FALL 1998

STERN business

All About Money

What it **Means**.
Why it's **important**.

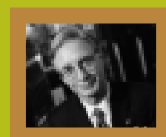
Also:

Will the EMU Fly?

Are Stock Options a Form of Risk Taking?

How to Regulate the Banks.

Interviews with:
Lillian Vernon
Donald Marron
Henning Schulte-Noelle

a letter from the dean 

One World

This is what the financial world is rapidly becoming. In late September, investment bankers, finance professors and other experts were discussing the possibility of an interest rate cut by the Federal Reserve.

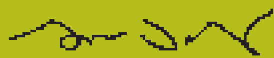
The consensus was there would be one soon, but everyone agreed the Fed would probably hold off until after the elections – in Germany.

The thinking was they wouldn't want to do anything that could remotely interfere in the race between incumbent Chancellor Helmut Kohl and challenger Gerhard Schroder, a social democrat, who stressed the twin issues of the German economy and joblessness during the campaign. (As you know, Schroder won.)

When the American Federal Reserve has to worry about the German elections and a cold in Japan turns into a serious case of flu on Wall Street, you know we now truly have a world economy. Given the new reality, we thought this would be an excellent time to examine the whole idea of money. What does the concept mean today, when everything throughout the world is so intricately linked?

Is the idea of a single world fraught with peril or a method by which rapid economic development can be produced? These are the ideas discussed in this issue.

We think the timing is right.



George Daly
Dean

STERNbusiness

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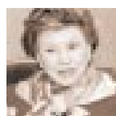
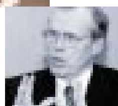

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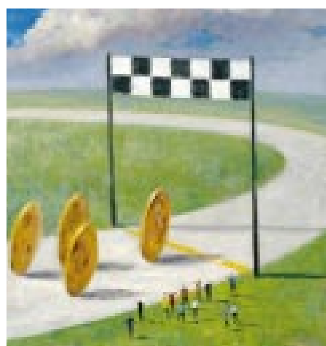
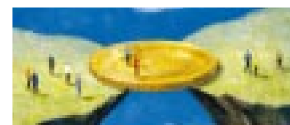




Cover and Money section illustrations by Andrew Judd

Lillian Vernon's Lillian Vernon

The namesake, creator and chief executive of this hugely successful enterprise is one of the leaders in the highly competitive business of mail order catalog retailing. She was born in Germany, fled Hitler with her family, settled on Manhattan's Upper West Side and spent a couple of years at NYU. After she was married and was expecting her first child, Lillian Vernon had the idea for an enterprise. She invested $495 of her wedding money in an ad in *Seventeen* magazine. Her product? A purse for $2.99 and a matching belt for $1.99, to be personally monogrammed with the buyer's initials. She got $32,000 worth of orders – and a business was launched. Today Lillian Vernon markets gift, household, gardening, decorative and children's products. The company introduces 2,000 new products each year. In 1997 sales were $240 million.

ML: *What does it take to become a good marketer, a good merchandiser, a good salesperson? Is it inbred or can it be learned?*

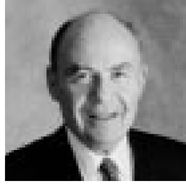
LV: In merchandising, you have to like things or you have to have an eye for things and I think that's an inbred quality. Marketing you teach. You may have a flair for marketing but you need the education and the background.

ML: *Can you explain what the distinction is between the entrepreneur and the professional manager and how you try to bring these two together?*

LV: Well, I'm an entrepreneur. I think an entrepreneur is never afraid of failure. And I'm not so sure that's true of the professional manager. They really work very hard at becoming the professionals that they are. There is none of the seat of the pants kind of thing, none of the dreams, none of the glamour that I think an entrepreneur encompasses in his or her work.

ML: *How do you create, within a huge company such as your own, a real feel for entrepreneurship?*

LV: In order to work in an entrepreneurial business you have to have some of the entrepreneurial spirits yourself and be able to go with the flow. Monday you may be sweeping the floor; Tuesday you may be being photographed for *The Wall Street Journal* on the White House lawn chasing Easter eggs. It's a flexible mix that works for our corporation. I was just adding up the number of years that our management team [of seven] has been with the company and it's a total of 142 years. I think there's an entrepreneurial spirit in them. They feel they don't need to move around, that they can do what they want to do and have the freedom to do what they want to do. Our executive vice president just had a 20th anniversary. The product developer has been there 18 years and she's all of 38. These people came to us young and found a place to work.



Marshall Loeb, the former managing editor of *Money* and *Fortune*, conducts a regular series of conversations with today's leading chief executives on the Stern campus.

ML: *There are a lot of people in business now who say that you don't want executives with that kind of tenure. You constantly need to recharge the perspective of the executive ranks.*
LV: I think you need the mix of the old and the new. If you have a growing company you keep adding new people. They're the ones who bring in the freshness. The older ones are the historians. And then I think it's the job of the corporation to really keep them interested. For example, one buyer buys certain items for a few years then moves over to another division. The man who ran our warehouse has just become the director of the personalization division.

I don't want to do the same thing every day - I don't want to look at the same catalog, read the same copy or go to the same analyst meetings or come here tomorrow. I think its the obligation of the corporation to really keep all the jobs rolling and fresh and moving.

ML: *You introduce 2,000 new products every year. How do you know what's going to go with the public?*
LV: You visit other stores, you look at other catalogs and say to yourself, 'Oh, my God, why didn't I think of putting that product in my catalog?' And I think all merchants, all retailers do that.

"I think we're **overcatalogued.** I wish they'd all go away. But they're not going to. Having a **name that's well-established** is important."

ML: *There's such a glut of catalogs. How do you cope with the glut?*
LV: We have 12,000 catalog companies to compete with now. I think we're overcatalogued. I wish they'd all go away. But they're not going to. Having a name that's well-established is very helpful.

ML: *You say that when making decisions on products you ultimately go to what you call your 'golden gut.' Where do you draw the line? When do you go with the gut instinct and when do you go with more formal market research?*
LV: When I use the focus groups they reconfirmed many of my own gut feelings.

ML: *How many focus groups do you have in the course of the year?*
LV: We'll probably do one a year for each of our divisions and sometimes combine some of the divisions.

ML: *How do you think the Internet is going to affect you?*
LV: We're on it. We have two people devoted to the Internet. They want to use it as a clearance vehicle because it provides a wonderful ability to take merchandise on and off. We've got great sale items that go on that webpage.

ML: *How big will the Internet be for you, say five years time, ten years time?*
LV: I don't know if it will be a dominant part. But it depends on how much money we're ready to put into it, how much effort and personnel staffing. And you need a database manager to manage this, you need somebody to put the items on.

ML: *What's going to be significant in the next five or ten years?*
LV: I think the Internet is going to make a difference. I certainly don't know how to use a computer. But a two-year-old now knows how to use a computer. The moment they begin to do anything they're on a computer. And that's the way of the world.

But people will always love to shop. They're always going to want to walk into the store, they're not going to want to always buy from a catalog. They're going to want to touch the merchandise, feel it.

Q & A with students

Q: *What usually motivates you in life, what made you make the major decisions in your life such as starting your company?*
LV: Fear. Fear of hunger. Fear of failure. Fear is a very motivating quality in the success of anyone. I had no business being in a business having $2,000 to my name, a baby on the way, living in a three-room apartment. I had no business doing that.

Q: *I'm a product of Stern. I graduated in '93. Came up with a great product idea in a class here called Creative Calendar. And I have to say that I'm in my third year of business and reaching about $300,000 in sales this year. Do you have any advice for me on how to move to the next step?*
LV: Bring [your sample] up to me and you tell me you're going to give me a really great price and you ask me to help you build your business and then maybe I'll put it in the catalog. How's that? And that's the next step.

Few people can say that they've been at the top of Wall Street for almost 40 years. Even fewer can say that they reached the top at the tender age of thirtysomething. But merely seven years after building his own company, Donald Marron's investment banking firm merged with Mitchell Hutchins & Co., which named the young prodigy president at the age of 34. In 1977, PaineWebber acquired Mitchell Hutchins and named Marron chairman four years later.

Donald Marron

Chairman & CEO of the PaineWebberGroupInc.

ML: *When you look ahead, what do you think will be the fastest growing financial service over the next five years?*

DM: In the 1970s our industry was driven by the institutionalization of money. The '80s were driven by the expansion of American corporations. The '90s is a decade of the individual. Today Americans have capital in their own hands to plan their own future. These financial assets of households have been growing at an eight percent rate for roughly the last eight or nine years and should grow at that rate for the next ten or fifteen years. So that's where the biggest future is for the financial services industry.

ML: *What are the potential dangers for the industry?*

DM: That the flow of funds will continue – you just can't guarantee that the funds will go into the stock market. Clearly, funds can go into the bond market or stay in cash. The second thing is that the growth in assets is outstripping the talent available to manage those assets.

ML: *What do you think is going to happen in the stock market this year and over the next five years?*

DM: The underlying dynamics of the stock market will stay in play for the next four or five years. I will tell you what is happening: the definition of what to invest in is broadening. Investments will broaden from domestic to global and from being straight long to being hedged. The number of different things people can invest in will get much broader.

ML: *In a marketplace driven by mergers and acquisitions, will PaineWebber be acquired?*

DM: We have been independent for 117 years and we haven't done too badly. Ultimately, size is not the criterion in this business, it's momentum. Everybody wants to be in this business. So you have to have either a niche or, in our case, a broad base. We have a brand name. How many companies can anybody name that are national, household names in the financial services industry? There are no national banks. There are no national insurance companies. So you're down to a handful of brokerage firms and a handful of mutual fund companies. We think that's a marvelous place to be.

ML: *How will the Internet affect your business?*

DM: The Internet is essentially a communication device right now. It's best at how people really execute transactions and get facts. The incremental cost of doing transactions is going down, but the incremental value of advice is going up. For example, say you're 55 years old and have a defined contribution plan, you wake up one morning and realize it is only

“Investments will broaden from **domestic to global**, and from being **straight long to being hedged.**”

that plan that you will have when you retire. Are you going to entrust your future financial decisions to a discount firm or the Internet? You may use it to do some of the execution, but you're going to want knowledge and advice. And I don't know of a way to get advice around retirement, health care and your future other than by talking to somebody. We hope it's PaineWebber.

ML: *As co-chair of the National Commission on Retirement Policy, you have a tremendous interest in Social Security. What should we do to rescue Social Security?*
DM: Well, I'm hoping for all of you that you'll collect on it, but I hope you won't rely on it for most of your income. A third of Americans have no savings at all. A third have $1,000. All the savings that we read about are in the third third. There are 50 million Americans today that do not have pensions. One reason for that is because of the huge growth in the number of small companies that aren't in the position to offer pensions. The second problem you have is that what Social Security was designed to do originally and what it seems to be doing today are quite different. When Social Security was established in 1935, it was just a safety net. Today we look at it as though it is an entitlement. So the answer is first to educate all Americans to understand the economics so those that are fortunate enough to have choices make the best use of them. Secondly, the Social Security money has got to get a better return for its owner.

ML: *Society appears to be splitting into two distinct and disparate groups, the so-called haves and have nots - and the gap is thought to be widening. Do you think that is really the case?*
DM: I think what comes out of this is that we're doing very good things for the top 80 percent of society, but the bottom 20 percent is losing ground. One of the reasons this is happening is the widening disparity of job opportunities based on education and access to technology. Not necessarily higher education, but just an understanding of what's available and what isn't. Unless that's addressed more directly sometime in the next few years, I think it's going to become a more highly profiled public issue than it is today.

ML: *How would you describe the strategy of your firm going into the early part of the 21st century?*
DM: Well, first of all, we will compete in areas where we think we have both the capability and the potential for actuality of a brand name in a franchise. Going into the 21st century, you will also see us focusing on the dynamics that are going to occur in Europe and Asia that are similar to the ones that occurred here. We are going to think through very carefully how we get our share of those markets. I think that's the next opportunity in the 21st century.

Q & A with students
Q: *What do you think is the role for business institutions as opposed to individuals in the social and political issues of the day?*
DM: I think first of all, the main role of businesses that are publicly held is to get a very good return for their shareholders. I do think, however, that business has other roles as well. For example, if there are issues that are important, either political or social, a company should support and foster them and allow its employees to do so also, because it is a broadening experience. Secondly, there is a responsibility to the community. I think it is particularly important that a company's officers get involved in all the activities in the community, support the candidates that they think are important to enhance the community's role, either locally or nationally, and do the other things that are important outside the business.

Q: *How do you think the year 2000 is going to impact the financial services industry and what do you think companies should be doing about it?*
DM: From everything that we can tell, the financial services industry is probably ahead of some other industries in this regard. In part because we actually are dealing with transactions around that time. However, the bigger issues that are less resolved are the relationships between firms that are far ahead and others that are behind, as well as domestic and foreign firms. For example, in our case, we are spending a huge amount of money taking lines of code, sending them to India to be fixed and then going through them again. We're also putting in other programs to deal with other firms that haven't done this. So it's expensive, it's time-consuming and you get nothing out of it except fixing your problem - although it will make you relatively more competitive than the firms that haven't done it.

Henning Schulte-Noelle

Chairman & CEO of Allianz, Inc

After joining Allianz in 1975, Henning Schulte-Noelle rose steadily in the organization, and in 1991 became chairman. Under him, Allianz expanded rapidly, solidifying its position as Europe's largest insurance group and acquiring many major insurance companies abroad, most recently AGF in France.

ML: *Governments worldwide are providing less money than in the past for pension payments to retired people. So people will have to save and invest more of their own money to support themselves in their lengthening old age. What kind of market does this open for Allianz?*

HSN: Well, it's not really a new market. It's a life insurance market in which we have been for more than 100 years now. But the dimension is changing. As you indicated already, we have a shift in the demographic development, which is really astounding. You probably know the figures – the number of people over 65 is increasing every year. There are more than 60,000 people in this country above 100 years old, which is fascinating.

What we do is we try to come up with the kind of products to satisfy this demand. We've had a shift to annuity products, which is dramatic, at least in the German market, for the last couple of years. And we have more products, which have a larger savings component built into them. So the product environment is changing with the demands of the market.

There is, of course, one big area – newly emerging markets – where the potential is really breathtaking. Especially Eastern Europe. We also see tremendous growth in the Asian Pacific countries, and that's why, in spite of the financial crisis, this area will remain one of the most attractive markets for the future.

ML: *By Central and Eastern Europe, I presume you include Russia and the countries of the former Soviet Union.*

HSN: Not at this time. The markets which attract most investment from insurance companies, so far, are Hungary, the Czech Republic, the Slovakian Republic and Poland. So far, the conditions for developing life insurance business in countries like the Ukraine or Russia are not really right. Those countries have to work on their regulatory environment, legislative environment.

ML: *Most American graduates of American business schools think of getting at least their first job with an American company. What are some of the advantages of landing a job with a non-U.S. company?*

HSN: I think it's a big advantage to see other countries, to live in other cultures, different environments. It adds to the professional experience. You not only learn languages, but you also learn how to deal with different business mentalities.

You learn how to deal with very different legal and regulatory environments. So you get a much broader picture of what's going on in the world.

ML: *When hiring for Allianz, what characteristics do you look for? For example, if I were a student here today who wanted to be hired by Allianz, what could I do now to improve my prospects?*
HSN: Well, get in contact with us. We have started to recruit on the campuses of good business schools in this country. We have several programs for high-potential students, where you can, as a first assignment, work as personal assistant to one of our board members.

Then the next step would be a line assignment, either on the sales side, in some of the departments or in our foreign subsidiaries.

ML: *There is a perception that European executives are better balanced than the driven, maybe overworked U.S. executives. Tell us whether or not you agree with that point of view about the importance of having a balanced life, and if so, how do you manage your own time?*
HSN: You somehow need to find balance but it's not easy. I don't feel at ease if I have been travelling and working long hours and cannot call my wife and family until 10 pm.

I know people who are perfectly at ease with being driven, you know, with this kind of business activity all their lives; who don't need sports, who don't need leisure activities, who don't need music. From time to time, I'm still able to play music. I've been playing church organ for a long time.

"You somehow need to **find a personal balance** in your life."

ML: *Many European countries, notably Germany, are moving toward adopting the euro as the currency. What will this mean for business in Europe?*
HSN: Well, the euro is going to change Europe more than anything else I've seen in 50 years; since the Second World War. The euro, of course, is in itself a very important step because it creates a common currency in an area where you have 11 different currencies. I don't need to tell you what that means for economic life, for fiscal policies, et cetera. So that in itself is a very important issue.

It is a huge step towards more integration of Europe, which has been the dream of my generation since the '50s and '60s. So we reach really the point of no return once we have introduced this common currency. Say you're travelling in Europe and need to make a phone call but don't have a mobile phone on you. You look for the next telephone booth, but then you find that you can't make the call because you don't have a Dutch guilder in your pocket.

The euro will be a very forceful factor for bringing more convergence in all areas – in our economic policies, our fiscal policies, legal policies, tax system and Social Security.

Q & A with students

Q: *You mentioned a convergence between nations and the barriers between nations economically. Another trend that we are noticing is that the barriers between different types of financial institutions are to be slowly whittled away, namely between insurance and banking. Do you think this trend will continue? Do you think it will be beneficial for the industry?*
HSN: I think, especially in the financial service industry, we will see this process going on. In the long run, on the whole, it's going to be beneficial to the industry, both the insurance side and the banking side.

The first question is will we have more and bigger, fully integrated financial groups? I don't think so. We see a very interesting kind of competition going on between different strategies in this way. We rather like to stick to our business, but it's an open game. We'll see. But the regulators and the legislators are being challenged by these kind of developments, and we'll have to be very careful of not going into too much regulation after we just managed to deregulate a bit of the markets.

Q: *What do you see as the major differences between European business education and American business education?*
HSN: That question is part of an ongoing discussion now in Germany. We always had two disciplines. We had the economic department in university and also the business administration. The benefit of studying business in this country is of course, that it's a better balanced curriculum. It's much more geared to the practice of business. And of course it's better organized. In two years' time you are able to complete a program where in Germany you would study four years. It's much tougher here. It's more intensive work.

Q: *Do you see the possibility of, say, 30 years from now, a global currency?*
HSN: I don't think that we will have enough similarities between Europeans, Asians and other cultures to see a global currency. I cannot exclude it. But I don't see it.

all money all the time,

Back in the late 1970s, a New York radio station, desperate to increase listenership, decided to change its format.

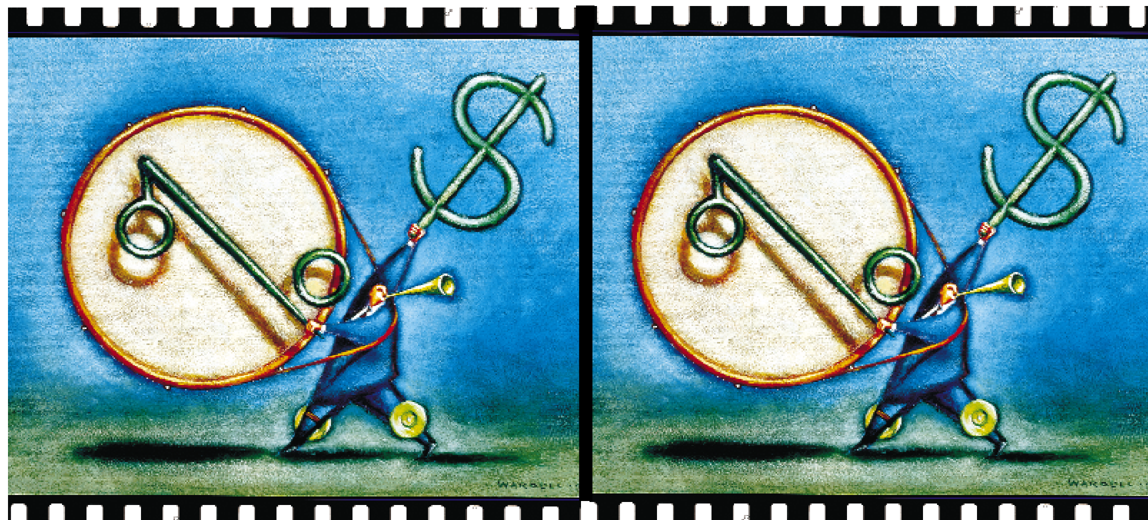
"Love songs! We'll play nothing but love songs," the station promised.

The format bombed.

The problem is that the vast majority of songs are about love (lost, found, hoped for, unrequited, etc.) in one form or another. When your playlist can include everything from Gershwin to disco, odds are you're not going to attract a core audience.

Maybe that station would have been better off playing nothing but songs about money. There are seemingly thousands of lyrics about earning a living, buying things, longing for greenbacks and even lusting after them.

There would be no shortage of titles or possible formats. For fans of fifties rock 'n' roll, you could play things like *Get A Job* and the Big Bopper's *Chantilly Lace* (which contains the immortal phrase, "but I ain't got no money, honey.")



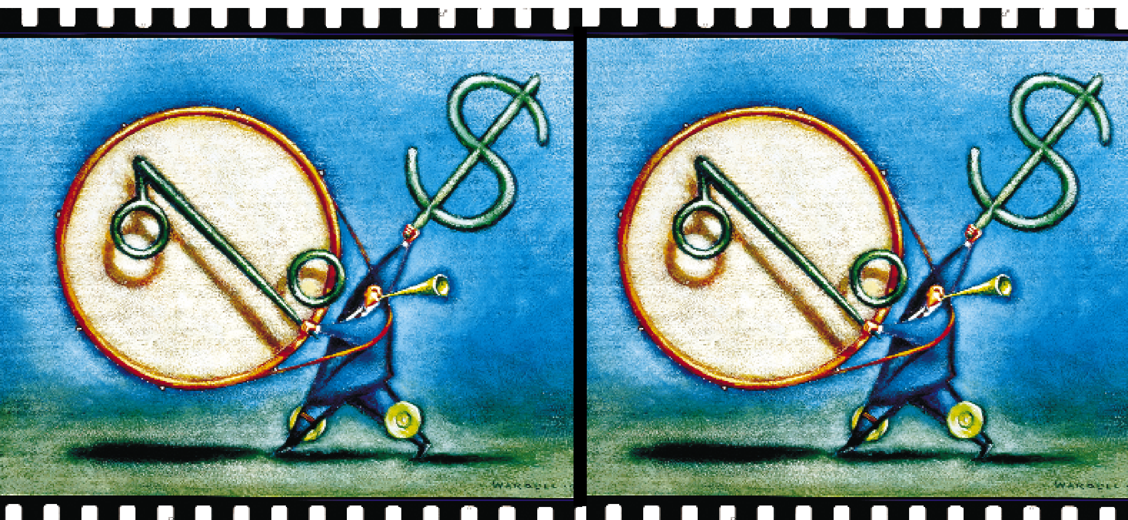
For those of us who came of age in the 1960s and '70s, the choices are endless. Janice Joplin asked the Lord to buy her a Mercedes Benz and, of course, the Beatles spent a lot of time on the subject. In their early days you had *A Hard Day's Night* ("work all day, to get you money to buy you things" and then later on Lennon - McCartney, who by this point were multimillionaires, wrote *I'm The Taxman.*)

As we moved into the 1970s, Bachman-Turner Overdrive brought us *Takin' Care of Business* ("If we ever get annoyed, we can be self-employed. I'd love to work at nothing all day.") Later still, Madonna was a *Material Girl.* Huey Lewis and the News sang about *Working for a Living* and a rock star with a sense of irony wrote *I've Got the Millionaire Blues.*

and the hits keep coming

The beat goes on today. My daughter Shannon's favorite band, The Spice Girls, (give my little girl a break, she's 11) include a song called *Move Over* as a not so subtle thanks to their tour sponsor, Pepsi. (The song talks about "generation next," a Pepsi advertising tag line.) And their song *Stop* explains how the group that is playing to sold out concerts worldwide is not interested in the money. Shannon's older brother has been known to listen to the Barenaked Ladies who had a minor hit with *If I Had a Million Dollars* (presumably, they wouldn't have the blues).

With money playing such an important role in our lives, we decided to devote most of this issue to the theme.



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We figured we'd start at the very beginning, so we asked Richard Sylla to explain why the concept of money has evolved the way it has. Larry White gives us an overview in Capital 101 (which should be required reading for federal banking regulators). Aswath Damodaran gets to ask a question that was on a lot of investors' minds as the market plummeted over the summer: What's a Stock Worth? David Yermack gives investors something else to worry about in "The Darker Side of Stock Options."

For those looking for alternatives, Edwin J. Elton and Martin J. Gruber write about mutual funds; Stephen Brown talks about hedge funds and, finally, Richard M. Levich wonders if the EMU will ever fly.

Why devote all this space to one topic?

As a sage wrote more than 30 years ago: "The best things in life are free? Well, you can tell it to the birds and bees. [We] need money."

PAUL BROWN *editor,* Sternbusiness

Capital 101

Now is the time to revise Capital Requirements for regulated financial institutions.

By **Lawrence J. White**

Capital. It can't be smelled or tasted. It has none of the tangibility or permanence of barrels of oil or bushels of wheat. At its most fundamental, it is just a numerical calculation based on a set of arbitrary accounting rules.

Yet an adequate amount of capital is vital for the financial health of regulated financial institutions. To understand capital is to understand the essence of the safety-and-soundness of commercial banks and other depositories. In fact, with only slight modifications, the idea also helps you to understand the financial soundness of insurance companies, defined-benefit pension funds and Freddie Mac and Fannie Mae.

Capital – What's it all about? The place to begin is a simple balance sheet. Figure 1 portrays a stylized balance sheet of a healthy (albeit small) bank. Its assets are the loans that it has outstanding. Its liabilities are the deposits it has accepted from, and owes to, its depositors. And the difference between the reported value of the assets and the reported value of the liabilities is the institution's net worth or capital.

Since capital is the result of this simple subtraction, the accounting standards that determine the specific rules for reporting the balance sheet's asset and liability values are crucial. For the discussion that follows I will assume that these reported values are market values. (I will return to this [counterfactual] assumption a bit later.) With that caveat out of the way, let's get to work.

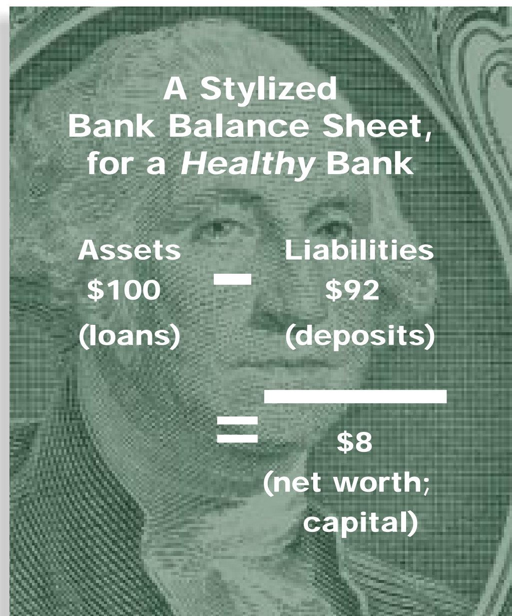


Figure 1

We begin with the simple subtraction which immediately reveals one important aspect of capital. Capital represents the owners' stake in the enterprise. In principle, the assets could be liquidated for $100, the depositors paid their $92 and $8 would be left over for the owners.

Now let us look at a second balance sheet. Figure 2 portrays an extremely unhealthy bank – one that is insolvent. Its assets are inadequate to cover its obligations to its depositors. If the owners of the bank are not required to cover this $12 shortfall – they're not if the bank is a corporation and thus operates within the standard legal limited liability for its shareholder owners – then the depositors will have to absorb this $12 loss in some apportioned manner.

A comparison of the two balance sheets reveals a second purpose of capital: Capital serves as a buffer to protect the depositors against the consequences of a decrease in the value of the bank's assets. The bigger the institution's capital, the greater the buffer for depositors.

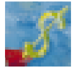
Now let us examine these balance sheets from the owners' point of view. Suppose the owners of the bank in Figure 1 replace "safe" loans (say, investments in U.S. Treasury bills) with investments in risky assets – say, assets that could increase in value by 20% or decrease in value by 20% annually, with a 50/50 probability of each outcome. The favorable outcome (assets of $120, liabilities of $92) would yield a net worth for them of $28; but the unfavorable outcome – the bank of Figure 2 – would yield a loss of only $8 to them (since limited liability allows them to walk away after their stake has been wiped out). The depositors would absorb the remaining $12 loss.

What has started out as a risky but fair investment "wager" has been converted (thanks to limited liability) into a very favorable bet for the owners (at the expense of the depositors): The owners have a 50/50 probability of gaining $20 or of losing only $8. Even risk-averse owners might be willing to take this bet, though they might also be concerned about their long-term reputations for taking risks and then walking away in the event of losses.

But note: The larger the level of capital the more that the owners have to lose from any risk-taking and are therefore less likely to engage in risk-taking in the first place.

Thus we see a third function of capital: Capital is a deterrent to excessive risk-taking by the owners of a bank (or by managers acting on behalf of the owners). In other words, capital provides an incentive for owners to be more careful and more knowledgeable about their operations, since they have more to lose from carelessness.

None of this should come as a surprise to private-sector borrowers. Indeed, when banks are acting as



lenders, they are very interested in the net worths of their borrowers, and their lending agreements try to restrict any actions a borrower might take that would erode that net worth.

Of course, these arrangements do not always work perfectly. Some borrowers do default on their loans; corporate bankruptcies do occur, with consequent losses to lenders. But the principles of monitoring, of restricting borrowers' actions and the importance of borrowers' net worths are deeply embedded in private-sector lending arrangements.

Bank regulation So, where does bank regulation fit into all of this? Arguably, bank depositors are not in a good position to protect themselves with covenants or "lending agreements" that would be applicable to their "loan" of funds to their bank. They are unlikely to be knowledgeable about a bank's finances. How many depositors would be capable of describing the finances of their bank, even in the simple terms of Figures 1 and 2?

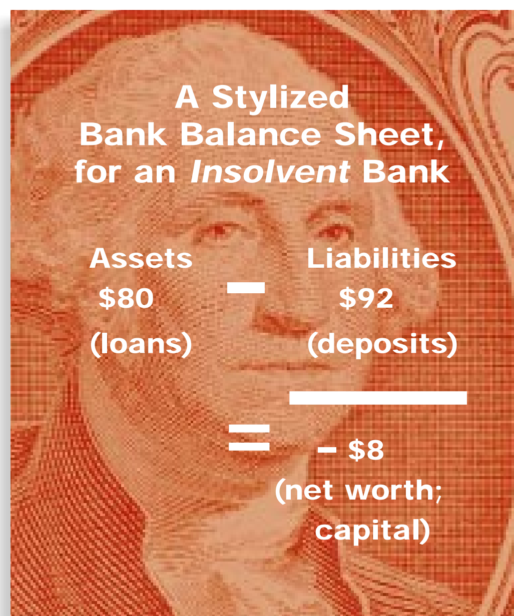


Figure 2

Further, a large fraction of bank deposits are liquid, and depositors expect them to be. As a consequence, if depositors become nervous about the (imperfectly understood) solvency of their bank, they are likely to race to their bank to withdraw their funds. Even well-informed depositors – knowing that their bank is healthy but fearing that the other depositors' withdrawals may impair their own ability to withdraw their funds – may also run to the bank, since they know even a healthy bank's assets (loans) are almost always less liquid than its deposit liabilities. Such depositor runs may be contagious, causing lines to form outside neighboring banks and worrying their depositors as well.

Governments have long understood this special, somewhat fragile nature of banks and the special problems of imperfectly informed depositors. Restrictions on the establishment of banks, on their activities and on who can own and manage them have long been part of the government's attempt to ensure the "safety and soundness of banks" and ultimately of the depositors' funds in those banks. Even deposit insurance, as a back-up guarantee for depositors, has a long history: The State of New York first offered guarantees to bank depositors in 1829. (The federal government did not begin its efforts until 1933.)

However, only in the last decade or two has the crucial role of capital – as a buffer and as a deterrent to risk-taking – received adequate attention and become the prominent feature of safety-and-soundness regulation. But although bank regulation has made important strides, there is much more that can and should be done.

Some hypothetical advice from Goldman, Sachs Here's one way to think about safety-and-soundness regulation: The rules are the government's efforts to achieve on behalf of depositors (as lenders of funds to banks) what private-sector bank lending agreements and bond covenants achieve for their lenders.

So, as a thought experiment, let us imagine that government regulation were absent and that a bank's depositors hired Goldman, Sachs (or another leading investment banking firm) to advise them on the concerns that they (as lenders to the bank) should have and on how they should protect themselves.

Goldman would surely advise the depositors that they should be concerned about the character of the bank's owners and managers and the nature of the bank's activities. It would also tell them of the primacy of capital and

of the importance of the bank having an adequate amount of capital to buffer them against the risks of the bank's operations. Further, Goldman would tell depositors that the riskiness of the bank's operations can vary substantially, depending on the nature of the bank's activities, the type of lending it does, to whom, where, when, in what currency, with what safeguards, with what hedging, etc., and thus the necessary amount of capital to provide an adequate buffer would vary with these factors. And, conversely, it would also remind them that capital is a more expensive source of funds for the bank than is debt (their deposits), so depositors will always face a trade-off: More capital (relative to assets) would mean greater safety but reduced interest for them.

Also, reminding them that capital is just the numerical difference between the value of the bank's assets and the value of their deposit liabilities, Goldman would advise the depositors that they needed to know the market value, or some close approximation thereto of those assets, since it is market values that would be the ultimate protection for the depositors if the bank began to falter.

In addition, Goldman would advise them that they needed to monitor the bank's activities and operations on a frequent basis, since the financial circumstances of a bank can change quickly. Finally, Goldman would surely advise depositors that they needed strong covenants that would limit the bank's owners/managers' activities to those that were commensurate with the depositors' expectations (and tastes for risks, etc.) and that would allow them to intervene early and strongly if the financial health of the bank (and thus the value of their deposits) was endangered.

Taking Goldman's "advice" to heart Now that federal deposit insurance covers three-quarters of commercial bank deposits and over 90% of savings institution deposits, most depositors do not worry about the financial health of their banks and the consequent safety of their deposits. Instead, it is the deposit insurance funds and ultimately the country's taxpayers that are at risk. Nevertheless, Goldman's "advice" still offers great value as a guide to bank regulators.

As we've seen, bank regulators have traditionally performed some of the monitoring functions "recommended" by Goldman. And, in the last decade, the prodding of the Bank of International Settlements ("Basel") Committee, the S&L debacle and the wave of commercial bank insolvencies of the late 1980s and

early 1990s have caused bank regulators to focus much more sharply on capital as a buffer.

But the regulators can do more – much more.

❍ First, and most important: Bank regulators must change the existing accounting conventions, at least for the purposes of determining a bank's capital. The present "generally accepted accounting principles" (GAAP) are simply not adequate, because they are fundamentally backward-looking and cost-based in spirit and (with only some exceptions) in practice. They are too slow to register downward movements in the values of assets and thus in the levels of capital. Instead, all assets, liabilities and off-balance-sheet items should be reported at market values or a close approximation thereof.

But, a believer in the status quo might argue, the regulators know about the true values anyway and can take the appropriate corrective actions. Unfortunately, though the first part of this claim is often true, the second is not. Much of the formal, as well as the informal, corrective actions that bank regulators can take are based on the nominal capital levels reported by the bank.

At a recent conference held by the FDIC on the lessons that should be learned from the experiences of the 1980s, a recurring theme was the delay and frustration experienced by bank regulators when they knew that a bank was sliding downhill but they could not act more

aggressively because its reported capital appeared adequate. The 1991 demise of the Bank of New England is a case in point. Even Charles Keating's Lincoln Savings & Loan looked healthy until shortly before it imploded in 1989.

So long as the terms of the regulatory "covenants" continue to be expressed in terms of reported capital, the capital calculation that follows should reflect as closely as possible current market values. (Would Goldman want it any other way?)

❍ Second: Bank regulators must receive this market-value information much more frequently than the four-times-a-year that is currently the standard. Banks' financial troubles can develop quickly, well within the 90 days separating today's formal reporting periods. Weekly reporting should be the immediate goal; daily reports, which are the norm for investment banking, should be the next target; and in this digital age the not-too-distant goal should be continuous, real-time reporting, even for the smallest banks.

All assets, liabilities and off-balance-sheet-items should be reported at market values or a close approximation thereof.

There are, of course, costs to more frequent reporting. But the benefits would exceed the costs, even today, and those costs will surely decrease in the wake of continued advances in telecommunications and data processing.

❍ Third: Though getting balance-sheet values expressed in terms of current market values and reporting them more frequently would be important steps forward, regulators should not stop there. Capital requirements must be forward looking, since today's assets will be affected by tomorrow's events. After all, $100 in newly issued 30-day Treasury bills and $100 in newly issued 10-year bonds by the B-rated XYZ Corp. are both worth $100 today. But they may be worth very different amounts tomorrow. Today's required capital levels should reflect tomorrow's possibilities. Regulators should borrow a page from the private bond-rating agencies and develop forward-looking, all-encompassing stress tests that would gauge the ability of a bank to remain solvent under a range of "worst-case scenarios" – e.g., a rerun of the Great Depression of the 1930s, a return of the double-digit inflation of the late 1970s and early 1980s, a severe regional recession, a sustained collapse of overseas markets and exchange rates, etc. Capital requirements (and risk-based deposit insurance premiums) should then be set so that banks can be reasonably expected to survive these scenarios.

Bank owners and managements should not view these regulatory changes as pure burden with little in it for them. With better reporting and better measurement of risks by regulators, financial markets may well be willing to provide capital to well-run low-risk institutions at a lower cost than is true today, and some banks might even be able to operate with less capital.

The favorable alignment of the stars Today's prosperous times present a golden opportunity – politically, as well as economically – for the Congress and bank regulators to develop and implement these regulatory improvements. Virtually all banks are financially healthy. Though their owners and managers, and their trade associations, are likely to oppose the changes, the banks can live with them. These same words could not have been written in 1990 or 1991. Then the banks were reeling from real estate and other losses and would have fought bitterly any major changes in reporting or stress-test requirements that would have threatened their nominal solvency.

Today it isn't raining. It's the best time to fix the roof.

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CURRENCY: A SHORT HISTORY

When is a dollar not worth a dollar?

By **Richard Sylla**

Back in the 1960s, Tom, a friend of mine, won the hand of his future bride, Janet, by taking her along on a trip to a currency dealer, to whom he sold a stack of one dollar bills for more than two dollars apiece. Janet reasoned that it would be a good idea to accept the marriage proposal of anyone that clever.

You will have to read on to discover how Tom pulled off that amazing deal. For now, let me say that Tom's happy experience illustrates a persistent problem in human affairs. Although currency is at least as old as recorded history, we have still not got it exactly right. The ill-fated Susan B. Anthony dollar coin and the pennies that pile up on your dresser are the latest examples. Some background will help.

Currency and money The terms "currency" and "money" are used almost interchangeably to denote a medium of exchange. But in history, currency has been both more and less than money.

Today it is less. U.S. currency now consists of coins issued by federal mints and paper notes issued by the Federal Reserve. To get a handle on how much "money" is out there we need to add bank deposits.

Two centuries ago, currency was more than money. Back then currency was composed of coins and paper notes issued by privately owned banks. Americans in the 1700s regarded money as coins, or gold and silver bullion (specie) that could be made into coins. Private bank notes were a paper credit, convertible into coins and specie, that is, into money. To the extent that the public trusted banks to convert their notes into coins, the notes served the purposes of money without being quite the same thing.

The Constitution had given Congress the power to coin and regulate the value of money, and had enjoined the states from making anything other than gold and silver lawful money. With those provisions in mind, the federal government established mints to make coins, and with the states, chartered banks which promised to convert their note and deposit liabilities into coin.

This changed what had come before Even earlier in American history, before the Constitution took effect, American states issued paper money that they did not agree to convert at fixed rates to gold and silver coins. This was currency by government decree or "fiat."

Fiat paper money first appeared in the Western world in 1690, in the Massachusetts colony. The innovation spread to all the colonies and, after independence, it persisted in the new states of the Confederation. Fiat money was useful to a rapidly growing American economy, and for colonial and state governments and Congress during the revolution as it was cheap to make. Hence its popularity. But it was also abused, as these governments ran their printing presses, implementing disguised inflation taxes rather than unpopular, formally legislated taxes.

It was the desire of the framers of the Constitution to end these abuses that led them to put the United States on a hard-money, convertible currency system.

Rich as Croesus Before our American forebears invented fiat paper currency, commodities of everyday use – wheat, rice, beans, olive oil, dried fish, cattle, silk, furs, cloth, sea shells (cowries in Africa and Asia, wampum in America), tobacco, iron, copper, silver and gold – had served humankind as media of exchange. Because of their divisibility or malleability, as well as their durability and attractiveness, shells and base metals such as copper were widely adopted as small change, while the precious metals – chiefly silver and gold – became the preferred currencies for larger transactions.

The rulers of Lydia, an ancient kingdom in what is now Turkey, introduced the innovation of coinage during the seventh and sixth centuries B.C. This was a breakthrough. Uniform coins facilitated transactions – a merchant could

simply count them instead of having to weigh and value commodities. They also facilitated taxation and wealth accumulation. One of the Lydian kings, Croesus, perfected the system. He introduced gold and silver coins of great purity. Lydian trade thrived, tax revenues grew, and Croesus became, well, "as rich as Croesus."

Spreading to Greece and Rome, the Lydian innovation contributed in no small way to the creation of classical civilizations and empires. Later Roman emperors, facing ever growing demands for bread, circuses and military spending, debased their coinages. That is, they called in gold and silver coins, melted them, added more and more base metals and recoined the mixtures into ever more new coins.

The people were not fooled. As prices rose and price controls were implemented, they lost confidence in their rulers. Before long, classical civilization collapsed.

Medieval and early modern revival of currency
After the Dark Ages and the rise of feudal society (in which land was the basis of wealth), a money economy appeared again. Medieval and Renaissance Italian city-states introduced new precious-metal coins – as well as banks and banking. Gradually the Italians spread these innovations to Europe north of the Alps. After Columbus, the New World, with its extensive supplies of silver and gold, added currency to fuel the rise of the West.

Despite this progress, currency problems continued to plague Western societies. Rulers picked up on the debasement practices of the later Roman emperors. The ever-present desire for more money to meet needs of state was part of the problem. But not all of it.

The larger problem was that coins were made of several different metals and full-bodied. That is, if by weight a hundred ounces of copper were equal in market value to ten ounces of silver and one ounce of gold, a seemingly wise ruler would instruct coin makers, often private craftsmen, to strike denominations of coins to reflect those relative values. But market values were hardly permanent. If a war raised the relative price of copper, copper coins would be melted down and disappear, creating a shortage of small change. If a newly discovered America brought more silver relative to gold, silver would fall in price relative to gold, and gold coins would disappear. European and American coinages were plagued repeatedly by such changes.

The solution was to base money on one metal – gold under a gold standard – and to provide subsidiary coins in other metals – silver, copper and nickel. Subsidiary coins were stamped with a higher monetary value than the market value of their metallic content. To make this system effective, subsidiary coins had to be limited in supply, and to be convertible at fixed rates into the precious metal constituting the monetary base. To ensure this, governments became monopolists in minting coins. Otherwise, anyone could purchase, say, 50 cents worth of copper, make it into 100 cent coins ("pennies"), and exchange it for a dollar.

England first implemented this solution in 1816, when it went on the gold standard. The United States did not effectively implement it until the 1890s, after numerous small-coin shortages, private token substitutes and problems with silver-gold bimetallism. It was a late and short-lived solution. In a matter of decades, all semblance of linking currency to a commodity of intrinsic value was abandoned. All U.S. currency became fiat currency.

How Tom did it Back to Tom and Janet's 1960s currency adventure. What Tom had done was amass a wad of U.S. dollar bills that were "Silver Certificates." The U.S. Treasury had issued these bills much earlier and promised to exchange them for silver dollar coins. In 1792, the amount of silver in a silver dollar established a mint price of the metal of about $1.30 per ounce.

By the 1960s, although silver dollars had not been minted in decades, the market price of silver moved well above $1.30 per ounce. At the time, this was explained by silver's increased use in photographic film and coin shortages by a supposed proliferation of vending machines. In retrospect, it was probably an early warning sign of the Great Inflation that would engulf Americans from the late 1960s to the 1980s.

Whatever the explanation, a one-dollar silver certificate was a title to an amount of silver worth much more than a dollar. Tom took advantage of it and impressed Janet with his acumen. Then the government called in the silver certificates. Coins with silver in them were replaced by similar coins made of copper and nickel. It was not much different from the debasements of Roman emperors and medieval princes.

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What's A Stock Worth?

All you need to know about **equity valuation**

By **Aswath Damodaran**

In a world where investors are inundated with advertisements for the latest and best ways to value stocks, it is easy to see why so many are overwhelmed by the choice in models and confused about their merits. It is worth noting, in the midst of all the hype, that valuation today is fundamentally not that different from valuation 20 or even 50 years ago. We might have more data to work with and more powerful computers to help build our models, but **there remain two basic approaches to valuation.**

In the first, which I will term intrinsic valuation, the value of any asset (including stock in a publicly traded firm) is estimated based upon three things: its capacity to generate cash flows right now; its ability to grow those cash flows over time; and the uncertainty associated with these cash flows. These three factors – cash flow, growth and risk – can all be brought into one analysis in a discounted cash flow model, where the value of an asset is written as the present value of the expected cash flows over its life.

In the case of valuing stock in a publicly traded firm, the valuation task is made more complex by the fact that stock does not have a finite life. That means, in theory at least, cash flows have to be estimated forever.

The key issues in discounted cash flow valuation involve estimation. The first input we need is the cash flow, which is defined as the cash flow left over after reinvestment needs have been met. Whether the cash flow is after debt payments, such as interest and principal are paid, will depend upon whether we want to estimate cash flows to equity (in which case they will be after these payments) or cash flows to the firm (in which case they will not be after these payments).

The second input is the expected growth rate. While many models and analysts claim to estimate expected growth, the growth in a company's cash flow ultimately depends upon how much of its earnings the firm reinvests and how well it reinvests that money. In fact, one of the key tests of consistency in a valuation is whether the assumptions about reinvestment are consistent with the assumptions about future growth.

The final issue is the measurement of risk. In the context of a large publicly traded firm, with thousands of stockholders, we generally take the perspective of the marginal investor in looking at risk. We make the key assumption that the marginal investor is well diversified and is concerned only about the risk added to his portfolio by this particular investment. This risk, called market risk, is measured differently in competing models. In the capital asset pricing model, it is measured with a beta – the beta is a measure standardized around one. A beta above one indicates an above-average risk investment, while a beta below one indicates a below-average risk investment. In multifactor models, it is measured with betas against multiple macroeconomic factors.

No matter how much care we take in coming up with the inputs to the valuation model, there will be errors. After all, we are using estimates. Valuations are, thus,

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never perfect, and even the best valuations are buffeted by unanticipated changes in the surrounding circumstances.

Even more frustrating is the fact that even if your valuation of a stock is right and the market is wrong, there are no guarantees that the price will move toward value anytime soon. In fact, intrinsic valuation is built on the fact that markets make mistakes and that they correct their mistakes – eventually.

There are a few activist investors, with substantial resources and the willingness to fight incumbent management, who can take their fate partially into their own hands. They take large positions in companies that they view to be undervalued, and then proceed to act as catalysts for the change that makes prices move toward value. In the long term, however, the rest of us have to put our faith in market efficiency. We do increase our odds by doing our homework on valuations, exercising patience in the face of contrary market movements and having long time horizons.

The second approach to valuation is relative valuation. In this approach, we value an asset based upon how the market values comparable assets. To use this approach requires three steps.

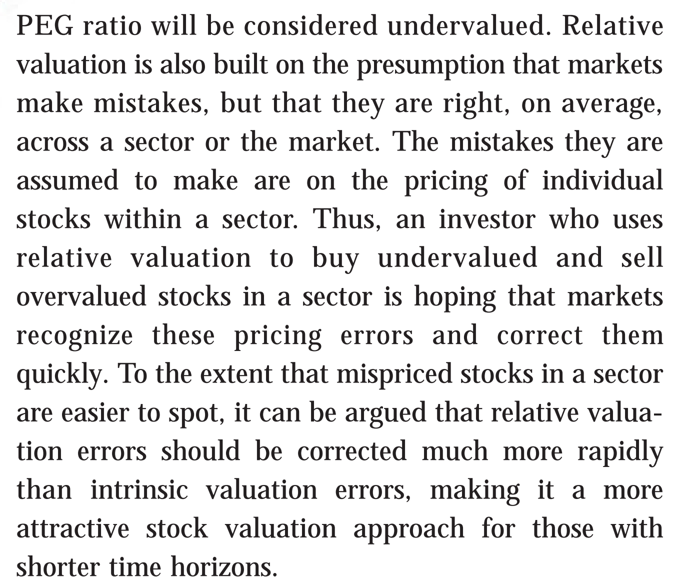
The first and perhaps most crucial, is identifying a comparable asset. Drawing on our earlier discussion of value, a comparable asset should be one with a similar cash flow generating capacity, similar growth potential and similar exposure to market risk. Since the selling point for relative valuation is its simplicity, analysts who use it often make the implicit assumption that other firms in the same line of business as the firm being valued are comparable companies. This assumption can become tenuous as firms within a sector become more diverse in what they produce, how large they are and what stage in the life cycle they are at currently.

The second step is to standardize prices. The prices of individual stocks cannot be compared because they reflect units of different absolute sizes. Therefore, we standardize prices by dividing them by some common variable like earnings or book value, yielding multiples such as price-earnings and price-book value ratios.

The final step in relative valuation is to compare this multiple across "comparable firms." While a naive comparison would hold that companies which have low price-earnings, or a low price-book value ratio, relative to comparable firms are undervalued, this would require these firms to have identical cash flow, growth and risk characteristics. Thus, most analysts who use multiples try to control for differences in at least one of these fundamentals, generally using simple techniques. As an example, differences in growth rates across companies within a sector are considered by dividing the price-earnings ratio of each firm by the firm's expected

"**Intrinsic valuation** is built on the fact that markets **make mistakes** and that they **correct** their **mistakes** – eventually."

growth rate to arrive at a growth-adjusted multiple called the PEG ratio. A firm with a PE ratio of 10 and an expected growth rate of 5% has a PEG ratio of 2.0, while a firm with a PE ratio of 25 and an expected growth rate of 20% has a PEG ratio of 1.2. Other things remaining equal, the second firm is viewed as more undervalued than the first, using PEG ratios. A firm which has a low PEG ratio will be considered undervalued. Relative valuation is also built on the presumption that markets make mistakes, but that they are right, on average, across a sector or the market. The mistakes they are assumed to make are on the pricing of individual stocks within a sector. Thus, an investor who uses relative valuation to buy undervalued and sell overvalued stocks in a sector is hoping that markets recognize these pricing errors and correct them quickly. To the extent that mispriced stocks in a sector are easier to spot, it can be argued that relative valuation errors should be corrected much more rapidly than intrinsic valuation errors, making it a more attractive stock valuation approach for those with shorter time horizons.



ASWATH DAMODARAN *is associate professor of finance at Stern.*

The Dark Side of

Executive Stock Options

HEADS I WIN TAILS YOU LOSE

Stock options have become the currency of executive compensation in the U.S. *Forbes* recently reported that CEOs of the 800 largest public companies now receive nearly 40% of their pay from exercising stock options. Annual rewards above $10 million, a level of compensation once restricted to elite athletes and entertainers, have become routine in American corporations. By **David Yermack**

Most stock options allow executives to buy shares of stock in their firm at a fixed exercise price, usually the price of the company's stock on the date the option is awarded. Options generally have ten-year lives, meaning that in a rising stock market like that of the 1990s, executives who hold options will profit handsomely even if their stock rises more slowly than the overall market.

Plenty of academic research has investigated whether stock options represent: A) an efficient reward system that makes American industry more competitive, or B) a feeding frenzy in which executives stealthily divert wealth from shareholders' pockets into their own. I have argued in several research papers that "B" is often more correct, because of the complexity surrounding options and the limited amount of disclosure required.

Let's take the issues one at a time.

Misleading disclosure Perhaps the most significant issue raised by executive stock options is how well corporations inform shareholders about their cost. While academics and accounting professionals have made great progress in developing methods for estimating the economic cost to shareholders when options are used for compensation, corporations have been slow to embrace these methods. When required to present estimates to shareholders, corporations have produced data of questionable quality.

The Securities and Exchange Commission in 1992 greatly expanded the disclosure requirements for executive compensation, in part because of investors' concern about rising stock option payouts.

Studying the first two years of disclosures pursuant to these regulations, I found a systematic pattern of firms underestimating option values. In a sample of 182 awards of stock options to CEOs of Fortune 500 companies, firms

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under-reported the options' value by about 9% on average, with a significant number shading their estimates by 40% or more.

It is not clear from companies' awkward explanations of their option value estimates whether they believe their shareholders will be too unsophisticated to spot the errors, or whether company managers themselves don't understand how to value stock options.

My own discussions with industry professionals suggest that outlandishly low claims about option values often result from firms hiring compensation consulting firms to produce the estimates. After a first, truthful, attempt to value the options, a consultant will hear from a company's CEO that the option values are "too high" and must be adjusted to produce a "better" number that can be shared with stockholders.

Dangerous information Between 1984 and 1994, the Financial Accounting Standards Board advanced a series of proposals that would have required companies to record an expense on their income statements to reflect the estimated cost of stock options issued that year. Business leaders mobilized against the FASB, arguing against any disclosure. Their arguments essentially boiled down to:

- that it was impossible to estimate the cost of options to an issuing company, a preposterous claim that no MBA student would make with a straight face; and
- that information about the cost of options was too dangerous to be shared with stockholders, lest they misinterpret the disclosures and vote to cut back on their use.

Eventually managers rallied enough political support to curtail the FASB's efforts, leading to the disclosure of option cost estimates in footnotes rather than the income statement. The real fear of managers all along, of course, was that shareholders would begin seeing clearly how much equity value was quietly being transferred out of their pockets and into the pockets of those who had been hired to represent their interests.

Dilution Fortunately other data has become available that sheds some light on the magnitude of options' cost to shareholders. When employee stock options are exercised, companies must issue new shares. Statistics about the dilution of equity from these stock issues have attracted great publicity recently. Data indicate that the 200 largest U.S. firms have today reserved more than 13% of their shares for this purpose, or twice as much as they had in the late 1980s. For smaller companies, the level of planned dilution is probably far higher. Reasonable assumptions would suggest that these firms had transferred, or were planning to transfer, some 20% to 25% of their equity value from stockholders to managers.

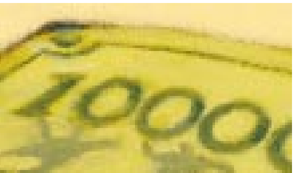
In the past, institutional investors have not paid a great deal of attention to executive compensation excesses because the amount of money involved was small, relative to the size of a corporation. But, the dilution of equity for stock option plans has grown large enough to get their attention, and some large institutions such as the State of Wisconsin pension system have begun voting against plans that would set aside more than 10% of a company's equity for payments to managers.

"Executives' unwillingness to retain their shares makes options look more like short-term bonuses."

Exercise and sell Despite the large-scale equity dilution caused by stock options, the massive issuance of new shares of stock has not led to any increase in the ownership levels of managers. My colleague Eli Ofek and I have investigated the impact of option awards upon managerial ownership between 1993 and 1996 among more than 8,500 executives. We found a striking result: in years in which a typical manager exercises 1,000 options to purchase shares of stock in his company, he also sells an estimated 1,054 shares. The net result? A slight decrease in ownership.

Several important qualifications apply to this result. Executives must raise money to pay the options' exercise price and also to pay income taxes associated with the exercise event, so some selling of shares might be expected. And we did observe some retention of shares by managers who have lower levels of ownership. Still companies are well aware that most executives will sell their stock immediately, since many firms have explicit provisions in place to facilitate simultaneous exercise-and-sell transactions.

A dramatic recent example of selling stock after an option exercise was provided by Michael Eisner, CEO of The Walt Disney Co., who in late 1997 exercised options to acquire 7.3 million shares of Disney stock. Eisner immediately sold 5.4 million shares (four million to cover taxes and the exercise price, according to *The Wall Street Journal*). Eisner contributed another 300,000 shares to his family foundation, probably generating a healthy tax deduction. The total transaction was so large that he had to hire Goldman, Sachs to undertake a private placement at below-market prices. Apart from its massive size, this case was unusual only because the CEO actually retained some fraction of the shares acquired from the option exercise, in this case 1.6 million of the 7.3 million shares that had been awarded, or about 22%.



Our main conclusion – that managers tend to sell immediately virtually all of the shares acquired from exercising stock options – flies in the face of companies' stated purpose for using stock options as compensation.

While options are often touted as instruments that will make managers think like shareholders and work to maximize a firm's long-term value, executives' unwillingness to retain their shares makes options look much more like short-term bonuses.

Option repricing Beyond the making-managers-think-like-shareholders rationale, companies often defend the use of stock options by claiming that managers profit from them only if their efforts succeed in raising the stock price. So, while the managers make money, shareholders make money as well. In practice, this hackneyed claim is often not true for at least two reasons: options that fall out-of-the-money can have their terms reset, and companies generally award options to managers just before favorable news is released. That news, of course, pushes the stock price higher.

Option repricing, recently described by a leading shareholder activist as "comparable to cheating on your spouse," is widely viewed as the most odious method by which managers extract wealth from the firm. When options are repriced, the company lowers the options' exercise prices, usually taking out-of-the-money options and resetting them to at-the-market prices. This maneuver invariably follows a steep drop in the company's stock price, a precondition for which the managers would appear to deserve blame instead of a financial windfall.

Along with my colleagues Menachem Brenner and Rangarajan Sundaram, I recently studied patterns of option repricing within a large cross-section of firms between 1992 and 1995. We found that during this period, approximately 1% of the options held by top executives were repriced each year. This result surprised us considerably because it occurred during a bull market when the large majority of companies' stock prices were rising and the "need" for firms to reprice options should have been very low. Numerous companies appeared in our sample more than once, meaning that they had repriced the same options multiple times. In nearly half of the cases of repricing, companies also added more time to the options' expiration. These adjustments deliver considerable wealth to executives, with the appearance of rewards for extremely poor performance.

Timing of awards The tendency of firms to award options to managers at favorable times also enriches executives for reasons that seem unconnected to performance. In a study of 620 awards of stock options to CEOs between 1992 and 1994, I found a marked coincidence between the dates of option awards and the timing of announcements that pushed company stock prices higher. Companies appeared to adjust option award dates around announcements of such events as quarterly earnings, acquisitions and divestitures, and new product launches, timing the awards so that managers' options would be immediately bounced into-the-money. This tendency was stronger when the compensation committee of the board of directors appeared to be dominated by the CEO (for example, when the CEO served as a member of the committee or no large stockholder sat on the committee). If managers can choose or at least influence the dates on which they receive stock option awards so that they benefit from the release of corporate news, the option scheme begins to look not like a performance incentive but rather a covert form of insider trading.

DAVID YERMACK *is associate professor of finance at Stern.*

Finally, some usable principles for

Mutual Fund Investing

Mutual funds have become tremendously important. At the end of 1997 they had grown to 4.5 trillion dollars in size and have grown about 21% per year over the last five years. The largest type of mutual fund invests in common stock. These funds account for more than 50% of the total dollar investment of all mutual funds, and have grown at better than 35% per year since 1993. The bulk of the assets invested in mutual funds are held in actively managed funds, though the assets invested in index funds are growing rapidly. The reasons for holding mutual funds are well known. Mutual funds offer inexpensive diversification, daily valuation, customer services and professional management.

By **Edwin J. Elton** and **Martin J. Gruber**

The industry has grown despite its performance. Many studies have shown that actively managed funds have underperformed the indexes that they most closely resemble by 0.5% to 1% percent per year (average 0.8%), and have underperformed low-cost index funds by 0.3% to 0.8 percent per year. Furthermore, index funds, depending on the methods used and time period studied, outperform between 60% and 75% of active managers.

In examining these results, you should keep in mind that we are comparing active funds to a set of indexes (or index funds) with the same characteristics. Articles in the popular press often report more extreme results because they compare all stock mutual funds to the S&P index, while many stock funds are intended to match other indexes. For example, some funds are designed to hold stocks which are on average smaller (have lower aggregate market value) than the stocks in the S&P index. The performance of these funds relative to the S&P index is more a result of how small stocks do relative to large stocks than how well the managers as a class can pick winners.

As discussed earlier, active managers underperform an appropriate index by 0.8%. Let us examine the implications for the fund managers' ability to select stocks. Since the average expense ratio an investor pays in stock mutual funds is 1.3%, this implies that active managers have an ability to select stocks. In fact, since they charge 1.3%, in expenses and only do 0.8% worse than the matching index, their ability is worth 0.5% a year.

If the customer buying the average actively managed mutual fund has performance below the appropriate index, what should he or she do? The answer lies in examining the characteristics of mutual funds. More particularly, the question to ask is: Are there any characteristics of active funds that allow investors to improve their performance? The answer, fortunately, is yes. Before examining this, let's consider how an investor should select an index fund.

If the investor decides to hold an index fund, he or she should examine two characteristics: how well it matches the index, and what expenses it charges. In fact, with rare exceptions there is very little difference in how closely index funds match the fluctuations in indexes

(so-called tracking error). However, the difference in expenses is large. Different index funds charge expense ratios, ranging from 0.25% to 1.5% in expenses. Since we do not find any low-cost funds with high tracking error, the decision rule is clear: pick the lowest cost fund. Higher expenses simply result in lower performance.

> "Mutual funds have become a tremendously important form of financial intermediary."

Given the discussion in the prior section, should one consider active managers? The answer to this question is less clear. In order to beat index funds, one has to select managers who will perform better than the average fund by the amount of the average fund's shortfall from the index less the expense ratio of the index fund. The presence of taxes can make it even more difficult for active funds to outperform index funds. Since capital gains taxes are only paid on realized capital gains, and since index funds rarely sell securities, holding index funds postpones the capital gains tax until the investor liquidates his/her holdings. Thus it is easier to justify holding active funds in tax exempt accounts (IRAs, Keoghs, 401Ks) than directly.

Hedge Funds

In the present market environment, no investors are more respected – and feared – than those who manage hedge funds. Managed Account Reports, a major source of data on hedge fund performance, estimates the industry size in 1996 (the latest figures available) at $100 billion managed by 2,000 funds, of which 44% are registered outside the United States. However these numbers give a poor indication of the influence of these funds. Some of the funds are very large; George Soros' funds had a capitalization of over $9.6 billion dollars in September 1996. In addition, their influence is leveraged many times over through the use of extensive margin account activity. There is a widespread perception that these managers have the ability to move markets. By **Stephen Brown**

Assume you wish to hold an active fund. How do you select one? The first rule is to eliminate the high expense funds. The expenses for the highest expense funds are 2% to 5% per year. A simple rule applies. If a fund charges enough, it will underperform an index in every period. Eliminating the 10% of the funds with the highest expenses improves average performance of a randomly selected fund by 0.3%. Once these funds are eliminated, there does not appear to be any relationship between performance and expenses. Similarly, sales fees such as front end loads also lower the rate of return investors get from mutual funds. Load funds are mutual funds that charge a sales commission to invest. An 8% sales commission means that only 92 cents of every dollar is available for purchase and requires the fund to earn more than eight percent before the investor starts to earn a profit. While there are plenty

" We find that past performance is somewhat predictive of future performance."

As a result certain hedge fund managers like Soros have achieved almost popular icon status, celebrated as much for their great wealth and public philanthropy, as for their trading prowess. However, there are dissenters. Dr. Mahathir Bin Mohamad, the Prime Minister of Malaysia, in an editorial piece that appeared in the September 23, 1997 issue of *The Wall Street Journal*, said "Whole regions can be bankrupted by just a few people whose only objective is to enrich themselves and their rich clients...We welcome foreign investments. We even welcome speculators. But we don't have to welcome share – and financial-market manipulators. We need these manipulators as much as travelers in the good old days needed highwaymen."

Who are these people, what do they do, and were they in fact responsible for the Asian currency crisis of 1997-98?

of load funds with good performance, there is a lot of evidence that even if the investor did not have to pay the load, the investor's performance would be no better in load funds than in no-load funds.

What else should an investor pay attention to? We find that past performance is somewhat predictive of future performance. The correct techniques for judging past performance are somewhat complicated. They involved comparing the performance of funds to a set of passive portfolios of similar risk. We find that the performance of the top decile of active funds, ranked on the basis of past performance with the high expense funds eliminated, is better than index funds. Furthermore, utilizing the techniques of modern portfolio analysis such as discussed

" What is the final answer to the optimal selection of mutual funds? Holding index funds isn't a bad solution."

Hedge Funds

Despite their public acclaim and despite their profound influence, surprisingly little is understood about hedge funds and what it is they do. The term "hedge fund" seems to imply market neutral, low risk trading strategies, whereas the extensive use of leverage in these funds appears to suggest a high level of risk. In fact, associating the term "hedge" with the name George Soros suggests in the popular mind that this term can be associated with any kind of high risk trading strategy.

The term "hedge fund" was actually coined by Carol Loomis in a 1966 *Fortune* magazine article to describe the investment philosophy of one Alfred Winslow Jones. His fund had two general characteristics. It was "market neutral" to the extent that long positions in securities he determined were undervalued were funded in part by taking short positions in overvalued securities. This was the "hedge" and the net effect was to leverage the investment so as to make very large bets with limited investment resources. His second innovation was the introduction of a substantial incentive fee initially set at 20% of realized profit without any fixed management fee.

Today, the term "hedge fund" encompasses investment philosophies that range far from the original "market neutral" strategy of Jones to include the global macro styles of people like Soros and Julian Robertson. In addition, many investment firms are simply renaming their trading desks as "hedge funds" and many traditional equity managers are rushing to get into what appears to be a very lucrative business.

As a practical matter, hedge funds are best defined by their freedom from regulatory controls stipulated by the Investment Company Act of 1940. These controls limit fund leverage, short selling, holding shares of other investment companies, and holding more than 10% of the shares of any single company. Compensation terms typically include a minimum investment, an annual fee of 1% - 2% and an incentive fee of 5% to 25% of annual profits. This compensation structure usually includes a "high water mark" provision that adds past unmet thresholds to current ones.

Hedge funds are set up as limited partnerships or limited liability companies providing specialized investment vehicles for high net worth individuals and institutions. The National Securities Markets Improvement Act of 1996 limits participation to at most 500 "qualified investors", individuals who have at least \$5 million to invest and institutions with capital of at least \$25 million. Exemption from regulatory oversight and investment restrictions faced by other investment companies comes at the cost of restrictions on public advertising and solicitation of investors. Absence of regulatory oversight means that reliable information on hedge funds is hard to come by. In addition the same regulations imply that the funds cannot

in our book, *Modern Portfolio Theory and Investment Analysis* (Fifth Ed., John Wiley & Sons), we can further improve performance.

What is the final answer to the optimal selection of mutual funds? Holding index funds isn't a bad solution. This is especially true if the funds are held in a taxable form (not in a pension plan) and you are investing small amounts of money. If you are investing large amounts of money, and/or you enjoy the process of searching for good managers, there is potential for improved performance in sorting among the large number of actively managed mutual funds. This is an area where the academic research is generally accessible so that one shouldn't be reluctant to pursue it.

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Both authors have been president of the American Finance Association.

disseminate information about their activities even if it were in their interest to do so. This is the reason so little is known about this sector of the financial market.

In a study forthcoming in *The Journal of Business*, William Goetzmann, Roger Ibbotson and I examine data obtained on an annual basis for a large number of offshore hedge funds. I found that these funds did reasonably well on a risk-adjusted basis, although their performance taken as a whole was not outstanding. Hedge funds as a whole are becoming increasingly correlated with the markets; most managers don't bring any special knowledge or skill to the table; attrition is high, and, as with most active managers of all kinds, superior performance doesn't persist over long time periods. As is the case with all kinds of specialized investments, buying any one specific fund is a highly risky venture. On a consistent basis, in every year of our sample extending from 1989 through 1995, 20% of hedge funds go out of business.

Despite this, one figure stands out. The performance of George Soros' funds have been quite outstanding. He is in virtually a category by himself. However, the evidence suggests that not even Soros could beat the odds every time. Relative to his self-described benchmark, his funds had positive returns every year except for 1994. In that year his Quantum Emerging Growth Fund earned a return of negative 16% and his Quota Fund earned a return of negative 12.3%. On the other hand, the size of Soros' funds command respect. It is at least conceivable that he and his currency trading colleagues did indeed provide the trigger mechanism for the Asian currency crisis even if he were not the trigger man himself.

"Every year 20% of hedge funds go out of business."

To investigate this issue, William Goetzmann, James Park and I, in a paper to be found in the Working Paper list of the Department of Finance at Stern, analyze the trading positions of the major currency traders around the time of the Asian crisis. We find that while these hedge funds did indeed take large positions prior to the crash in the early part of 1997, they were buying – not selling – the Malaysian ringgit at the time of its collapse in September, and the returns attributed to currency positions were reasonably small over that period of time.

While it is true that hedge fund managers have an importance in the market far in excess of their asset base, they are not omniscient. Perhaps if they were more farseeing, they would have been ruthless advocates for the type of public disclosure that would render toothless populist criticism of their activities.

STEPHEN BROWN *is the David S. Loeb Professor of Finance at Stern.*

fly

On January 1, 1999 international financial markets will welcome a new currency, the euro, which begins life alongside the 11 national currencies of Austria, Belgium, Finland, France, Germany, Ireland, Italy, Luxembourg, Netherlands, Portugal and Spain. These 11 nations comprise nearly 300 million people and make up the European Monetary Union (EMU). One cannot fault the parents for being proud in boasting that the euro is something special. It will be the currency of the EMU, which has an annual GDP of about $6.6 trillion.
A currency that facilitates economic activity on this scope could naturally aspire to a preeminent position in international markets, and possibly challenge the dominant role played by the U.S. dollar.

Will the euro after all?

Fasten your seatbelts.

By **Richard M. Levich**

But with any newborn, the birth process and adolescent years harbor considerable risk. Money is what a society chooses to accept to facilitate transactions, serve as a unit of account and as a store of value. A new currency guided by a new set of policymakers and institutions with no track record presents an obvious credibility risk. And the EMU has already suffered its share of criticism.

EMU received its first public relations challenge when critics noted that an emu is a large Australian bird, a bird unfortunately incapable of flight. With the countdown to EMU only a matter of weeks away, economists around the world must seriously ask whether EMU and its offspring, the euro, are ready to fly.

By **July 1, 2002** at the latest, when we speak of German **marks**, French **francs** or Italian **lire** it will be in the **past tense**.

The background The notion of unifying Europe into a single "common market" began in the late 1950s, but it was not until 1962 that the European Commission proposed a single currency for Europe. Progress on a common currency floundered until 1978 when the European Monetary System (EMS), which was intended to stabilize European exchange rates, was launched. In March 1979, the European Currency Unit (ECU), the precursor to the euro and representing a basket of 10 European currencies, was introduced. Throughout the 1980s, the EMS suffered numerous setbacks as currencies devalued and revalued against their prescribed central rates.

In 1988, the Delors Report put a common European money back on the front burner by proposing a staged timetable to achieve an EMU by 1999. In Stage I, the European Community members agreed to full liberalization of capital movements and closer cooperation on economic, fiscal and monetary matters. The Delors Plan set goals on the convergence of inflation and interest rates, and limits on fiscal deficits, national debt and exchange rate variability as criteria for EMU membership. Many observers thought that the EMS crises of 1992 and 1993 were the deathblow to EMU. And many more felt that the convergence criteria would be beyond the ability of most countries to meet. Indeed, the fudging of economic data to meet these criteria is a criticism some use to cast doubt on the future of the

EMU. But 11 countries met these criteria during Stage II. At the same time, the European Commission established a European Monetary Institute as a forerunner to the European Central Bank (ECB), and all participating national central banks were granted independence from political interference.

What remains to complete monetary union is Stage III, which begins on January 1, when the conversion rates between these 11 national currencies and the euro (equal to 1 ECU) will be irrevocably fixed. The responsibility for monetary policy at that point is transferred from the national central banks to the European Central Bank. The euro will become a virtual money for denominating all accounts in the ECB and the European System of Central Banks, as well as new government debt instruments, and other contracts. On January 1, 2002, physical euro notes and coins will be introduced and national monies withdrawn from circulation. By July 1, 2002 at the latest, the changeover is to be complete. National notes and coins will lose their status as legal tender. At that point when we speak of German marks, French francs or Italian lire it will be in the past tense.

The starry-eyed dreamers' vision In the happy state envisioned by EMU proponents, the cost of abandoning national monies is small, the gains from adopting a common currency are large and the likelihood of success is enhanced by professional monetary policymakers and a rejuvenated European economy. It is easy to see why some people are optimistic.

When every nation has its own central bank and its own money, it can exercise monetary sovereignty and independence by setting its own interest rate and using its exchange rate to adjust to international trade and financial imbalances. But many economists doubt whether this sovereignty actually allows countries to achieve superior economic performance. And in practice, Europe has desired exchange rate stability to reduce risk and promote trade and capital flows. It makes no sense for a country to pay for an option giving it the right to alter its exchange rate, if the country has no desire to ever exercise this option. In this scenario, the costs of a changeover to EMU are paid once, and the benefits – of lower transaction costs, lower exchange rate risk, greater depth in financial markets across Europe and greater capital mobility – are perpetual.

This scenario becomes more plausible if we also assume that the ECB will be run by a group of seasoned central bankers who will operate free of political influence and want only to achieve their professional goal of price stability for the euro. If they succeed, institutional investors will flock to the euro attracted by depth, liquidity and diversification. Other central bankers will diversify their risks by replacing some of their U.S. dollar reserves with the euro. Financial markets could assist in developing the euro's reputation by providing a strong disciplinary force, and charging a realistic risk premium to countries that issue excessive euro liabilities. Even the U.S. might gain something as the common currency makes it easier for American firms to penetrate European markets. And U.S. policymakers might also feel more discipline knowing that a strong competitor like the euro was gaining ground.

> The EU at present is something less than a **United States of Europe.**

The gloomy-faced skeptics' fear While the story might turn out as described, skeptics (a.k.a. realists) note that successful currencies have always been associated with powerful states. The euro will be the currency of just 11 European Union nations. Greece will probably join in 2001, but three EU nations (Britain, Denmark and Sweden) have elected to retain their own central banks and national currencies. Even if the euro were the currency of all 15 EU nations, the EU at present is something less than a United States of Europe. Individual EU nations retain their political sovereignty and could, in principle, extricate themselves from EMU (although probably at great cost).

Along these lines, skeptics are quick to point out that the path to EMU has been highly politicized.

The economic criteria (in particular budget deficits and debt levels) for membership were fudged via creative accounting or creative language. The recent strained voting for an ECB president also demonstrated how politicians might control the exit date for the first president and the naming of the second, helping to cast doubt on the "independence" of the ECB.

In addition, the ECB faces numerous technical operating problems. How will the ECB gauge the performance of the EMU-11 nations and determine whether it is time to tighten or loosen monetary policy? How will the ECB engage in open market operations? Will the ECB buy and sell German, French or Italian government securities? Its choices will affect the interest rates in these markets because the credit risks will not be identical. Take one further case. Suppose there is concern over fiscal deficits in, say, Italy and depositors switch euros out of Italian banks and into German banks. While Italian euros and German euros are meant to be perfect substitutes (like Boston Fed dollars and Dallas Fed dollars), the market may attach a different interest rate to the euros in each market. A transfer of funds would add to the Bundesbank's claims against the Bank of Italy. Would the Bundesbank let these flows go ahead without limit?

Despite the concerns, **EMU** and the **euro** are going ahead, a triumph of **political will** over **economic judgment**.

Finally, economic principles suggest that the European Union is not an ideal candidate for a currency union. Labor is not mobile across the region, and fiscal transfers are limited. Somewhere down the road, one EMU nation will experience a slowdown and political pressures will mount to loosen monetary policy to speed recovery. At that point, the ECB will be forced to validate its independence.

Watching the EMU in flight

Despite the concerns, EMU and the euro are going ahead, a triumph of political will over social pressure and economic judgment. It is possible that the EU nations will grow to fit their new monetary union. After EMU, the absence of currency risk, portability of pensions and spread of pan-European firms may increase labor mobility. Without the printing press at their disposal, European governments may have to adopt more transparent and realistic budgeting, which may reduce some of the structural rigidities that sap output.

While we wait for the long run, economists will watch to see how EMU and the euro perform in flight. And while they wait, they will be pondering a series of questions such as: Will a lack of confidence and political concerns cause the euro to start out as a weak currency? Or will the euro start strong, as the ECB establishes its credibility and portfolio holdings diversify into euros? Will ECB policy shift quickly in response to minor signs of inflation? Or will policy changes lag because of difficulty in reading the signals from the 11 EMU nations? What will the ECB watch – inflation, unemployment, output, the money supply – to set its policies, and will developments in some countries carry more weight than in others? And how will the euro financial markets work? Will there be large credit risk premiums applied to some of the EMU-11?

Without a doubt, the EMU will offer an exciting ride as it learns to fly.

Fasten your seat belts.

RICHARD M. LEVICH *is professor of finance and international business at Stern.*

A Steinway concert grand piano is the instrument of choice for more than 90% of virtuoso pianists around the world. Amazingly, its been that way for over a century: Despite operating in a world of continuous technological change and improvement, the Steinway piano does not change at all. This raises interesting questions. Specifically, how did Steinway & Sons develop such a unique and distinctive product? And how did it establish such a lasting reputation?

the Steinway piano, A World of Identity

by **Roger Dunbar**

To examine the question, I visited the firm's showrooms on 57th Street with my colleagues Raghu Garud and Suresh Kotha, as well as its headquarters and main factory in Astoria, Queens. We observed hundreds of Steinway pianos being built. We also observed a workforce that was highly involved and committed to the craft of piano making. Indeed, other than its personnel, the firm's facilities and surroundings didn't seem particularly special. The people we talked to were all well aware that the Steinway piano enjoys an exalted reputation in the musical world. They simply accepted this as fact, and found it difficult to help us much in our quest to understand why. They did suggest, however, that the answer could probably be found somewhere in the company's history.

So we started reading histories about the development of both the piano and Steinway & Sons. We were interested in identifying the strategic decisions the firm had made to develop a unique and distinctive piano. We also realized that uniqueness and distinctiveness do not in themselves guarantee market acceptance for a product and certainly not consistent market acclaim. Hence, we were also interested in identifying the strategic decisions that enabled the Steinway piano to become not just acclaimed, but also universally accepted as the world standard for assessing piano sound.

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Some background about the piano industry

We quickly found that in order to appreciate what Steinway & Sons had done, we had to understand the history of the piano's development. The first piano was built in Italy in 1700. It was basically a harpsichord, but had the quills used to pluck the strings replaced with a hammer action. Its arrival went virtually unnoticed at a time when the violin dominated the musical world. In Dresden, Germany, however, Gottfried Silbermann saw the potential of the pianoforte. He improved the piano, had his efforts endorsed by Frederick the Great of Prussia, and employed numerous apprentices to develop the instrument further. When Dresden was engulfed in the Seven Years War (1756-1763), twelve of Silbermann's apprentices (later nicknamed the 12 apostles) migrated to England. Working with British craftsmen, these men built up the technical knowledge that allowed England to become the world's leading piano making nation for the next century.

A piano's components include its action, the strings, the soundboard and the frame. Due to the work of many inventors, the quality components needed for a modern piano were available by 1830. Leading piano makers such as those located in England and France, however, emphasized craft production. This meant that most often piano makers used only components they had developed while ignoring improved components developed elsewhere. The quality of pianos therefore varied widely.

The needs of consumers, however, were crystallizing. In the mid-1700's, as larger auditoriums were built and pianos placed in them, most people were asking for louder pianos that they could hear.

Early Steinway designs

The Steinways had built a small piano making workshop in Germany. In 1850, they migrated to New York, where they encountered new piano components and approaches to piano building that they had not seen before. Henry Jr., the firm's 23-year old designer, borrowed, copied and stole as many new ideas as he could and came up with a new piano design which won immediate acclaim at an important manufacturer's competition. Sales grew rapidly and in 1860, seven years after its founding, the firm opened the US' largest piano factory at 53rd St., currently the site of the Seagram's Building. Continuing success in manufacturers' competitions culminated with the firm's triumph at the 1867 Paris Exhibition, where Steinway pianos were recognized for the first time as being superior to those made by leading English and French makers.

Clearly leadership had a major impact on Steinway & Co. Henry Jr. was different from the expert designers of other firms in that he was very young and did not have a long record of established craft production routines to guide his efforts and inhibit him from innovating. As a new immigrant, he was keen on finding and using the best ideas available in his adopted country. He used the knowledge of piano making garnered from his father's workshop to sort out which of these new ideas were best and combined them into a new piano design. The result was the unique and distinctive piano which achieved world acclaim in Paris.

As a new immigrant, he was keen on finding and using **the best ideas available** in his adopted country

The later Steinway design

While the Steinway pianos exhibited in Paris were largely a result of Henry Jr.'s design efforts, Henry himself was absent, having died of tuberculosis two years earlier. The Steinway pianos were therefore exhibited in Paris by Henry's elder brother, Theodore, who sold the piano-making partnership he had nurtured in Germany (Grotrian-Steinweg) and came to New York to take over management of Steinway & Sons. Theodore was also an expert piano designer well aware of what his younger brother had achieved. In Paris, he explained the new methods and approaches to all who would listen. The English and the French weren't interested, but the German piano makers listened closely. They copied Steinway & Sons' methods and within a decade, firms like Bechstein and Bluethner along with Steinway & Sons were outdoing France and England in piano making.

Theodore felt that the successful Steinway piano could be made better still and so he decided to redesign by following a single and consistently applied principle of tonality: The purest, most brilliant piano tone is achieved as the strings

are stretched to their utmost. With this assumption in mind, he sought ideas from other makers and from firms working in other materials to uncover ways to build an improved piano with the tautest strings. The redesign effort took over a decade. The Steinway concert grand piano that made its appearance around 1880 is very similar to the instrument used in concert halls today.

Again, the same approach that brought success to Henry Jr.'s work also guided Theodore's redesign efforts: Theodore sought out and brought to the firm many ideas developed elsewhere. Theodore's efforts were different from those of Henry in that he was guided by the principle that the tautest string was a prerequisite for the best piano sound. In fact, while the tautest string makes a distinctive piano sound, it was not clear to everyone at the time that this sound would be the best. In the treble, a taut string gives a "singing" tone which most other pianos don't have, while in the base the notes produced "growl" which is also a unique feature that is also distinctive to a Steinway.

Steinway sound becomes the standard. How, then, did the Steinway sound become the standard against which all other piano sounds are compared? The firm's business affairs had been directed by another son, William, who had invested the firm's resources in a wide range of ventures related to the developing transportation industry. When William died in 1896, his nephews took over Steinway & Sons and quickly ascertained that the firm was almost bankrupt. They sold off all unrelated investments and concentrated on pianos. By this time, Steinway & Sons was the only fully integrated firm in the U.S. and it had a stranglehold on the high end of the piano market.

For the next thirty years, Steinway & Sons sought to tighten its grip on the industry by reinforcing and cementing all possible relations with the music and broader cultural communities. It did this by sponsoring concert tours by prominent musicians and by creating a list of Steinway-supported artists, a veritable who's who of musical talent that included the likes of George Gershwin, Percy Granger, Vladimir Horowitz, Jan Paderewsky, Serge Prokofiev and Serge Rachmaninoff. The company further cemented relations with the broader cultural community by sponsoring non-pianists such as Heifetz, Kreisler and Zimbalist and by commissioning paintings of music-related events from famous artists like N. C. Wyeth. In addition, year in and year out, the firm spent advertising and promotional budgets that totaled 10% of gross sales. To further enhance Steinway's impact on cultural standards, the company persuaded all competing piano makers to cease sponsoring concert artists. For over thirty years, then, Steinway & Sons was the monopolist that sponsored the elite concert artists who, through their endorsement, virtually established the cultural standards used to evaluate the piano "sound." By choosing a Steinway piano, they institutionalized the Steinway sound throughout the industry.

Altogether, then, Steinway built its reputation "by design." In developing its unique sound, the company combined its own insights and knowledge with the ideas of competitors and others. This contrasted sharply with most competitors who ignored improvements made elsewhere and persisted with their own approaches.

How resilient is Steinway's competitive position? In 1960, Yamaha pianos started appearing in the U.S., and in 1966, Yamaha announced it had built a test model which it believed would be recognized as the world's finest concert grand piano. Yamaha's president vowed to wrest the mantle of superiority from Steinway. Yamaha obtained endorsements from leading artists just as Steinway had done, but when some of them started denying they had made any such endorsement, the game was pretty much over. Over the last 30 years, although Yamaha's sales have grown exponentially in line industry growth, the Steinway piano has remained the industry standard.

ROGER DUNBAR *has taught management at Stern for the past 16 years. His interests lie in identifying cultural assumptions and in exploring ways in which cultural understandings affect the ways people interpret and act in social and business situations.*

endpaper

It's Only A Machine
(Yeah, right.)

by **Paul B. Brown**

One of the hot areas of scientific research right now is studying how people react with machines. That's why you hear all this talk about "ergonomically designed" office furniture, and how this luxury automobile, or that one, just feels right.

Perhaps no machine/people interaction has received as much attention as the way that people react to computers.

The results are typical. This report from *The New York Times* is representative.

It pays to treat computers politely. They can be jerks and bullies. But they can also be friends and teammates.

If all that makes perfect sense to you, then you, too, suffer from what two Stanford University professors believe is a universal syndrome: The practice of perceiving machines as man, reacting to your lap top almost as if it is a little person sitting on your knees.

The piece, which ran a while back, goes on to quote the professors as saying, in essence, that if you treat your computer as more than a dumb machine, you're nuts.

With all due respect to the professors, it is probably time for them to spend a bit more time out of the lab.

Now, I don't know about you, but I know my computers – and I have two of them – are thinking beings with distinctive feelings.

My main computer, the one I use every day, is a big, lumbering thing, I think of it as sort of the defensive lineman of computers. It can power through huge amounts of data in a heartbeat, but it lacks finesse. (I would never think of trying to write a poem on it, for example.) It also has its moods. I like to get up early and write, and my big old computer would prefer to sleep in. As a result, it can take an awfully long time for the machine to boot up in the morning.

But while our body clocks are different, my big machine and I are identical when it comes to cold weather. We hate it. It is almost impossible to get my machine to do anything, when the temperature falls to below 30 degrees outside. But that's okay, I don't like to do much of anything either when it's that cold.

My laptop is another matter entirely. Neither rain, nor snow, nor gloom of night can keep this little sleek number from working. But it will only work on things it likes. Oh, that's not entirely true. The machine will crunch numbers, but reluctantly. It runs spreadsheets far slower than the manual says it will.

Ah, but when it comes to word processing, it is another matter entirely. Spelling corrections are made in the wink of an eye, and when I am writing about subject matters it likes – say computers – the words appear on the screen, it seems, even before I have pushed the keys.

I know. You think I'm nuts.

Well, that's fine. All I know is that since I have started taking the personalities of my two machines into account, I haven't had a system crash and that annoying "error message" – you know the one, "file (the file you have been working on for three weeks straight) not found" – has been banished from my machines' vocabulary.

You go on treating your machines any way you like. Me and my electronic friends are very happy together.

PAUL R. BROWN, *editor of* Sternbusiness, *has recently learned Microsoft Word. We are happy to welcome him into the 20th century.*

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