ECONOMICS U$A
21st Century Edition

PROGRAM #10

PROFITS AND INTEREST:
HOW DO YOU GET THE BEST RETURN?

AIRSCRIPT

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Final transcript

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NARRATOR: FUNDING FOR THIS PROGRAM IS PROVIDED BY ANNENBERG LEARNER

DAVID SCHOUMACHER: In Maryland, state law protected home buyers from high interest rates. How could rapidly changing economic conditions turn that law against them? And how could an idea developed by two college dropouts be worth 300 million dollars? And what would justify charging hundreds of dollars a dose for a medication that costs pennies to make?

One of the fundamental incentives of our economic system is to make money. Individuals and institutions alike want to maximize the money they make in the marketplace. Profits and Interest: How Do You Get The Best Return? With the help of economic analysts Richard Gill and Nariman Behravesh we'll investigate that question on this 21st Century edition of Economics U$A. I'm David Schoumacher.

(MUSIC PLAYS - OPENING TITLES)

PART I

DAVID SCHOUMACHER: It was the church which first decreed that charging for the use of money was sinful. The concept of usury and its immorality can be found in the Bible…and by the Middle Ages it was part of the church law. Through the years the term usury came to mean "excessive interest rates" and the idea of limiting interest rates to reasonable levels was adopted as government policy. What caused that policy to work against the people it was designed to protect? For 100 years Maryland financial institutions had lived with state laws setting usury ceilings. Because market interest rates on home mortgages stayed below these ceilings, few problems arose. Homeowners could get mortgages and lenders could get an acceptable rate of return. But then, in the 1970s, inflation drove interest rates up. Maryland's financial institutions were faced with paying out higher interest rates to depositors than they could earn by providing home mortgage loans. Baltimore banker Douglas Dodge explains…

DOUGLAS DODGE: "Well, in that period of time interest rates generally were rising…reflecting the value of money really all over the world. And the result was that the yield available to banks and thrift institutions, insurance companies who traditionally may have made mortgage loans or purchased mortgage loans became unattractive relative to other investment alternatives."

DAVID SCHOUMACHER: As economic conditions changed, Maryland's banking community began to look elsewhere for investments. Money that normally would have gone into home mortgages simply went shopping for higher returns, readily available from certificates of deposits and from the large New York money market funds. While this helped the financial institutions, it devastated Maryland's housing industry. One Maryland home builder who felt the pressure personally was Frank Miano.

FRANK MIANO: "Well, let's take a small builder who had maybe three or four spec houses that he'd built and were sitting, and he was paying interest on those. And it's a question of staying power…How long can you make those payments and maintain that unit until it's sold?"

DAVID SCHOUMACHER: Miano's losses on houses like these temporarily forced him out of the home building business.

FRANK MIANO: "We sold some houses at a loss in order to get out from under the construction loans. We finally did sell them…"

DAVID SCHOUMACHER: As lenders cut back on home mortgages, new home buyers and sellers became frustrated. Even the resale market was affected. Maryland wasn't the only state facing this problem. Eighteen other states had ceilings on interest rates. Usury laws had placed a stranglehold on so much of the nation's housing money that Congress was ready to ban them. Pressures to change the law mounted in Maryland. Senator Laurence Levitan sponsored the bill to raise usury limits.

LAURENCE LEVITAN: "We were not only hearing from lenders and developers at the time of the interest crunch…when the interest rate hit the ceiling and went above the ceiling…but we heard from the average citizen…the guy on the street…the guy who wanted to buy his house…the guy who wanted to sell a home. The only effect of that ceiling was to prevent them from entering the marketplace."

DAVID SCHOUMACHER: Senator Julian Lapides opposed lifting the ceiling…

JULIAN LAPIDES: "When people need or want money, they're unconcerned about the cost at that moment. And that's why the state has to be almost in place of the parent…We have to really be responsible to protect the public from themselves."

DAVID SCHOUMACHER: The bill passed easily, clearing both houses by February 21, 1979. Governor Harry Hughes signed it the next day. What happened? Interest rates on mortgages shot up to 12%...then gradually came in line with interest rates across the nation.

LAURENCE LEVITAN: "So, in effect, what we had is we froze these people in their property…They couldn't move. They couldn't sell. Once we raised the ceiling, that changed…People were able to sell their houses, and did…Money started to flow into the State of Maryland."

JULIAN LAPIDES: "I really think that the consumer lost badly that year, and in subsequent years when we just removed all limits in Maryland now, and I think that the public has been damned."

FRANK MIANO: "I don't think it's any different than any other commodity. If there's a shortage of sugar in the marketplace, then the price of sugar is going to go up. If there's a shortage of coffee, the price of coffee's going to go up…so money's no different…If there's a shortage of money, the cost of money's going to go up."

DAVID SCHOUMACHER: The action by the Maryland legislature to raise usury ceilings ended the crisis. Interest rates did increase, but mortgage loans did become available. We asked economic analyst Richard Gill to explain the limits on what the government can do to control the rate of return on investments in a market economy.

(MUSIC PLAYS - COMMENT AND ANALYSIS I)
(ECONOMICS U$A LOGO appears on screen)

RICHARD GILL: Sometimes good intentions produce counter-productive results. The basic philosophy behind usury laws is honorable enough: borrowers are often people in need; they can be taken advantage of by lenders. The fact is, however, that money, in the form of loanable funds, is subject to the forces of supply and demand as is any other commodity in the marketplace. The demand for loanable funds to borrow will depend on the interest rate…The lower the interest rate the greater the number of homebuilders, developers and potential homeowners who will be interested in borrowing money. On the supply side, the savings and loan and other lending institutions will be looking for the highest rate of return on their loans. If they can't get it in a particular area…in this case,

the State of Maryland…they'll look elsewhere. In short, the higher the rate of interest, the greater the supply of loanable funds that will be forthcoming. In this particular diagram, supply and demand are equated at an interest rate of 15%. And what Maryland's usury law did was to say, no, you can't charge 15%, only 10%. They put a ceiling on interest rates, here, meaning the supply of loanable funds coming on to the market was reduced. And this meant (A) that a lot of people who would have been happy to borrow at 10% couldn't find lenders to lend to them, and (B), even more significantly, the total supply of mortgage money…and thus new homes…was reduced below what would otherwise have been the case. A few people got good deals; many simply could not build homes at all. Good intentions. The road to new homes in Maryland was definitely not paved with them.

PART II

DAVID SCHOUMACHER: The most impressive thing about the early computers was their size. Today you can do more work faster than the 1950s version of a computer with microprocessors or computer chips like these. In 1976, two young Californians decided to take a gamble on computer chips. In four years they were multimillionaires. What could they have done to earn such a high rate of return? Steve Jobs dropped out of college, studied Eastern religions, designed video games for Atari…

STEVEN JOBS: "I received a letter from a six-and-a-half year old boy a few months ago which to me completely sums up what we've accomplished in the last few years. And it reads: 'Dear Mr. Jobs, I was doing a crossword puzzle and a clue was 'as American as Apple blank.' I thought the answer was computer, but my Mom said it was pie.'"

DAVID SCHOUMACHER: Steve Wozniak won a science fair prize at age 12, started designing computers in high school, and finally raised enough money to build one six years later.

STEPHEN WOZNIAK: "Well, I took it down to the club and I hauled my TV set…my Sears TV set…down and would demonstrate to everybody…Look how small this is, look how few chips it is, and it's running Basic on the screen…and I built it myself."

DAVID SCHOUMACHER: The founder of Atari, Nolan Bushnell, recalled the video game they created…

NOLAN BUSHNELL: "I had one little project that everyone kept turning down. It was a project called "Breakout" which was one of the games. And nobody wanted it and finally I said to Steve, 'Hey, do this for me…you know.' And he said, 'Done.' Wozniak wasn't on the payroll at that time and Jobs was…and I think that he sort of farmed…you know the two of them worked something out in the evening and I think two weeks later, which in a project that traditionally took 3 or 4 months, boom, we had a prototype back.."

DAVID SCHOUMACHER: In January, 1976, Jobs the promoter began pestering Wozniak the designer to build some printed circuit or PC boards so other hobbyists could build their own computers.

STEPHEN WOZNIAK: "We put in a thousand dollars total and we'd have to sell 50 before we made money. We looked at each other and I said, 'I don't think we're going to get our money back,' and he said, 'No, maybe we're not going to get our money back but at least for once in our lives we'll have a company.' He just wanted to have a company. And if you're like me, you know, and you're free, that's more of a reason for doing something…You don't have to justify it in some concrete productive sense if you're going to make money…First chance in a lifetime…So we kind of started as just a little play dream."

DAVID SCHOUMACHER: For start-up capital, Jobs sold his VW van and Wozniak his programmable calculator. In a few weeks they had a prototype.

STEPHEN WOZNIAK: "Well, we got our PC boards made and I took this blank PC board down to Hewlett-Packard and showed it off to all my engineer friends and everyone was gloating over it, and I thought it was the most beautiful PC board in the world. And a couple of days later the phone rang there, right at work, and I picked it up and Steve said, 'Guess what!,' and he sounded real excited and I said, 'What?' And he said, 'I just got a 50 thousand dollar order.'"

DAVID SCHOUMACHER: That first order came from the owners of the Byte Shop, one of Silicon Valley's first computer stores. And Jobs used it to get the electronic parts for the Apple I, on credit. The garage at Steve Jobs' parents' house, where the first Apples were assembled, has entered the entrepreneurial folklore as the log cabin birthplace of the personal computer industry. It was here that Wozniak tested the Apple I and started working on future models. Jobs wrote advertising and managed the money.

NOLAN BUSHNELL: "The characterization that Steve Jobs was the marketer…the promoter…was absolutely true and that Steve Wozniak was the technologist. Steve Jobs was the guy that really forced the company to happen…who solved the problems…who hired the people…who made sure the company started to be pushed into a real organization…and of course Mike Markkula helped a great deal as well."

DAVID SCHOUMACHER: Marketing expert Mike Markkula was so impressed with the computer's potential…he took some of the fortune he'd made while at INTEL and provided expansion capital in return for a partnership. The threesome then began developing the Apple II for the West Coast Computer Fair in the spring of 1977.

STEPHEN WOZNIAK: "We got the first units just the day before the show. Then we sat down and we carved off all the little excess shavings that were hanging off of them, made them look presentable, and we put our boards in, and it was a complete working Apple II computer."

DAVID SCHOUMACHER: Journalist Michael Moritz wrote a history of Apple. He describes how Apple stole the show…

MICHAEL MORITZ: "They had colorful large logos that were hoisted higher in the sky than anybody else's…They had the impression of a well-established booth even though the booth was just draped with crepe paper…but it was, as they say in Silicon Valley, an order of magnitude more advanced than a card table."

DAVID SCHOUMACHER: Although there were only three finished computers at the fair, the company took orders for 300 in following weeks.

STEPHEN WOZNIAK: "Mike Markkula's comment after the show was…he looked back and he said, 'it's gonna happen…we're gonna be a 500 million dollar company."

DAVID SCHOUMACHER: That breakthrough led to full-scale production. The handful of employees moved into a new building in Cupertino and launched an advertising campaign. The design of the Apple II sets it apart from its competitors. First, it was expandable…Owners could add circuit boards to run printers, speech-boxes and other devices. Second, the computer had more memory capacity so it could run complicated financial programs like VisiCal…and, when Wozniak came up with a disc drive, it revolutionized the way that information was entered and stored.

MICHAEL MORITZ: "Apple developed a floppy disc that could work and that they could market before anybody else. And it put them ahead of the pack."

DAVID SCHOUMACHER: By September, 1980, the Apple II dominated the personal computer market. It was being used at home for both fun and profit, in offices for word-processing and financial calculations, and in schools to educate and entertain. One hundred thirty thousand had been sold…The company had 1,000 employees working at plants from Ireland to Singapore. Annual sales hit 300 million dollars. Apple's success

in the salesroom led to a growing interest in its stock as the company prepared to go public.

MICHAEL MORITZ: "It's clear that for underwriters and investors, in the fall of 1980, the prospect of an Apple public offering seemed rather like the second coming. The people who had stakes in the company, people who were underwriting it, the venture capitalists who had invested were clearly going to see three lemons in a row on the slot machine."

DAVID SCHOUMACHER: On December 12, Apple stock was snapped up by the public, making it the largest initial offering since the Ford Motor Company went public. In addition to raising cash for the company, the offering rewarded early employees and investors handsomely. The big winners, however, were Apple's founding entrepreneurs…Steve Jobs and Steve Wozniak, who had in a relatively short time become multimillionaires because of their creation.

STEPHEN WOZNIAK: "It was rather astounding and shocking…I knew it was one of the finest products ever, that sort of deserved to be such a huge winner, but it was something you could have never looked ahead and really believed and expected."

DAVID SCHOUMACHER: Of all the entrepreneurs who turned inventions into fortunes in California's Silicon Valley, none did it as spectacularly as the founders of Apple computers. But are such huge profits justified? And what role do they play in a market economy? We asked economic analyst Richard Gill.

(MUSIC PLAYS - COMMENT AND ANALYSIS II)
(ECONOMICS U$A LOGO appears on screen)

RICHARD GILL: Large profits in a capitalistic system, according to the great economist Joseph Schumpeter, derive from one source and one source only: innovation. They are the superabundant rewards given by the system to those who are clever enough, daring

enough, enterprising enough to come up with something new. The Apple computer story is really a letter-perfect example of what Schumpeter was talking about. A few quick points about this process: First, innovation decisions have a quite different flavor from the kind of expected rate of return calculations we were discussing earlier. How can you calculate an expected rate of return when you're doing something completely new? You're flying in the dark. It's doubtful that the rate of interest plays any major role here at all. Second, the original entrepreneurs weren't really risking big money. They had to sell a van and a calculator to get started. Their risks were far more subtle…a sense of personal failure perhaps…their reputations, Schumpeter might have said. Third, the huge profits these entrepreneurs made did not last that long. IBM and all the brotherhood quickly swooped down into the personal computer market. Entrepreneurial profits are often huge, but also transitory. The leader is followed by the "swarm"….This was also part of Schumpeter's description. Schumpeter's general conclusion? These enormous, short-lived profits are fully justified by the benefits that innovation brings. Given the dominant role that such innovation has played in the entire history of American economic growth, one finds it difficult to disagree. Huge profits can represent monopoly and distortion; but they also can be the oil that lubricates the wheels of progress.

PART III

DAVID SCHOUMACHER: Those of us who take medication are astounded by the high cost of these tiny little capsules. But biotech pharmaceutical companies, like all businesses, try to gain the highest rate of return on their capital. They do this in a number of ways: by investing in the market, in real estate, or in themselves…buying new equipment, building new plants, and developing and selling new products…

DAVID SCHOUMACHER: This is true across the board, especially in the high risk world of biotechnology pharmaceutical companies. The questions always are when to invest, what to invest *in*, and how much profit and return on investment can be expected.

So how do firms in the biotech industry decide how much to spend on research? What drugs to develop, balancing medical and economic issues? Medimmune is a biotechnology firm that researches ground-breaking new drugs. Bahija Jallal is Medimmune's vice president of research and development

BAHJIA JALLAL: "Several things go into consideration for us to develop one drug. First, we need to be in an area of unmet medical needs. We need to be sure that we bring medicines that will make a difference in a patient's life, medicines that are different and/or better than what's available out there. Then what comes into consideration is the science. Does the science support that? Do we have strong science? Is it innovative enough, and then at the very end, how long it's going to take to invest in this drug to bring it... but really the level of priority goes that way."

DAVID SCHOUMACHER: The cost of actually manufacturing drugs is often minimal, sometimes pennies per pill. So where does all the money go?

IAN SPATZ: "There's an enormous investment that has to be made in the knowledge that is embedded in any product. Because that's really what a product is, whether it's a capsule, or an injection, or anything else. It's really just the knowledge of what the chemicals, the biological products, can do once they're into a human body."

DAVID SCHOUMACHER: We all know that in business, time is money. For pharmaceutical companies that time costs millions of dollars. Time for expensive researchers, doctors, lab technicians, and endless testing on animals and eventually humans. But how much time?

BAHJIA JALLAL: "To give you an example, it takes almost more than 10 or 12 years to develop a single drug. For instance, for a student right now, imagine starting in elementary school, by the end of high school is the duration of developing one single drug. One of the products we make here is Synagis. Synergis actually helps prevent respiratory diseases. This is extremely important, specifically in premature babies. This

is a product that started with revenues of 200 million dollars per year; today it makes over a billion dollars per year. We're very proud that we helped more than 1 million babies out there."

IAN SPATZ: "For many pharmaceutical and biotechnology products, many companies have the same scientific insights. It's a race to the finish line."

IAN SPATZ: "Getting there first is good, because you don't have competition. But you don't know that you'll be first, and if you end up being second, third or fifth, then you're not going to do as well in the market-place."

DAVID SCHOUMACHER: It's true that many pharmaceuticals are rejected or recalled from the marketplace, but there is a bigger threat to pharmaceutical companies.

IAN SPATZ: "Let me talk a little bit about generic medicines if I can, for a second. A generic medicine is simply a copy of an existing medicine that has been available to patients for quite some time, but it's no longer protected by its patent. People can make an exact duplicate of what you sold, and what that means is the price comes way, way, down, because there is much more competition."

DAVID SCHOUMACHER: So, the pharmaceuticals have a precious window to maximize profits before their patent protections end. And though Medimmune and other pharmaceutical companies can make huge profits on a single drug, how profitable are they compared to other firms?

IAN SPATZ: "Pharmaceutical companies, and biotechnology companies, are not any really more profitable than other companies, when you look at correct measures. But it's very difficult to measure profitability. I think the best way of looking at the profitability of this industry is to look at the stock market."

IAN SPATZ: "It's a very sophisticated, and also a very accurate way of looking at how people project the value of companies, and whether they think their profits will be growing. And pharmaceutical and biotechnology stocks have been hammered for about a dozen years."

BAHJIA JALLAL: "The misconception that's out there that we are in it just for the money. I would say, come and see the scientists in the lab, the efforts that we put into drug development. You have to have the passion to do that."

IAN SPATZ: "This is a tough business, and it requires a lot of courage and fortitude, but most importantly it is not a business just like any other, because it involves people's health and well-being. It is one that people feel very strongly about, and it is one that can have an enormous positive impact on people's lives."

DAVID SCHOUMACHER: Biotech firms like Medimune tell us that the average research and development costs to bring a single drug to market is in the hundreds of millions of dollars. Although, should a drug succeed, it can result in mega profits for the company and its shareholders. But what seems like high profits earned on one drug are offset by large investments in other research endeavors that don't pan out. So, is the payoff worth the investment? And who ultimately pays the price? For those answers we turn to Economic Analyst Nariman Behravesh.

(MUSIC IN: ECONOMICS U$A LOGO appears on screen)
COMMENT AND ANALYSIS III

NARIMAN: There is a popular perception that pharmaceutical companies charge outrageously high prices for new drugs and earn obscenely high profits. This view ignores the huge challenges, costs and risks associated with the development of new drugs, which can take as long as a decade to create, test and get approved by Federal Drug Administration.

The development costs can run into the hundreds of millions of dollars. If the drug succeeds, then the company that has created it can reap big profits. But the chances of success are only 10% to 20%—and, competitor companies can bring their products to market first. So the risks associated with drug development are very high. Last but not least, the huge profits of drug companies only last as long as the new drugs are covered by the relevant patents.

So are the high profits of drug companies justified? Without those profits to encourage the investments and risk-taking associated with new drug development, we would likely not have seen the creation of new medicines to combat heart disease, cancer and HIV-AIDS. Who ultimately pays the price? We all do, because we are the ones that benefit the most from these news cures.

DAVID SCHOUMACHER: Of the thousands of people who start new firms every year, most will fail. As we have seen, financial institutions, large corporations and individual entrepreneurs must all carefully calculate the probabilities for success and failure. We are propelled by the forces of the marketplace to invest our time and money in those ventures offering the best chance of return. For this 21st Century Edition of Economics U$A, I'm David Schoumacher.

(MUSIC PLAYS –OVER CREDITS)

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