW Urban Area	24.3	8.8
SE Urban Area	44.7	23.8
Other Townships	18.3	7.2

New Constructions

Average annual new construction is approximately 5.5 million cubic meters — about 1,700,000 square meters: this figure has remained constant since 1980. *(Source: Statistics Office, Municipality of Rome).*

N.B. The 1988 figures are not yet available. In 1986-87, 80% of new construction was for residential purposes, and the remaining 20% (about 1,000,000 cubic meters per year) was for other purposes. Of that 1,000,000 cubic meters per year, 350,000 cubic meters were used for office space (in 1986) and 700,000 (in 1987).

Building permits for construction of non-residential buildings were granted in 1987 for 1,000,000 cubic meters, and during the first three months of 1988 the figure was 205,000 cubic meters. This steady level of new office construction is foreseen until 1990-91.

Current Scale Of The Rome Market For Large Office Space

During the last 12 months, there has been an increase of over 10% in the availability of large office space in Rome. This could be due to the entry on the market of new and completely restructured properties, (and) or to the greater spread of the market with private and local government offices tending to move from the center out to the suburbs.

At the present time, in the municipality of Rome, over 200,000 square meters of office space are available, distributed as follows:

Available Office Space

Area	**(Square Meters)**	**%**
South	150,000	68
East	25,000	11
North	30,000	14
West	15,000	7

Demand

The most popular areas are: Center; Outer Center—West; Outer Center—North; Outer Areas—South (EUR, Laurentina, Vigna Murata, etc.).

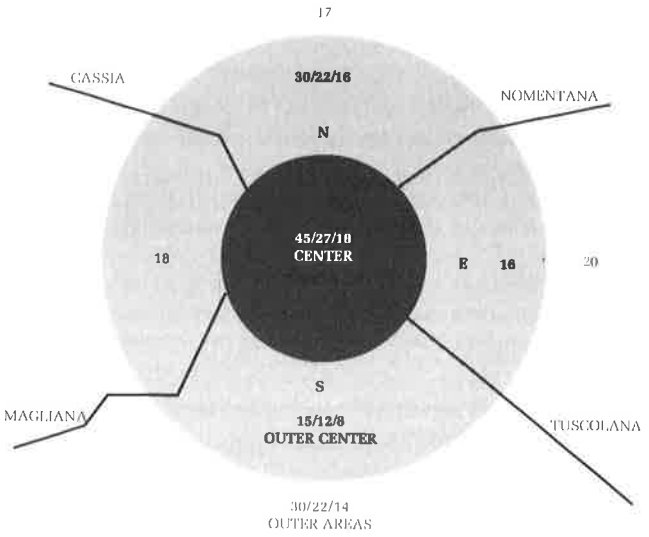
A research survey conducted by CRESME in 1986 reveals that demand for offices in the upper service sector (managerial and administrative levels) is distributed as follows:

- Center and Inner Center West 43%
- EUR 16%
- Outer Center North 11%
- Outer Area South (and beyond EUR) 6%
- Outer Center East 6%
- Other Areas 18%

The potential demand for new office space is about 400,000 square meters per year. Part of this demand will be satisfied by conversions of residential properties to office use (both legal and illegal); and part will be satisfied by new buildings and by refurbishing existing buildings.

GRAPH NO. 2

Rome: Monthly Rent for Office Space
(£. x 1000/mq - Spring 1989)



Demand for new office space is estimated to be about 200,000 square meters per year for the next three years.

Short And Medium Term Market Growth

The potential market of office space over the next three years will be approximately 460-760,000 square meters, divided as follows:

1. properties presently blocked by authorities — 60,000 sq.m.
2. abandoned properties to be converted into service sector use — 100,000 sq.m.
3. new constructions:
   3 years × (min. 100,000 sq.m.) — 300,000 sq.m.
   3 years × (max. 200,000 sq.m.) — 600,000 sq.m.

Illegal office use conversions have not been included in these figures.

New office space in Rome to be completed by 1/1/91:

Area	Square Meters
South	200,000
East	55,000
North	20,000
West	45,000

Prices

If supply remains at the minimum levels indicated above, there will be price competition. It will become a buyer's market, however, if production reaches the upper levels, which is predicted.

The time taken to rent out or sell office space tends to vary from zero (in the cases where the premises are already sold or rented before the building site is completed or even opened) to a maximum of 12 months.

Since we foresee an increase in the cost of money and a partial devaluation of the Italian lire in the short and medium term, an average increase in building costs of about 10% per year can be expected for 1989-91.

Prices will undergo a similar increase (with a balance in supply and demand), slightly above the rate of inflation.

Sales prices in central areas of Rome have risen 20% in the last 12 months, (13% in real terms), whereas the level is only 7% in the suburbs (at inflation levels). Rental levels have gone up less (maximum 16% both in the center and the suburbs).

The difference in growth trends between sales and rental prices is partly due to purchasers' expectations of higher future income.

Therefore, there will be an increase in rental prices in the short term. The estimated average increase is about 10% gross annually and 4% net of inflation annually.

There will probably be a greater increase in 1989 with respect to previous years than there will be in 1990 and 1991 and therefore it is reasonable to predict an overall slowing down of the market.

INTERNATIONAL REAL ESTATE ADJUSTED PRESENT VALUE MODEL

A discounted cash flow model analyzes the risks associated with real estate development in foreign countries.

by G. Hayden Green and Musa Essayyad

Many factors are pushing towards the globalization of real estate markets including countries finding conduits for their economic surpluses; achieving the benefits of international portfolio diversification; the serious pursuit of the European Economic Community to create a single, less intergovernmentally restricted market by 1992; plus expanding existing markets and exploring new markets. Real estate globalization and international integration are being bolstered by the emergence of a more peaceful coexistence between the West and the East; dramatic growth of international tourism and the need to satisfy tourists' needs by creating foreign resorts and entertainment projects; advancement in information technology and the proliferation of private international organizations and intergovernmental organizations with the capacity to insure against international risk, guarantee repatriations and coordinate monetary and financial systems.

As the market for real estate becomes increasingly global in nature, the development of a more accurate investment model that captures international risk becomes more important. All existing real estate evaluation models lack this international focus and assess only domestic risk. A review of the literature has failed to identify a generic model that incorporates the impact of international risk in the valuation of foreign real estate development opportunities. This article attempts to bridge this research gap

by proposing a modified real estate investment model that captures the international risk elements in the global real estate development market.

The model presented focuses on the real estate development process, however it is adaptable to the capital or investment sector of the real estate industry. To accommodate the real estate development life cycle, the risk assessment process is distinguished between short-term, medium and long-term risk. The dimensions that constitute foreign risk have different time horizons and affect different stages of the development process. By identifying these factors, the overall risk and its time horizon can be incorporated in the proposed model.

Review Of Foreign Risk

Political Risk

Political risk encompasses a wide range of events that can have a temporary impact on a real estate project's cash flow or can lead to outright expropriation of assets. Measuring political risk is primarily a qualitative endeavor; however, several quantitative techniques have been developed.[1]

Some countries have policies for foreign developers that are not required of domestic developers. These policies

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can range from outright prohibition of foreign development to the restriction of foreign developers from engaging in certain types of projects. Some countries require foreign developers to obtain a domestic partner for certain types of projects, while many countries prohibit foreign investors from exceeding certain investment thresholds.[2] Other countries impose no control on foreign investment in real estate, although they do require foreign investors to register their projects, which is often a bureaucratic and time-consuming process.

Labor strikes are common in some countries, while in certain particularly undeveloped countries material and transportation shortages are frequent occurrences, and the quality of workmen is not always equal to the standards expected in developed countries. The attitude of the people in a country can change regarding foreign investment in real estate; there also appears to be an inherent fear in many countries that foreigners will buy up the country.[3]

The most extreme type of a political risk is expropriation, or the seizure of foreign assets by a country, which may be accomplished by a partial or total blockage of funds from leaving the country or the actual seizure of the asset. Expropriation may creep in through the gradual imposition of arbitrary regulations and taxation and restriction on remittances and transfer pricing. The extreme example of expropriation is confiscation of the assets which implies seizure without compensation.

An evaluation of the economy of the host country can help in the estimation of the risk that restrictions may be imposed on foreign development or that assets of foreign developers may be expropriated. Several lessons have been learned from the international debt crisis of the 1980s. Some countries are more susceptible to external shock than others. Sudden changes in international interest rates or commodity prices have less impact on countries with a diversified export structure than on countries with a comparable level of development but a lopsided export structure.[4]

The nature of a country's economic policy and the degree of its economic growth are indications of whether the country will be able to meet its foreign debt obligations. In countries overburdened by debt, social and political tensions often arise and result in political instability and changes in foreign real estate investment policy.

During the project planning stages, foreign developers must evaluate a country's propensity to impose restrictions on real estate projects and its past and present discriminatory and restrictive practices. In addition to analyzing a country's economic policies, it is advisable for foreign developers to look at those factors that relate to the current and future capacity of a country to provide net foreign exchange. This ability is reflected in the country's economic and structural strengths as measured by gross national product (GNP) growth, investment ratio and efficiency and inflation rate and export growth. The country's interest rate differential, inflation rate differential, relative income differential and international capital flow also are important factors to consider.

Layers Of Taxation

Profits generated from development projects in foreign countries are subject to taxation by both the project's host country and the developer's home country. The type of income to be remitted to the parent company also must be considered because dividends, loans repayment interest and management fees may be taxed differently.

Some countries have multiple layers of taxation that affect real estate projects, while others have modest tax policies including the granting of tax holidays for as many as five or ten years. Many countries have tax treaties with other countries that include nondiscrimination clauses.

An international real estate developer should always check to see if his country has a tax treaty with his project's host country.[5] Because real estate investments are typically analyzed on an after-tax basis, it is also necessary for the developer to determine when and what taxes must be paid on the foreign investment and the form that the remittance takes. The foreign country's income tax requirements, tax treaties and withholding tax and foreign tax credits all are relevant.

The Foreign Exchange Risk

A country's exchange rate may be fixed, floating, managed float or pegged to another currency/currencies. In foreign real estate development there is often considerable difference between the cash flow of the project and the cash flow accruing to the parent firm. Evaluating the development project on the basis of its cash flow eliminates the possibility of misforecasting the exchange rates over time. This evaluation also is essential when working with local joint venture partners.

Unless the developer plans to reinvest the money in the host country, the earnings from foreign development activity also must be evaluated on the basis of the net present value of funds which actually are converted to the currency of the parent firm. The foreign real estate project should be analyzed as if it were a separate venture and then the amount, timing and form of transfers to the parent company should be determined to assess the impact of the foreign project on the company's overall performance.

The cash flows to the developer should not always be lumped together. It may be advantageous for management fees and interest from funds loaned by the parent firm to be separated from the net after-tax operating cash flows generated from the investment in order to isolate the profit centers of the development project. A foreign real estate investment that produces a marginal competitive capital investment yield may still be an acceptable project when management fees and other profit centers are considered. These profit centers normally are treated as operating costs that reduce the cash flow from the project and often are distinguished from joint venture profits. Separating the profit centers from the operating cash flows generated by the project also may provide the parent firm with diversification benefits.

Additionally, the effect of inflation on the cash flow must be determined to measure the impact of the exchange rate. Subsequently, the foreign currency cash flows should be converted into the parent firm's home currency and then discounted by the desired rate of return in the home country.

Adjusting The Discounted Cash Flow Model

Given the diverse and complex nature of international investment risks, whether political or economic, investors should require a rate of return commensurate with the degree of risk they are assuming. Therefore, the investment's required rate of return should be increased, and the cash flows of the project should be adjusted to reflect the specific impact of a given risk. Furthermore, due to the complex nature and unpredictability of international risk, the length of time required to recoup the initial investment becomes critical to the decision making process. Consequently, a payback period analysis should be employed concurrently with the discounted cash flow model to evaluate real estate investment in foreign nations. Surveys have shown that U.S. multinational corporations use multiple evaluation techniques, but they often use the payback period as a measure of risk, particularly for overseas investment projects.[6]

Given the nature of international risk, a combination of the discounted cash flow and payback period approaches is suggested. The approach discussed in this article integrates the internationally adjusted discounted cash flow model as devised by Lessard[7] and the discounted payback period model as proposed by Rappaport[8] to form an international real estate adjusted discount cash flow model.

The widely employed criterion based on the discounted cash flow framework is the standard net present value (NPV). Considering the effect of foreign exchange and taxes, the base-case NPV is defined as follows:

$$NPV = \sum_{t=1}^{n} \frac{(CF_t)(F_t)(1-T)}{(1+k)^n} - CF_0(S_0)$$

where: CF_t = Estimated cash flow in period t
F_t = Forward exchange rate for the period t, expressed in local currency
T = Tax rate
k = Discount rate
CF_0 = Initial investment at time 0
S_0 = Spot exchange rate at time 0, expressed in local currency

The standard net present value approach does not take into account, however, the financing cost of acquiring or developing real estate in foreign countries. Also, it ignores other items that are unique to foreign real estate investment and development. A discounted cash flow technique that is better adapted to accommodate these elements employs the adjusted present value (APV) model as defined by Myers:[9]

$$APV = NPV + PVF$$

where: APV = Adjusted present value
NPV = Base-case net present value
PVF = Present value of financing cost and benefits such as: cost of issuing securities to finance the development project, the interest tax shield that would be realized if foreign debt financing was used, the subsidized financing that might be offered by most host governments to boost a local economy, etc.

The NPV and PVF in the model also need to be modified to take into account the change in risk-adjusted discount rate (k*) over time. In real estate development each risk, whether domestic or international, has different time horizons, and different risks occur in different stages of the real estate development life cycle. It is during the strategic planning stage of the project that risk analysis initially takes place along with the conceptualization of the project, market and feasibility analysis, architectural design, capital and site optioning, permitting, etc. During the facilitation stage the land is bought, the structure is constructed and initial absorption has taken place. In the operational stage the property cash inflow matures. In the terminal stage the parent company liquidates the property at an appreciated or depreciated value.

Cash outflows or inflows associated with the different stages of the development life style are surrounded by risk, and uncertainties are generated from their own time horizons. Host government regulations on taxes, remittances, transfer pricing, rental control and exchange arrangements change with time, especially in the less developed countries of the Third World. Uncertainties are even more pronounced during the terminal stage of development when the fair market value of a project may be unrealizable due to the attitude of the host government.

Based on the assumption of perpetual cash-flow streams and permanent debt, Modigiliani and Miller in 1963 proposed the following formula to adjust the discount rate:

$$k^* = k(1-T^*L)$$

where: k = Opportunity cost of capital
k^* = Adjusted discount rate
T^* = Tax savings from debt
L = Proportional contribution made by the real estate project to corporate borrowing power

Miles and Ezzell in 1980 developed another formula:

$$k^* = k - Lk_DT^*[(1+k)/1+k_D)]$$

where: k_D = Cost of debt

Whether the Modigiliani and Miller or Miles and Ezzell model is employed in computing the adjusted discount rate k*, the arbitrage pricing theory is the preferred method of calculating the discount rate k. The arbitrage pricing theory is preferable to the capital asset pricing model in the real estate context because it eliminates many needless, restrictive assumptions, including the availability of a market portfolio which is irrelevant to real

estate investment.[10] The arbitrage pricing theory, in its *ex post* form, is expressed mathematically as follows:

$$k_j = E(k_j) + \sum_{i=1}^{n} \beta_{ji} [\varnothing_{ji} - E(\varnothing_i)]$$

where: k_j = Rate of return or the discount rate of jth property
$E(k_j)$ = Expected return on jth property
β_{ji} = Relationship between the i_{th} factor and the return of the j^{th} property
n = Systemic factors affecting the rate of return
$\varnothing_{ji}$ = Effect of i^{th} factor on return

The basic assumption underlying the arbitrage pricing theory is that the rate of return (discount rate) of a property is equal to the risk-free return plus a risk premium that is measured by the difference between the expected effect of economic factors and the unexpected effect of the same factors.

International Real Estate Adjusted Present Value Model

Capitalizing on the adjusted present value approach as developed by Myers, Lessard in 1979 extended the standard domestic version of the APV approach to foreign investments in the following format:

$$-CF_0 + \sum_{t=1}^{n} CF_t/(1+k^*)^t + \sum_{t=1}^{n} T_t/(1+i_d)t + \sum_{t=1}^{n} S_t/[1+i_d(1-tx)]^t$$

where: T_t = Tax savings in year t due to the specific financing package
S_t = Before-tax dollar value of interest subsidies (or penalties) in year t due to property-specific financing
i_d = Discount rate of the parent company
tx = Company's marginal tax rate

During the facilitation stage of the property development cycle, the calculation of the initial cash flow (CF_0) must be adjusted to account for specific country risk. To stimulate economic activities and attract real estate investors, some countries offer special concessions such as free land for the site of, say, tourist resorts. These benefits are treated as a reduction in CF_0. Here, in the calculation of CF_0 the initial property cash outflow consists of the estimated value of land and construction costs, including labor, materials and overhead. Interim financing cost and working capital also should be included in calculating CF_0. Working capital in the form of additional cash or non-real property assets needed in the construction of the property should be treated as a cash outflow at the time it occurs. At the operational or preferably at the terminal stage, however, the working capital investment presumably is recaptured and consequently is considered cash inflow. The net CF_0 should be expressed in terms of the parent company's local currency including any forward exchange rate impact on the conversion from interim financing to long-term financing.

Net cash inflows in the operational stage are estimated by preparing a pro forma income statement. Annual gross revenue is estimated with sensitivity analysis based on multiple scenarios of different vacancy rates for the property under consideration, its estimated credit losses, operating expenses, debt services and net tax liability (tax liability − tax savings). Concessionary benefits granted by the host country should be discounted here. These benefits include obtaining loans at concessionary terms. Based on judgmental forecasting of the direction of political and economic risks of the host country, certainty equivalents may be assigned to the estimated net cash inflows. These inflows, as well as foreign taxes and the parent company's local taxes, should be expressed in the parent company's local currency.

The following model takes into account most of the possible remittable cash flows to the parent company:

$$\begin{aligned}
IREAPV = &- CF_0(S_0) + \sum_{t=1}^{n} \frac{[CF_t(F_t)][1-tx_t]}{(1+k^*_t)^t} \\
&+ \sum_{t=1}^{n} \frac{[T_t(F_t)]}{(1+i_{dt})^t} + \sum_{t=1}^{n} \frac{S_t(F_t)}{[1+i_{dt}(1-tx)^t]} \\
&+ \sum_{t=2}^{n} \frac{WC_t(F_t)}{(1+k^*_t)^t} + \sum_{t=1}^{n} \frac{(USL_t - CL_t)(F_t)}{(1+k^*t)_t} \\
&- \sum_{t=1}^{n} \frac{BLF_t(F_t)}{(1+k^*_t)^t} - \sum_{t=1}^{n} \frac{(TRPH_t - TRPL_t)(F_t)}{(1+k^*_t)^t} \\
&+ \frac{[(TV_n - BV_n)(F_n)][1-txcgn]}{(1+k^*_n)^n}
\end{aligned}$$

where: IREAPV = International real estate adjusted present value
S_0 = Spot exchange rate of the foreign currency in terms of local currency
T_t = Net tax liability
F_t = Forward exchange rate at time t
S_t = Before-tax dollar value of interest subsidies (or penalties)
k^*_t = Discount rate which is adjusted for that particular kind of risk at time t
WC_t = Working capital that is recaptured during period t
USL_t = U.S. lending rate at time t
CL_t = Concessionary lending rate at the host country at time t
$USL_t - CL_t$ = Difference between the high U.S. lending rate and the host country's concessionary rate, the difference being an indirect benefit
BLF_t = Funds blocked from being remitted out of the host country at time t
$TRPH_t$ = Transfer pricing at the country imposing the high tax rate at time t

$TRPL_t$ = Transfer pricing at the country imposing low tax rate

$TRPH_t - TRPL_t$ = Transfer pricing advantage that the parent company would lose because the host government is imposing restrictions on transfer pricing

TV_n = Property's realizable market

BV_n = Book values of the property

^{tx}cgn = Capital gains tax rate

The last term in the IREAPV equation accounts for the discounted value of the future realization market value of the property at the terminal stage of development. This value should be estimated considering the estimated selling price, selling cost, taxes on sales and balance due on mortgage loan(s). Cash flows from working capital that will be recaptured also can be discounted here. However, the probability of expropriation or confiscation by the host government should be estimated prior to this stage.

Internationally Adjusted Discounted Payback Period

Many U.S. and other multinational firms use multiple techniques in addition to or in lieu of the discounted cash flow model to evaluate the feasibility of foreign investment. In fact, the majority of Japanese firms do not utilize the discounted cash flow model; rather, they assess a project's profitability based on cash flow projections that include imputed interest charges on the investment in that project. The payback period also is used often by numerous multinational firms as a reasonably reliable means of reducing the unpredictable risks in foreign nations.

A combined IREAPV-PBP is used by the authors of this article to yield an internationally adjusted discounted payback period model (IADPBP). The standard payback period is the period np which satisfies the following equality:

$$\sum_{t=1}^{np} CF_t = CF_0$$

The discounted payback period is defined as the period np which satisfies the following equality:

$$\sum_{t=1}^{np} CF_t / (1 + k)^t = CF_0$$

This last equation indicates that the discounted payback period is the period during which the cumulative NPV of a property is equal to zero. It is adjusted to take into account the need to capture the effect of the adjusted present value and the international real estate adjusted present value as follows:

$$\text{IREAPV-PBP} = \sum_{t=1}^{np} \frac{[CF_t (F_t)]\ [1 - tx_t]}{(1 + k^*_t)^t}$$

$$+ \sum_{t=1}^{np} \frac{[T_t (F_t)]}{(1 + i_{dt})^t} + \sum_{t=1}^{np} \frac{S_t (F_t)}{[1 + i_{dt}(1\text{-}tx)^t]}$$

$$+ \sum_{t=2}^{np} \frac{WC_t (F_t)}{(1 + k^*_t)^t} + \sum_{t=1}^{np} \frac{(USL_t - CL_t) (F_t)}{(1 + k^*_t)^t}$$

$$- \sum_{t=1}^{np} \frac{BLF_t(F_t)}{(1 + k^*_t)^t} - \sum_{t=1}^{np} \frac{(TRPH_t - TRPL_t) (F_t)}{(1 + k^*_t)^t}$$

$$+ \frac{[(TV_n - BV_n) (F_n)]\ [1 - {}^{tx}cgn]}{(1 + k^*_n)^n} - CF_0 (S_0)$$

A Case Example

The following case example illustrates the application of the proposed international real estate adjusted present value model. The example employs a step-by-step approach to present and discusses the individual terms of the model. The final step calculates the net present value of all the terms of the model and evaluates the feasibility of the foreign real estate project.

The Case

M.E. International, Inc. (MEI-USA), is a U.S. commercial real estate development company that has foreign direct investment in Beijing, People's Republic of China, and offshore investment in Hong Kong. MEI-USA is considering expansion of its real estate investment overseas, particularly in other cities of the People's Republic of China. Specifically, MEI-USA is seriously looking into the possibility of building a multipurpose commercial building in Shanghai. Based on office space analysis, the proposed building would be leased to multinational corporations having business dealings in Shanghai. Some Japanese, German and British companies already have expressed interest in long-term leases with MEI-USA.

In addition to the People's Republic of China's guarantee through the National Bank of China, the company would be using lease agreements as collateral to secure a $U.S. 30 million, five-year Eurodollar floating rate note (FRN) pegged to the Hong Kong Interbank Offer Rate (HKIBOR). The current HKIBOR on U.S. dollar FRNs is 8 percent plus 2 percent to account for default risks of MEI-USA, MEI-Beijing, and the Chinese sovereign risk. It is anticipated that with the Chinese government's guarantee of the FRN, 100 basis points would be saved in the annual coupon payment. To lower further MEI-USA's effective cost of borrowing, it is assumed that the interest on the FRN would be adjusted every year rather than every six months. The interest rate on U.S. dollars is expected to rise or decline by 25 basis points a year, leaving the average nominal interest rate on the FRN unchanged. It has been assumed that the principal would be paid back in five equal annual installments.

To make the FRN appealing to potential investors, the investment banker recommended that the five-year note be in a bearer form rather than a registered form.

According to forecasts obtained from foreign exchange consulting services, it is expected that, given the purchasing power parity of the U.S. dollar vis-a-vis the Chinese yuan, the U.S. dollar would be appreciating by an average of 7 percent. MEI-USA would pay $20,000 during the

first year in consulting fees to the foreign exchange consulting firm.

Given the size and the nature of the issue (fixed-income note versus equities) and the favorable climate of the Asian capital market, MEI-USA would capitalize on its Hong Kong networks by utilizing the expertise of a prominent investment banker at the Hong Kong off shore banking center to underwrite the issue for a total flotation cost of 1.1 percent of the issue. This figure includes 1 percent of the investment banker's underwriting spread and 0.1 percent for legal, accounting and printing expenses.

There is also a strong likelihood that the Chinese government would allow MEI to recover from its existing investments in Biejing a substantial amount of funds (50 million yuan) that had been blocked due to a past dispute over local labor policies.

According to the People's Republic of China's regulations, land cannot be owned; therefore, the land on which the proposed building would be erected would be leased from the government for 300 yuan/square meter or roughly about 30 yuan/square foot a year. However, the Chinese government would waive the land use fees for the first five years. It is anticipated that the site and building sizes would be 150,000 and 500,000 square feet, respectively.

Moreover, MEI-USA estimates that the initial construction cost of the multipurpose commercial building in Shanghai would be 300 yuans per square foot. The annual building operating expenses are estimated as follows: 60 percent at 40 yuans/square foot and 40 percent at 25 yuans/square foot. The company expects the net leasable area to be 455,000 square feet. Given the office space in Shanghai and the preliminary negotiation with the Japanese, German and British companies, MEI-USA forecasts that it would lease out 60 percent of the leasable area at 140 yuans/square foot and 40 percent at 90 yuans/square foot.

Based on negotiations with the principal foreign lessees, a forecast of local demand for commercial building space and the past experience of its Beijing subsidiary, MEI-USA estimates vacancy allowance at only 7 percent.

The current income tax rate in the People's Republic of China is 30 percent, plus a local surcharge of 10 percent and another 10 percent on income remitted out of the country by foreign enterprises. Nevertheless, MEI-USA would be able to apply for exemption from the surcharge upon application to the local authorities. Furthermore, the company would be taking advantage of new laws that make the income tax rate 15 percent in special economic development zones. Therefore, the net tax rate applicable to the company's income would be only 25 percent. Of particular importance here is that, to avoid double taxation, the People's Republic of China has concluded a tax treaty with the United States.

Depreciation in China is allowable for fixed assets and is calculated on annual straight line basis, with a residual value generally fixed at 10 percent of the cost. The minimum depreciable life of houses and buildings is 20 years, and capital gains arising from the disposal of fixed assets are taxable at 20 percent. Given the magnitude of political and economic risks in China, MEI-USA feels that the payback period should not exceed five years. Therefore, the company expects to sell the building at the end of five years at an estimated market value of 30 million yuan.

Based on different degrees of certainties associated with the materialization of different cash inflows, various discount rates will be utilized, the least risky being the recouping of the blocked funds. However, those funds will be collected at the initial stage and therefore will be deducted from the initial investment. The discount rates applicable to cash flows range from 14% to 16%; so the average of 15% will be used.

EXHIBIT I

The Initial Investment

Initial construction cost 500,000 square feet @ 300 yuan/square foot	yuan 150,000,000
Working capital needs @ 5%	yuan 7,500,000
Less blocked funds	−50,000,000
CF_0 in yuan	107,500,000
CF_0 in U.S.$ (yuan = U.S.$ 0.2687)	$ 28,885,250

The Solution

Step 1: Calculate the initial investment, CF_0, at the facilitation stage, with the spot rate of yuan = U.S.$ 0.2687 (see Exhibit I).
Step 2: Calculate the five-year net annual cash inflows in the operational stage (see Exhibit II).
Step 3: Calculate the total remittable cash flows to MEI during the operational stage (see Exhibit III).
Step 4: Calculate the net revisionary value of the building at the terminal stage, given the market price and the capital gains tax. Also, capture the working capital (see Exhibit III).
Step 5: Convert cash inflows in Steps 3 and 4 into U.S. dollars at the expected exchange rate of yuan/dollar (see Exhibit III).
Step 6: Calculate the adjusted present value and the payback period (see Exhibit IV).
Step 7: Based on Steps 5 and 6, evaluate the profitability of the project by discounting the different cash flows according to the international real estate adjusted present value model, using the applicable discount rates.

Conclusion

According to Exhibit IV, the adjusted present value is positive, and the discounted payback period does not exceed the five-year target. Hence, building a multipurpose commercial building in Shanghai, China, is a feasible project, and MEI-USA should be able to recoup its investment in 4.1 years.

Summary

This article presents a discounted cash flow model for analyzing foreign real estate development projects. The model takes into account political risk and foreign exchange risk, and it captures special tax considerations. The model analyzes these risks in different time horizons corresponding to the real estate development lifecycle. The suggested model provides adjustments for the initial cash outflow, cash inflows, the discount rate and holding period which are international real estate-specific.

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EXHIBIT II

Projected Revenue, Operating Expenses and Net Revenue (in Yuans)

	Year 1	Year 2	Year 3	Year 4	Year 5
Annual gross revenue 455,000 square feet × .60 × 140 yuan 455,000 square feet × .40 × 90 yuan	54,600,000	54,600,000	54,600,000	54,600,000	54,600,000
Vacancy allowance @ 7%	3,822,000	3,822,000	3,822,000	3,822,000	3,822,000
Operating expenses 455,000 × .60 × 40 yuan 455,000 × .40 × 25 yuan	15,470,000	15,470,000	15,470,000	15,470,000	15,470,000
MEI-USA's management and service fee @15% of the annual gross revenue	8,190,000	8,190,000	8,190,000	8,190,000	8,190,000
Foreign exchange forecasting fee	74,432	—	—	—	—
Depreciation	499,995	499,995	499,995	499,995	499,995
Debt Service flotation cost [$30 m × 1.1%]/0.2687 interest expense @ 10% (see Exhibit V)	1,228,136 11,164,868	9,603,842	7,202,881	4,801,921	2,400,960
Net revenue	14,150,569	17,014,163	19,915,124	21,816,084	217,045
Income tax @ 25%	3,537,642	4,253,541	4,853,781	5,454,021	6,054,261
Net revenue after taxes	10,612,927	12,760,622	14,561,343	16,362,063	18,162,784

EXHIBIT III

Total Remittable Cash Flows to MEI-USA

	Year 1	Year 2	Year 3	Year 4	Year 5
Net income after taxes (from Exhibit II)	10,612,927	12,760,622	14,561,343	16,362,063	18,162,784
Add-back depreciation	499,995	499,995	499,995	499,995	499,995
Operating cash flows	14,225,001	13,260,617	15,061,338	16,862,058	18,662,779
MEI-USA's management and service fees	8,190,000	8,190,000	8,190,000	8,190,000	8,190,000
Net tax savings (U.S. rate − Chinese rate)	1,273,551	1,531,275	1,747,361	1,963,448	2,179,534
Interest rate savings (100 basis points)	1,116,487	960,384	720,288	480,192	240,096
Revisionary value (market value − book value) less capital gains tax	—	—	—	—	22,000,020
Total remittable cash flows (yuan)	35,917,961	37,202,893	26,233,543	44,357,756	69,935,020
U.S.$ exchange rate	$ .2687	$ .2499	$ .2499	$ .2499	$ .2499
Total remittable cash flows	$ 9,651,156	$ 9,297,003	$ 6,555,762	$11,085,003	$17,476,808

EXHIBIT IV

Calculation of the Adjusted Present Value and the Discounted Payback Period

$$APV = -\$28{,}885{,}250 + \frac{9{,}651{,}156}{1.15} + \frac{9{,}297{,}003}{1.15^2} + \frac{6{,}555{,}762}{1.15^3} + \frac{11{,}085{,}003}{1.15^4} + \frac{17{,}476{,}808}{1.15^5} + \frac{7{,}500{,}000 \text{ yuan } (\$.2499)^*}{1.15^5}$$

$$= \$6{,}806{,}232$$

Discounted payback period = 4.1 years

*Working capital is converted at an exchange rate of $.2499

EXHIBIT V

Loan Amortization Schedule (in Million U.S. Dollars)

Year	Loan Outstanding	Interest	Principal Payment	Total
1	$30	$3.0	$6	$9.0
2	24	2.4	6	8.4
3	18	1.8	6	7.8
4	12	1.2	6	7.2
5	6	.6	6	6.6

THE FUTURE OF THE SECONDARY MORTGAGE MARKET

Has the secondary mortgage market planted the seeds of eventual demise for the traditional mortgage loan system?

by Jack Harris

Since the mid-1970s, the U.S. mortgage market has undergone profound change. Deregulation and volatile interest rates have transformed the mortgage lending industry from a somewhat insular financing area into a more integral component of the larger credit markets. While the changing environment has created difficulties for savings and loan associations, it has provided fertile ground for the growth of a secondary mortgage market. Federally sponsored secondary market agencies (Fannie Mae, Freddie Mac) have been established to assist mortgage lenders in overcoming the inherent problems of making long-term loans with locally derived, short-term funds. Yet some believe the secondary market agencies are encroaching on the viability of depository lending institutions, even implying that they contributed to the irresponsible expansion of the savings and loans, which has lead to the current thrift industry debacle.

Given the uncertain nature of the savings and loan industry at the present time, secondary mortgage markets may play an even stronger role in the provision of housing financing in the future. However, the shape of the secondary mortgage market, and increasingly the entire home mortgage industry, will hinge on several major issues. While it is not possible to foresee the future, it is worthwhile to make educated speculations based on current trends. The following article is one reading of these trends. The article examines the major issues that will help determine the future development of the secondary mortgage market. In the sections that follow, the article addresses these key questions:

- Can the secondary mortgage market continue its extraordinary growth of recent years, or has it reached its peak?

- What is the role of purely private firms in securitizing real estate debt? Will they be crowded out by the federal secondary market agencies?
- What are the prospects for the development of secondary markets for a wider variety of real estate loans? What are the major obstacles to this development?
- What does a strong secondary mortgage market mean for primary mortgage lenders?

Development Of A Secondary Market For Mortgages

In 1988, 44% of the $240 billion of mortgage loans closed by institutions insured by the Federal Savings and Loan Insurance Corporation (FSLIC) were sold into the secondary market; of the loans made for purchase of one- to four-unit dwellings, 61% were sold into the secondary

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market.[1] In addition, virtually all of the $85 billion of loans made by mortgage bankers entered the secondary market. Clearly, a system of home financing that began as a collection of independent institutions formed for gathering deposits locally to make loans has become a system of mortgage lenders that are performing a more specialized task: the origination of loans that eventually will be absorbed into vast securitized pools.

Is Continued Growth Inevitable?

Since the mid-1970s, the secondary mortgage market has grown from an ancillary supplement to the primary market, to a dominant part of the home loan system. Note the rapid increase in the share of mortgages held in mortgage pools, which are portfolios of loans formed in the secondary market as collateral for mortgage-backed securities (Table 1). To some observers, growth of the secondary mortgage market signals an inevitable trend away from traditional avenues of mortgage lending toward full integration of all segments of the capital markets. To others, this past growth has merely been the result of a unique combination of factors that are not likely to be maintained. Therefore, these observers believe, the size and importance of the secondary mortgage market may have already reached a high watermark, and the secondary market may begin to recede from its current level. Which of these views is correct depends on how the other issues discussed in this article are resolved.

Deregulation

There is no question that the recent growth of the secondary mortgage market is the result of a combination of economic, technological and institutional developments, most of which have undermined the viability of traditional, deposit-taking institutions and the institutions' ability to satisfy the demand for housing credit. Possibly the most important of these developments, however, have been the deregulation of home financing institutions and the economic conditions that made deregulation inevitable. On first examination, this may seem an odd statement. One of the reasons the secondary mortgage market exists is to overcome the problems of lenders subject to deposit yield ceilings.

In the past, regulated deposit rate limits prevented savings associations from competing for funds when short-term interest rates rose, and the resulting disintermediation forced a moratorium on new lending activity. The secondary mortgage market, by tapping credit markets directly, supplied the necessary liquidity for new loans. Following the phase-out of deposit ceilings, savings associations found the pursuit of high cost funds untenable and recognized the advantages of holding liquid securities in lieu of loans.[2] Faced with a rising cost of funds, lenders became net sellers of loans and looked to the secondary markets as a prime source of liquidity.[3] While savings associations were becoming more attuned to the secondary mortgage market, the demand for mortgage funds expanded greatly because of the strong growth in household formation, the increase in mobility of the population, the rise in housing prices, the increase in refinancing activity encouraged by accumulated equity and, recently, the decline in interest rates.[4] As the competition to satisfy a growing demand for mortgage funds intensified, lenders needed additional sources of funds to fulfill the need.

At the same time, continuing regulation of assets encouraged the liquidation of loan portfolios. Portfolio lenders were limited in the rate of growth on assets and were pressured to increase the ratio of capital to assets on their books. The secondary mortgage market stood ready to help with these problems.[5]

Economic Factors

The successful deregulation of an industry that had long been accustomed to constraint was a product of extraordinary economic conditions. Namely, the rise and fall of inflation rates and the associated upheaval in interest rates had subjected the financial sector to unusual volatility and exposed the most serious flaw of the traditional mortgage lending system: the maturity mismatch between assets and liabilities. Lenders adopted two innovations to help solve this problem, both of which served to place more reliance on secondary mortgage markets. First, mortgage lenders made aggressive moves to originate adjustable rate mortgages in lieu of fixed rate loans. Many lenders found that, even with heavy discounts on ARM terms, they had to offer fixed rate loans as an alternative. They also found that originations of fixed rate loans could be sold into the secondary markets while ARMs could be retained in portfolio.[6] Second, portfolio lenders purchased mortgage-backed securities instead of holding whole loans because these securities qualified as

TABLE 1

Ownership of Mortgage Debt Outstanding
One- to Four- Family Non-Farm Dwellings

		Held by:			
Year	Total (Billions)	Thrifts	Banks	Federal Agencies*	Pools
1977	$ 642.7	57.4%	16.4%	5.6%	9.4%
1978	753.5	55.7	17.1	5.8	10.1
1979	870.5	52.9	17.2	6.1	11.6
1980	963.9	50.6	16.6	6.4	13.3
1981	1,038.5	48.3	16.4	6.5	13.7
1982	1,074.7	42.6	16.2	7.2	18.0
1983	1,189.8	40.5	15.3	7.3	21.7
1984	1,319.4	40.1	14.9	7.4	23.0
1985	1,469.1	37.8	14.6	9.0	24.6
1986	1,698.5	32.9	13.9	7.5	30.6
1987	1,925.2	31.1	14.3	6.4	34.0
1988	2,115.2	30.6	14.8	6.2	34.1

* Government National Mortgage Association, Farmers Home Administration, Federal Housing Administration, Veterans Administration, Federal National Mortgage Association, Federal Home Loan Mortgage Corporation, Land Banks.

Source: *Federal Home Loan Bank Bulletin, Savings and Loan Source Book, Federal Reserve Bulletin*

mortgage assets for tax purposes but could be readily liquidated in the market if a need for cash arose. The federally sponsored secondary mortgage market agencies encouraged this strategy by offering swap programs that traded securities for loans. In fact, the popularity of these swap programs was one key to the growth of the secondary mortgage market.[7]

Technology

Technological developments also served to expedite the linkages between loan originations and loan securitization. Computerized networks enhanced mortgage banking operations, and the secondary mortgage market agencies streamlined the processes of providing commitments and delivering loans.[8] These developments prepared the secondary market to handle ever growing volumes of business.

Factors That Deflect The Growth Trend

Although the secondary market appears to be poised for continued growth, David Seiders, chief economist for the National Association of Home Builders, has argued that several developments may deflect the trend: First, interstate mergers of failing institutions and the spread of branch banking are reducing the need for a secondary market to overcome geographic imbalance. A large multistate association may shift funds among branches to match supply and demand on a broad geographic scale. Second, because many associations have sold off most of their low-yielding fixed rate mortgages, the need for liquidity is diminishing, especially with a large proportion of lender portfolios comprised of ARMs. Third, associations are becoming more sophisticated in the techniques of issuing mortgage bonds and can take advantage of recent legal reforms that make issuance less cumbersome. The development of mortgage futures markets also is allowing lenders to hedge against volatile interest rates. Finally, the extent of the transformation of portfolio lenders into mortgage bankers may have been exaggerated. Seiders has pointed out that institutions are moving back to being net purchasers of mortgage loans after being net sellers of loans for several years.[9]

Not to be overlooked is the fact that the secondary mortgage market rose to prominence during a period of unusual growth in the demand for mortgage funds. In the late 1970s, national home ownership rates accelerated, while average home prices soared. The result was a great leap in the dollar volume of mortgage loans originated for home purchase. The general decline in mortgage interest rates, beginning in 1982, induced a surge in loan refinancing, including the refinancing of many expiring seller-financed loans. A large share of these refinanced loans was made by mortgage bankers, which added fuel to the growth of the secondary market. The effect of these events on the mortgage market has largely been realized; rapid growth in the demand for mortgage funds therefore is not expected to continue.

The secondary market has become an important part of the mortgage lending system and is likely to retain a major role. However, as the points discussed above suggest, the rapid recent growth of that market has been the result of a combination of extraordinary events and conditions and therefore is not likely to continue. Most likely in the near-term future is a state of coexistence between the agency-dominated secondary market and a financially stronger and sophisticated lending industry. However, this balance will depend on several factors:

- The impact of the Financial Institutions Reform, Recovery and Enforcement Act on loan originations at savings and loan associations. A crippled thrift industry could shift the home loan market toward mortgage bankers and commercial banks, thereby placing more emphasis on secondary market activities.
- The operation of federal secondary market agencies. Whether or not agencies become privatized could depend on the growth of the secondary market.
- The success of REMICs in opening opportunities for private secondary market issuers. This new mechanism for issuing mortgage-backed securities, created by the 1986 Tax Reform Act, reduces much of the rigidity that discouraged private mortgage conduits in the past.
- Resolution of the current shake-out in the market for mortgage-backed securities. The demand for securities is down amid investor concern about the soundness of mortgages in general. There is also fear that thrifts may cut back purchases of securities.[10] If the market has peaked, there will be little room for new issues.

A Future For Private Conduits?

Although federally-related agencies dominate the secondary mortgage market, there is a fledgling industry of purely private mortgage conduits that are surviving by finding unserved niches within the market. These private mortgage firms face important hurdles in attempting to compete with the agencies; however, recent legislation has reduced some of these hurdles.

The Secondary Mortgage Market Enhancement Act of 1984 eased several of the barriers faced by private firms by allowing issuers of investment quality mortgage-backed securities to use shelf registration with the Securities and Exchange Commission or blind pools (i.e., raise funds before acquiring specific mortgage loans) and by granting certain exemptions that previously had been enjoyed only by federally-related agencies, including exemption from state "blue sky" laws. It has been estimated that these changes save private issuers about two basis points in issuance costs.[11]

The 1984 act also broadened the market for private mortgage issues. Regulations were changed to allow purchase of private mortgages by pension funds and savings and loan associations.[12]

The creation of REMICs in 1986 provided further flexibility. Tax and accounting problems were eliminated by allowing use of sale of assets treatment without tax

liability at the issuer level. Administrative control was increased by eliminating the need for a financial subsidiary to issue the securities. Ending the requirement for overcapitalization made issuance more profitable. From a legal standpoint, private firms were placed on equal footing with the federal agencies.

Competition With Federal Agencies

Regardless of the improved operating environment for private firms, they still must compete with the formidable federal agencies. Private firms are unable to offer comparable yields for the purchase of mortgage pools; rather, they must limit activity to "non-conforming" loans, or loans with principal amounts above the statutory limits placed on the agencies. Still, the non-conforming segment of the market is relatively small.[13]

Competitive problems stem from two basic sources. The federal agencies enjoy the implicit backing of the U.S. Treasury, which creates the perception among investors that their issues hold low risk and reduces the interest rates the agencies must pay on security issues.[14] Second, the massive market volume of agency operations provides a measure of market power and economies of scale.[15]

These two problems were addressed by the Reagan Administration, whose policy toward secondary mortgage markets was to encourage private participation, if not to advocate complete privatization of the market. Attempts were made to counter the implicit backing of the agencies by the Treasury by requiring the agencies to pay user fees on each security issued. The idea was that the fee would match the value of the implicit Treasury guarantee and make the issue fully priced in a competitive market.[16] However, such fees would raise costs to the agencies and lower the prices they could pay for mortgage loans. Because of the major role the agencies play in providing liquidity for residential loans, the ultimate result would be higher mortgage interest rates to the home buyer. So far, strong opposition from the mortgage industry has succeeded in frustrating user fee proposals.

Attempts to stem the growth of the agencies have been less clear cut. During the formulation of legislation creating REMICs, some opposition was expressed against allowing the agencies to use the new device. However, the philosophy that prevailed was one of helping the private issuers without hurting the agencies by limiting their participation, especially since REMICs were expected to be the predominant vehicle for issuing mortgage-backed securities.[17] As a trade-off, the Department of Housing and Urban Development authorized the Federal National Mortgage Association to issue REMICs only after agreeing to study the issue of privatization. A special task force on the issue recommended the creation of two entities, one that would continue FNMA's current support of the housing financing market and another that would be completely independent.[18] The report also emphasized that a private FNMA would not be feasible if the Federal Home Loan Mortgage Corporation remained tied to the government. However, this was the extent of the effort; the change to the Bush Administration and the FSLIC crisis shifted attention away from the issue.

The Issue Of Privatization

On the surface, this issue appears to be one of ideology which, if true, would hold only casual interest for those participating in mortgage markets. The extent of privatization does, however, hold practical importance as well.

Proponents of privatization point out that the original purpose of federal agency participation in the home loan markets was to organize and facilitate a market structure that was fragmented at best. For many years, the agencies carried on small-scale operations because their purchase offers were relatively uncompetitive. During volatile recent times, the agencies became very competitive bidders for loans, and they grew accordingly. Continuation of this growth is seen as a threat to depository institutions and established roles in the primary as well as the secondary mortgage markets. Some see the eventual demise of the traditional portfolio lender as loans are originated primarily for sale in the secondary market and a housing market that would lose an important buffer against the inherent volatility of the capital markets.[19]

Opponents of privatization emphasize the costs of losing the participation of the agencies. They assert that private firms could not compensate for any substantive agency withdrawal from the market. Without federally supported agencies, mortgage securities would be viewed as more risky, thus raising interest rates on mortgage originations.[20] A private FNMA would not need to confine itself to housing financing and, when profitable, could shift to other areas of investment. Therefore, the old problem of disintermediation could return. Smaller lenders, lacking the volume needed to directly access capital markets, would lose the advantages of the secondary market.[21]

The issue of privatization revolves around two differing perceptions of the agencies: one, as threats to the traditional system of making mortgage loans; two, as essential ingredients in protecting the mortgage loan system. Resolution of the issue appears to hinge on the prospects for continued growth of the secondary market. If the market expands further and the agencies grow along with it, the controversy will intensify. Conversely, if the market stabilizes and matures, the issue may become moot.

It is reasonable to expect "privatized" agencies to operate much as federal agencies do now. Even if privatized, the agencies, by their very size, would continue to enjoy competitive advantages in the areas they operate. Furthermore, privatization would free the agencies to encroach on the niches carved out by private mortgage conduits. However, a more accurate accounting of the real cost of securitizing mortgages might force the housing industry to compete more effectively for funds with other sectors of the economy.

Securitization Of A Broader Array Of Loans?

The secondary mortgage market has been very successful in securitizing fixed rate mortgage loans on single-family

homes largely because of standardization of the product. From a risk standpoint, homes are relatively similar, and mortgage underwriting procedures also are similar, in part because lenders accept guidelines from the federal agencies to assure a market for the loans. Guidelines were established initially by the Federal Housing Administration, but lately the secondary market agencies have established their own rules for making conventional loans.[22]

Traditional single-family home loans are only part of the real estate debt held by financial institutions. Financial institutions also hold loans for homes financed with adjustable rate mortgages and 15-year fixed rate loans. In addition, the institutions hold loans for multi-family projects, mobile homes, condominiums and various types of non-residential properties. Although some entrees have been made, securitization of these forms of debt has been lagging.

The apparent reluctance to extend securitization stems from the difficulties in assessing risk for pools of loans with varying characteristics. After all, a bond is a relatively dependable investment; it provides a fixed income over a predictable period of time. Property loans, in contrast, introduce much more uncertainty. The property may turn out to be a poor performer; property values may decline, or the borrower may encounter economic difficulty. Also, unlike major corporations or governmental entities, most mortgage borrowers have limited capacity to weather adverse financial conditions. Because of these uncertainties, the risk of default on property loans is significant.

An additional source of uncertainty involves prepayment of loans. Most mortgage loans allow the borrower to repay the loan balance at his discretion. Typically, borrowers refinance loans when interest rates fall. Unfortunately for the holder of the mortgage, that is the worst time to recover the principal of the loan, since proceeds must be reinvested at a lower rate of return.

If the probability of loan default and prepayment can be estimated, the financing market may discount the price of the security by an appropriate amount to compensate. This estimation has been accomplished, with some proficiency, for fixed-rate, single-family home loans. Default insurance is readily available on the individual loans from FHA and private insurers; guarantees of timely payment at the pool level are provided by the Government National Mortgage Association or the issuer. Because of lenders' long experience with these types of loans, insurers are willing to undertake the risk of default, and investors have a basis for assessing prepayment risk. However, other types of loans are either too new or too complex to lend themselves to reliable estimation. ARMs provide a good example.

Adjustable Rate Mortgages

When ARMs became widely available in the early 1980s, the various combinations of adjustment terms, indexes and other features produced a vast variety of loan types. However, since most lenders retained ARMs in their portfolios, this variety was not too much of a problem. As the volume of ARMs rose, the need for securitization of ARM loans increased. In response, the federal secondary mortgage market agencies identified a short list of ARM characteristics they would buy. However, because of the newness of the product, the agencies did not know what to expect from even the limited types of ARMs they purchased.

In simulations and actual practice, it has been found that certain features of ARMs affect default risk and prepayments significantly. The loans often are originated at deeply discounted interest rates in order to attract borrowers away from fixed rate loans. Many lenders qualify borrowers based on the low first year rate, leading to delinquencies when the rates are later increased. At times of interest rate volatility, adjustment caps have helped limit borrower defaults. However, experience is insufficient to evaluate the effect of these factors on credit risk.[23] The agencies are addressing these problems by promulgating specific underwriting guidelines in a manner similar to those on fixed rate loans. In the process, they are bringing a level of standardization to ARMs.

Loans For Multi-Family Units

Multi-family housing is another area in which the secondary mortgage markets have made limited inroads. Freddie Mac began issuing multi-family pass-through certificates in 1984. Since then, there has been a steady increase in agency involvement. (Table 2 shows the small, but increasing, portion of all multi-family unit debt held in agency pools.) In 1987 Freddie Mac purchased $2 billion and Fannie Mae purchased over $300 million of multi-family unit loans.

TABLE 2

Multi-Family Unit Mortgage Debt
Held in Agency Mortgage Pools

Year	Total Debt (Billions)	GNMA (Billions)	FHLMC (Billions)	FNMA (Billions)
1985	$214.0	$4.9 (2.3%)	$0.9 (0.4%)	$1.0 (0.4%)
1986	247.8	5.8 (2.3)	4.7 (1.9)	1.4 (0.6)
1987	273.9	7.7 (2.8)	6.7 (2.4)	2.0 (0.7)
1988	287.6	9.3 (3.2)	6.5 (2.3)	5.9 (2.1)

Source: *Federal Reserve Bulletin*

The problem of assessing the risk of default and inopportune prepayment is even more acute with multi-family unit loans. Not only are the properties heterogeneous, but underwriting methods often are customized to specific loan situations. The amount and terms of a loan depend on the projected performance of the property rather than on the credit-worthiness of the borrower. Moreover, financing arrangements are varied, including participation loans with various types of kickers to the lender.[24] Unlike

loans on owner-occupied homes, there are no data on prepayments.

Income property loans have been sold to investors in the past. Because single loans may be large, they may be sold off individually. Forming pools for the purpose of securitizing the loans is impeded by the lack of standardization. Recent developments may overcome the problem. Standard and Poor's now provides ratings for pools of commercial property loans.[25] Freddie Mac has developed a method of risk-based pricing which is sensitive to underwriting standards.[26] In addition, some conduits are self-insuring the pool by taking a subordinated interest.[27]

There are other areas of real estate financing that have not been introduced to securitization, such as loans for manufactured housing, second homes and net lease properties.[28] Apparently, these areas are constrained only by the problem of assessing risk because there are plenty of loans available to form pools.

Moral Hazard Problems

While broadening the base of securitized real estate debt may offer a more reliable supply of financing, some are concerned about the moral hazard problems that may ensue,[29] that is, the possibility that loan originators may be tempted to maximize loan volume at the expense of quality, knowing that the problem will be someone else's. This problem is recognized by secondary mortgage market operators and is a reason why they promulgate standards for underwriting loans. The real question is whether standardization will work in an area of financing that requires flexibility for a successful transaction. Real estate investors may find it difficult to negotiate terms with a lender whose allegiance is to Wall Street.

Undoubtedly, there will be continued experiments in securitizing various types of real estate debt. Some will be successful, while others will not. So far, innovators have moved with caution, so that no major security crises have occurred, and there is little reason to expect this situation to change.

Is The Secondary Market A Threat To Traditional Mortgage Lenders?

The 1970s and 1980s have been years of turmoil for housing financing. Volatile economic change has exposed the weaknesses of the mortgage origination system. Growth of the secondary market has largely been responsible for preventing collapse of the system. The secondary mortgage market has alleviated some of the old problems of portfolio lenders. By providing an alternative source of loanable funds, the secondary market has filled the gap caused by disintermediation in the face of rising short-term interest rates. By providing liquidity in lender portfolios, the secondary market has alleviated the problem of asset-liability mismatching.

Yet some feel that, by stepping in to save the system, the secondary mortgage market may have planted the seeds of the eventual demise of mortgage originators as they presently exist. There is no question that secondary mortgage market operations have changed the overall mortgage market. Whether that change will transform the function of lenders is open to question.

Increased Specialization

One result of the rise of secondary markets is increased specialization in the process of delivering mortgage funds to borrowers. Lenders may concentrate on the origination process as a profit center apart from earnings from the loans themselves; they need not undertake the liabilities of holding loans.[30] This has blurred the distinction between institutional lenders and mortgage bankers. Portfolio lenders may hold mortgage-backed securities and still qualify for favorable tax treatment. Even servicing contracts may be sold in the market to provide up-front cash flow. A whole industry has developed around the firms specializing in servicing mortgages.[31]

The movement toward specialization not only liberates the traditional lender from the problems of holding mortgages, it also provides alternatives to the lender's participation. Liquidity provided through the secondary market has been instrumental in encouraging more long-term mortgage lending at commercial banks.[32] Furthermore, there may not be a need for a lender to be involved; builders and real estate brokers may originate mortgages directly with credit market conduits through computerized networks.[33] Borrowers may feel more comfortable dealing with traditional lenders until they realize that it makes little difference who makes the loan when they are dealing with a servicing firm in some distant city while their loan is being held in a credit pool that is even farther removed.

Standardization Of Underwriting And Mortgage Instruments

The secondary markets have been instrumental in standardizing loan underwriting and mortgage instruments.[34] Such factors as loan qualifying standards and appraisal forms promulgated by FHLMC and FNMA have become fixtures in the industry. To an increasing degree, loan terms that are acceptable in the secondary market also are offered in the primary market. Even portfolio lenders want to retain the options afforded by a marketable loan. While such standardization has brought some order to the market, it also may have stemmed the innovation in mortgage design that emerged immediately after deregulation. Although economic stability has been a big factor, standardization of mortgage loans has had the effect of reducing the types of mortgages that are available. The menu of mortgages available to the borrower today is not the smorgasbörd it was a few years ago.

Possibly of greater concern than the loss of innovation in mortgage design is the trend toward reducing the underwriting responsibility of mortgage originators. If lenders see their role as merely satisfying a list of standard criteria

established by secondary mortgage market agencies, neither investors nor borrowers will be well served. The agencies recognize this threat and have acted to discourage some practices that erode the quality of loans. Their greatest weapon, however, is the removal of the loan originator's access to the market by refusing to purchase further loans when a pattern of bad loans develops.[35]

Securitization

Securitization programs have reduced risks significantly for portfolio lenders. By swapping whole loans for securities, lenders add liquidity to their portfolios.[36] Using these mechanisms is a necessity in a market in which interest rates are subject to wide swings. The growing relationship between lenders and secondary investors places less emphasis on individual borrowers and depositors. The concept of the self-sufficient community savings and lending institution is becoming obsolete.

Some see the real threat to primary lenders on the liability side. The agencies' securitization process is seen as a more efficient way of doing what savings associations do—convert investors' funds into mortgage credit. The associations' ability to raise funds may become limited to retaining small, conservative depositors.[37] At that point, savings and loan associations would be little different from mortgage bankers.

Finally, the full development of secondary markets opens up a vast source of funds for mortgage loans.[38] What has been sacrificed is the stable mooring of low cost deposits as a base for mortgage interest rates. These rates now move in a fashion that is similar to the movement of credit yields,[39] and mortgage loans are rationed by interest rate levels rather than by supply. While this development may appear to be beneficial, in actuality, the economy loses the traditional role of housing as a counter-cyclical leader during business recessions.

Conclusion

It is tempting to view change as the loss of something valuable. The integration of the local mortgage lender into the broad securities markets may strike some as unfortunate. Certainly, the ultimate holder of mortgage loans has no commitment to the local area, and mortgage lending is no longer a matter of pooling local resources for local needs. In many ways, this development is similar to the demise of the mom and pop grocery. While some aspects of the relationship between lender, depositor and borrower may have been lost, opportunities and options for lenders, borrowers, investors and suppliers of specialized services have been increased. In economic terms, increased options generally promote greater initiative, efficiency and responsibility. Therefore, the change brought about by the development of the secondary mortgage market must be seen as a benefit to society, however uncomfortable it may be for those who are unprepared for change or for those who have entrenched interests.

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CREATING VALUE IN UNDERPERFORMING MULTI-FAMILY APARTMENT COMPLEXES

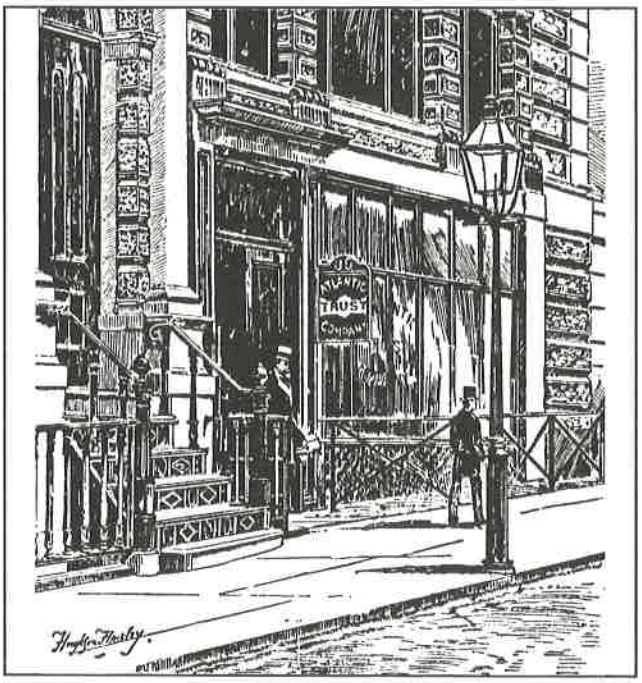
A strategic plan that cuts operating costs, improves management efficiency and responds to market needs is the first priority.

by Stephen A. Stoner

The Bush Administration's much anticipated bailout of the savings and loan industry finally has arrived in the form of the Financial Institutions Reform, Recovery and Enforcement Act of 1989 (FIRREA). FIRREA created the Resolution Trust Corporation (RTC), which is responsible for managing and financing the resolution of failed thrifts. Included in RTC's charter is the orderly disposition of an estimated $200 billion to $500 billion of income-producing real estate owned (REO) property—i.e., property that has been foreclosed by the failed thrift institutions. The creation of this disposition mechanism, combined with the panoply of REO property on the books of healthy or marginally performing savings and loan institutions, creates business opportunities for real estate investors who are skilled in managing troubled property. For those investors lucky enough to negotiate a deal with the government or a thrift, the challenge is merely beginning. The real test of their skills will come when they attempt to create a profitable investment.

Development of a strategic plan for creating asset value should be the first order of business for a prospective owner of an underperforming, multi-family apartment complex. Note the use of the word "prospective." Planning is most effective when it occurs prior to the closing of a deal; good planning by a prospective owner ensures that the team acquiring the property knows exactly what to expect and how to proceed once it takes possession. Specific points to evaluate during the planning process include:

- Improved management efficiency
- Operating cost reductions
- Capital improvements and maintenance schedules
- Amending leasing policies
- Market repositioning
- Partial asset shutdown



Improved Management Efficiency

One of the first areas to consider is the performance of the existing property management team and the steps that need to be taken to streamline management efficiency and reduce costs without suffering a noticeable decrease in tenant services.

Automating the financial and accounting functions is a good place to start. Automation means more than just cranking out monthly operating statements on a personal computer. It means automatically generating and mailing rent invoices to tenants near the end of each month so payments can be sent directly to a bank for deposit in a lockbox account. It also involves automatic receipt of daily account statements from the bank so the property manager can follow up on delinquencies. In addition,

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automation of certain regularly occuring payments (loan payments, insurance contracts, etc.) may be instituted.

A good financial software package should include budgeting and cash management applications and the capability of creating monthly operating statements on a timely basis. If scrutinized properly, these statements enable the property manager to identify and solve potential operating or maintenance problems quickly and in a cost-effective manner. Automating the generation of monthly operating statements can be a cost saving in itself. The upfront costs of a computer system usually are offset by the savings achieved by reducing manual processing time.

Significant savings also can be achieved by moving the property manager and rental agents of a small- or medium-sized apartment complex off-site. A move to a central management office allows the unit that was being used as an office to be rented, and it allows agents and managers to allocate a portion of their time to other projects without eroding services to tenants of the complex. Prospective tenants can call the central office for an appointment to see vacant units, and current tenants can inform the off-site office of problems by telephone. Maintenance requests can be made via an answering machine set up in an on-site maintenance shed that is checked on a regular basis by maintenance personnel.

Creating standard operating procedures for the maintenance crew of the apartment complex can eliminate the need for and the cost of an on-site maintenance supervisor. Schedules for regular tasks, such as lawn mowing or pool cleaning, can be established as can responses to routine but unpredictable requests by tenants for repairs (leaky faucets or broken windows, etc.). Nonroutine or costly maintenance decisions that require supervisory input can be forwarded to a supervisor at the management office.

Operating Cost Reductions

Establishing a budget is the easiest and most obvious method of controlling operating expenses. The budget should be based on historical operations and include input from an experienced manager on how to alter existing procedures to save money without affecting services by, for example, sourcing all maintenance and insurance contracts, increasing deductibles on insurance or requiring tenants to pay for utilities.

Each cost item in the budget also should be evaluated carefully to identify areas of potential savings. For example, consider an apartment complex that caters to college students by providing a shuttle service back and forth to campus. Monthly expenses for the shuttle service, which include loan payments, gas, maintenance, wages and insurance, average $7,500 per month or $90,000 per year. The complex is located on an existing university bus route which provides more frequent trips to and from the campus and longer hours of operation. The cost of an unlimited bus pass for enrolled students is $150 per semester and $275 for one full year. If the owner of the complex eliminates the shuttle service and instead buys each of the 250 tenants a year-round university bus pass, he will spend only $68,750, saving $21,250 annually, and the tenants will get better service to boot.

A commonly overlooked potential cost-saving measure is to protest real estate taxes. If the property's last assessment occurred at a time of higher profitability, then it may be carrying an inflated market value. In addition, a tax protest for a property in a depressed market often can generate a significant saving. Professional firms specializing in tax protests generally are quite successful and inexpensive; they are compensated based upon only a percentage of the savings.

Capital Improvements And Maintenance Schedules

A capital budget should be established to prioritize capital improvement needs. An important consideration, especially in the development of a capital budget for recently acquired property, is an assessment of deferred maintenance. A common error made by investors in underperforming properties is to over-improve their complexes, thus driving up operating costs. In many cases, the existing tenant mix will not support the rents that are required to pay for upscale improvements or amenities. For example, all college students need is a sturdy apartment near campus at a reasonable price. Giving them more is asking for an avalanche of maintenance and repair expenses and the associated problems of maintaining profitability when students move to lower cost housing complexes elsewhere.

Once deferred maintenance and other capital improvement needs are identified, evaluated and costed, a schedule of work can be established. In an underperforming apartment complex, it makes little sense to perform work on occupied units unless the tenants are threatening to move out. Management time and funds are much more effectively spent on upgrading unoccupied apartments. Once occupancy stabilizes, a schedule for long-term capital improvements can be put into place.

A regular maintenance program is the most effective method of controlling capital improvement costs. Scheduling and monitoring routine maintenance and checkups are as important as management and financial control tools.

Amending Leasing Policies

Leasing policies can be used as a mechanism to subtly alter the tenant mix in an underperforming apartment complex and generate greater profits. Each individual apartment complex and market has an optimal mix of leasing policies concerning base rent, terms, pets, children, credit standards, etc., which maximize the value of the complex. Changing even one of these variables can alter the profitability of the complex. For example, if rents are raised, vacancy rates may increase. However, in some situations the increase in vacancy rates can be offset by the higher gross rents that are generated and the lower delinquency rates that are associated with more affluent tenants. The property manager must be in touch with the needs of his tenants and the characteristics of his market

to be able to create the most profitable bundle of leasing policies. He needs to evaluate such leasing policies as tenant credit checks and screening procedures, discounts for signing or renewing leases, security deposit amounts, parents' cosigning requirements and procedures for dealing with delinquent rents.

Market Repositioning

The primary idea behind market repositioning is to understand the market segment represented by existing tenants and determine whether current tenants provide the optimal mix. A comprehensive market study is the key to understanding the market and the tenant mix. The market study is done in several phases. First is the data-gathering stage during which information is gathered on the demographic and socioeconomic trends, competitors, existing and projected pools of prospective tenants, market size and other isolated factors. Based on the results of the data-gathering phase, conclusions can be made regarding the supply of and the demand for housing in the market, and these conclusions can be utilized to identify underserved population segments.

If the determination is made that marketing the complex to a particular population segment could increase the bottom line, then a more detailed study of the situation should be made. This more comprehensive study involves an analysis of the life-style needs of the target population and a calculation of the capital expenditures required to create the proper environment to meet those needs. An important financial consideration in this analysis is the cost of maintaining a different level of service to the tenants. If, after this analysis, a shift in the market position still appears to be profitable, a program of implementation can be developed.

As a hypothetical example, consider an apartment complex located in Lafayette, Indiana, that has traditionally appealed to Purdue University students. Lafayette is the site of a Subaru-Isuzu plant that will open in 1990 and will create over 5,000 new jobs. A savvy apartment complex owner may find it profitable to remarket the complex to employees of the plant who can probably afford higher rents, cause less wear and tear on the facilities and have less turnover.

Partial Asset Shutdown

The final discussion topic is reserved only for the most desperately under-performing properties. If all else fails, it may be most effective to close down part of an under-performing complex, preferably a nonattached building, to eliminate all of the variable and a good portion of the fixed costs associated with the closed-up area and allow the owner to invest management efforts and funds on the remaining units. The closed-down portion of the complex provides a good source of spare parts for making capital improvements and meeting maintenance requirements of other units, and, if the market ever turns around, the closed-off portion of the building can always be refurbished and reopened.

Conclusion

There is no blueprint for creating value in underperforming, multi-family apartment complexes. It takes selective acquisition, creative problem-solving, the willingness to defer current returns, adequate capital reserves and a skilled property management team. Investors who plan carefully and are willing to sweat for their return should be excited about the opportunities that are available in today's real estate market.

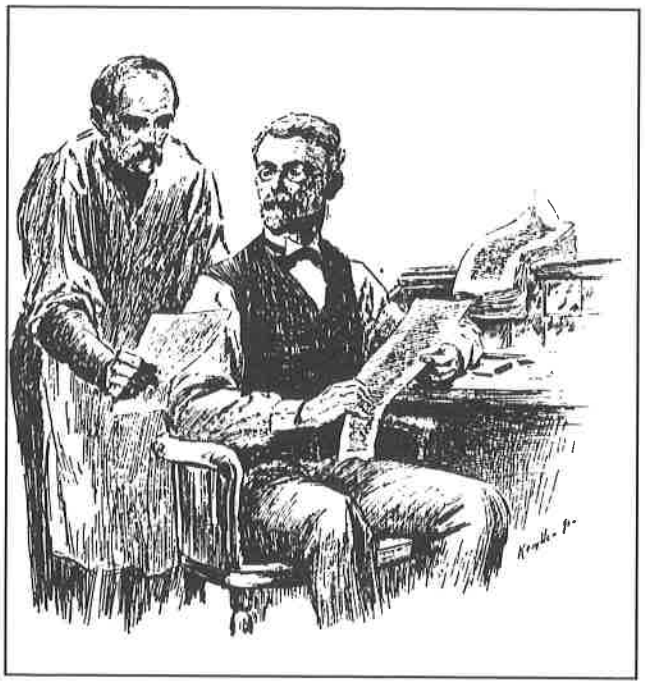
THE CRITICAL SUCCESS FACTORS APPROACH TO CORPORATE REAL ASSET MANAGEMENT

The identification of factors that are critical to the success of a corporation can demonstrate the importance of corporate real asset management to an organization's strategic planning process.

by Hans R. Isakson and Sumit Sircar

Corporate strategic decision-making usually is in the exclusive domain of certain top managers of a firm. Although real assets comprise a significant portion of the total assets of many large corporations, the corporate real asset manager rarely is included in the strategic decision-making process unless real estate is one of the business lines of the firm. As a consequence, important corporate real estate decisions, such as divestitures, acquisitions, etc., are heavily influenced by managers at the strategic level of the organization before the corporate real asset manager has an opportunity to study the situation. It is important that those who participate in the corporate real estate decision-making of an organization understand how they can be integrated into the strategic planning of their firm.

Typically, at the strategic level of a firm, real asset management is under the purview of a vice president of finance. But, recent advances in strategic planning tools strongly suggest that for some firms, especially those that are considering major real estate divestitures or acquisitions, the real asset manager should participate in planning.



This article reviews recent advances in strategic planning tools that corporations may use to assess the strategic value of real asset management to their organizations. An emerging tool, called the Critical Success Factors (CSF) approach, has great potential for enabling a corporation to determine not only the role of real asset management but the roles of all other asset management areas in strategic planning.

Corporate Real Asset Management

Corporate real asset management means many things to many people. Here, corporate real asset management is defined as the comprehensive management of the real estate decisions of a corporation, with real estate defined in the broad sense as any interest in land (i.e., an ownership/lease interest).

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The standard definition of fixed asset management, which includes the comprehensive management of all real property, buildings, leaseholds, contracts, furnishings, equipment and land,[1] covers most of corporate real asset management. However, while corporate real asset management covers real property, buildings, leaseholds, contracts and land, it does not include furnishings and equipment which are not considered to be fixtures.

There are three aspects to fixed asset management: (1) the management of real property decisions (disposition, acquisition, design, construction and operations); (2) facility (interiors of the buildings) management; and (3) office (furnishings, maintenance and communication systems) management. Corporate real asset management directly encompasses the first aspect but only tangentially covers the other two aspects of fixed asset management. Thus, corporate real asset management may be considered a subset of fixed asset management.

A more detailed elaboration of real estate asset management distinguishes between facility management (routine housekeeping and property management) and asset management (site selection, acquisition through purchase or lease), management and control of lease renewals, use of idle assets and disposition of real property.[2] However, the earlier definition of corporate real asset management is virtually identical with the latter.

The exact nature of the activities that entail corporate real asset management varies widely from firm to firm. Yet, no matter what activities actually are designated as the corporate real asset management functions, the firm and its management may suffer in the marketplace if the real assets are not managed effectively and efficiently.

Study Rationale

Corporations that do not use their assets effectively and efficiently are prime targets for hostile takeover attempts, greenmail campaigns and other forms of compulsory corporate restructuring. When a corporation's use of assets is inefficient and capital markets undervalue the stock of the corporation, corporate raiders are tempted to take over the firm, and stockholders become interested in restructuring corporate management.[3] Also, according to Jensen's free cash hypothesis, when companies use cash flows to fund low-value projects rather than to pay out dividends, they become targets of takeovers.[4] Corporations consequently must manage their assets optimally to avoid the wrath of the marketplace and stockholders; they must make the effective and efficient use of their assets a major objective of the strategic planning process.

Substantial portions of the assets of many corporations are real assets; even firms that specialize in services need and use real assets. The form taken by these real assets may vary from fee simple ownership to long-term leasehold interests to joint ventures with developers/lenders. But, whatever their form, these assets represent long-term commitments by a corporation, and they need to be used as efficiently and effectively as any other asset of the firm. Because of their long-term nature, real assets impact upon the strategic planning of a firm. Nevertheless, corporate real asset management is often overlooked.

Whether it be budgeting and control, long-range planning, corporate portfolio planning or strategic management, the strategic planning process of a firm must include tools that enable the assets of the organization to be managed efficiently. Unfortunately, some of these tools, such as return on investment and discounted cash flow analysis, tend to be biased against effective corporate real asset management. Other tools, such as business portfolio matrices and value added chain analysis, leave corporate real asset management out of the strategic planning process if the firm is not directly engaged in some form of the real estate business.

Corporations should place considerable emphasis upon their real assets within their planning. The key issue is how they can determine the extent to which real assets should be included. Certainly, the simplest approach is to include on the planning team someone who knows something about real estate. However, another far more important tool is available. The Critical Success Factors approach is exceptionally well suited to determine the degree to which real assets should be incorporated in a corporation's strategic planning process.

The Critical Success Factors Approach

The Critical Success Factors approach is an example of a concept that was pioneered by practitioners before it was championed by academics. It was used initially in strategic management in the late 1950s, notably by McKinsey and Company, Boston. Several other consultants in the strategic management area subsequently have added to the critical success factors literature.[5] Academics since have borrowed the concept and applied it to other areas. Perhaps the most widely quoted application is that of John F. Rockart, who in 1979 showed how critical success factors could be used in the design of information systems for top executives.

Rockart's definition of critical success factors is probably more widely accepted than any other:

> Critical success factors thus are, for any business, the limited number of areas in which results, if they are satisfactory, will insure successful competitive performance for the organization. They are the few key areas where 'things must go right' for the business to flourish . . .[6]

However, Dickinson, Ferguson and Sircar provided a somewhat different conceptualization in 1984:

> CSFs are defined as events, circumstances, conditions, or activities that require special attention because of their significance. They can be internal or external and can influence success either positively or negatively. Their essential character is the need for a special awareness or early warning system to avoid unpleasant surprises or missed opportunities.[7]

CSFs And Business Strategy

Within the strategic planning process, the Critical Success Factors approach fits best in the formulation of what is called business strategy.[8] That is, once corporate strategy has been decided (i.e., the business[es] of the corporation have been identified), the Critical Success Factors approach is most useful as a tool for determining how the corporation should compete in each of its businesses.

Tregoe and Zimmerman have identified a "critical issues approach" for the implementation of any strategic framework. The strategic framework is derived from top management and constitutes the driving force that determines the scope of future products and markets. They have defined critical issues as:

> those changes, modifications, additions to the organization's structure and systems, to its capabilities and resources, to its information needs and management that result from setting strategy.[9]

Leidecker and Bruno have analyzed the relationship between critical success factors and the strategy development process.[10] Using Hofer and Schendel's seven-step process (strategy identification, environmental analysis, resource analysis, gap analysis, strategic alternatives, strategic evaluation and strategic choice),[11] they find critical success factors useful in the environmental analysis (step 2), as well as the resource analysis (step 3) and strategic evaluation (step 6).

The Critical Success Factors approach is also useful in the formulation of broad action plans. Once the mission of a business has been stated, managers search for those areas that deserve their constant and careful attention to ensure that the organization's mission is being fulfilled. The Critical Success Factors approach is issues oriented, rather than functionally directed because business strategies focus upon issues, not on individual business units or corporate functional areas.

Previous Critical Success Factors Studies

One of the earliest applications of the Critical Success Factors approach is in Rockart's classic article, in which he reports on the critical success factors set by the chief executive officers of: (1) a medium-sized microwave communications company; (2) a major oil company; (3) a store furnishings manufacturer; (4) a government hospital; and (5) an electronics company. Rockart does not reveal the identity of any of these organizations, making any broad generalizations about critical success factors difficult, at best. Real assets never are mentioned; yet effective and efficient asset management (in the form of the price/earnings ratio) is included as the most important critical success factor of the microwave communications company. If real assets are a significant part of this company's total assets, then effective corporate real asset management can help to improve its price/earnings ratio.

Also, the oil company in Rockart's study includes the development of new ventures as one of its critical success factors. Without knowing the identity of the oil company, it is difficult to interpret this critical success factor. Nevertheless, many major oil companies do possess considerable real assets, and corporate real asset management may be an important part of the strategic plan of Rockart's oil company.

About the closest Rockart's study comes to corporate real asset management is the electronics company's critical success factor to improve its facilities. As defined earlier, corporate real asset management includes facility planning and improvement. However, improvement of facilities is the last on the electronics company's list of seven such factors.

Critical success factors in yet another business sector, i.e., hotel companies, are reported by Geller.[12] He compiles lists for six different companies in diverse operating environments. Many of the critical success factors reported touch upon corporate real asset management. One hotel company finds well-planned and well-built physical plants to be its most important critical success factors. For another hotel, reinvestment in its properties is the factor with highest priority, while another hotel finds the identification and purchase of good sites as critical success factors. The lists of some of the other hotel companies include the development of new properties and disposal of old properties.

The critical success factors most frequently mentioned by all respondents also are rank ordered by Geller. Superior product (physical plant) and superior location rank third and fourth respectively, illustrating the overall importance of corporate real asset management in the hotel industry.

As may be expected, the present literature on critical success factors suggests that corporate real asset management has a significant bearing on the factors of some firms while it has little or no importance to others. Also, one cannot predict, on the basis of an industry as a whole, how important corporate real asset management is to a given firm in that industry. Given the dearth of critical success factors reported in the literature, it is not possible to generate any sustainable hypotheses regarding the pattern of the importance of corporate real asset management.

Further studies of specific business sectors, such as Geller's hotel companies study, should provide generic factors for those sectors, which, in turn, may identify generic corporate real asset management needs for those sectors. It is also conceivable that there may be factors common to firms in certain environments, regardless of industry, with attendant corporate real asset management implications. Critical success factor studies of firms with highly developed corporate real asset management capacities would be particularly useful in identifying these generic or common denominators.

CSF Study Procedures

A well-done critical success factor study of a firm will aid the firm not only in determining the role of its corporate real asset management team but also in identifying those

areas that require constant monitoring by the firm's management team.

A critical success factor study is best done with the full cooperation and participation of the top management of the firm. Such studies also can be aggregated at the level of an industry or at the level of a regional/national economy. However, the best place to start a study is at the level of the top management of a firm.

The Critical Success Factor approach is popular with top executives because it is a tool they can understand and use to deal with the substantial uncertainty they face. A common method for getting the study started within a firm is to have an outside expert provide an introductory seminar on the concept to senior executives followed by two interviews with every senior-level manager at the policy making level. The first interview is devoted to eliciting critical success factors from each executive. The lists are later refined and narrowed, through discussions between the expert and top managers, to perhaps five or ten. The second interview concentrates on appropriate measures for monitoring each critical success factor.

Although many of the factors identified by the managers will overlap, in the aggregate those generated by all managers reflect the firm's position more completely than do those listed by any single manager. The measures selected for monitoring each critical success factor reveal to the firm's top managers just how important (or unimportant) corporate real asset management is to the overall goals and objectives of the organization. Indeed, top managers may decide to reorganize the corporate real asset management functions of the firm as a result of the study.

An alternative method of implementing the Critical Success Factor approach is used by IBM of Europe and many of its customers to ensure that a management team "knows where the enterprise is heading and agrees on what it will take to succeed."[13] The technique is called Process Quality Management, and it has some interesting salient features.

First, a top management team of a maximum of 12 members is formed. Meetings are generally held off the office premises and preferably are led by a neutral outsider. The first task of the team is to state the team's *collective* mission.

Next, the team identifies the critical success factors that must be accomplished to achieve its mission. While they must be both necessary and sufficient, there should not be more than eight in number. Identification of the factors usually takes about three hours.

In step three, the team lists the necessary and sufficient business processes for each critical success factor and creates a matrix that illustrates the effect of each business process on each factor. Each business process is the exclusive responsibility (accountability) of one and only one team member. Business processes that are not represented by a team member are not allowed; the team therefore must be reconstituted so that each and every business process associated with a critical success factor has team representation. This point is particularly important for corporate real asset managers. If a real estate business process is associated with any of the critical success factors of an organization, the corporate real asset manager should be made a member of the top management team that is engaged in this exercise.

Finally, the team determines which business processes are the most important to commit resources to, by examining the combination of how well those businesses are currently being managed and the number of critical success factors they impact. It is at this point that the corporate real asset manager is able to accurately assess the importance of the real estate functions of the firm to the organization.

Corporate Real Asset Management Cases

Corporate real asset management occasionally is incorporated within corporate strategic planning. Three case histories illustrate the difficulty of achieving this incorporation. The first two case histories describe the consolidation of all corporate real estate activities into a central real estate function and demonstrate the difficulty of folding corporate real asset management in the strategic planning process when this process is functionally oriented. The third case describes the integration of corporate real asset management into corporate strategic planning when the corporate strategic planning process is issues oriented and uses the basic concepts of critical success factor planning.

GTE Service Corporation

In 1982 under the leadership of a new president, GTE, a major firm in the unregulated telecommunications and data transmission business, consolidated the real estate activities of its 60 subsidiaries into a centralized real estate department, headed by a vice president of corporate real estate.[14] The newly formed department started with a small staff of specialists who provided in-house, full-service project management to all GTE family units.

A major problem encountered by the new department was how to win the confidence and trust of the operating divisions' presidents; initially, the operating divisions were not mandated or required to use the real estate department's services. The problem was addressed by finding a highly visible project that would prove the department's credibility. The project was a success and earned the department a new corporate policy stipulating that they would have to approve any real estate transaction involving sums in excess of a certain amount. The department now practices a variety of proactive management techniques, but it is not completely integrated into the strategic management process. Thus, even with the backing of top management, the in-house, full-service real estate department had to win the confidence and trust of the various operating divisions of the corporation. The mere centralization of real estate activities was not sufficient to integrate corporate real asset management fully into the strategic planning of GTE, especially since

the firm practiced one of the many functionally oriented, strategic planning processes.

Boise Cascade Corporation

Some of the conflicts inherent in the centralization of corporate real estate activities are illustrated by the experience of Boise Cascade Corporation as discussed by Larry P. Ebert.[15] Although Boise Cascade was at one time one of the largest real estate developers in the world, in 1972 it decided to get out of the real estate business. Because it still owned and leased considerable amounts of real estate, Boise Cascade was forced to remain in the real estate business solely in support of operations.

However, a policy requiring the company's operating groups and divisions to use the services of the real estate department conflicted with the growing trend toward decentralization of operations. Once again, the real estate department had to win the confidence and trust of the other divisions, which it did by using bribes to get disposals (gains were returned to the division, while the real estate department ate the losses) and free, high quality servicing to get acquisitions. Later, the real estate department became a profit center; all real assets (owned or leased) were transferred to the real estate department, which then leased the facilities back to the operating units. This profit center role evolved out of the classical conflict between shareholders' and management's interests in the buy/rent decision.

Yet even with the elevated status of a profit center, the corporate real estate department at Boise Cascade was not fully integrated into corporate strategic planning. The centralization of the real estate functions of the operating units into a corporate real estate department did not by itself earn corporate real asset management a position in the strategic planning process of the firm.

Mead Corporation

The process of integrating corporate real asset management into strategic planning at Mead Corporation closely adheres to the concepts outlined in this article.[16]

Mead chooses among investment opportunities through the strategic planning process. In doing so, it follows the following steps:

1. Allocate capital/cash resources to business units selectively.
2. Ascertain/confirm long-term viability of Mead investment in its businesses.
3. Identify critical threats/opportunities facing business units—competition, markets, production facilities, costs, productivity, human resources, legal considerations.
4. Determine overall performance objectives of business units—returns, asset growth, cash use.
5. Provide performance measures for control of actual performance during the planning horizon.

The first two steps clearly deal with the question of what business(es) Mead will enter into, or strategy identification, to use Hofer and Schendel's terms. Once this is accomplished, the Critical Success Factors approach (step 3) is used to prioritize the issues that are most critical to the business(es). The strategic plan is therefore business driven rather than project driven, and the critical success factor analysis provides guidance in determining the most critical areas for the achievement of overall performance objectives.

Step 4 is an integral part of every business plan, no matter what other techniques are used. It is in step 5 that some deviation exists from the planning and control process envisaged in this article. The performance measures used for control are obviously the keys to how management expects to achieve its objectives. Here lies the true test of how effectively the Critical Success Factors approach is being implemented. Although their identification is an important step, it is by no means sufficient. It is imperative that measures be devised in order to monitor performance relative to each critical success factor so the responsible managers can keep track of progress and take action as necessary.

For example, swift access to sources of funds may be critical to the success of a particular business unit. This determination is important, but it is not sufficient to enable control of performance. An adequate measure of performance related to securing prompt access to sources of funds is necessary. Once this is agreed upon, appropriate information systems need to be developed to provide the requested information in a timely fashion to the relevant decision-makers. It may be agreed, for example, that a dollar amount of expected funding by various funding sources, e.g., insurance companies, pension trusts, IDR bonds and the like, will be continuously monitored and that precipitous declines in these amounts will trigger urgent action by top executives of the business unit.

Implications Of Corporate Real Asset Management Cases

The first two case histories (GTE and Boise Cascade) demonstrate that centralization of all real estate activities into a corporate real estate department, even if organized as a profit center, is not enough to ensure that corporate real asset management will be part of corporate strategic planning. The integration of corporate real asset management into the strategic planning process requires a commitment by top managers. The reason for this is that it is usually not a mainstream revenues-generating business unit, even if it is structured as a profit center.

A powerful device for engaging the attention and interest of top managers is the use of the Critical Success Factors approach. Mead Corporation, in fact, uses precisely this technique. At Mead, the strategic importance of corporate real asset management had been largely overlooked before the implementation of the five-step strategic planning process in which elements of the Critical Success Factors approach was made a key component. The real

asset manager at Mead is the envy of his peers across the nation, owing to his close working relationship with the CEO. The broadened scope of his responsibilities indicates the potential of the Critical Success Factors approach for the real asset manager. If Mead were to incorporate the appropriate monitoring steps into its strategic planning process, its use of Critical Success Factors would be even more effective.

It may appear that a necessary ingredient for the proposed planning approach to work is that corporate real asset management be of stragetic importance. However, this is not the case. The Critical Success Factors approach should be followed regardless of its perceived importance to the firm. The exercise will help determine the appropriate role not only of corporate real asset management but of other business issues.

Summary And Conclusions

This article presents a strategic planning tool, the Critical Success Factors approach, which may be instrumental in making top corporate managers aware of the contributions that corporate real asset management can make to the strategic decisions of the organization. The Critical Success Factors approach focuses on issues of heightened concern to the corporation and its various units/divisions rather than to the individual unit/division or functional areas of the firm.

If corporate real asset management is being overlooked as a critical success factor of a firm, which can easily occur when real estate decisions are highly decentralized, the Critical Success Factors approach can reveal to top managers the strategic importance of effective and efficient corporate real asset management. But even if corporate real asset management is centralized, its potential contributions to corporate strategic planning still may be overlooked because of the built-in biases against in-house service centers found in many popular strategic planning tools and processes. The Critical Success Factors approach guarantees that corporate real asset management will play an appropriate role in corporate strategic planning and control.

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REAL ESTATE ANALYSES USING GEOGRAPHIC DATA

New information management technologies and systems are powerful real estate analysis tools.

by Robert H. Pittman and Maury Seldin, CRE

Location is over-talked about and under-analyzed. Everyone knows it is important, but few really conduct the analyses which assess the productivity potential of a site with the rigor required to justify confidence in the real estate decision.

Appraisers pay lip service to location analyses in arriving at value estimates. Appraisal standards require the three approaches to value to be preceded by material on location. Mostly, however, this material is descriptive rather than analytical. Even when the material is analytical, it usually is not linked with the valuation process by a line of reasoning. The "now therefore" conclusion in general represents a giant leap of faith.

Logic holds that the demand analyses will show the relationship between employment as the engine of the local economy and demand for a particular type of property services. The line of reasoning traces the impact of the employment increases on demands for a particular type of space and then disaggregates the total to infer demand by particular market segments. It then assesses the current competitive position of the subject among the other projects providing space or in the construction pipeline to provide space. The result is absorption in the submarket in which the property is most competitive.

Changes in absorption are triggered by changes in demand and/or supply conditions. Price changes then result from changed absorption and underlying supply conditions influencing land available for development to meet changing demand requirements.

Investors would do well to invest in locations which get better, not the best location. The best location already commands the premium price which reflects the competitive advantage. The location which gets better will appreciate substantially more than those locations which already have arrived.[1]

The market analyst forecasts future income and values and then discounts the expected appreciation. In an efficient market all one gets is prevailing rate of return for taking the risk. But real estate markets are not very efficient. Therefore, the superior knowledge about the

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future, accompanied by better or luckier guesses, will produce superior results.

Analytical Models

In order to deal with any analysis, one needs a model. Essentially, a model is a set of relationships. The simplest of models is a descriptive model for competitive analyses. The decision maker simply obtains a description of what is happening, especially the successful projects, and then emulates them. The difficulty is, of course, that by the time the new product hits the market, conditions could have changed and what was successful before may not be successful in a changing environment.

At the other extreme is the econometric model. Rather than being simplistic, it is quite sophisticated. It may combine a demand model, a supply model and a price model. The combination may then be used to forecast changes in price and inventory with the resultant absorption. Unfortunately, the models are so data hungry and the availability of data is so sparse that the models are difficult to apply to situations requiring a timely real estate decision.

The judgmental model is the middle ground. It has the advantage of being able to forecast turning points which descriptive models do not. But its data requirements are not as great as the econometric models because the analyst may insert judgments to bridge the data gaps. The result is a line of reasoning which makes sense. How good the resultant forecast is depends in some measure on the data and in some measure on the judgment, providing the model itself makes sense.[2]

Data

The numbers are critical to any analysis. The key to data is quantitative adequacy and qualitative sufficiency.[3] That means one needs enough numbers to run the model and the accuracy of the numbers must be sufficient for the analysis at hand. Data-gathering efforts then should focus on the most relevant data, not that most readily obtainable. The readily obtainable syndrome explains why some appraisal and market analysts have lots of data but weak lines of reasoning.

Perspective

Any perspective needs a line of reasoning. The model is the heart of that line of reasoning. When a potential course of action is outlined, a model may be used to forecast the outcome of that course of action.

Outlining the potential course of action is what is required to get analyses suitable to the perspective. If one really had confidence in being able to accurately forecast the outcome of a course of action all the time, he would need no defense from potential error. But some crystal balls cloud up from time to time.

Strategy may be used to deal with the uncertainty. A strategy is a set of defensive policies. Policies are guides to action. Defensive policies are guides to action designed to protect from unfavorable events which may or may not develop. Development of the strategy thus requires risk assessment.

Risk Assessment

Risk assessment is often thought of as assessing the potential variability in the numbers. "What if" in a spreadsheet analysis provides an excellent example of risk assessment. If a series of ranges is used for each number, then one can look at a distribution of potential outcomes.

If probability can be assigned to each potential expected values of a variable, then the most likely outcome and risk can be rigorously quantified with good results, assuming the quality of the input was high.

Geographic Data

Traditional Analyses

Geographic information, in traditional real estate analysis, is generally in the form of a series of maps displaying physical and economic data. The maps generally show the location of the subject parcel, competitive parcels, market areas and local economy. Data for such factors as the analyst sees as important also may be mapped.

These maps may be thought of as showing spatial relationships and differences in characteristics of subareas. The underlying concern, however, is the set of linkages between the subject property and activities at other locations.

Linkages refer to movements between points.[4] The movements are generally thought of as movements of goods or people. People choose to reside in reasonable proximity to the location of their work and to places where they spend their time and money. Retail outlets locate close to their customers. Thus, retail store location analysis is very much a geographic analysis. Manufacturers locate to be close to their sources of material when the material is expensive to move. They also consider labor availability and conditions. Thus, the location analysis is also a geographic analysis.

Warehouses locate where it is cost effective to be near distribution outlets and sources of supply. The means of access by relevant transportation modes is critical. Again, this is a geographic analysis. The typical view of these analyses is generally just a location analysis.

Systematic Analysis

A systematic analysis is about to be suggested. It focuses on small area analysis as the most relevant geographic area to be used for market analyses, appraisals and decision analyses such as feasibility, underwriting and investment analyses.

The focal point for any real estate decision maker ultimately gets to the parcel level. But the key to the analysis of that parcel is the set of parcels with which it competes.

Those competitive parcels are in locations proximate to the subject because it is the same set of linkages which is of concern. Thus, the first two steps in geographic analysis are (1) locate the parcel on a map and (2) define the area of competition.

The area of competition is the market area or the submarket area. For residences, this is thought of as neighborhood analysis or an analysis which covers an aggregation of neighborhoods. For retail, the focal point goes to

trade areas, but the analysis encompasses enough competitive retail outlets to get market share. For office, it goes to office districts in which there are commonalities of functions and linkages.

It is the absorption of space, be it residential, retail or office, within the small area—a submarket—which is the critical analysis. The competitive position of the subject as compared with the other projects is the usual focal point.

What is frequently missed in the traditional analysis is the rigor of the market analysis for the submarket in focusing on the share of the submarket considering its unique linkages and functions.

A systematic analysis that disaggregates demand to the local level can provide the rigor that deals with the linkages and functions. However, developing the rigor of the analysis requires a geographic information system (GIS).

An analysis of the supply, including the pipeline of new projects for the area, also requires a geographic information system. In an earlier era, this could simply be information on 3" × 5" index cards with one card for each project and a pin on the map to show the location of the project. That visual image is very useful but simplistic considering the level of detail required for comprehensive analyses.

Geographic Information Systems

An information system is an integrated set of operations in which information is collected, stored and retrieved for use. A geographic information system is an information system which is spatially referenced.

The output of a geographic information system may be a map or a series of maps and the underlying data which may be arranged as a spatial spreadsheet. The system may be coupled with analytical models which process the spatially referenced data in the line of reasoning to forecast the outcome of a course of action. These analytical economic models may be integrated with analytical geographic models to provide a hybrid model useful for forecasting outcomes of courses of action. They are variations of judgmental or econometric models which integrate spatial analyses with economic analysis and provide the results in a spatial or geographic form as well as the numeric form usually used by the economic models.

Local Government

Local governments utilize geographic information systems to plan for the location of public facilities, to dispatch emergency vehicles, to value property for tax assessment purposes and to accomplish a whole range of other tasks for which the spatial dimension is critical.

The spatial dimension represents some aspect of linkage. Dispatching emergency vehicles is a clear case. So is planning the location of development. But there is a significant difference between these two examples.

The location of events which requires dispatch of emergency vehicles, e.g., traffic accidents, is generally independent of the location of dispatch centers. The location of development, by way of contrast, significantly is dependent on the location of public facilities.

The influence of the provision of facilities is critical because the availability of facilities affects the developability of the site. But development is generally market driven, with developability as a constraint.[5] Provision of facilities is a necessary but not sufficient condition for development to occur.

Local government and other regulatory authorities in their programs of providing facilities will constrain the market to develop in the locations as zoned, assuming that the required facilities will be available. Government authorities can work symbiotically with the market, or they can fight market forces. Resistance to market forces will drive development to the next best area, i.e., less desirable areas, with the result that increasing premiums will be paid for the best areas. The less efficient the system, the bigger the premiums for the better locations; hence the greater the profits for the locations which get better.

A geographic information system can be an integral part of a forecast of the location of development irrespective of whether the public sector or the private sector is making the forecast. While there are transportation models which may be used to forecast the location of development, they typically do not contain the variables to get the best forecast for changing land use.

Forecasting The Location Of Development

While local government may forecast the location of development, it is not the sole forecaster. Private sector decision makers make their forecasts as part of their decision making process.

The judgmental model may be integrated with a geographic information system to forecast the location of development. Such a model starts with a classification of space uses and moves to an absorption analysis.

If all sites in the relevant local economy are classified as to use and intensity of use, then each parcel may be classified as developed, underdeveloped, developing, developable or not yet developable. A potential supply picture then is created in the form of a map. A geographic information system is required to do this.

For every relevant classification, the judgment model may go through disaggregation to a submarket; the geographic information system may be used to define these market areas.

The supply pipeline also may be analyzed to indicate the quantity of structures in process, i.e., at some stage of the development process. This is in addition to those pipelines of land on which structures may be erected. The key stages in the process may be marked as permits, starts and completions.

Obviously, local government has the economies of scale for the most cost-effective analyses. But the various units of government as well as utilities, whether public or private, may not have an integrated system of analyses. Often, the zoning departments, public facility providers

and tax assessors maintain their separate information systems. These plans and forecasts, however, may be integrated by one of the agencies or by private sectors if they have the data and the geographic information system capability. Thus, while an agency may maintain its own information system, other agencies may tap into the data bank in order to use relevant data for their analyses.

Technical Aspects

Computer technology has moved geographic information systems from the era of the 3" × 5" cards with severely limited amounts of data to computers with humongous databases. The initial difficulty has been that it also requires humongous computers.

Recent developments have permitted the shift of geographic information systems to personal computers. State-of-the-art PCs now have the capacity that previously was available only with mainframes. Plus, the era of the quadtree format has arrived.

To understand quadtree, it is useful to understand rasters and vectors.

Rasters

A raster system utilizes a grid arrangement in which each square is in or out of an encompassed polygon. The lines that draw the polygon are thus the outer lines of the outer squares. A line for a road may be drawn by marking the appropriate squares. The connection of the squares then represents the path of the road. Alternatively stated, the polygon may be drawn by marking all squares within the polygon as in and all squares outside the polygon as out. Those squares partially in and partially out may be marked in, and the path of the boundary is marked by these squares. Obviously, depending on the size of the squares, the polygon represented by the raster will have some distortion. The smaller the squares, the less the distortion (Exhibit I).

EXHIBIT I
Rasters

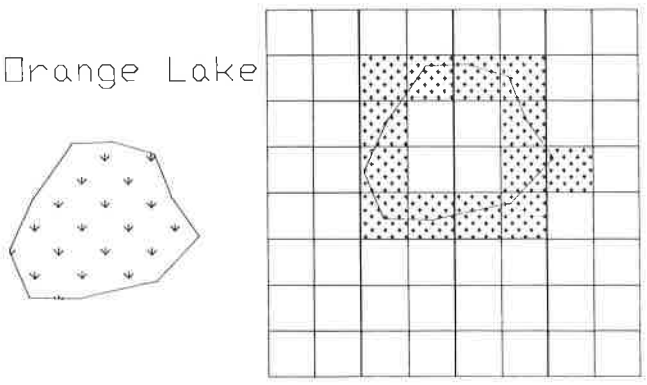
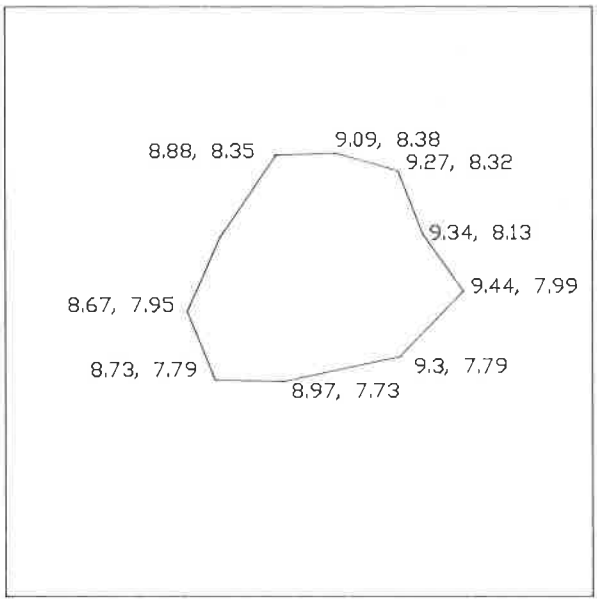


EXHIBIT II
Vectors



Vectors

A vector system of drawing a map is simply putting points on a map and connecting them. This process can be done by copying a map with an electronic device to note the location of the points. One can take maps of different scales and copy the points on a common map by using longitude and latitude as coordinates. The process is simple but tedious. The result is a map of lines for roads or other line networks or polygons for sites, census tracts, planning districts or counties or any other encompassed geographical area. This level of detail is very important for certain kinds of maps, e.g., parcel maps and utility lines. For other kinds of maps, an approximation is sufficient (Exhibit II).

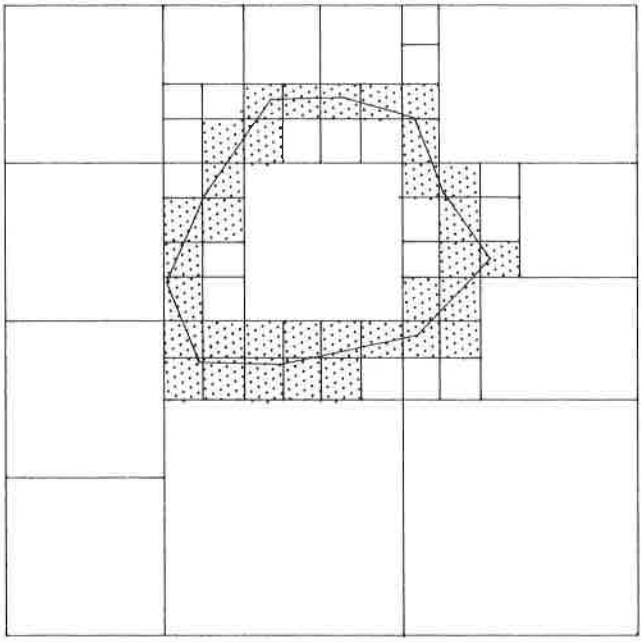
Quadtree

Making the squares smaller is done by dividing each raster into fourths, i.e., the squares become quads. This may be done in successive steps until the size is small enough for the purpose. The problem is that dividing all the squares into quads until the desired resolution is reached eats up a lot of computer capacity. The quadtree format divides only those squares which have a need for greater resolution. All the squares that are in or out of the polygons are not subdivided (Exhibit III).

Software

SPANS has this capability of quadtree built into it. SPANS, the acronym for Spatial Analysis System, is produced by Tydac Technologies, Inc. SPANS also is compatible with Lotus 1-2-3, DBase III and other spreadsheet software. The combination of software thus permits financial spreadsheets and spatial spreadsheets to be integrated.

EXHIBIT III
Quadtree



Currently, we are working on a template of applications for tailored software for particular types of real estate analysis.

The following discussion indicates emerging applications using state-of-the-art technology being simplified for wider use. The technology being discussed is doable, but its wider application requires some refinement. Nevertheless, understanding the approach will enhance decision making even without directly using state-of-the-art technology. Simply understanding the concepts will enhance the analyst's skill.

Real Estate Analysis

The real estate analyst needs some economy of scale to utilize the systematic approach. A great deal depends upon what local government already provides in the way of information systems. But, in any case, it probably does not pay for the private sector real estate analyst to develop a system for a single set of decisions or projects unless the scale is as great as a new town or a major employment center. What does make sense is an ongoing system available to many decision makers over time, probably from a central non-government source such as a university real estate center or a privately owned company.

From a practical point of view, we are not looking at the ultimate in real estate analysis, only the enhancement. The quality of real estate analysis can be significantly enhanced by using geographic information systems or by applying the approaches suggested in the following discussion. These build upon what we have available (which differ by local areas) and move toward what is envisioned as an ideal system.

Structuring The Question

Structuring the question is the most critical step in any analysis. Indeed, it is the foundation of real estate counseling and decision making. One way to approach the structuring of the question is to divide the approach into three parts: first, the situation as to a property; second, the situation of the decision maker; and third, the delineation of the decision to be made and the analyses which will aid in the decision making process.

One may have a particular parcel in mind for acquisition or disposition or for development or financing. The characteristics of the property are important in the analysis as are the linkages with market areas. This is ordinarily dealt with as a property description.

The vantage point may be the buyer, seller, developer or lender. As a buyer in search of a site, a set of characteristics is being sought. The prospect is sorting out the parcels. A seller, on the other hand, is segmenting the buyers. A lender is one who may wish to evaluate potential profit for a particular type of property or a location at which sites are available.

The question will direct the analyst to a particular type of analysis, but it should be in the context of the structure.

Decide On The Analytical Techniques

The analytical model to be selected depends on the property type and the analytical techniques. But there is one situation and the decision models generally fall into categories designed to answer questions as follows: (1) Does society need it? (2) What is it worth? and (3) Is it for me? The discussion which follows discusses analytical technology using geographic data.

Market Studies

Local Economy

The local economy is clearly the engine of demand for real estate, be it office, residential or industrial. The key is analysis by submarkets. It is necessary to understand the economy down to the detailed micro-submarket area. One of the best ways to understand the economy at that level of detail is with a geographic information system. Imagine a system that would go down to the census block level to display and analyze geo-coded data on employment, household income and other information so you could quickly analyze the local economy from the block level up. This would be an extremely powerful tool for local economic analysis which would feed into the demand for real estate. Because the local economic analysis could be done at the very disaggregated block level, real estate demand at the submarket level could be much better delineated.

A geographic information system can facilitate this micro-analysis of urban economies which in turn enables the analyst to perform a much improved micro-analysis of real estate submarkets. The 1990 U.S. Census will use the TIGER System (Topologically Integrated Geographically Encoded Reference System) which will enable spatially referenced census data on income, age, sex, households,

etc., to be quickly integrated into a geographic information system.

When you aggregate statistics and analysis to the metropolitan statistical area (MSA) level, e.g., Chicago, you lose sight of what is happening in the submarkets. For example, the North Loop submarket in Chicago may be equal in market size to the size of many second- and third-tier cities. But until the disaggregate information is available to let you do the submarket analysis, an investment opportunity may be missed. Analysis of local economies and real estate markets may be enhanced using a geographic information system and TIGER files. One may hone in specifically on hundreds of submarkets in MSAs throughout the country. This would enable investors and developers to pick submarkets that will give them the overall highest return. A geographic information system can help do this, and it will be a significant improvement in the way the local economy and real estate submarkets are assessed, identified and analyzed.

Market Analyses

In strict definitional terms, market analyses are nonsite-specific market studies which assess societal needs for a type of real estate space as measured in the marketplace. A geographic information system can be used in many ways to do nonsite-specific market analyses. Nonsite-specific market analysis can be divided into the planning stage, analysis of the local economy and the market analysis stage.[6]

The first phase in nonsite-specific analysis is planning. When planning, a key step is delineation of the market area. A geographic information system can be very helpful here. In the case of retail analysis, the market area is a trade area, and a geographic information system can be very helpful here as well. In particular, hybrid gravity and geographic information system models can define retail trade areas very accurately. In the housing market, neighborhoods often are identified as market areas, and they are delineated by socioeconomic characteristics and linkages. Once again, a geographic information system can be useful in this analysis in the way described above by using TIGER files and other information to pinpoint the socioeconomic characteristics of a given neighborhood and the surrounding neighborhoods.

In determining linkages, a geographic information system can be particularly valuable in distance measurements. Travel time (hence, linkage) is not just a simple function of linear distance. It depends on road congestion and the road network. Geographic information system models can incorporate these variables and arrive at travel time and linkages.

Another part of nonsite-specific market analysis in the planning stage is market segmentation. Market segments are identified using categories of consumer characteristics, including demographic, social, economic and psychographic. We have discussed already the ability of a geographic information system in the analysis of economic and demographic/social characteristics, but it can also be used to analyze psychographic characteristics. Often, psychographic characteristics are derived from surveys of consumer attitudes, preference patterns, etc., as a function of socioeconomic status, age, sex, etc. With a geographic information system containing data on demographic/social and economic characteristics, one may derive psychographic characteristics, such as owner/renter preference, lifestyle choice, amenities, etc., and map them.

The second phase in nonsite-specific market analysis is analysis of the local economy. The first step here is to analyze demographic data for the entire market and for each submarket. We already have discussed how geographic information systems can analyze submarkets (down to the block level) in terms of age, sex, marital status, etc. Previously, we discussed a system in which demographic data was analyzed at the minute block level and then aggregated upward to identify submarkets. The same approach may be taken with purchasing power, expenditure patterns and sales levels.

In phase three of the market analysis, one must equate demand with supply. We have talked about some components of demand, but a geographic information system can also help with supply components. Supply is a function of developable land and units that are in the pipeline under construction. A geographic information system can help with this pipeline analysis by mapping and assessing where available land is relative to the submarket, and it also can be used to map and analyze properties that are currently under construction with building permit information.

After completing demand and supply forecasts in nonsite-specific market analyses, the analyst must match demand and supply. If this is done in a very aggregated way at the MSA level, the analysis may show that demand equals supply for a particular product when, in fact, there is much imbalance at the submarket level. This goes back to what we discussed already in terms of analyzing the submarket as opposed to the total market. By matching segmented demand forecasts to each component of supply at the submarket level, one can then build up to a total aggregated demand/supply analysis which adequately reflects activity at the submarket level. For example, a totally aggregated demand/supply forecast for Class A office space in Chicago may show that existing supply equals projected demand for the next few years. However, there may be submarkets that are in supply/demand imbalance, and this will be identified with the geographic information system-based submarket analysis.

Absorption Analysis

There is a time dimension in market analysis which relates to a quantity of space which will be taken at prevailing prices. This is referred to as absorption. The absorption may be for a large market area such as a metropolitan statistical area, and a part of that area, e.g., a county, or a small area such as a submarket, which is smaller than a county. Such submarkets are usually small enough to identify a particular class of property with which a subject property is competing. It is this last subarea which is the critical area of analysis because it

contains the competitive properties of a subject property. As such, one may focus on the absorption of that class of properties, however it is defined.

A good absorption analysis should be predicated upon a submarket analysis. The analyst should disaggregate the market by tenure, location, price range and product type. The way to forecast absorption turning points is to do this disaggregate analysis. For example, the absorption of a particular product in market A will change based on changes in the situation in contiguous market B under a situation of some substitutability. This brings up a very interesting, but sometimes overlooked, phenomenon. Submarket analyses do not end with the individual analysis of 20 different markets. An aggregate real estate market is a general equilibrium system as opposed to a partial equilibrium system. The partial equilibrium analysis can be done for each submarket, but then the general equilibrium analysis must also be done when putting the submarkets together. To go through a comprehensive analysis of submarket A for absorption, one must look at the situation in the surrounding submarkets. To get this totally comprehensive approach—a general equilibrium, spatial submarket approach to real estate analysis—one can use a geographic information system. It is a very powerful tool for performing this analysis because the submarkets are linked together very strongly from a spatial dimension.

Marketability Analyses

Marketability analyses are site-specific analyses. The question focuses upon the absorption of space in a specific property for a specific use. The key in the analysis is to identify the potential competitive projects and then see how these various projects divide up the aggregate of the submarket.

Appraisals

The appraisal process requires identifying comparables and adjusting for differences. A geographic information system can be a valuable tool in this analysis. In an appraisal, after one adjusts for financing terms and conditions of sale to obtain the market-adjusted indicated sale price of the comparable property, one must then adjust for location and physical characteristics to obtain the indicated sale price of the subject property. The process requires dealing with comparabilities. A geographic information system can help in adjusting for locational attributes of comparables. Since the value of the structure—residential, office or retail—is a function of location and linkages, a geographic information system is an excellent way to analyze these many complex linkages and arrive at better assessments of comparability and more accurate adjustments. A good geographic information system, with proper data specifying location of other parcels and features such as infrastructure, can identify whether prospective comparable properties are truly comparable in terms of location and linkages. For example, in a residential appraisal situation, a comparable house may be analyzed in terms of distance to shopping, schools, transportation arteries, etc. In addition, the characteristics of the neighborhood can be analyzed with a geographic information system. Income data and other economic characteristics of the neighborhood and surrounding neighborhoods can be pinpointed better with a geographic information system than with a windshield survey or secondary statistical research methodology.

Conclusion

Geographic information systems previously were built using mylar overlays for the relevant data layers and for storing the data in hard copy. Now, the new technologies and systems described in this article represent a giant leap in this powerful real estate analysis tool. With new geocoded census data, the adoption of geographic information system technology in real estate analysis and other areas will be accelerated.

Computerization has progressed to better handle the data in order to rely less on hard copy transfer and calculations. Computer mapping has progressed so that it is easier to spatially represent locational attributes. That is progress and the entry into a new era.

In this new era, the data and the economic models will be integrated to handle the data into the geographic information systems which have capability for spatial analysis. Thus, the end result is a hybrid model that combines economic analysis and geographic information systems which provide increased *analytical capability.*

Competent real estate analysts should be aware of these concepts because understanding the concepts will help shape the analyses. State-of-the-art analysts should avail themselves of this new tool, just as they have availed themselves of computers. This more powerful tool will enable higher quality analyses, and we certainly need to conduct higher quality analyses to make better real estate decisions.

NOTES

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ASSESSING THE COSTS AND BENEFITS OF ACCELERATED PAYMENT MORTGAGES

Calculation of the costs vs. the benefits of accelerated payment mortgages shows that APMs are not always advantageous to home buyers.

by Wynn P. Betty and Douglas Timmons

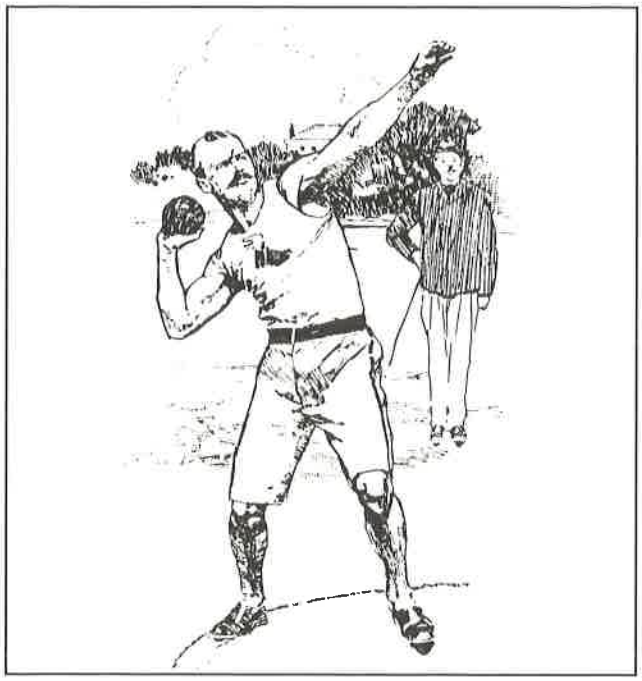
During the past few years, many mortgage lenders have advertised the virtues of accelerated payment mortgages (APMs), particularly 15-year or biweekly payment plans. Lenders suggest that, by paying more each month or by making payments more frequently, the home buyer will own his home quicker and save tens or hundreds of thousands of dollars in interest payments.

While it is true that APM plans do expedite equity buildup in one's home and lower total interest costs over the life of the loan, the financial advantages of these plans versus those of the traditional 30-year mortgage are not as clear-cut as suggested. Although total interest payments are reduced, APMs may actually require larger monthly payments, thereby reducing a home buyer's total net worth and eliminating the opportunity to invest in other assets. The overall potential effect of an APM plan on a borrower's net worth depends significantly on:

1. the borrower's tax rate;
2. differences in interest rates attached to the mortgages;
3. differences in up-front costs (e.g., points and closing costs);
4. the length of time the mortgage is held;
5. the return that may be earned on funds invested elsewhere.

In assessing APMs, all of the above factors must be evaluated by real estate counselors before making recommendations. Evaluation is possible if the following information is provided:

1. the size and frequency of payments on the financing alternatives under consideration;
2. the expected lives of the mortgage loans;



3. total annual payments of the mortgage loans;
4. expected changes in the outstanding loan balances each year;
5. year-end remaining balances projected for the loans.

In addition, estimates are required of the borrower's marginal income tax rate and the after-tax return that may be earned on alternative investments. With this added information, the relative advantages or disadvantages of APMs can be projected.

Costs And Benefits

It should be remembered that, by making higher mortgage payments, the APM borrower is electing to invest in

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a home rather than in alternative investments. The benefit to the borrower is a more rapid paydown of the mortgage debt with a corresponding increase in equity in the home. The cost attached to APMs reflects the lost opportunity to invest in other investments amounts equal to the additional payments APMs require.

Measurement Of Costs And Benefits

The opportunity cost attached to any mortgage may be viewed as the value of an investment fund that would have accumulated had the money earmarked for the mortgage payments been invested in an alternative investment of similar or lesser risk. In attempting to measure such costs, since mortgage payments may be biweekly or monthly, it is convenient to standardize payments as equivalent annualized amounts. The opportunity cost, defined in this manner, can be determined if the following information is provided:

q = the number of mortgage payments made in a year

a = the size of the periodic payment

OPR = the after-tax opportunity rate that may be earned on an alternative investment

To calculate the equivalent annual annuity opportunity cost (r), OPR must be adjusted to reflect the compounding period (payment period) of the mortgage using the following relationship:

$$r = [\sqrt[q]{OPR + 1}\,] - 1$$

Once r is determined, the payment amount associated with each mortgage can be compounded forward for q periods to determine the equivalent annual opportunity cost. In mathematical form, the calculation is as follows:

$$A = a\left[\frac{(1 + r)^q - 1}{r}\right]$$

where:

A = equivalent annuity,

a = size of the periodic mortgage payment

The annuity amount for the APM may be compared to that of other mortgages to define the equal annual annuity opportunity cost difference.

The difference in annual annuity opportunity cost for the APM and any reference mortgage also must be adjusted to reflect differences in tax savings. Interest expenses are tax deductible, and since APM plans lower interest expenses, they also reduce tax savings. To recognize the opportunity cost of tax savings, the annual tax deduction for each mortgage may be viewed as:

$$D = \text{total annual payments} - \left[\text{change in outstanding loan balance during the year}\right]\left[T\right]$$

where:

T = the borrower's tax rate

Because greater tax savings tend to accrue from longer term, fixed rate mortgages than from APMs, the difference in tax savings between the two mortgages, in general, must be added each year as an additional annual cost. Finally, any up-front costs attached to the mortgages must be identified, and any difference must be viewed as an added cost or benefit of the APM.

Once the relative opportunity costs of APMs have been defined as equivalent annual annuities or as single amounts, they may be compounded forward to measure the cumulative cost of an APM over its life. For purposes of discussion, the following definitions are provided:

$A\text{-}A_b$ = the difference in equal annual annuity cost of the APM and the alternative mortgage being considered (an annual annuity cost difference)

$D_b\text{-}D$ = the annual difference in tax savings on the alternative mortgage in comparison to the savings on the APM (calculated for each year during the life of the APM).

UC = the up-front cost difference between the APM and the alternative mortgage (incurred initially)

The projected cumulative opportunity cost of the APM in year "t" is the compound value of the three sets of costs. Since these costs are defined as annual amounts or as equivalent annual amounts, compounding is on a per annum basis at the OPR rate.

In year "t" the projected opportunity cost of $A - A_b$ is the future value of an annuity compounded at the OPR rate for $t - 1$ years. Each year's tax saving difference ($D_b - D$) must be compounded forward as a single amount from the year of the tax difference until year t is reached. Finally, the compound value of any additional up-front costs (UC) for t years is added. For purposes of further discussion, this cumulative cost in year t is denoted as C_t.

The relative benefit of the APM is easily measured as the difference in the outstanding loan balance on the APM in comparison to the reference mortgage. Accordingly:

$$B_t = OLB_b - OLB$$

where:

B_t = the benefit in year t

OLB_b = the outstanding loan balance on the reference mortgage at the end of year t

OLB = the outstanding loan balance on the APM at the end of year t

The cumulative benefit at the end of the life of the APM (B_L) is equal to the remaining balance on the reference mortgage at maturity of the APM. This amount also includes the increase in the borrower's net worth that results from selecting the APM rather than the reference mortgage. This benefit must be compared with the cumulative opportunity cost over the life of the APM (C_L) in order to define the net cost or benefit of the APM over its life.

TABLE 1

Calculation of the Costs/Benefits of Alternative Mortgage Instruments

Cost/Benefit	Mortgage A (30-Year Mortgage Monthly Payment $100,000 Amount 11% Rate per Annum)	Mortgage B (15-Year Mortgage Monthly Payment $100,000 Amount 11% Rate per Annum)	Mortgage C (Biweekly Mortgage Biweekly Payment $100,000 Amount Payment Equal to 1/2 Monthly Payment on 30-Year Mortgage)
Payment amount	$ 952.32	$ 1,136.60	$ 476.16
Total annual payment	11,427.84	13,639.20	12,380.16
Difference in annual payment compared to 30-year mortgage	0	2,211.36	952.32
Total payment over life	342,835.20	204,588.00	247,603.20
Total interest over life	242,835.20	104,588.00	147,603.20
Difference in payment over life	0	138,247.20	95,232.00
Remaining balance on 30-year mortgage at maturity of APM	0	83,786.96	69,133.93

Illustration-Cumulative Costs And Benefits

For purposes of illustration, costs and benefits have been calculated for three mortgages (see Table 1). In making these calculations, it has been assumed that the borrower's tax rate (T) is 28% and the OPR earned on other investments is 7%. It has further been assumed that a fixed rate mortgage (mortgage A) has $2,000 more in up-front costs than an APM of 15 years (mortgage B) and a biweekly APM (mortgage C). Tables 2 and 3 present the resulting costs and benefits projected for APMs B and C under these conditions.

TABLE 2

Relative Cost and Benefit for Mortgage B (15-Year Plan)

Time (Years)	Cumulative Cost (C_t)	Benefit (B_t)	Net Benefit
1	$ 173.55	$ 2,326.25	$ 2,152.69
2	2,574.62	4,921.68	2,347.06
3	5,227.87	7,817.46	2,589.59
4	8,160.66	11,048.33	2,887.67
5	11,403.44	14,653.08	3,249.64
6	14,990.01	18,674.96	3,684.95
7	18,957.96	23,162.25	4,204.30
8	23,349.05	28,168.81	4,819.76
9	28,209.74	33,754.71	5,544.97
10	33,591.67	39,987.01	6,395.35
11	39,552.27	46,940.51	7,388.25
12	46,155.41	54,698.66	8,543.25
13	53,472.14	63,354.57	9,882.43
14	61,581.51	73,012.13	11,430.62
15	70,571.46	83,787.26	13,215.80

Interpretation

Under the assumptions made, a continuous and growing advantage exists for mortgages B and C (the APMs) in comparison to mortgage A (the 30-year mortgage). Mortgage B (the 15-year mortgage) has a net benefit of $13,215.80 after 15 years, and the borrower's equity is greater by this amount because the 30-year loan has an

TABLE 3

Relative Cost and Benefit for Mortgage C (Biweekly Plan)*

Time (Years)	Cumulative Cost (C_t)	Benefit (B_t)	Net Benefit
1	$ (1,123.16)	$ 1,005.60	$ 2,128.76
2	(152.24)	2,128.01	2,280.25
3	923.15	3,380.78	2,457.63
4	2,114.56	4,779.07	2,664.51
5	3,434.85	6,339.78	2,904.93
6	4,898.32	8,081.77	3,183.45
7	6,520.88	10,026.10	3,505.22
8	8,320.26	12,196.26	3,876.00
9	10,316.17	14,618.50	4,302.33
10	12,530.58	17,322.09	4,791.51
11	14,987.92	20,339.70	5,351.78
12	17,715.42	23,707.83	5,992.41
13	20,743.38	27,467.16	6,723.78
14	24,105.57	31,663.16	7,557.59
15	27,839.57	36,346.54	8,506.96
16	31,987.28	41,573.90	9,586.62
17	36,595.32	47,408.43	10,813.11
18	41,715.69	53,920.66	12,204.97
19	47,406.28	61,189.30	13,783.02
20	53,731.60	69,302.21	15,570.61

*Bi-weekly mortgage is paid off in 19.9864 years

TABLE 4

Net Benefit—Sensitivity Analysis
($2,000 Up-Front Costs
on 30-Year Fixed-Rate Mortgage)

Mortgage Maturity*				Net Benefit	
Mortgage Rate	Tax Rate	Investment Rate	15-Year Plan/ Biweekly	15-Year Plan	Biweekly Plan
9%	15%	7%	15/21.9164 yrs.	$ 11,283	$ 14,341
9	28	7		4,051	6,684
9	33	7		1,270	3,740
9	15	11		(11,944)	(6,732)
9	28	11		(20,618)	(16,895)
9	33	11		(23,954)	(20,804)
9	15	13		(26,771)	(21,469)
9	28	13		(36,308)	(33,308)
9	33	13		(39,978)	(37,861)
11	15	7	15/19.9864 yrs.	21,926	25,041
11	28	7		13,216	15,571
11	33	7		9,866	11,928
11	15	11		1,532	5,369
11	28	11		(8,852)	(6,707)
11	33	11		(12,845)	(11,352)
11	15	13		(11,422)	(8,016)
11	28	13		(22,806)	(21,770)
11	33	13		(27,184)	(27,059)
13	15	7	15/18.0709 yrs.	31,914	34,345
13	28	7		21,899	23,678
13	33	7		18,048	19,576
13	15	11		14,399	17,125
13	28	11		2,535	4,010
13	33	11		(2,028)	(1,034)
13	15	13		(3,346)	(5,779)
13	28	13		(9,619)	(8,857)
13	33	13		(14,606)	(14,486)

* Net benefit figures for biweekly mortgages are based upon year-end figures closest to actual maturity date.

TABLE 5

Net Benefit—Sensitivity Analysis
(No Up-Front Costs Differential)

Mortgage Maturity*				Net Benefit	
Mortgage Rate	Tax Rate	Investment Rate	15-Year Plan/ Biweekly	15-Year Plan	Biweekly Plan
9%	15%	7%	15/21.9164 yrs.	$ 5,765	$ 5,480
9	28	7		(1,466)	(2,176)
9	33	7		(4,248)	(5,121)
9	15	11		(21,514)	(26,599)
9	28	11		(30,187)	(36,763)
9	33	11		(33,523)	(40,671)
9	15	13		(39,280)	(50,897)
9	28	13		(48,819)	(62,736)
9	33	13		(52,487)	(67,289)
11	15	7	15/19.9864 yrs.	16,909	17,301
11	28	7		7,698	7,832
11	33	7		4,347	4,189
11	15	11		8,037	(10,755)
11	28	11		(18,421)	(22,832)
11	33	11		(22,415)	(27,477)
11	15	13		(23,931)	(31,062)
11	28	13		(35,315)	(44,816)
11	33	13		(39,693)	(50,106)
13	15	7	15/18.0709 yrs.	26,395	27,585
13	28	7		16,381	16,918
13	33	7		12,530	12,817
13	15	11		4,830	4,037
13	28	11		(7,034)	(9,137)
13	33	11		(11,596)	(14,121)
13	15	13		(9,162)	(12,269)
13	28	13		(22,128)	(26,906)
13	33	13		(27,114)	(32,535)

* Net benefit figures for biweekly mortgages are based upon year-end figures closest to actual maturity date.

outstanding balance of $83,786.96, but the opportunity cost of the accelerated mortgage is $70,571.46. Mortgage C (the biweekly mortgage) also shows a positive net benefit.

The advantages suggested in Tables 2 and 3 are a result of the combined effects of the borrower's tax rate, the OPR assumed, differences in up-front costs, differences in interest rates on the mortgages and the length of time the mortgage is held. If changes in these variables are assumed, the net benefit may be increased or decreased or made to disappear entirely.

Sensitivity Analysis

The net benefits of APMs versus a 30-year mortgage have been calculated over a range of mortgage contract rates, marginal tax rates and investment opportunity rates. Specifically, all possible combinations of these parameters have been tested for mortgage rates of 9%, 11% and 13%; marginal tax rates of 15%, 28% and 33%; and investment opportunity rates of 7%, 11% and 13%. Additionally, these combinations have been tested under the assumptions that the 30-year fixed rate mortgage has no extra up-front costs and that the 30-year mortgage has $2,000 of extra up-front costs. These extra costs may be considered as discount points which are assessed at origination due to greater (longer) interest rate risk exposure. (Refer to Tables 4 and 5 for the results of these calculations.)

Extensive analysis of the net benefit results shown in Table 4 and Table 5 will not be presented. Since each home buyer's specific input date for the three variables (mortgage rate, tax rate and investment rate) are unique, net benefits must be analyzed for each case. A more meaningful insight regarding the usefulness of APMs may be achieved by highlighting apparent generalizations indicated by the output data in the tables.

This data clearly suggests that APMs are not always advantageous. As the home buyer's marginal tax rate increases, the net benefit of APMs decreases; however, when mortgage rates exceed investment opportunity rates, the APMs can be beneficial. Additionally, the larger the spread between the mortgage rate and the investment rate, the greater the impact on net benefit. Obviously, when there is no up-front cost differential in the mortgages, the net benefits of the APMs are decreased.

Conclusion

The approach developed in this article may be useful in assisting home buyers in the selection of a mortgage. Whether an APM is or is not the borrower's best choice depends on his or her specific circumstances. By comparing all the costs and benefits associated with various home financing choices, buyers can make more enlightened mortgage choices.

Of the variables discussed in this article, the only ones that are easy to determine are the contractual interest rates on the mortgages. The borrower's marginal tax rate, though perhaps easy to estimate at the time of financing, is subject to change over the life of the mortgage. Changes in the borrower's income may move him into another tax bracket, or the U.S. Congress may legislate new tax rates. Neither of these possibilities seems unlikely, and if the borrower's tax rate increases, the appeal of APMs decreases. Equally if not more troublesome is the determination of the borrower's investment opportunity rate. Undoubtedly, as this rate increases, APMs become less attractive. In addition to the determination of the above variable inputs, it must be remembered that the 15-year APM always will be more costly from an "out-of-pocket" perspective, and the increased monthly payments may not be affordable.

For many and perhaps most home buyers, the traditional 30-year mortgage is still the most appropriate choice because it is more flexible than accelerated repayment plans. Why should a home buyer lock into higher or more accelerated payments if he already has the right to prepay as most 30-year mortgages allow? The average residential mortgage typically is paid off, for a variety of reasons, prior to maturity, anyway; and a home buyer may replicate the accelerated plans merely by making additional payments and without contractually obligating himself to a more demanding payment schedule.

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TIME-SHARE PERFORMANCE: A SURVEY OF FINANCIAL DATA FROM DEVELOPERS

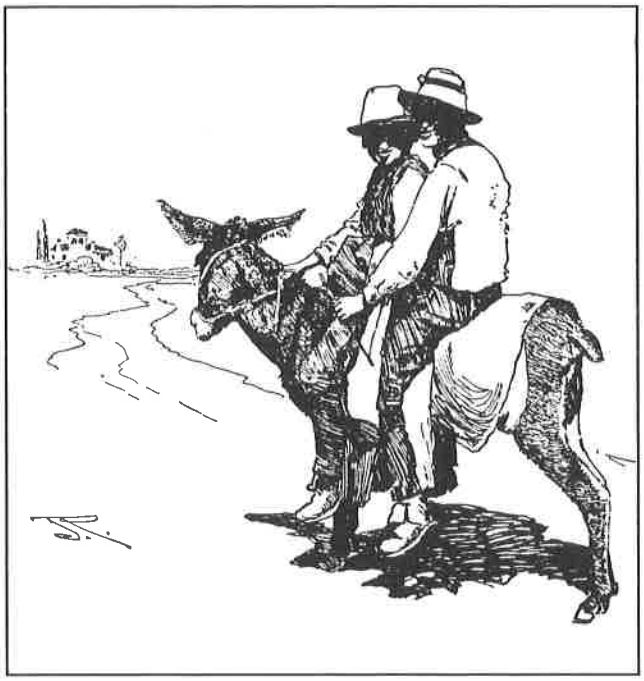
The time-sharing industry is healthy today but needs an efficient means of reselling units to prosper in the future.

by Marvin L. Bouillon and Jennifer Wang

Time-sharing, a means of sharing a vacation home with other people, gained wide appeal during the 1960s in Europe where families traditionally vacation in the same location year after year. Since its introduction in the United States in the early 1970s, time-sharing has become widely used. Time-share sales, which totaled $10 million in the United States in 1975, increased to over $1.3 billion in 1981.[1] By 1987, the U.S. time-share industry had sales of $1.75 billion.[2] Over 1.3 million Americans have purchased time-shares,[3] and California, Colorado, Florida, Georgia, Hawaii, South Carolina and Texas have been the most popular locations.[4]

But while the development of time-share units has become increasingly popular in recent years, research in this area has been limited. The purpose of the study reported in this article is to present some descriptive statistics on time-share resorts.

The study characterizes the time-sharing industry as indicated by the results of a questionnaire sent to the developers of the resorts in the United States that are members of the National Time-Sharing Council (NTC) and provides current statistics pertaining to this growing area of the economy.



Time-Share Operations And Practices

Time-sharing essentially involves prepayment of vacation accommodations for many years into the future. There are two basic categories of time-share ownership: (1) fee simple and (2) right-to-use. Fee simple ownership provides the buyer with all the rights inherent in real estate ownership, such as the right to sell, lease or bequest the interest. Purchase of a fee simple time-share is evidenced by the transfer of certificate of title. The right-to-use plan, which is basically a lease, provides the owner with the right to occupy the resort and to utilize its facilities for a particular time period. Legal title to the property is not given to the purchaser of the right-to-use form of time-share ownership.

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Generally, time-share units are divided into week-long segments with one or two weeks a year set aside for maintenance. The owner of a time-share unit is responsible for paying an annual maintenance fee for paying taxes, property repairs and housekeeping. This fee, like the price of a time-share, varies depending on the demand for the unit. In general, high demand periods are classified as "red" weeks and have the highest maintenance fees and time-share prices. Periods of medium demand ("white" weeks) or low demand ("blue" weeks) have correspondingly moderate or low fees and prices.

Time-shares also are sold as fixed time or as floating time. Fixed time provides continuity because the consumer buys an interval of time in a particular time-share unit for a specific week. Floating time provides flexibility because the purchaser buys a week in a time-share unit to be used within some extended time period. If a developer is selling both types of time plans, fixed time is more likely to be used during periods of high demand.

International exchange companies allow a time-share owner an opportunity to trade his week at Resort A for another comparable week at Resort B. Strict rules must be observed in the exchange process, and the system's ability to satisfy exchange requests depends on the available vacancies at a chosen location. RCI, Interval International and The Exchange Network are three of the major international exchange firms.

Many interesting questions arise in the area of time-share financing: What organizations are more likely to finance time-share units? When the time-share developer provides financing, how much is collected as a downpayment? What interest rate is charged? What is the length of the financing? Who services the paper? Finally, do developers provide a resale program? This article answers these questions with information collected via a questionnaire, and it discusses how important the resale market is to the future of the time-share industry.

Methodology And Data Collection Procedures

This study pursued the performance of time-shares by asking developers to provide financial data. A questionnaire consisting of 18 questions was mailed in November, 1988, to all 129 United States resorts listed in the 1985 NTC directory. The questions are shown in Exhibit I. The respondents were asked to complete the questionnaire and return it in a stamped, self-addressed envelope. A follow-up letter was mailed about one month later. Four questionnaires were returned as undeliverable. Forty-five (34.9%) completed questionnaires were received.

Table 1 reveals the location of the 129 resorts that were questioned as well as the location of the 45 resorts that returned completed questionnaires. As the table indicates, the developers who completed the questionnaire appear to represent the entire population of NTC firms.

TABLE 1

Location of the National Time-Sharing Council Firms and the Respondents to the Survey Questionnaire

State	No. of NTC Firms	No. of Completed Questionnaires
Arizona	3	1
Arkansas	5	3
California	28	9
Colorado	4	2
Florida	31	13
Georgia	2	1
Hawaii	2	2
Idaho	1	0
Louisiana	1	0
Maine	1	1
Maryland	1	1
Michigan	1	0
Minnesota	1	0
Missouri	4	1
Nevada	1	0
New Hampshire	6	1
New York	3	1
North Carolina	9	2
Oregon	1	0
Pennsylvania	7	0
South Carolina	8	2
Tennessee	2	1
Utah	2	1
Vermont	1	1
Virginia	2	0
Wisconsin	2	2
Total	129	45

Results

According to the results of the survey, 79% of the respondent developers consider their resorts to be national. Furthermore, the firms that responded are on the average 7.4 years old with a mode of seven years. Only 20% of the firms are 10 years or older, and the oldest resort is 14 years old. These responses illustrate that the time-sharing industry is extremely new in the United States and that most time-sharing developers are interested in selling to a national clientele.

Nineteen (42.3%) of the time-sharing projects report that less than 50 building units have been constructed. Eighty percent of the projects are less than 200 building units in size, which means that many of the projects are small. Forty-one (91.1%) of the reported projects sell time-shares for 50 or more weeks a year in each building unit, while only three of these 41 developers sell all 52 weeks. This indicates that the projects sell as many of the available weeks in each unit as possible. Many of the units have two bedrooms, two bathrooms and sleep six people comfortably. Only five resorts sell one-bedroom units, while only four developers have one-bathroom units.

Eighty-seven-and-a-half percent of the resorts sell "fee simple" time-shares. Thirty developers sell only "fixed time" time-shares; 11 resorts sell only "flexible time"; the remaining four firms sell both types of time plans. This finding indicates that most of the developers sell ownership rather than a lease to the time-share property for a particular week in a specific building unit.

Twenty-six (66.7%) of 39 developers report that 10% or less of their sales are cash sales, which means some form of financing is provided for most time-share sales. In 60.5% of the resorts, financing is made available through their own offices, and banks and savings and loans are major sources for outside financing. When financing is provided by the developer, a 10% to 20% down payment usually is received. The mean down payment in our sample is 16.2%. The average interest rate charged is 13.9%, and it varies from 0% for a Florida developer who requires a 40% down payment with 12 monthly payments to 18% for a Florida firm that requires a $1 down payment for a five-year mortgage. Fifty-six percent of the financial paper is serviced inhouse, and 27% is serviced by the lender.

Sixty-four percent of the firms in the sample belong to the RCI exchange company, and 26% are members of Interval International. Finally, 36% of the firms report that a resale program is available through their company.

TABLE 2

Prices and Maintenance Fees Reported by Time-Sharing Resort Developers

Prices

Season	Price	Mean	Standard Deviation
Red Week	High	$12,858	$5,909
Red Week	Medium	10,980	2,971
Red Week	Low	8,821	4,251
White Week	High	$ 8,151	$3,532
White Week	Medium	7,588	3,003
White Week	Low	6,420	2,615
Blue Week	High	$ 6,246	$3,251
Blue Week	Medium	5,838	2,663
Blue Week	Low	4,726	2,399

Maintenance Fees

Season	Mean	Standard Deviation
Red Week	$270.78	$115.89
White Week	249.03	98.49
Blue Week	243.53	100.89

Notes:
Most time-share weeks are divided into three categories based on demand for the particular resort in a specific season. A "red" week occurs when the resort is in high demand. A "white" week and a "blue" week occur when the resort is in medium and low demand, respectively.

The developer was asked to report the high, medium and low prices for each time-share season.

TABLE 3

Medium Prices and Maintenance Fees Reported by Time-Sharing Resort Developers by Area of the Country

Prices

Season	California	Florida	Hawaii	West[a]	South-east[b]	North-east[c]
Red Week	$9,533	$11,535	***	$9,906	$9,483	$13,020
White Week	6,375	8,640	***	7,178	6,350	7,360
Blue Week	4,800	6,223	***	5,428	5,050	5,330

Maintenance Fees

Season	California	Florida	Hawaii	West	South-east	North-east
Red Week	$348.00	$258.00	$405.00	$246.80	$226.50	$212.40
White Week	300.20	258.00	405.00	212.10	226.50	193.50
Blue Week	291.83	258.00	405.00	199.56	217.83	186.60

Notes:
***No prices were reported.

[a] Includes the following states: Arizona, Arkansas, Colorado, Missouri, Utah and Wisconsin.

[b] Includes the following states: Georgia, North Carolina, South Carolina and Tennessee.

[c] Includes the following states: Maine, Maryland, New Hampshire, New York, and Vermont.

Tables 2 and 3 provide data on pricing and maintenance fees. Prices charged for a week range from $500 for a low demand ("blue") week in Maryland to $32,000 for a high demand ("red") week in Florida. Medium priced, high demand ("red") weeks sell for $10,980 on the average, while the medium demand ("white") and low demand ("blue") weeks go for a medium price of $7,588 and $5,838, respectively. On the average, the Northeast ($13,020) and Florida ($11,535) charge a higher price for their high demand units than California ($9,533), the West ($9,906) and the Southeast ($9,483).

Maintenance fees are more expensive for a high demand ("red") week ($270.78) than for a medium demand ($249.03) or a low demand ($243.53) week. Hawaii has the highest maintenance fees on average at $405.00 for all three levels of demand. Florida and California also are relatively expensive when compared with the other regions. These three states are very popular resort areas, and their popularity may be driving prices upward during high demand seasons.

Summary

The results of this study indicate that most developers of time-share projects consider their units to be national resorts and generally sell two-bedroom, two-bathroom units, which sleep six people comfortably. In addition, most resorts are involved with "fee simple" and "fixed time" time-share units. Over half of the resorts (60.5%) provide their own financing of time-share units. Meanwhile, banks and savings and loans are considered popular sources of outside financing. The down payments, interest rates and terms of the financing through the

developer appear to be competitive to those provided by outside sources. Prices charged for time-share units tend to be higher in Florida and the Northeast region of the United States, while maintenance fees are higher in Hawaii and California.

Conclusion

The time-share industry is changing dramatically. Firms such as Marriott Corporation and Walt Disney Company recently have entered the industry, and it is expected they will improve the industry's image.

The future of the time-share industry from the developer's viewpoint is dependent upon the resale market. We found in our survey that only 36% of the firms provide a resale market. Since the easy sales already have been made, the time-share industry needs a mechanism to efficiently resell time-share units. Currently, computerized national clearinghouses devoted to selling time-share units are available, but it remains unclear whether they are reselling time-share units efficiently. Future research needs to focus on the effectiveness of the resale market.

NOTES

1. Tharmalingam, Kumar "Time-Sharing: Is It Here to Stay?" *Appraisal Journal* (Oct, 1986): 571-81.
2. Taylor, John H. "We Thought We Were Invincible," *Forbes* (Sept 19, 1988): 72.
3. Fins, Antonio N. "Condo Time-Sharing Tries to Live Down Its Past," *Business Week* (Jun 19, 1989): 80.
4. Elliot, E. and Susco W., "Vacation Options," *Working Women* (Sept, 1982): 72.

EXHIBIT 1

Questions Presented to Time-Share Developers

1. Which of the following best describes your time-sharing resort?
   a. It is one that is nationally recognized and attracts people from all areas of the country.
   b. It is a property that is located in a single or multi-state area and appeals to buyers in that limited area.
2. What is the age of your time-sharing resort?
3. How many building units do you have in the time-sharing program?
4. How many weeks do you sell in each unit (e.g., 50 or 51 weeks)?
5. How many bedrooms are there in each building unit?
6. How many bathrooms are there in each building unit?
7. How many people are able to sleep in each building unit comfortably?
8. What type of ownership is sold to the buyer?
   a. Fee simple
   b. Right-to-use
   c. Other (Specify) _____
9. What type of usage is provided to each buyer?
   a. Flex time
   b. Fixed time
   c. Other (Specify) _____
10. What percentage of time-sharing sales are cash sales with no financing?
    a. 5%
    b. 10%
    c. 15%
    d. 20%
    e. Other (Specify) _____
11. Do you finance the purchase of time-shares through your office?
12. If your answer to 11 is "no," then who provides the financing? (Circle all appropriate responses.)
    a. Banks
    b. Savings and loans institutions
    c. Credit unions
    d. Private individuals
    e. Other (Specify) _____
13. If your answer to 11 is "yes," then provide the down payment that is needed to receive a certain interest rate and terms (e.g., a 20% down payment may allow a buyer the option to receive a loan at 8% for 10 years.)

Downpayment	Interest Rate	Term

14. Who is servicing your financial paper?
    a. Inhouse
    b. Lender
    c. Third party
    d. Other (Specify) _____
15. Your time-sharing resort belongs to which of the following exchange companies? (More than one response is allowed.)
    a. Interval International
    b. RCI
    c. Exchange Network
    d. Other (Specify) _____
    e. We do not belong to any exchange company.
16. Does your time-sharing resort have a resale program?
17. Given that a red week is the most desirable, a white week is somewhat desirable and a blue week is least desirable, what are the high, medium and low sale prices charged by your resort for the different colored weeks?

	Red Week	White Week	Blue Week
High			
Medium			
Low			

18. What are the average annual maintenance fees charged to each buyer?

Red Week	White Week	Blue Week

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