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EXECUTIVE SUMMARIES

REAL ESTATE SYMPOSIUM

MAY 3–4, 2011

SESSIONS

SPEAKER: **ARTHUR I. SEGEL**, Poorvu Family Professor of Management Practice, Harvard Business School

OVERVIEW

The U.S. real estate market remains grim. Housing prices may have finally hit bottom, but new housing starts are virtually non-existent and housing debt needs to come down by approximately $4 trillion.

The situation in commercial real estate isn't any better. The market has come down by 45% and securitization is in shambles. There is at least $1 trillion of excess debt that needs to be written down. We are perhaps just 20% of the way through the problems—with a long way to go.

But the crisis in real estate presents opportunities. Harvard Business School has revised and expanded its real estate curriculum to address these opportunities. Courses and field studies are now more global and deal with topics such as sustainability and securitization.

CONTEXT

Professor Segel provided a framework for the conference by giving a brief overview of the residential and commercial real estate markets. He then introduced Harvard Business School faculty, who described their real estate courses.

Housing may have hit bottom, but much debt must be written down.

While the housing market is fine in some locations—such as Washington D.C., New York City, Boston, and Texas—across the entire country, residential real estate continues to muddle along. In relative terms, housing starts are basically non-existent.

Housing prices have been in a free fall for a while and may have hit bottom. If the futures markets are right, prices will bottom out by the end of the year. But housing expert Robert Shiller recently said he wouldn't be surprised if housing comes down another 25%.

Levels of mortgage debt remain astounding. Several experts have said that levels of housing debt need to be written down by at least $4 trillion. Currently, underwater mortgages represent 25% of all housing.

The commercial real estate market is still working its way through the crisis.

Commercial real estate prices fell by 45%, went back up a little, and then came down again. Experts estimate that there is $1.0–$1.5 trillion too much debt in commercial real estate. While some analysts have reported that the country is 50% of the way through the real estate crisis, Professor Segel thinks that we are just 10%–20% through the problems.

In terms of commercial mortgage-backed securities (CMBS), the market essentially doesn't exist at the moment; it is insignificant and needs major structural changes. The securitization side is in shambles. The retail real estate market also is in terrible condition.

> *"I've seen reports that say we're halfway through the [real estate] crisis. I don't think we're even 20% through the problems; it's possible that it's only 10%."*
>
> —Arthur I. Segel

In the past few years HBS has developed several new real estate courses and offerings.

There are currently six HBS faculty members teaching real estate courses. Over the past few years, the real estate curriculum has changed significantly to become much more global and to focus on topics such as securitization and sustainability. Among the courses being offered are:

- *Real Estate in Emerging Markets*, which this past semester had students from 20 countries.
- *Housing Finance and Affordable Housing*, which looked at entrepreneurial opportunities and larger policy issues.
- *Innovation in Business, Energy, and Environment*, a field course where about 50 students create 10–15 teams to look at topics like smart grids or photovoltaics.
- *Real Estate Development, Design, and Construction*, a course about how to build a building.
- *Sustainable Cities*, which looks at the increasing population of cities and focuses on topics such as lack of clean air, water, and energy to support cities.
- *Leading Complex Capital Projects*, a new program launching in June 2011. It is not a project management course; it deals with leadership of big projects. Among the attendees are representatives from CityCenter (the huge, recently completed U.S. project), the Abu Dhabi airport (the largest real estate project in the world), and the London Olympics.

Also, about 30 students from the graduate school of design, the business school, the law school, and the Kennedy School are participating in a field study dealing with the redevelopment of the waterfront in South Bombay.

Other Important Points

- *Alumni club.* Harvard Business School has a vibrant real estate–focused alumni club: Harvard Business School Real Estate Alumni Association, or HBSREAA. This club has 2,000 alumni members, with programs in cities around the globe. The club's greatest value is the networking that takes place among members. To learn more, go to: http://www.hbsrealestatealumni.org/index.html.

MODERATOR: **ANDRÉ F. PEROLD**, George Gund Professor of Finance and Banking, Harvard Business School

PANELISTS: **WILLIAM A. ACKMAN** (MBA '92), Chief Executive Officer, Pershing Square Capital Management

SETH A. KLARMAN (MBA '82), President, Baupost Group

OVERVIEW

These successful investors, who don't invest solely in real estate, see advantages to being generalists. They have a broad investment perspective and can allocate capital to different types of opportunities as bargains present themselves.

For value investors who are committed to finding bargains, there are bargains to be found in the current environment, including in real estate. But value investing requires a disciplined approach and a longer time horizon than most investors have. And as these investors illustrate, value investing isn't just making good purchase decisions; it includes actively working to increase the value of an investment.

CONTEXT

These two extremely successful investors described their investment philosophies, explained how they think about investing in real estate, and responded to a wide range of questions from conference participants.

Understanding the concepts of value investing is easy. Behaving as a value investor is hard.

Both panelists agreed that they are value investors. (Mr. Ackman joked that there are two types of investing: value investing and greater-fool investing.) Mr. Klarman declared that there is no confusion about what value investing is: it is buying a dollar for fifty cents. However, few investors are able to behave as value investors. Most investors are impatient, short-term oriented, and focused on relative performance. In contrast, value investors have a long-term orientation, which is rare.

> *"Value investing can be like watching paint dry . . . you need to have a longer-term orientation."*
>
> – Seth A. Klarman

At Mr. Klarman's firm, value investing entails making extremely conservative estimates about a potential investment, and then looking for bargains that are priced at a significant discount to these conservative assumptions. This philosophy has served Mr. Klarman and Baupost well, generating 19% per year compounded returns over the past 28 years.

Beyond just making good purchase decisions, these investors sometimes are active in the process of making their investments more valuable.

A key to success for value investors is finding bargains and making purchases at attractive prices. Value investors make a great deal of money based just on good decisions and buying at good prices.

But these investors take action to increase the value of their investments. In all its investments, Baupost typically meets with management and makes suggestions; in its direct real estate investments it is usually involved in strategic or financial decisions. Mr. Klarman said, "It's as if we are investing in a company and we're the management or control the management and cause good things to happen. We don't invest in real estate . . . and sit on our hands."

Mr. Ackman's firm is even more assertive and active. Pershing Square Capital Management's strategy is to buy a significant minority equity stake in a company. By making investments that result in a significant equity position, and by then behaving in a highly activist manner, Pershing Square gets a company's attention and uses its position to drive changes. (In contrast to Mr. Klarman's characterization of patiently watching paint dry, Mr. Ackman says that he gets a hairdryer and blows on the paint.)

For both of these investors, sizing is a big deal.

Both of these investors have a philosophy of finding great bargains and then making a few reasonably big bets. Unlike many investors who might have 100 or 200 positions, these investors prefer to concentrate their investments wherever possible, possibly investing 10%–15% of their capital in one investment.

> *"Sizing is a big deal. We can only do a few things at a time, particularly things that require activity."*
>
> – William A. Ackman

These investors see advantages in being generalist investors as opposed to real estate specialists.

An advantage of being a general investor is being able to look as broadly as possible across asset classes to find bargains, and then to allocate capital in a flexible way to achieve the highest returns. This is different from investors who are locked into investing in a certain asset class or sector.

Mr. Klarman doesn't think of himself as a real estate investor. He views himself simply as an investor who has skills at assessing risk and return. He has found that real estate assets are often priced inefficiently, providing ample opportunity for a value investor. He likes that real estate investments exist in so many forms, from REITs to dollar stocks to bank debt on overleveraged real estate assets, as well as other types of investments. Over the years his firm has made more than 500 real estate investments, and all of them were unique one-offs of some type that presented a bargain.

> *"I don't think of myself as a real estate person. I'm an opportunistic investor looking for bargains and I look in all places."*
>
> – Seth A. Klarman

Mr. Ackman also views himself as a generalist investor. One of the attractive elements of investing in real estate is that it provides a portfolio of options, which has value, and it has high relative value compared to other types of fixed income investments.

> *"Real estate is about creating a portfolio of inexpensive options with different kinds of characteristics."*
> – William A. Ackman

While real estate development requires some specific expertise, Mr. Ackman believes that being a general investor provides a broader investment perspective.

Other Important Points

- *Home run.* Mr. Ackman's activist value-investing strategy was on display with General Growth Properties, the second-largest operator of malls in the United States. In late 2008, the company's stock fell by 99% and the equity had a value of $175 million while the company had $27 billion in debt. Mr. Ackman spent about $16 million to purchase 79 million shares for just pennies each. However, while the company's equity had been hammered, the company's fundamentals, underlying business, and cash flow were all fine. Led by Mr. Ackman, the properties owned by the company filed for bankruptcy and restructured. The equity has since increased in value from $0.34 per share to $23 per share, an increase of almost 70 times.
- *Retail outlook.* At the moment, Mr. Ackman, who has several holdings in retail, sees the retail environment as increasingly favorable. Mall sales and traffic are both increasing, indicating that consumers are spending again. Existing retailers, especially those in good locations, are benefitting from the lack of new construction over the past few years. The Internet has not destroyed retail, as some had predicted, and Apple is increasing its presence in retail to get closer to consumers, a trend that bodes well for retail.
- *Pessimism and optimism.* Both panelists, particularly Mr. Klarman, are concerned about the country's macroeconomic problems. The government's huge deficits are troubling and there is a lack of political courage to confront the situation. The infrastructure is crumbling and confidence in the dollar is fading, which is worrisome.

  While acknowledging the situation and the challenges faced, Mr. Ackman is more optimistic. America remains the best country in the world for entrepreneurs and investors, he believes. Politicians will focus on addressing the deficit, and America will find a way to resolve the major problems that exist.
- *Personal motivation.* In response to an audience question, the panelists granted that they don't have to work. But they both love their jobs, are intellectually stimulated, enjoy the people with whom they work, and couldn't imagine doing anything else. They have balance in their lives and are able to leverage their success to benefit important causes and organizations.

PRESENTER: **WILLIAM A. SAHLMAN**, Dimitri V. D'Arbeloff—MBA Class of 1955 Professor of Business Administration and Senior Associate Dean for External Relations, Harvard Business School

OVERVIEW

A series of systems drives how organizations behave. This includes incentive systems, risk-management systems, accounting systems, and human capital systems. The financial crisis shows that many of these systems have been broken. Many people had big upside incentives with no downside risk; organizations lacked adequate controls; and those with big incentives were able to write their own accounting rules. This was a predictable formula for disaster.

Another disaster is playing out right now with regard to the U.S. government. Politicians have mortgaged the future by racking up huge deficits and levels of debt—which are far greater than most people realize.

Digging out of this massive hole requires more competent government officials, better corporate leaders, and most importantly, entrepreneurs. Entrepreneurs see opportunities within problems, devise better solutions, create jobs, and drive growth. The importance of entrepreneurs and the interest in entrepreneurship has caused HBS to dramatically increase its courses and offerings in this area.

CONTEXT

Professor Sahlman offered managerial lessons from the financial crisis, described the enormous crisis faced by the U.S. government, and shared his view of the solution.

The recent financial crisis offers important managerial lessons.

In analyzing the financial crisis, Professor Sahlman has concluded that organizations have four important systems that affect their performance:

- *The incentive system.* This is how people are paid. Option-like payoff structures where people have low downside risk but high upside potential (as is often the case on Wall Street) affect how people behave. For example, people at Countrywide (and elsewhere) had strong incentives to close deals, but no long-term interest in whether a mortgage was paid.
- *The risk-management system.* This deals with how risks are measured, managed, and controlled. Does a firm have controls in place that limit exposure to particular risks?
- *The accounting system.* This is the system an organization uses to report its results, both internally and externally. (In the financial crisis, people with strong incentives and poor control systems got to choose their own accounting systems, particularly their own definition of profits.)
- *The human capital system.* This is the system that determines who an organization hires and who is promoted. People in all organizations vary in both competence and character.

These four systems are all wrapped in an organization's culture, which is what happens outside of an organization's rules; it is how people really behave.

The world's $200 trillion in financial assets are the fuel by which these systems operate. This fuel masked a tremendous amount of rot underneath.

> *"The worst problems arise when you have low-competence, low-integrity people with strong incentives, no risk management, who choose the accounting, and also have a corrosive culture."*
>
> – William A. Sahlman

The U.S. government is in far greater debt than most people realize.

The incentive of those in the government is to keep getting reelected, which doesn't come about through bold leadership or by inflicting pain on constituents. It is achieved by giving things away.

By reading the news, people would believe the current deficit to be $1.5 trillion, the total debt $14 trillion, and our debt-to-GDP around 90%. This is not accurate. The current value of the country's debt is at least $70 trillion and it may be closer to $100 trillion. The components are:

- *Social Security.* The current value of this deficit is $8 trillion.
- *Medicare.* The current value of this deficit is $38 trillion.
- *Medicaid.* The current value of this deficit is around $35 trillion.

In addition, for the past 10 years the average federal deficit has been $4 trillion per year. Each year the government collects about $1 trillion in federal income taxes. Even doubling or tripling income taxes is not going to solve the annual deficit or make a dent in the debt. A further problem is that there are 100 million beneficiaries of Medicaid, Medicare, and Social Security, but just 5 million people who pay 85% of the $1 trillion in income taxes. (Also, states have about $5 trillion in future liabilities.)

> *"What our politicians have done is mortgage the future. We don't just have a revenue problem, we have a retirement problem."*
>
> – William A. Sahlman

The reality is there is not a single politician talking truthfully about this situation. The current debt and deficit situation will only worsen over time as interest rates increase, which they surely will. The country's financial situation is even worse than that of Greece, Spain, and Portugal.

Healthcare in the United States is a disaster and healthcare reform only worsened the situation.

Healthcare reform legislation didn't reform healthcare; it only changed access to healthcare. We took a system where providers get paid for delivering more services, took away the cap on the amount of payment for an individual, and added 32 million more people. Each time one of these 32 million people receives healthcare, they pay just $10. So, the people who provide services will get paid more and the people receiving healthcare have no marginal costs.

> *"We didn't do anything to revamp the system. We didn't do anything to change how healthcare providers are paid. . . . We have a crisis coming."*
>
> – William A. Sahlman

Entrepreneurs provide the best hope for the future.

Averting the looming crisis brought on by excessive government debt requires:

- *Government action.* We need better, more competent people in government.
- *Entrepreneurs.* Entrepreneurs view every problem as an opportunity. For example, HBS alumnus Sal Khan is developing creative solutions to solve the country's educational problems. Khan founded Khan Academy, which offers 2,000 free, online educational videos in math and science. Khan also is working with school systems across the country on new educational models.

  Like other entrepreneurs, Khan shows that a person can see an opportunity and take action to make a difference. It is entrepreneurs who found firms, create jobs, and drive growth. Growth is what the country needs to extricate itself from the hole it is in.

  > *"If it weren't for entrepreneurs, nothing good would happen."*
  >
  > – William A. Sahlman

- *Corporate success.* To get out of these problems, the country needs its large corporations—like GM—to do well. This requires more competent managers.

Other Important Points

- *Entrepreneurship at HBS.* The study and teaching of entrepreneurship has grown significantly at HBS. In the early 1980s, there were just four faculty members in the entrepreneurship unit; today there are 32. In the MBA program's second year, 22% of all classes taken deal with entrepreneurship.
- *Future rate of return.* Professor Sahlman predicts that the median rate of return in every asset category will be zero for the rest of eternity. This prediction is based on the fact that a relatively few players achieve consistently high rates of return and get a disproportionate share of the upside. This means that for everyone else, the rates of return will be low (or negative) and the median rate of return will be zero or less.
- *Big risks.* Professor Sahlman sees the main economic risks as a run on the dollar, an immediate increase in interest rates, and social unrest.
- *Tax system.* The current tax system penalizes companies from hiring people. We need to move away from taxing savings and employment, and start taxing consumption.
- *Crisis in human capital.* In many ways, the country's greatest deficit is in human capital. The country's education system doesn't work, resulting in a shortage of educated, skilled people.
- *Alternative energy.* Over the past 15 years, U.S. investment in alternative fuels and energy efficiency has averaged less than $1 billion per year.
- *Amazon's stats.* Amazon.com is an amazing company. Its sales are $1 million per employee and the company's operating capital is minus $2 billion because its customers pay in advance but Amazon doesn't pay its suppliers for 60 days. Also, its real estate costs are extremely low, with warehouses in low-cost locations. This is in contrast to a competitor like Barnes & Noble, which had extremely costly retail locations and fewer inventory turns.

SPEAKER: **KARL E. CASE**, Professor Emeritus, Wellesley College

OVERVIEW

While the worst appears over for the U.S. housing market, the current housing market is far from strong. Now is a great time to buy, with low interest rates and low home prices, which puts affordability at a 40-year high. But demand remains low. Foreclosures continue to surge, new housing starts remain tepid, and inventory levels in many markets remain high.

The recent financial and real estate crises and recession have made potential home buyers fearful about buying a home and taking on debt. In addition, many consumers who do want to buy a home are struggling to get mortgages due to more stringent credit requirements.

Despite these challenges, there are some positive signs. Prices seem to have bottomed out in most markets and there are quite a few optimistic people; just a small number of people and transactions can play a huge role in changing the psychology of the market.

CONTEXT

Housing expert Karl Case discussed the current state of the U.S. housing market and what the future may hold.

Across the United States, the housing market continues to hold back the economy.

At the peak of the housing boom, residential new investment accounted for 6–6.5% of the total economy. Now it is less than 2.5%. In past recessions, the housing market has played an important role in stimulating the economy. But this time around, the housing market is continuing to restrain the economy. Consider the following:

- *Little new building.* Over the past 33 months, housing starts have fallen and stayed at 16-year lows. Historically, there have been about 2.3 million housing starts per year. But over the past three years, little is being built. In the past 12 months, there have been fewer than one million housing starts. There are large numbers of unemployed construction workers who have given up on the sector and are looking for work elsewhere. The lack of housing starts also affects all types of related industries.

  > *"Right now we are not producing anything and we haven't produced anything for 33 months."*
  >
  > – Karl Case

- *Reductions in the wealth effect.* As housing wealth increases, it has a ripple effect that generates extra spending. In the first part of the decade, the value of the country's housing stock increased by $10 trillion, which resulted in $6.5 trillion in additional spending spread throughout the economy. But the inverse happens when asset values decline. Today the value of housing wealth is down by one-third, which translates into negative economic effects to the tune of hundreds of billions of dollars.

- *Foreclosed properties.* In the South and Southwest (including Florida, Arizona, and Nevada), significant overbuilding occurred. A huge number of properties are now in default and are moving slowly through the foreclosure pipeline. Nationally, two million people are in the last stages of the foreclosure process and two-thirds of them haven't made a house payment in more than two years. This will continue to be a burden on the economy for months to come.

- *The shadow housing inventory.* Quantifying the housing inventory is difficult. Given housing price declines, existing home owners are reluctant to sell at a loss and therefore don't list their home. There may be a large "shadow inventory," since many home owners would like to sell and will put their property up for sale as soon as the market picks up.

There is huge variability in housing across different regions and segments.

The U.S. housing market is actually comprised of several regional and local markets, which have high degrees of variability. For example, California (which accounts for 25% of home values) and New England are incredibly different. Texas is a unique market, as are Arizona, Florida, Las Vegas, the Midwest, and other cities and regions.

Variability also exists in different segments of the market. Specifically, some geographies experienced a boom in the lower tier of the housing market. As credit flowed to this lower tier, prices in many places, like Nevada, increased by 300% or 400% over the past decade. In contrast, some places had no lower-tier boom at all.

Consumer fear and lack of credit are obstacles to home purchases.

It is a great time to be a buyer. Houses are more affordable than they have been in decades as both prices and interest rates remain low. Housing has tax benefits and remains a good investment. When people buy a house, it is equivalent to a stock dividend. They receive valuable housing services that are fixed in real terms and are tax free. This amounts to a 6% or 7% after-tax yield on an asset that generates a fixed dividend over time. In addition, appreciation is tax free and the cost of mortgage interest can be deducted.

Despite the attractiveness of the market, two factors are hindering home purchases:

- *Fear.* The financial crisis, high unemployment, and large numbers of foreclosures have made people fearful about owning leveraged assets. People are renting instead of buying (the rental vacancy rate is declining) and household formation rates are negative as parents and (adult) children are living together. Concern about risk has made home ownership less attractive.

  > *"It's a good time to buy and the only thing that is keeping people away is fear. They are nervous after living through this horrible time."*
  >
  > – Karl Case

- *Lack of credit.* People who want to purchase a home often cannot get credit. Banks now have more stringent criteria for mortgages. Professor Case mentioned how an individual with good income was turned down for a condominium mortgage because the lender said the building had too many vacant units.

The housing market may have reached a rocky bottom.

Professor Case believes the housing market is bouncing along a rocky bottom. With prices appearing to bottom out in mid-2009, the rapid decline seems to be over, but there will be peaks and valleys ahead. Factors that will affect the market's momentum include:

- *Reduced government involvement.* Tax policies temporarily boosted home purchases and government guarantees have served as insurance for most transactions that have occurred. In 2010, 90% of U.S. residential mortgages were touched by the government, mainly through guarantees. This level of risk being transferred to the government is neither desirable nor sustainable.

  Professor Case believes we are inevitably headed toward risk-based insurance, where people with good credit scores get inexpensive insurance but households with bad credit (which includes many low-income households) will have to pay more.

- *Small glimmers of optimism.* Professor Case thinks the housing market could gain momentum through a relatively small number of transactions. Because people base the value of their home on comparable transactions, a small number of favorable transactions can go a long way in boosting the optimism of the entire market. Small actions can have a significant impact on the overall psychology of the market, and the psychology of the market is what drives the market. The housing market has shown in the past that it can turn quickly.

> *"I think you can get a significant effect on the movement of the market if you simply change moods a little bit."*
>
> – Karl Case

Other Important Points

- *Key drivers.* Over the long term, housing prices are correlated with income growth and population growth.
- *Mortgage interest deductions.* Several leading thinkers have begun to discuss the idea of gradually eliminating the tax deduction for mortgage interest. Because this involves taking something away from a large number of people, it will be politically difficult. But the large deficit may cause the idea to get more consideration than it has in the past.
- *Let the market work.* Professor Case believes that using taxes and other government policies to attempt to manipulate the housing market results in unforeseen pitfalls. While subsidies may be warranted at the low end of the market, he believes the rest of the housing sector should be left to market forces.
- *Hearing Case-Shiller.* NPR recently set the Case-Shiller Home Price Indices to music; in particular, opera. To listen go to: http://www.npr.org/blogs/money/2011/04/27/135737940/the-case-shiller-index-sung-as-opera

SPEAKERS: **BRUCE D. WALKER**, Professor of Medicine, Harvard School of Public Health

MARK SCHWARTZ (MBA '78), Chairman, MissionPoint Capital Partners

OVERVIEW

Globally, HIV/AIDS is the single most deadly epidemic disease. With new insights gleaned from genetic and other analyses, scientists are getting closer to a successful HIV vaccine, which has proved elusive for thirty years. However, bringing a new vaccine through human trials is both costly and time-consuming. It requires funding beyond the traditional government and pharmaceutical sectors to sustain innovative researchers here and at the disease's ground zero in Africa.

CONTEXT

Deemed "honorary real estate developers" due to their innovative projects and long-term, visionary commitments, Dr. Walker described his career-long campaign to discover an AIDS vaccine and Mr. Schwartz discussed related funding requirements.

After 30 years and tens of millions of deaths, the world still lacks—and needs—an AIDS vaccine.

Since its first appearance in the early 1980s, the human immunodeficiency virus (HIV) has challenged and perplexed the medical community. HIV causes acquired immunodeficiency syndrome (AIDS), in which the immune system's progressive failure allows opportunistic infections and cancers to thrive.

While AIDS doesn't command the headlines it once did, this epidemic continues to expand globally. Between 40 and 50 million people already have died of AIDS, and scientists expect that at many as 200 million will eventually succumb—more than any other disease.

After thirty years of investigation, no successful vaccine has made it to market. While drug regimens have been developed that are effective at treating and controlling symptoms, scientists have no way yet to prevent the acquisition of the disease. Further, the effective drug "cocktail" is enormously expensive and access to drugs is limited, particularly in Africa where they are desperately needed.

Education and preventing behavioral interactions have not worked well to stop the spread of AIDS. In one African city, the infection rate among 15-year-old women is less than 1%; among 17-year-old women it is 20%; and among 23-year-old women it is more than 60%. In some African communities, individuals have a better than 50/50 chance of being infected. In Dr. Walker's view, the only way to solve this problem is development of a vaccine.

> *"The AIDS epidemic is the defining medical problem of our generation. . . . I think it is a solvable problem."*
>
> – Bruce D. Walker

Why is creation of an HIV vaccine so difficult and elusive? First, variability: HIV mutates far more within a single individual than the influenza virus varies around the world from one year to the next. Second, the virus essentially becomes part of the infected person's genome.

Patients with HIV but not AIDS may provide answers.

Because the scientific community focused single-mindedly on treating desperately ill AIDS patients, doctors tended to forget about those who contracted the HIV virus and experienced brief illnesses, but never went on to develop full-blown AIDS. In fact, the "viral loads" in their bodies were low or undetectable. Learning that there were large numbers of such individuals, Dr. Walker and other physicians and scientists asked, "Why didn't they get sick? What were their immune systems doing differently?"

Comparing the DNA from individuals in two groups—those who contracted the virus and got sick and those who contracted the virus but didn't get sick—yields a surprising result: just four amino acids appear to regulate the difference between a high and low viral load in infected individuals. In other words, a minor genetic divergence forces the virus to mutate in a way that is harmless to the patient.

> *"We've been able to identify now exactly what the problem is and what it is that's critical for control of the virus."*
>
> – Bruce D. Walker

Dr. Walker is hopeful that understanding the biological factors that allow some patients who contract this virus to remain healthy will ultimately provide the keys to developing a vaccine.

AIDS research has had an important side benefit: a deeper understanding of the immune system.

The immune system is an incredible surveillance system that defends the body, attacking viruses, cancers, and other intruders, while holding in check viruses that already reside within a person's body, like chicken pox or mono.

Through the course of AIDS research, the understanding of the immune system has increased dramatically; scientists have been given an incredible and unexpected window into the immune system. As a result, there will be valuable discoveries applicable to cancers and other diseases.

Funding is now the key obstacle blocking an AIDS vaccine.

With a narrowly defined target, the path to creating a vaccine suddenly becomes visible. This is, however, a costly, multi-disciplinary, and long-term endeavor that doesn't fit current research funding parameters.

> *"To me, the path forward is very clear, but the path forward is not simple because the funding issues still exist and are extremely constrained."*
>
> – Bruce D. Walker

Inspired upon hearing a speech by Dr. Walker, Mr. Schwartz has worked with Dr. Walker for almost a decade, helping make a difference by raising funds and supporting research and caregiving activities, including programs and activities in Africa.

> *"We will be training African doctors and scientists. We're empowering all of those local populations."*
>
> – Mark Schwartz

Together Dr. Walker and Mr. Schwartz have begun to leverage institutions such as the Doris Duke Foundation, MIT, the Gates Foundation, and the Howard Hughes Medical Institute, all of which have the staying power to fund long-term efforts.

The collective goal is to encourage scientists across a variety of fields—from virology and physics to computational biology and economics—to collaborate across traditional academic silos. Just as important, scientists are asked to dedicate a major portion of their careers to solving the AIDS puzzle. To enable that commitment, long-term funding is crucial. This is in contrast to the short-term funding that most scientists receive from sources such as National Institutes of Health (NIH) grants, which have narrow charters and little flexibility to take risks, collaborate across disciplines, and change direction with unexpected findings.

Established in February 2009 with a $100 million gift, the Ragon Institute of MGH, MIT, and Harvard has brought together dozens of scientists, engineers, and clinicians whose mission is to break the HIV vaccine impasse. Ideas are not in short supply; only a lack of funding to conduct the necessary human trials. In 30 years, three vaccine trials have failed. It is estimated that researchers need another $200 million to go forward with a series of five to ten trials.

> *"We've got to take the things that are potentially high impact and high risk—and test them."*
>
> – Bruce D. Walker

It is unlikely that this initiative would become self-funding at some point, because the vaccine is needed most in the poorest parts of the world. It can't and won't be developed or manufactured at scale by pharmaceutical companies based on a compelling ROI. More funding and support is needed to make an AIDS vaccine a reality.

PRESENTER: **STEPHEN G. BREYER**, Associate Justice, United States Supreme Court

OVERVIEW

America's founders saw judges as the people who should be given the authority to interpret laws and decide when a law is unconstitutional. Judges are objective, not political, and are charged with making hard, unpopular decisions. In general, granting this authority to the courts has worked well for the country. Americans respect the decisions of judges and comply with these decisions, even when they disagree.

While views differ on the approach used to make legal decisions, the most common approach reflects America's pragmatic legal tradition. The Constitution provides underlying values that guide judges' decisions, but these values are applied differently in different times and situations.

CONTEXT

Justice Breyer explained why he wrote his most recent book, *Making Our Democracy Work*, and discussed the role that the Supreme Court plays.

Our society requires some entity to have the authority to set aside unconstitutional laws, and judges are the best option.

People want to know about the U.S. Supreme Court. They have an undying thirst to understand why our society allows nine unelected men and women to set aside laws passed by Congress. After all, Congress was elected and represents the will of the people. Why does the Court get to tell them what to do?

John Marshall didn't invent the idea of judicial review in the *Marbury v. Madison* ruling. In reality, he simply was reflecting the beliefs of most of the founders. The founders believed that if people don't follow the Constitution, then it is not a functional document.

To paraphrase Alexander Hamilton: People might not do what the Constitution says and if they are not going to do what it says, it won't work. But who will make the determination about what it says? Hamilton didn't have an easy answer.

Clearly, there needs to be a person or body with the authority to interpret the Constitution. It can't be the President, who already has too much power, and it can't be the Congress, which makes decisions based on popularity. (It is a bit much to expect the same people who passed the laws to turn around and set them aside if needed.)

Somewhat due to lack of better options, that leaves judges. Justices are not political, are given life tenure, and are entrusted with making hard, unpopular decisions to preserve the values articulated in the Constitution.

> *"If you read Federalist 78, it roughly says, 'We can't think of a better place to put it [the authority to set aside laws] so we will put in the court.'"*
>
> – Justice Stephen G. Breyer

America's democracy requires that judicial decisions be respected and complied with.

Justice Breyer explained that "judges are weak." Their role is to make difficult decisions, and these decisions often are not popular.

> *"You need the public support for an institution that is guaranteed to annoy people."*
>
> – Justice Stephen G. Breyer

Part of the enduring greatness of American democracy is the respect for the role of the judiciary, which has evolved over the past 200 years. Justice Breyer shared the following milestone cases:

- *Outright refusal.* After Cherokee Indians living in Georgia discovered gold on their land, the State of Georgia tried to take this gold. The Cherokees hired a lawyer, the case went to the Supreme Court, and the Court ruled that the gold and the land belonged to the Cherokees. However, instead of enforcing this decision, the government sent in soldiers to evict the Cherokees. This was not a good moment for the judicial system.
- *Eventual compliance.* Nothing changed for nearly three years after the Supreme Court's 1954 decision in Brown v. Board of Education banned segregated public schools. Then, in 1957 a federal judge in Little Rock, Arkansas, ordered the local high school to integrate. When the school board refused to comply—with the support of the governor of Arkansas—President Eisenhower sent in U.S. soldiers to escort students into the building, thereby enforcing the Court's decision.
- *Peaceful acceptance.* When the Supreme Court ruled in Bush v. Gore to resolve the 2000 presidential election in favor of George W. Bush, a large portion of the American population believed the Court got it very wrong. However, based on America's abiding respect for the rule of law and the decision of the Court, there were no riots in the streets and no violence.

Among different possible approaches to deciding cases, the American judicial tradition works well.

Justice Breyer indicated that there are multiple perspectives to deciding legal cases, some of which are less helpful and some of which are more helpful.

LESS HELPFUL APPROACHES

- *Based on politics.* Even though about 40% of the Supreme Court's cases are unanimous decisions, many people believe cases are decided based on politics. In general, judges avoid politics and politics don't enter into judicial decisions. However, there have been instances where judges were influenced by politics. A notable example is the Dred Scott case, which is not America's proudest moment. Judges aren't politicians and should stay away from politics, Justice Breyer cautioned.

- *Based on "what is good."* Some people believe that the approach judges use to decide cases is based on what they believe to be good. But having individual judges attempt to make decisions based on what they personally believe is good does not make for an effective legal system. This isn't how judges approach cases.
- *Based on original intent.* To eliminate the risk that judges will substitute their subjective views of the law, Justice Scalia suggests that the approach for making decisions is to look at what the framers of the Constitution thought and the language they used. But relying on the language of a 19th-century judge when making 21st-century decisions won't always work. If so, the Court doesn't need judges; it needs historians.

MORE HELPFUL APPROACH

A more helpful approach is the American judicial tradition that has evolved over the past 200-plus years. In this tradition, judges rely on the values from the Constitution, if not the precise language. These values create a system for running a democratic government. And the democratic system that America has created is quite special:

- *It protects basic human rights and ensures the Bill of Rights.*
- *It ensures a degree of equality in the 14th Amendment.*
- *It divides power between the federal government and the states and between three branches, so that no group will become too powerful.*
- *It insists on the rule of law.*

In the American judicial tradition, the values of the Constitution stay the same, but their application does not. This application involves looking closely at laws and looking for their purposes when interpreting them.

The American judicial tradition also is pragmatic in nature, in that most tough decisions don't pit right against wrong; they pit right against right. Pragmatism is required to balance these rights.

Other Important Points

- *Reasons for court systems.* The two primary reasons to have court systems are that they ensure a certain degree of human freedom and they enable prosperity. Prosperity is ensured because people know that laws and contracts will be enforced in an honest way.
- *Eminent domain ruling.* Justice Breyer saw the Court's decision on eminent domain rights as straightforward. If the government takes a person's property, it has to be for a public service and the individual has to be fairly compensated.
- *Hard cases.* In deciding which cases to hear, the Court looks for so-called splits: divisions of opinion in lower courts on federal law questions. As a result, the cases most likely to reach the Court are those that have been decided previously in varying ways by perfectly good judges. By definition, they are going to be difficult decisions.
- *Don't look back.* Justice Breyer fully engages in each case in front of him, makes the best possible decision at that moment in time, and then moves on to the next case, rarely looking back.
- *Elected judges.* Judges who raise funds and campaign for office represent a big problem, as this practice creates doubts about a judge's objectivity.

SPEAKER: **DAVID B. YOFFIE**, Max and Doris Starr Professor of International Business Administration and Senior Associate Dean, Chair, Executive Education, Harvard Business School

OVERVIEW

Despite the gloom surrounding the housing and commercial real estate bust, the technology landscape continues to evolve, presenting fresh opportunities for savvy real estate professionals. In particular, computing resources are quickly and inevitably moving to "the cloud," where they become available to a number of progressively more powerful mobile devices. Younger consumers are already there, but business trails them.

CONTEXT

Professor Yoffie described current and imminent technologies that will affect consumer behavior and business opportunities, including real estate.

Future technology will arrive sooner than most people think.

Moore's Law, an observation by Intel's Gordon Moore that chip computing power doubles every 18–24 months, has held true for 40 years and shows no signs of abating. This exponential growth, difficult to comprehend in a linear world, means that a fingernail-sized microprocessor today can process a trillion instructions per second.

It took eight years to put the processing power, storage, and display resolution of a state-of-the-art 2001 Apple iMac into a 2009 handheld iPhone—and at a lower price point. A comparable transfer from today's iMac will take only four years. This enormous boost in handheld power enabled the mobility revolution, and its accelerating progress is inevitable. Service providers such as real estate developers need to ask themselves: What will consumers do with this power? What can my business do to position itself to take advantage of this tsunami of data traffic and Internet access?

> *"What we're seeing is an irreversible movement toward creating handheld computing capability."*
>
> – David B. Yoffie

Japan, which leads the United States in available bandwidth, has seen the phone share of access to major websites jump from 14% to 85% in only five years. A similar shift will occur here, yet almost no one is ready for it. Soon, everything that resides on a real estate site today will be primarily accessed from a plethora of phone, tablet, game console, television, and other non-PC devices.

Apple's volume has doubled in the past two years, and in just one year Google has gone from essentially a zero smartphone presence to 450,000 new Android activations per day. Apple already has about 400,000 iPhone applications available, and Google is adding 1,000 each day. Amazon is another company changing the way consumers make purchase decisions, not only through innovative services but also through its Kindle e-book reader. E-book bestsellers now outsell their physical counterparts two to one on Amazon.

As consumers change their online behavior, businesses must keep pace.

Who uses email the most? Surprisingly, 91% of seniors between the ages of 65 and 72 use email, even more than baby boomers. Younger consumers' usage shifts to social networks such as Facebook, and they greatly prefer texting—100 texts per day, on average—to emailing. And one out of every five marriages today starts online.

Another bright spot for business is that consumers 30–50 years old are the most likely to pay for content online; seniors are the least likely, demonstrating a fundamental psychological difference between generations.

Network providers such as Verizon will spend billions on infrastructure over the next couple of years to keep up with the demand. They have no choice.

High-tech companies such as Nokia, Research in Motion, and Microsoft that are a half-step behind in introducing new products and acquiring intellectual property are rapidly losing market share. Real estate firms need to get ahead of the curve to meet rapidly emerging consumer demand for access, services, and products.

Apple's successful iPad tablet illustrates how computing behavior is changing.

Apple has sold 20 million iPads in the past 12 months, dominating the tablet sector. Eighty-two percent of buyers are using their iPads at home for games, search, email, and news, but not for work—yet. Real estate people need to start thinking about how consumers and businesses will use tablets tomorrow in work settings as a replacement for paper, as a sales tool, and as a productivity device.

As an example of creative thinking, Hyundai—not BMW or Mercedes—now delivers its luxury vehicles' user manuals on iPads, which are included in the price of the car.

> *"Tablets will go from zero revenue to a $50 billion business in about 24 to 36 months. There aren't many businesses in the history of the world that have grown that quickly."*
>
> – David B. Yoffie

How will the tablet industry play out? Several scenarios present themselves:

- *Winner takes all.* In a repeat of its successful iPod MP3 player strategy, Apple gets three-quarters of the market early and retains it by frequent price cuts and capability increases. Other players share the scraps.
- *Oligopoly.* The iPad platform shares the market with a few other players such as Android and Windows, with a 40/30/30 split of some sort.
- *Smartphone domination.* In this scenario, Apple retains 30% of the tablet market, as it has with the iPhone, and Android scoops up 60%.
- *Massive fragmentation.* Japanese, Korean, and Chinese entrants chip away at the leaders' market share until everyone has only a small piece of the large market.

(The audience felt that the first two scenarios were equally possible, and that the fourth was unlikely.)

Apple is by far the biggest buyer of flash memory and specialized displays, which is a distinct competitive advantage, but it nevertheless needs to deal with the perceived negatives of its "closed system," at which businesses may balk.

Consumers lead businesses in accepting the inevitable "cloud."

Cloud computing, in which a mix of public and private networks provide processing power, file storage, and applications to individuals and businesses, is the other half of the mobility equation.

Aside from the logistics of having one's resources available anywhere, cloud growth is being driven by fundamental economics. A University of California, Berkeley, study showed that cloud providers' "mega-data centers" offer bandwidth and labor at one-seventh the cost of a company data center, storage at one-sixth the cost, and power at one-quarter the cost.

An example: a $250 million streaming media company hit the ceiling in terms of bandwidth costs. By outsourcing its entire data center to Amazon, the company is enjoying net savings of 47% and no longer worries about bandwidth limitations.

Eighty percent of mid-sized companies and 92% of large enterprises are experimenting with at least one cloud service today. But this is still a young industry: Only 6,000–7,000 of the top 500,000 websites are hosted in the cloud today.

CIOs feel some ambivalence: While they can save money and gain efficiencies, they also reduce headcount and IT budget, which can translate into a loss of influence. They worry too about security and quality of service, as highlighted by the recent Amazon outage.

Consumers, however, appear not to harbor any similar qualms. Music, photos, videos, and applications are increasingly moving from personal computers to the cloud, and consumers are comfortable with the security and availability tradeoffs.

Real estate companies, with their enormous stores of virtual property tours and photo galleries, should actively explore shifting these services to the cloud.

Facebook demonstrates how social networks inhabit the cloud.

Facebook is the largest cloud player of all, with almost 600 million users worldwide and 700 billion minutes of usage each month, up from 92 billion minutes just a year ago.

Facebook won the battle with LinkedIn and MySpace by becoming developers' platform of choice, just as Apple did with its iPhone. Facebook now has two million developers writing applications, and the most popular application is Zynga's CityVille—a real estate game. (www.zynga.com) Location-based services are another rapidly growing niche, with clear implications for real estate professionals.

Mobile "augmented reality" will change the way people search for real estate.

So-called "augmented reality" superimposes additional information over what an individual is seeing, much as a fighter-jet pilot has a "heads-up" display that reveals more data about the surrounding landscape.

> *"We're not talking about pie-in-the-sky here. We're talking about near-term technologies that could affect the way almost everyone does business."*
>
> – David B. Yoffie

In consumer real estate terms, augmented reality will enable a prospective buyer or renter to point his phone's camera down a street and view an overlay of available properties, prices, and contacts. In fact, a British company called Rightmove (www.rightmove.co.uk) has this capability now and has more than a million listings. Similarly, an active iPhone service in New York City provides a mobile guidebook, with directions, planning advice, and restaurant information.

This isn't perfect, however: GPS is sometimes insufficiently accurate or not available at all inside some buildings, and there are unresolved legal and copyright issues about the ownership of images and augmented information.

Other Important Points

- *Innovation at Harvard:* In fall 2011, Harvard will launch an Innovation Lab to better compete in incubating new technologies. (www.i-lab.harvard.edu)

MODERATOR: **WILLIAM J. POORVU**, MBA Class of 1961
Adjunct Professor in Entrepreneurship, Emeritus, Harvard Business School

SPEAKERS: **JANE L. MENDILLO**, President and CEO, Harvard Management Company

DANIEL W. CUMMINGS, Managing Director of Real Estate Investments, Harvard Management Company

OVERVIEW

Harvard Management Company (HMC) takes an approach to investing in alternative asset classes that involves identifying and capitalizing on pockets of market inefficiency. Today's distressed real estate market is characterized by capital inefficiencies that HMC, as manager of the world's largest university endowment, is uniquely positioned to leverage.

CONTEXT

In response to questions from Professor Poorvu and audience members, Ms. Mendillo and Mr. Cummings shared HMC's real estate investment approaches and strategies.

HMC's strategy for alternative asset classes is to capitalize on market inefficiencies.

HMC manages Harvard's endowment, the largest university endowment in the world. The company uses a mix of internal and external managers. Internal managers trade equities and fixed-income assets in public markets. External managers are used primarily for investments in alternative asset classes, such as private equity, as well as real estate, foreign public markets, and emerging economy markets. Harvard's endowment was an early investor in alternative assets, which have performed well over the years.

HMC's investment strategy in alternative asset classes is to find inefficiently functioning pockets of markets and take long-term positions at depressed prices, often through limited partnership positions. The market inefficiencies are typically temporary, and might reflect an absence of players, business cycle vicissitudes, large capital inflows or outflows, illiquid markets, or other factors. With long investment time horizons, HMC can afford to wait patiently for such opportunities to open up and to act on them when they do.

> *"Having an outlook that is really in perpetuity, if we can wait for times and find places where assets in illiquid markets are priced attractively, we can make good money."*
>
> – Jane L. Mendillo

While such opportunities have been rewarding, pursuing them over the years had some less-than-desirable effects: alternatives grew to represent more and more of the endowment portfolio, more capital became tied up in less liquid markets, and more money was being run by external managers. "We gave a lot of our capital out to external managers [as] our allocation to alternative assets has gone up," explained Ms. Mendillo. This curtailed capital for new opportunities: "Our allocation to outside managers had gone up; the dependency of the university on endowment income had gone up; so our access to capital liquidity for new opportunities had been getting more and more curtailed."

Since the financial crisis, HMC has changed how it manages its real estate investing.

Over the past two years, HMC has been working to limit the number of external managers investing its capital. The idea is to gain more control over its own capital, including decisions related to "when and where capital gets called and what the exact opportunities are." HMC's internal team is looking at some opportunities in alternatives, including real estate, that Ms. Mendillo says they are very excited about.

> *"We've said, let's take a little bit more in-house; let's be a bit more of our own strategist. . . . That's where we stand today."*
>
> – Jane L. Mendillo

Today, real estate represents about 8–9% of HMC's overall endowment portfolio, which is fairly consistent with levels of the past decade. But much more of it is internally controlled.

As she speaks with alumni and other university stakeholders, Ms. Mendillo says that the distressed nature of the real estate market is more of a communication challenge than a performance worry. The performance expectations of HMC's board of directors for the asset class are realistic and tempered by the endowment's long-term outlook. If returns come in under target in a particular quarter because it was time to sell certain assets and market conditions were less than ideal, that is understandable. Board members do not focus on quarterly returns in private markets as much as public ones.

There are positives and negatives to real estate assets in general in the current market environment.

On the positive side, real estate investments provide the endowment portfolio with diversification, inflation protection, income-generation potential, and control over when assets are sold. Moreover, real estate valuations, based on comparable properties, are not as volatile as in private equity markets, where values fluctuate based on what publicly traded stocks are doing.

> *"Real estate is a little more predicable than private equity . . . [since] at least people say, 'What are similar properties selling for in a particular market?'"*
>
> – William J. Poorvu

On the negative side, real estate assets have generated poor returns for the portfolio in recent years and the prolonged market depression makes appraisal/valuation difficult. Distressed conditions should continue for a couple of more years. Nothing approaching the appreciation rates seen before the financial crisis can be expected again.

Distressed market conditions create capital inefficiencies that HMC is well positioned to leverage via operating partnership deals.

When the financial crisis struck, HMC was caught with outstanding commitments and obligations that amounted to 150% of its real estate net asset values (NAVs). The investments were all similar in terms of operation, structure, and objectives—and were all similarly hit when NAVs declined. (These positions were taken in 2005–2007, before Ms. Mendillo and Mr. Cummings had arrived.)

The way HMC approaches real estate investing now takes advantage of its position as a well-capitalized endowment. Today's real estate market is characterized by capital inefficiencies, vestiges of the financial crisis. So HMC enters into operating partnerships with small to mid-sized real estate companies that have good track records but cannot easily raise funds. HMC becomes their exclusive source of capital. The deals are fairly traditionally structured in terms of fees, hurdles, etc. There is no need to invent fancy structures.

HMC has strong relationships with its partners, who present the company with multiple deals to evaluate. During the first 12–18 months of the relationship, partners cannot show deals to others without HMC's permission. So there is a level of commitment as they try to work together. Partners understand HMC's criteria, and as a result HMC rejects only about one in five deals brought to it to consider.

The goal is to build a thematically focused portfolio of smaller properties, most of which are income-producing by the time HMC gets involved (only one project is in development phases). HMC retains management discretion, and seeks properties that can respond quickly to its efforts to add value. HMC's strategy is to find income-producing property niches where fundamental demand should remain strong whatever the economy does. That points to residential areas such as single-family, student, and senior housing. HMC has seven such operating partnerships so far, with a few more in the works.

> *"It's typically the value-add [situation we seek], where there's an amount of income in place and where we are confident in our ability to move that bottom line in one way or another."*
>
> – Daniel W. Cummings

The company also is becoming active in real estate co-investment activities and secondary-market purchases, which it had never done before. HMC has some international real estate exposure as well, and will be exploring more opportunities abroad in the next year or two. A staff of ten supports the work.

Other Important Points

- *Harvard's take.* HMC pays out about $2 billion per year to the University, which equals 5–6% of the endowment portfolio. That is unlikely to change: Harvard depends heavily on this money, as it has few options for raising revenue.