Exhibit No.:	
Issues:	*Cost of Common Equity, Capital Structure and Cost of Debt*
Witness:	*David C. Parcell*
Sponsoring Party:	*MoPSC Staff*
Type of Exhibit:	*Surrebuttal Testimony*
Case No.:	*ER-2007-0004*
Date Testimony Prepared:	*March 20, 2007*

MISSOURI PUBLIC SERVICE COMMISSION

UTILITY SERVICE DIVISION

SURREBUTTAL TESTIMONY

OF

DAVID C. PARCELL

AQUILA, INC.
d/b/a AQUILA NETWORKS-MPS-ELECTRIC AND
AQUILA NETWORKS-L&P-ELECTRIC

Case No. ER-2007-0004

Jefferson City, Missouri
March 20, 2007

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

In the Matter of Aquila, Inc. d/b/a Aquila Networks-MPS and Aquila Networks-L&P, for authority to file tariffs increasing electric rates for the service provided to customers in the Aquila Networks-MPS and Aquila Networks-L&P service area.	))))))	Case No. ER-2007-0004

AFFIDAVIT OF DAVID C. PARCELL

STATE OF VIRGINIA)
) ss.
COMMONWEALTH OF VIRGINIA)

David C. Parcell, of lawful age, on his oath states: that he has participated in the preparation of the foregoing Surrebuttal Testimony in question and answer form, consisting of 9 pages to be presented in the above case; that the answers in the foregoing Surrebuttal Testimony were given by him; that he has knowledge of the matters set forth in such answers; and that such matters are true and correct to the best of his knowledge and belief.

David C. Parcell
David C. Parcell

Subscribed and sworn to before me this 15th day of March 2007.

Susan W. Crew
Notary Public

My Commission Expires:
3/31/10

SUSAN W. CREW COMMONWEALTH OF VIRGINIA NOTARY PUBLIC

SURREBUTTAL TESTIMONY

OF

DAVID C. PARCELL

ON BEHALF OF

MISSOURI PUBLIC SERVICE COMMISSION STAFF

AQUILA, INC.

d/b/a AQUILA NETWORKS MPS-ELECTRIC

AND AQUILA NETWORKS L&P-ELECTRIC

CASE NO. ER-2007-0004

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SURREBUTTAL TESTIMONY

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DAVID C. PARCELL

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AND AQUILA NETWORKS L&P-ELECTRIC

CASE NO. ER-2007-0004

Q. Please state your name, occupation, and address.

A. My name is David C. Parcell. I am a consulting economist and Executive Vice President of Technical Associates, Inc. My address is 1051 East Cary Street, Suite 601, Richmond, VA 23219.

Q. Are you the same David C. Parcell who filed direct testimony and rebuttal testimony on behalf of the Commission Staff earlier in this proceeding?

A. Yes, I am.

<u>EXECUTIVE SUMMARY</u>

Q. What is the purpose of the testimony you are presently providing?

A. The purpose of this testimony is to provide surrebuttal testimony to the rebuttal testimony of Samuel C. Hadaway, who has provided cost of capital testimony on behalf of Aquila, Inc., d/b/a Aquila Networks MPS (MPS) and Aquila Networks L&P (L&P).

Q. What is your understanding of Dr. Hadaway's rebuttal testimony in this proceeding?

A. Dr. Hadaway is providing rebuttal testimony on the cost of equity, cost of debt, and capital structure recommendations of Commission Staff, Office of Public Counsel ("OPC"), and Federal Executive Agencies/Sedalia Industrial Energy Users' Association/St. Joe Industrial Group ("FEA/Industrials").

Q. Please outline the parts of Dr. Hadaway's testimony that you are responding to in this current testimony.

A. I am responding to, and providing surrebuttal testimony on the following general areas of Dr. Hadaway's testimony:

- The cost of common equity;
- The cost of debt; and,
- The capital structure.

COST OF COMMON EQUITY

Q. Dr. Hadaway claims, on page 3, that your cost of equity recommendation, as well as, the cost of equity recommendation of FEA/Industrial's witness Gorman, are much lower than returns allowed by this Commission on other Commissions. Do you have any comments on this?

A. Yes, I do. I note, first, of all, that Dr. Hadaway acknowledges on page 3, lines 8-9, that authorized returns on equity for electric utilities have been declining in recent years and averaged 10.36 percent in 2006. This 10.36 percent level is nearly a full percentage point below the 11.25 percent that Dr. Hadaway is recommending (as updated) in this proceeding. I also note that the 0.25 percent reduction (i.e., from 11.50 percent to 11.25

percent) in Dr. Hadaway's recommendation for Aquila reflects his own acknowledgement that the cost of equity has declined over the past year.

I further note that, if the Commission's only standard for establishing the cost of equity for Aquila was the authorized return levels for electric utilities throughout the country, that my proposed 9.625 percent recommendation (i.e., mid-point of range of 9.0 percent to 10.25 percent) is closer to the 10.36 percent average authorized return in 2006 than is Dr. Hadaway's 11.25 percent return. I further note that the upper end of my cost of equity range – 10.25 percent – is close to the 10.36 percent average return granted in 2006.

I also note that authorized equity returns for electric utilities have been in a constant state of decline since 2000, as is noted in the Regulatory Focus cited by Dr. Hadaway on page 4, lines 26-27. The average allowed return for electric utilities by year has been:

2000	11.41%
2001	11.05%
2002	11.10%
2003	10.98%
2004	10.67%
2005	10.50%
2006	10.36%

This clearly demonstrates that it is Dr. Hadaway's 11.25 percent recommendation that is, in his own words (page 3, line 11) well above "the mainstream of recently allowed ROEs."

Dr. Hadaway also cites, on page 4, lines 13-15, this Commission's decision in the KCPL case, in which a 100 basis point band on either side of the average of the recent (i.e., first three quarters of 2006) average authorized returns on equity for electric utilities was considered a "zone of reasonableness". If such a procedure were to be applied presently, a "band" of 9.36 percent to 11.36 percent would be found. My mid-point recommendation

(9.625 percent) and my upper end (10.25 percent) are well within this "band", while Dr. Hadaway's 11.25 percent recommendation is near the top end of this "band." I do not believe that Aquila has demonstrated any credible reason for it to be near the top of the "band."

Q. Are there any indications that capital costs continue to remain low by historic standards?

A. Yes, there are. The feature article in the February 19, 2007, issue of Business Week was titled "It's a Low, Low, Low, Low-Rate World, Why money may stay cheap longer than you think". This article, which is attached to this testimony as Schedule DCP 1, indicates that, in spite of the Federal Reserve raising short-term interest rates in recent years, long-term "real rates, which adjust for inflation, have barely budged." This article goes on to opine that rates will remain low.

Q. Dr. Hadaway claims, on page 6, lines 19-21, that portions of your analysis are "extreme". Do you have any comments on this?

A. Yes, I do. Dr. Hadaway has made a serious, though I am sure inadvertent, misinterpretation of my DCF analysis. Since I have shown the mathematical combination of dividend yields and various growth rates, he apparently has misinterpreted these combinations to be "DCF estimated common equity cost rates".

I think my testimony is clear that investors consider various alternative growth rates in making investment decisions. As such, investors evaluate these alternative growth rates to assist them in their investment decisions. However, it does not follow that each individual growth rate reflects an "investor decision" and thus each growth rate creates a DCF estimated common equity cost rate. Rather, it is the cumulative impact of all these growth rates, or some combination of growth rates that form the basis of investor decisions and thus, DCF estimated common equity cost rates.

It is likely that the primary reason for Dr. Hadaway's misinterpretation of my DCF analysis is the difference in the manner in which he and I calculated our DCF costs. He looks at alternative growth rates and reaches a single growth rate conclusion to be combined with the dividend yield to reach a DCF estimate of the cost of equity, whereas I combine the various growth rates directly with the dividend yields. We both reach conclusions based on our own interpretation of the proper growth rates. The fact that I show individual combinations of yields and growth rates, which are then used as inputs into my ultimate estimate of the DCF costs of equity, appears to have confused him and apparently results in his misinterpretation of my analyses.

The misinterpretation obscures the real difference in our respective DCF analyses, notably whether primary reliance on forecasts of GDP growth, is proper in a DCF analysis.

Q. Dr. Hadaway claims, on page 7, that "portions of (your) DCF analysis produce returns that are only slightly above the cost of debt". Is this statement correct?

A. No, it is not. What Dr. Hadaway fails to mention in his rebuttal testimony is that I use the average of numerous growth rates in developing the low end of my DCF analysis. He also fails to mention the obvious fact that I use the highest growth rates in developing the upper end of my DCF analysis. As I have indicated, it is reasonable to believe that investors consider numerous factors in making investment decisions, not just the most optimistic factors.

Q. Dr. Hadaway maintains in his rebuttal testimony on page 7, as he did in his direct testimony, that the DCF model cannot be used as an estimate of the cost of equity for a utility when the market price of utility stocks exceeds the book value. Do you agree with this position?

A. No, I do not. Knowledgeable and/or informed investors are aware of the fact that most utilities have their rates set based on the book value of their assets (i.e., rate base and capital structure). This knowledge is reflected in the prices that investors are willing to pay for stocks and thus is reflected in DCF cost rates. To make a modification of the DCF cost rates, as Dr. Hadaway proposes, amounts to an attempt to "re-price" stock values in order to develop a DCF cost rate more in line with what he thinks the results should be. This is clearly a violation of the principle of "efficient markets." If one believes that markets are efficient, there is no reason to modify either stock prices or market models based on stock prices.

Q. Dr. Hadaway also criticizes your sample of proxy companies. Do you have any comments on this criticism?

A. Yes, I do. The obvious purpose of selecting any proxy group for use in a cost of equity analyses is to provide a substitute for the subject company. This is especially true in the case of Aquila, whose substantial problems associated with its unsuccessful non-regulated operations created a situation where this company could not be used as a standard for MPS and L&P.

I demonstrated on Schedule 7 of my direct testimony that my comparison group provides a more appropriate standard for Aquila than does Dr. Hadaway's larger, less-comparable group. This was demonstrated by the fact that some of his companies had market caps of up to seven times as large as Aquila. In fact, Dr. Hadaway has made no showing that his reference group is comparable to Aquila. I also note that his rebuttal testimony makes no such claim, as he relies only on the relative size of the group in terms of companies.

In spite of this, I did perform my cost of capital analyses on Dr. Hadaway's group, as well as for my own group, a point that he only casually mentions. It should be noted that the DCF and CAPM results for my group provide similar or even higher results than those for his group, as is indicated below:

	Parcell Group		Hadaway Group	
	DCF	CAPM	DCF	CAPM
Average	8.1%	10.3%	8.2%	9.9%
Median	8.3%	10.1%	8.0%	9.8%
High	9.5%		9.5%	

As a result, my DCF and CAPM results would have been lower had I only relied on Dr. Hadaway's group. He does not acknowledge this in his rebuttal testimony.

Q. Dr. Hadaway also claims, on page 8, lines 18-20, that you should have used "a longer-term broader-based growth estimate, like the GDP growth forecast" in you DCF analyses. Do you agree with this?

A. No, I do not. I demonstrated in my rebuttal testimony that Dr. Hadaway's historic GDP growth estimate is seriously flawed and overstates the expected growth in GDP, as is provided by governmental and private industry forecasters. As a result, Dr. Hadaway is not only wrong to use GDP growth as the primary growth rate in the DCF model, but he also uses an excessive value of GDP growth.

Q. Dr. Hadaway next claims, on page 8, lines 22-23, that the CAPM's "Use in regulation is limited". Do you agree with this?

A. No, I do not. The CAPM is widely used in regulation. It is my personal experience that most, if not virtually all cost of capital witnesses use this model, except for Dr. Hadaway.

Dr. Hadaway cites his interpretation of "respected academic research studies in 1992, some 15 years ago. In spite of this "research", the CAPM continues to be a mainstay in cost of capital recognition, in spite of Dr. Hadaway's unique disregard for this model.

Q. Dr. Hadaway also criticizes your comparable earnings analysis. What are you comments about these assertions?

A. Dr. Hadaway claims the comparable earnings analysis is not valid because "returns on book equity may bear no relationship to the market's required rate of return." What Dr. Hadaway has ignored in making this statement is that I have evaluated the earned returns of utilities in conjunction with the accompanying market-to-book ratios. This process permits an examination of the market's reaction to and perception of the level of earned returns.

<u>CAPITAL STRUCTURE AND COST OF DEBT</u>

Q. What is your response to Dr. Hadaway's comments on your capital structure and cost of debt?

A. I find it interesting that Dr. Hadaway begins his discussion by acknowledging that I am using the same capital structure and cost of debt as is being proposed by Aquila, then he concludes that my position is "illogical and unfair." I have discussed this issue in my rebuttal testimony and will not repeat these points here.

Q. Do you believe that investors are concerned with Aquila's internal capital assignment process?

A. No, I do not. MPS and L&P are divisions of Aquila. While these divisions are distinct for regulatory purposes, investors should have little interest in how Aquila "assigns" its capital to these divisions.

In recent years, Aquila has issued the debt and equity for the MPS and L&P divisions. Therefore, it is logical to assume that investors are primarily interested in Aquila's consolidated operations. MPS and L&P receive capital from Aquila and this entity has various mixes of capital in it at any given point in time when MPS and L&P receive capital from the parent. As a result, I believe it is more proper to utilize the consolidated capital structure of Aquila, as I am proposing in this proceeding. This is the case since Aquila's capital structure is verifiable and represents how MPS and L&P are capitalized.

Q. Does this conclude your surrebuttal testimony?

A. Yes, it does.

Exhibit___(DCP-3)
Schedule 1
Page 1 of 6

CAPITAL

IT'S A LOW, LOW, LOW, LOW-RATE WORLD

Money is cheap. And some experts say it could stay that way for years. That's creating opportunity —and brand-new risks

BY MICHAEL MANDEL AND DAVID HENRY

WAIT A MINUTE—weren't long-term interest rates supposed to be a lot higher by now?

When the rate on the 10-year Treasury bond plunged from 6.5% in early 2000 to an average of 4% or so in 2003, the explanations were easy: tech bust, recession, weak capital spending, low inflation, steep rate cuts by central banks around the world. The low rates seemed perfectly normal—and sure to reverse on a dime when conditions changed.

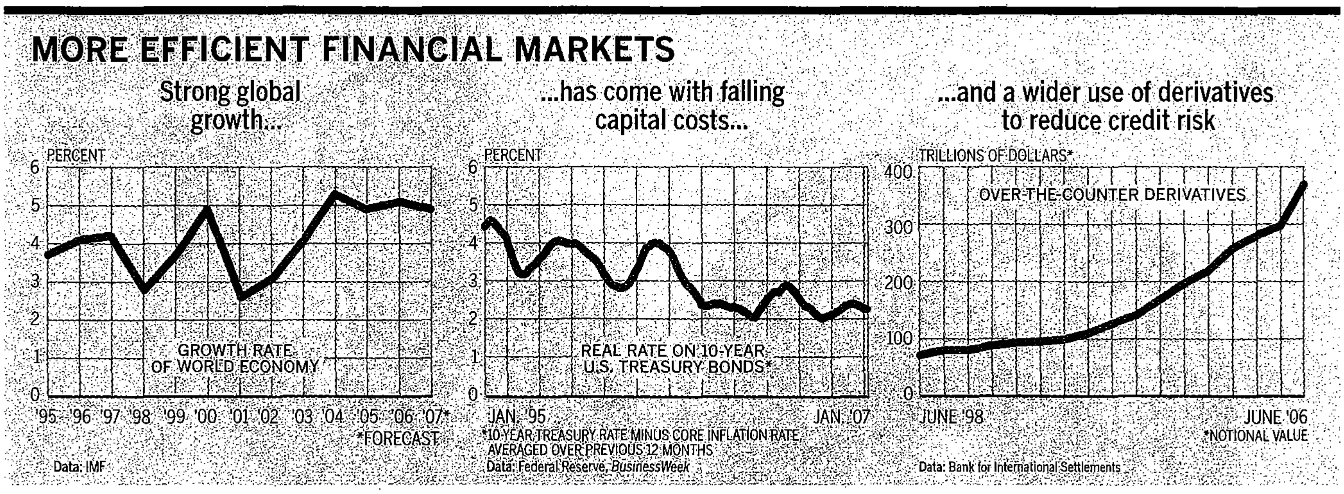
Since then, plenty has changed. The Fed has hiked short-term rates by more than four percentage points. The global economy grew by 5.1% in 2006, the second-strongest performance in 25 years. Europe and Japan have recovered. Even tech spending seems to be on the rise, judging from Cisco Systems Inc.'s strong earnings report on Feb. 6. And yet—and yet!—10-year Treasury rates have risen only three-quarters of a percentage point. Real rates, which adjust for inflation, have barely budged.

It isn't only a U.S. phenomenon. Ten-year euro bonds are yielding around 4% today, no higher than in 2003, despite much faster growth in the region. Real rates in the euro zone are up only a bit.

Borrowers, of course, are deliriously happy. Even the shakiest companies are seeing their debt costs plunge. The spreads on triple-C rated bonds and lower—the junkiest of junk—are at a record low 4.7 percentage points over ultrasafe Treasuries, compared with the previous record of 5.2 percentage points in 1997, according to Merrill Lynch & Co.

Most remarkably, the craziness isn't likely to stop anytime soon. The low

ROBERT NEUBECKER



cost of capital is probably going to last "five to seven years," says Samuel Zell, who as chairman of real estate firm Equity Office Properties Trust watched bidders wield cheap debt in a fight over his company. (Blackstone Group, with a $39 billion bid, won out on Feb. 7.) James W. Paulsen, chief investment strategist at Wells Capital Management, sees an even longer horizon: "This could be a prolonged cycle where the cost of capital is low [for] 10 or 20 years."

It is, indeed, a low, low, low-rate world.

Easy money is creating all sorts of economic benefits. Corporations are making capital investments again—and with their borrowing costs so low, profits are still zooming. Private equity firms are using loads of cheap debt to buy companies at jaw-dropping prices. Even the housing market, which boomed for five years on cheap money, hasn't fallen apart. It's gliding to a soft landing rather than a hard crash, allowing consumers to keep spending (page 35). "We are in this era where financial innovation and product structuring, particularly in the debt markets, has been very stimulative," says Henry H. McVey, chief U.S. investment strategist at Morgan Stanley. Zell puts the state of rates in similar terms: "I think that's going to be a growth accelerant around the world."

'FUTURE TURBULENCE'

BUT THE EASY MONEY also brings a slew of unexpected problems. Historically, risky borrowers have had to pay much higher interest rates on their debt. Now there's little penalty—and that means there's less incentive for companies to stay fiscally sound. Low rates aside, other borrowing terms are getting easier, too. Many debt deals being made today have fewer protections for investors in case companies can't pay. "I've never seen issuers have this much power," says Raymond G. Kennedy, a bond fund manager at PIMCO with 26 years' experience under his belt. Kingman D. Penniman, founder of KDP Investment Advisors Inc., a bond research firm, sees a dark side to this: "You're laying the groundwork for future turbulence."

The shift to a low-rate world doesn't mean lower volatility. In fact, excesses, crack-ups, and bad investments are not only possible but guaranteed. "Over the next several years there's likely to be some event that will widen out the spreads," says Zane Brown, director of fixed income at mutual fund manager Lord, Abbett & Co. But when the dust has cleared, he says, the world economy will likely be left with a lower cost of capital than the average over the past 5 to 10 years.

> **The shift to a low-rate world doesn't mean lower volatility**

In some ways, it's the 1990s all over again. Back then, the info-tech boom created an unexpected boost in productivity that persists today. Now it looks like something analogous has hit the global financial markets. A combination of globalization, innovation, and good old-fashioned competition among markets has made it easier and cheaper to raise and deploy money. Borrowers now can draw funds from around the globe. And derivatives let financial institutions and traders manage their risks with mind-blowing precision. With Chicago, London, New York, and Frankfurt all jostling to be the world market leader, exchanges and financial institutions have an incentive to be cheaper, faster, more innovative (page 36).

At the same time, the low rates reflect major imbalances in the global financial system. The developed countries, led by the U.S., have systems that are good both at raising money and allocating it. Emerging markets such as China have only half of that equation: They can collect the money, but they don't have the financial institutions that can put it to the best use. According to a November, 2006, survey of executives by McKinsey & Co., only 40% of respondents in China and Latin America said their company's access to external funding is good or very good.

Eventually the financial systems in China and India will improve, and a lot more of their capital will be used at home. That won't happen anytime soon, though. In a new book, *The Next Great Globalization*, Federal Reserve Governor Frederic S. Mishkin writes: "It takes a long time for any nation to achieve strong property rights and an effective financial system."

For now, China and the other emerging markets are serving as key suppliers of capital in increasingly connected markets. "People are more willing to throw their money across borders and across currencies to get the highest yields," says David A. Wyss, chief economist at Standard & Poor's. Indeed, in just the past year, the value of outstanding international debt securities—debt raised in foreign countries or foreign currencies—has risen by 20%.

It's a continuation of a long-running trend. Since 1990, cross-border capital flows have been rising at a 10.7% annual rate, adjusted for inflation and exchange rate fluctuations, says a January, 2007, report from the McKinsey Global Institute. That's up from just 4.3% from 1980 to 1990.

An essential part of the globalization story is the adoption of the euro in 1999, which created a huge pool of highly mobile capital from lots of smaller pools.

CHARTS BY ERIC HOFFMANN/BW

ILLUSTRATION BY OTTO STEININGER

"The euro markets are today much bigger than what they would be if we had not had the euro," says Jerry del Missier, co-president of London-headquartered investment bank Barclays Capital.

The second key factor is the development of new trading instruments. Financial innovation isn't new, of course. Mortgage-backed securities date to the 1970s, and junk bonds came to life in the '80s. But innovation seems to have reached a fever pitch with the recent advances in collateralized debt obligations (CDOs), which keep borrowing costs low by dividing risks into big buckets and then reallocating them among hundreds of investors. With nearly half a trillion dollars' worth issued in 2006 alone, and with the risks widely dispersed, investors are willing to put more skin in the game. "Financial innovation in the form of CDOs has changed the risk premium associated with the bond market," says McVey.

MARKET FUEL

PUT THE TWO TOGETHER—bigger markets and innovation—and you have the makings of a global financial revolution. Adding more fuel, exchanges are becoming more entrepreneurial—which, as always, brings down costs. There's bustling competition from online exchanges as well. "When oil prices were very high and airlines needed to hedge the prices of jet fuel with options, they had no idea if investment banks were ripping them off, because there was no transparency in the price," says David Gershon, CEO of SuperDerivatives Inc., an online derivatives and options exchange. Gershon's outfit is among a handful of startups that allow investors to trade sophisticated instruments online. He argues that exchanges like his make markets more transparent and create more liquidity.

These changes have helped reduce the real cost of capital, best measured by the interest rate on low-risk Treasury bonds. Economists don't expect much of a change over the medium term. The Congressional Budget Office projects 10-year rates will average just 5.0% over the next three years, compared with 4.8% today.

Even more important is the decrease in the risk premium on corporate borrowing. Investment-grade bonds, issued by the healthiest companies, might enjoy a quarter-point decline in their spread over the low-risk Treasury rate long term. For junk bonds, says Wyss, "we could get a bigger permanent impact on keeping those spreads lower, maybe 100 basis points"—one full percentage point.

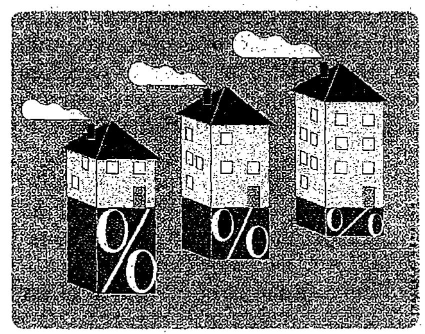
The increased efficiency has been ben-

CHARTS BY ERIC HOFFMANN/BW

ILLUSTRATION BY OTTO STEININGER

Why Housing Hasn't Hit the Skids

BY PETER COY

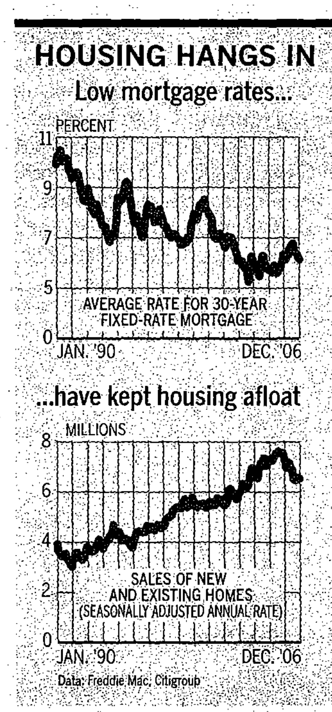


So this is the much-feared "housing bust"? Bust Lite is more like it. Existing-home prices are as high as they were a year ago, while sales have receded only to 2003 levels. The only extreme decline is in construction: Builders are trying to get rid of the houses they've already built before they put up more. The overhang of unsold homes could be back to normal by around midyear.

The credit goes, at least in part, to low interest rates. Fixed-rate 30-year mortgages averaged a modest 6.2% in the last quarter of 2006—well below a decade ago (chart). That, combined with income growth, means houses in most areas remain affordable even though prices rose more than 50% nationally in the past five years. The affordability index of the National Association of Realtors is still over 100, meaning a family making the median income can afford to buy a median-priced house.

The market began gaining momentum in 2001 when the Federal Reserve started lowering rates to end a recession. Corporations cut back on borrowing, but homebuyers exploited the low-cost money. Says Citigroup economist Steven Wieting: "The housing sector acted as a bottom feeder, taking advantage of cheap capital flows."

The surprise is that low rates are still keeping a floor under housing. Thirty-year mortgage rates are no higher than in June, 2004, even though the Fed has since pushed up the federal funds rate by 4.25 percentage points. It's the same in Britain, where long-term rates have actually fallen since 2004 despite short-term rate hikes by the Bank of England. No surprise: After a brief lull, Britain's housing market is booming again.



Globalization and financial innovation are two key factors in keeping rates low. Investors know more about the loans they're buying, so they will pay more for them. "It's become a much more attractive asset class, hence more dollars are chasing the mortgage market, hence lower rates," says Bryan Whalen, a portfolio manager at Los Angeles-based Metropolitan West Asset Management. As recently as three years ago, he says, investors in mortgage-backed securities received two-page summaries of the portfolio. Now they get data on each loan.

Credit default swaps, which let people bet for or against a bond or loan's creditworthiness, have also improved transparency. If investors bet heavily against an issuer's securities, its lending costs are driven up. "This pushes out the marginal lenders," says Whalen. That creates a healthier market—and ultimately, lower rates.

eficial so far. Companies gain from a lower cost of capital in the form of lower interest payments and higher profits. If rates had not stayed so low, corporate earnings would be about 10% lower than they are today.

Naturally, lower capital costs have made it easier to borrow. Duke Energy Corp., a $16.3 billion electric and gas utility based in Charlotte, N.C., plans to boost capital spending by $1 billion a year over the next three years to build new power plants to keep up with the growing demand. Duke may borrow the money instead of drawing down its cash, says David L. Hauser, chief financial officer, since "interest rates have remained surprisingly low." Robert M. La Forgia, chief financial officer of Hilton Hotels Corp., says low rates were critical to his company's ability to purchase its international hotel operations last February, uniting Hilton brands that had been apart for over 40 years. The company put together a $5.5 billion bank line at just 1.5 percentage points above the rate London bankers charge one another. "It's part of what made this deal possible," he says.

But the downside of the long-term trend is short-term financial market excess. It's here, and it's real. "The economy is robust, [but] we've entered into this new phase where the markets are financing riskier transactions," says Mariarosa Verde, head of the Credit Market Research team at Fitch Ratings Inc. Excess is especially evident in the corporate credit markets, where covenants, which protect investors by requiring companies to maintain healthy financial ratios, are becoming less restrictive. Some companies are jamming investors in other ways. When Pittsburg (Tex.)-based Pilgrim's Pride Corp. raised money to buy another poultry processor in January, it issued bonds that allow it to use projections rather than actual results to meet certain financial tests for borrowing more money. Pilgrim CFO Richard A. Codgill notes that the projections have to be "reasonable." Hospital chain HCA Ltd.'s latest bonds include some with provisions that let the company use debt instead of cash to make interest payments to bondholders. It works essentially like an IOU that increases HCA's debt down the road. Says Kennedy of PIMCO: "The bottom line is that when there's too much money in the market, [investors] lower [their] standards." What's more, many are depending on instruments that are highly leveraged, numbingly complex, and untested by a market downturn.

Then again, derivatives might cushion the blow when the reckoning comes. When hedge fund Amaranth Advisors went under, says Brown of Lord Abbett,

The Triumph of the 'Pork-Belly Crapshooters'

BY JOSEPH WEBER

Years from now, this decade might come to be viewed as the golden age of high finance. New markets are sprouting up everywhere, drawing huge amounts of capital and helping hold down rates. And the action is no longer confined to New York. Chicago in particular has emerged as a financial hub in its own right—with plenty of other cities coming on strong.

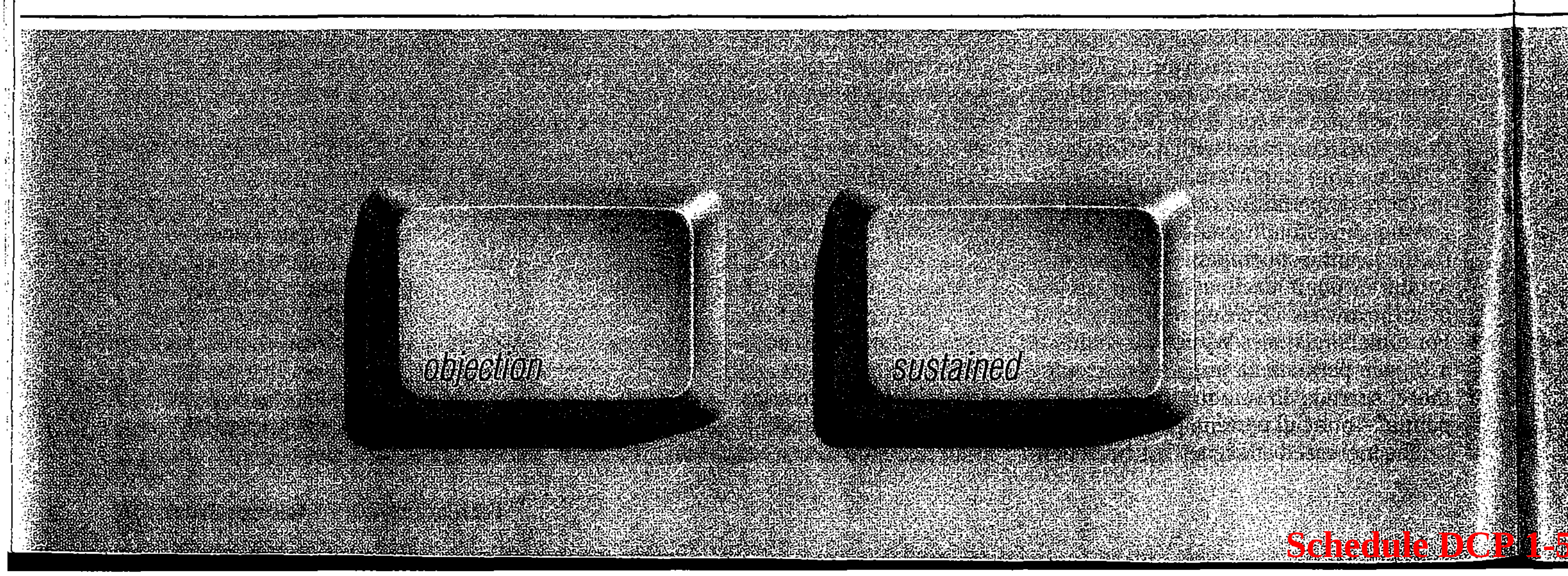
At the center of the explosion of markets and capital is vigorous competition. Banks, exchanges, and cities are vying for lucrative new trading business by focusing on three selling points: price, speed of execution, and innovation. The result can only benefit borrowers, who end up with a lower cost of capital.

The rise of Chicago's financial exchanges—and their current plans to expand—is emblematic of the creativity and entrepreneurial zeal worldwide that have helped create today's low-rate environment.

In the 1970s, Leo Melamed was casting about for some way to increase the Chicago Mercantile Exchange's competitive edge against its crosstown rival, the Chicago Board of Trade. But the notion of looking beyond cattle, pigs, and other farmland products to currencies and financial instruments seemed crazy. "The world thought it was foolish," recalls the CME's former chairman and current *éminence grise*. "How could a bunch of pork-belly crapshooters be trusted with foreign exchange?"

Undaunted, Melamed went on to develop financial futures, arguably the most important new financial product since the rise of stock markets. Now futures on everything from Treasury securities to European weather allow corporate treasurers, investors, and traders to lay off risks. This allows capital to flow more freely, which is essential to keeping rates low. The growth has been staggering: Chicago's two big exchanges handled more than 2.1 billion contracts last year, or 9 million

MATTHEW GILSON



PARTNERS Duffy and Donohue will face stiff competition

contracts a day, up from 700,000 a day in 1986. And their innovations spurred the global market for over-the-counter derivatives, which has ballooned to around $300 trillion.

Like lots of revolutionary ideas, the notion behind financial futures is simple. For decades farmers would sell off parts of their crops months in advance to traders in the Chicago markets. The farmers got cash up front and didn't have to fret as much over bad weather or poor harvests. The traders got contracts they could then sell to others, making or losing money as harvest day neared and the crop looked more certain. By applying the same principle to currencies, first in 1972, the CME helped executives of multinational companies lay off the risk of fluctuating pounds or francs. Since then, the CBOT and CME have expanded to other types of derivatives and are still adding more. Soon traders will be able to wager on the price of commercial real estate and the likelihood that companies such as Tribune Co. will go bankrupt.

But the global competition is forcing the Chicago exchanges to look for bigger scale and more efficiency to offer investors and borrowers better deals. Not only do they do battle with energy-oriented futures bourses in the U.S. but they also face Eurex, a European market that now leads the world in derivatives trading. Soon, China will step up its participation in futures with a new bourse in Shanghai expected to open this year. The appeal of futures is even blurring the lines among exchanges, as the New York Stock Exchange, armed with a new derivatives unit that will come in with its Euronext acquisition, looks to expand.

All that competition is the reason the CME and the CBOT plan to merge by midyear in an $8 billion deal. The CME hosts stock index and currency futures, while the CBOT is home to Treasury contracts. CME Chairman Terrence A. Duffy and CEO Craig S. Donohue will hold the same positions at the combined CME Group. Together, the two exchanges will shoot past Eurex, with as many as 600 million more contracts traded yearly.

The exchanges are also hungrily eyeing expansions into the OTC market, a move that could provide investors and borrowers with more choices. Eurex soon plans to start trading a contract based on European credit default swaps, itself a multitrillion-dollar market. "The new Chicago entity is going to be under terrific competition as global alliances appear," says Michael Henry, a senior executive in the capital markets practice at consulting firm Accenture Ltd. For its part, the CME has teamed up with Reuters Group to push into the foreign exchange market and the OTC market for other derivatives known as interest-rate swaps.

Chicago's innovations are driving growth in other markets

Bold ideas in finance underlie all the growth. And thanks to expanding global competition, there's plenty of reason to believe it will continue. "If we weren't innovative throughout the years, we'd still be trading butter and eggs," says CME's Duffy. As long as there's money to be made and the ideas keep coming, the cost of capital will drop even further.

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part of its losses were covered in the derivatives markets. "It barely caused a ripple." Adds del Missier: "We haven't done away with dislocations in markets, but markets are much more able to deal with dislocations, and their impact will be less."

Over the long term, the big issue is the development of better financial systems in China, India, and other emerging markets. Right now money is pouring into real estate rather than infrastructure, education, and other essential investments. As financial systems improve in these countries, they will likely make better use of their own money. When that happens, the cost of capital around the world will go up.

But that's a long way off. In the meantime, rates are likely to remain low. "Whatever shocks are ahead," says del Missier, "the markets are better positioned to deal with them than they've ever been." ■

–With Mara Der Hovanesian in New York, Christopher Palmeri in Los Angeles, and Stanley Reed in London

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