

ECONOMICS U\$A
PROGRAM #116

SUPPLY AND DEMAND: WHAT SETS THE PRICE?

BY VIRGINIA QUESADA

AIRSCRIPT
MAY 17, 1985

16. DEMAND AND SUPPLY

PURPOSE:

To help viewers understand the factors that determine the quantity of goods demanded by consumers, and the factors that determine the quantity of goods supplied.

OBJECTIVES:

1. The amount of a good consumer's purchase depends on how much they value it in relation to the selling price.
 - a) The more units of a good an individual (or society in general) has consumed in a given period, the less he values an additional unit (diminishing marginal utility).
 - b) If the value the consumer places on an additional unit of a good is less than the selling price, he will not purchase it.
2. At a given price, consumers will generally demand more of a good if their income rises, if the price of a substitute good rises, if the price of a complementary good falls, or if consumers' tastes change in favor of the good in question. All these factors will shift the demand curve.
3. As producers expand production they may initially experience economies of scale, but as they continue to expand production the cost of producing each additional unit will increase.
4. A firm will not maximize its profits if it expands production past the point at which the additional cost per unit is greater than the revenue earned by selling that unit (the marginal revenue = marginal cost criterion for profit maximization).
 - a) If the selling price increases, firms will produce more units of output because they will then be able to make a profit on these units.
 - b) If the costs of production increase, firms will produce fewer units.

KEY ECONOMIC CONCEPTS:

marginal utility	shifts in the supply and demand curves
substitute goods	movement along the supply and demand curve
marginal cost	marginal revenue
profit	diminishing returns
complementary goods	

ILLUSTRATIVE EVENTS:

The northern California drought is used as an illustration of the diminishing marginal utility of a commodity, the increase in high cost oil exploration and recovery techniques shows increasing marginal costs, and the sudden shifts in the demand for blue jeans are used to show shifts in the demand curve.

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ANNENBERG/CPB PROJECT (logo and Music)

TEASER

DAVID SCHOUMACHER: In 1974, water was cheap. By 1977, the state was in the midst of a great drought. What would Californians be willing to pay now for water? After the 1973 Arab-Israeli War, the Middle-Eastern oil spigot was shut off. What did America do to get domestic oil producers to fill the gap? During the designer jean craze of the 70s, why would so many pay so much for so little? During the holiday season, shoppers descend on this store enmasse, ready to buy what they want as long as the price is fair. Meanwhile, the producers of every item in this store have tried to predict not only what the shoppers will want, but what they will be willing to pay. Supply and demand...what sets the price? Economic analyst Richard Gill and I will be examining that question on this edition of Economics U\$A. I'm David Schoumacher.

(MUSIC IN-SERIES OPERING TITLES)

(SUPPLY AND DEMAND: WHAT SETS THE PRICE? appears on screen)

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SUPER: Supply and Demand: What Sets The Price?

PART I

DAVID SCHOUMACHER: Rarely have Americans had to worry about water. They've been able to take it for granted because it's plentiful...it's available...and it's cheap. But for the things water does, there is no substitute. What would it take to show how much water is really worth? 1975 marked the beginning of one of the worst droughts in California's history. It's a semi-arid state with the gigantic agriculture industry dependent on water from its northern snow-pack and winter rains. But in the fall and winter of 1975, the relief of seasonal winter rains and snow did not come. Accustomed to "dry-spells", Californians showed little concern. But that winter wore on with no rain or snow, and soon what was great weather for some began to cause problems for others. The summer of '76 exploded into flames as over 1,400 fires swept the state in a three-week period. Marin resident, Sharon Mooney, recalls...

SHARON MOONEY: "When the rains didn't come and they didn't come and they didn't come...people talked about preferring to have rain to sunshine..."

DAVID SCHOUMACHER: The next winter continued without rain. Farmers were notified that water for irrigation would be drastically cut back. By March of 1977, the reservoir levels had fallen dramatically. Don Neudeck, head of the state's Drought Control Center, recalls...

DON NEUDECK: "It was really amazing to...just to fly over and take a look at how the reservoirs were so drawn down that they...you couldn't believe it...we were running out of water in California..."

DAVID SCHOUMACHER: Officials reallocated water and promoted conservation methods. The Drought Control Center was flooded with suggestions. One woman even asked for a moratorium on watering cemeteries...When the needs of the living are in danger, let the souls of the dead rest in peace a little drier. Just to the north of San Francisco lie the well-to-do suburbs of Marin County. It was one of the first areas forced to begin rationing water...Early in the second year of the drought, each resident was cut back to 46 gallons a day...That's 2/3 less than normal. Why was Marin hit so hard by the

drought? We asked the manager of the County Water District, at that time, Dietrich Stroeh...

DIETRICH STROEH: “Well, that goes back to the decision of the people in the early 70s, in which a number of issues were placed on the ballot for additional water bond issues to develop additional water. Folks in Marin County at that time felt that for various reasons they did not want these issues to go forward...They defeated them.”

SYLVIA ALLEN: “There were many in the Bay area, and in California, too, that felt it served Marinites right to be suffering from the drought, and they really resented having to send water over the Richmond Bridge or to send any water to us at all...because the Marin County people had defeated several bond issues for water and had not really looked to develop any water resources.”

DAVID SCHOUMACHER: “To reinforce the 46 gallon per day allotment, new water rates were imposed. Former Marin Water District Board Member, Pamela Lloyd...

PAMELA LLOYD: “In some areas we gave people by number of people per household...ok, this is how much water you have available to you to use in a given period of time. You choose how you use it. If you want to water your Bonsai plants or whatever you want to do, you make your choice and you make your choice on when you use it, but over a certain period of time you can not go beyond that use or you’ll be penalized, and this is where economics did come in. You’d be penalized very severely for it.”

KATHY BEDILION: “Cooking and drinking water were important...and our vegetable garden. As long as we could keep the vegetable garden, that was important to us...You didn’t wash the car...you didn’t hose down the patio or the deck, all these real wasteful uses...”

DAVID SCHOUMACHER: Some homes and restaurants put signs up directing people toward conservation methods.

JIM BEDILION: “It was ‘in’ to wear dirty clothes type thing was what it was...or drive a dirty car...you didn’t drive a clean car...”

PAMELA LLOYD: “We all did all the little things like when you were waiting for the hot water to come on, you collect the cold water and use it for something else...”

DAVID SCHOUMACHER: Rising to the challenge, Marin residents reduced their water consumption by 66%. There’s an old saying: “You never miss the water until the well runs dry”...Well, as the drought continued, Marin County saw more and more evidence of just how valuable water was. Look at what people were willing to pay for something they had so recently taken for granted.

DIETRICH STROEH: “A thousand gallons of water today, for an individual through the municipal system, you’re talking somewhere in the neighborhood of 62 cents for that amount of water...to \$1.00...so they were selling the same thing...just basically the same amount for somewhere in the neighborhood of \$500.”

DAVID SCHOUMACHER: Another expensive option was to dig your own well...Many hard-hit farmers did...along with wealthy landowners.

DIETRICH STROEH: “The well-drillers did a phenomenal business...phenomenal business...they couldn’t keep up with it...”

DAVID SCHOUMACHER: People were now very willing to invest the time and energy needed to follow strict conservation methods.

PAMELA LLOYD: “Conservation is going to be part of what one would call one’s water supply. What you save, you don’t have to buy...”

DAVID SCHOUMACHER: Besides being motivated to conserve, Marin residents were also willing to spend more money...a lot of money...and a long term commitment so they wouldn't be as vulnerable again.

DIETRICH STROEH: "There were successful bond issues in 1976 and '78 that were extremely costly projects. Adding both of those together they were actually more than the ones that would have been...could have been passed in the early 70s. The people were willing to pay for that water...so they wouldn't have to go through that drought situation again."

DAVID SCHOUMACHER: torrential rains in the final days of 1977 marked the end of this drought. Northern Californians were humbled by the experience and for the next six years people carefully held their use of water...But then, with memories fading and plenty of water at hand, consumption slowly climbed back to where it had been before the drought. We asked economic analyst, Richard Gill, what does the experience of droughts and water shortages teach us about the nature of consumer demand?

(MUSIC IN-COMMENT AND ANALYSIS I)

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RICHARD GILL: One thing the Marin County experience clearly brings out is that when you have a shortage of a commodity like water, you get very careful about how you use it. Watering cemeteries, cleaning house and washing the dog are clearly out. Drinking water is definitely in. Baths and showers? Presumably, after a few weeks, they begin to have a fairly high priority too! Another way of putting this is to say that when you have very little of a commodity, an additional unit of it will bring you more added satisfaction...more marginal utility, as economists describe it...than if you have an abundant supply. At the height of the drought, an additional gallon of water for a Marin County family would have been used for very high priority purposes...drinking, cooking food. The added utility...the marginal utility...of a gallon of water was very high. As

the drought eased up, more and more water became available. The car got washed, the law got watered. An additional gallon of water now brought less added satisfaction, a lower marginal utility. The principle expressed here is usually called the “Law of Diminishing Marginal Utility.” Graphically speaking, the principle would look like this. We measure the marginal utility of a gallon of water here on the vertical axis. Along the horizontal axis, we measure the amount of water available to us. At the height of the drought, we have very little water, here, and its marginal utility is high. When the drought eases, we have a great deal of water available to us and the marginal utility of water becomes very low, here. In general, for most commodities, the marginal utility curve will look like this, diminishing as we go down to the right. And this principle is important because, among other things, it explains why we’re willing to pay more for a commodity when it’s in short supply and why we’ll pay only a low price for it when it is abundant. In fact, our brief study of droughts has taught us much of what lies behind the demand side of the famous “Law of Supply and Demand.”

PART II

DAVID SCHOUMACHER: As the smoke cleared from the 1973 Arab-Israeli War, OPEC put the squeeze on America by quadrupling its prices for oil. Where America had once been a major petroleum exporter, by the 1970s it had become overly dependent on imported oil...for fuel...power...and heat. OPEC had it...America needed it. This first oil crisis shook the economic structure of the nation...Where were American oil producers? Ike Kerridge, an economist from the Hughes Tool Company, explains...

IKE KERRIDGE: “Well, the price of oil which is the critical factor in the incentive to drill...price had been very stable over a number of years...actually through 1971. And of course as inflation began to accelerate in this country in about 1965, this meant that in terms of purchasing power, the real price of oil was declining...and therefore there was less incentive to drill, and drilling activity declined by about 70% from the '55-'56 period to the low point in 1971, when, on average, we had fewer than 1,000 rigs running in the United States.”

WILLIAM RUTTER, JR.: “From ’51 or ’52 to ’73 the dollar number was \$3.25 for West Texas crude. The purchasing power decreased all that time and the cost obviously escalated during that 20 years...22 years.”

DAVID SCHOUMACHER: The American oil industry had other problems. In an effort to curb inflation, price ceilings were imposed in 1971 by the Nixon Administration. James Schlesinger, the nation’s first Secretary of Energy...

JAMES SCHLESINGER: “If we attempted to control the price of oil or of natural gas, based upon the assumption that a 15% rate of return was the ceiling...because there are so many failures, so many dry-holes, we would discover there would not have been the entrepreneurial activity in the industry that was necessary to maintain any kind of activity. The control of price in a highly risky industry will destroy that industry, and we were doing a fair amount of damage to the industry during the period of control.”

DAVID SCHOUMACHER: World oil prices kept rising. Although prices for our known oil reserves were restricted by Nixon’s controls, one incentive was offered to the American oil industry. New oil, oil found after 1972, was free to follow the higher “world price.” American producers heard the knock of opportunity. One newcomer was Sam Lefrak, a New York City landlord who declared war on OPEC...

SAM LEFRAK: “Because they drove the price up so high...it now became economically viable for us to go deeper and drill right here for oil and gas.”

DAVID SCHOUMACHER: In 1972, at least 40-60% of America’s known reserves remained trapped in rock pores and fissures. Expensive enhanced oil recovery techniques, designed to extract a greater percentage of oil, could greatly add to the nation’s reserves. By allowing this source of oil to follow the “world price,” the government encouraged additional research and exploration in this area. But this infant oil boom was soon stifled. In 1975, in an effort to protect consumers from dramatic oil

price hikes, President Gerald Ford put ceilings on all domestic oil. This discouraged domestic production and left us more dependent on imports. Then in December, 1978, Iran, racked by political upheaval, curtailed production of crude oil. Cut off from its major source of supply, the price of oil in the United States once again more than doubled. Frustrated consumers were reacquainted with the energy crisis...as long gas lines reappeared. Oil suppliers put pressure on the government to decontrol gas and oil. Mr. Schlesinger, what do you think turned all this around and made decontrol acceptable?

JAMES SCHLESINGER: “It was a number of things. First, there was the opportunity that was created by the fall of the Shah...Public concern was rising when production ended in Iran...Governmental concern was rising even more rapidly. There was alarm that ultimately became more than alarm...almost panic in the industry...to acquire additional supplies. And some action had to be taken by the government...”

DAVID SCHOUMACHER: By June of 1979, President Jimmy Carter announced the gradual phase-out of controls on domestic oil. Once the controls were lifted, was there a shout of yahoo from the wildcatters and they jumped out to start drilling again?

JAMES SCHLESINGER: “Oh yes, yes, indeed, it had an immediate effect...and the level of drilling activity began to rise as soon as decontrol was announced. We were drilling annually about 2,000 wells...We moved up until 1982 to about 4,500 wells...more than doubled the level of drilling activity.”

DAVID SCHOUMACHER: The new high price for oil, coupled with government decontrol, were the financial carrots needed to lure suppliers back into domestic production. Many of these producers were independents who accounted for 90% of domestic drilling. Wildcatter, William Rutter, Jr., had left the oil industry in 1959, and re-entered when the promise of profits returned...

WILLIAM RUTTER, JR.: “When the price of oil went up, enough...I started looking at deals that were, you know, would pay out in a reasonably short period of time and that

the total reserve...total estimated or hoped for value reserve...was an attractive multiple of the perceived risk. The price of these commodities has gone up, but they always come back down because as soon as they get high, producers want to produce a lot...and the consumers want to consume less, and so you have a balance. This is the supply, you know, the Laws of supply and Demand...and it works.”

DAVID SCHOUMACHER: Did these new suppliers win their gamble? Well, many of them did. With the lure of rising oil prices and profits, oil production almost doubled in America as well as the OPEC countries. As profits soared, more producers decided to pump even more oil. Soon there was a glut. By 1985 the price of oil had plummeted. We asked Economic Analyst Richard Gill: What do oil prices tell us about the law of supply and demand?

(MUSIC IN-COMMENT AND ANALYSIS II)

(MUSIC OUT)

RICHARD GILL: It tells us a great deal about how consumers and producers react to higher prices. With higher oil prices, American consumers found ways to use less oil. Their demand curve for oil had this general shape. We started, say, with price here. As the price went up, oil consumers found ways to economize on oil. This is just what we would have expected from our earlier discussion of droughts and marginal utility. They economized on the more expensive oil, just as in the California drought, they economized on the temporarily expensive water. But the oil episode also tells us a good deal about producer reactions to higher prices. The higher price of oil served as an incentive to search for and produce larger quantities of oil. This search was expensive and risky. It required the promise of higher profits for the producers to undertake it. And this is essentially the signal that high prices give to producers. High prices promise higher profits which, in turn, mean that businessmen can now expand production even though the costs of that additional production may be quite high. In saying this, we are really describing the supply curve of an industry, whether oil, potatoes, or video cassette recorders. It would generally look like this. The higher the price, the more oil, potatoes,

or VCRs the producers will bring to the market. As the consumer demand curve slopes downward to the southeast, the producers' supply curve usually slopes upward to the northeast. And, indeed, if it's a very "well-behaved" industry, the intersection of these two curves will determine the price of the product...here...and the quantity of the product that is brought to the market...here. That, in a nutshell, is the "Law of Supply and Demand." Of course, not all industries are that "well-behaved." OPEC gets into the act, or the government...or the consumers themselves may get new ideas. That's another "law" of economics": Nothing ever seems to stay put!

PART III

DAVID SCHOUMACHER: A fascinating part of our culture is our preoccupation with "fads." Seems that we're always being consumed by a mania for something that's "in style"...whether it's "Cabbage-Patch" dolls or "hula-hoop." And when something is "hot" you've simply got to own one. The jeaning of America took place in several stages...and peaked when this almost basic commodity became "high fashion"...designer jeans. Now, when shopping for a basic pair of blue jeans, why not simply look for the lowest price? Though they were double the price of regular jeans, America was buying them in droves. Why were people willing to pay a premium for these jeans? (SFX: SONG: "TIGHT BLUE JEANS") We talked to Joe Nakash, President of Jordache Enterprises...

JOE NAKASH: "In the beginning, right from the beginning, when we brought the concept of tight, sexy jeans...we went into the department stores and they said...I'm sorry, we don't need another jeans company...and we were very upset. And we said, I'm going to fix them...we're going to go directly to the consumer and we're going to tell them that we have those beautiful designer jeans, and that's what we did..." (AUDIO CLIP: JORDACHE COMMERCIAL - "YOU'VE GOT THE JORDACHE LOOK") We created such a demand that the consumer went directly to the department stores and said, I want that jeans."

DAVID SCHOUMACHER: We talked with advertising and marketing experts in the apparel industry...

ERWIN EPHRON: “They fit much better...on women, than any other jeans had before...They were kind of a “melding” of the fashion world...the practical world...the status world...all at a price that lots of people could afford.”

JOHN L. WILCOX: “It became very acceptable to wear jeans almost anywhere...so it became a universal product and that added further utility to it, because your jeans were a product you could work in...you could play in...you could go out at night in.”

(AUDIO CLIP: JORDACHE COMMERCIAL – “JORDACHE CONNECTION”)

BRENDA GALL: “Brands were built up with a lot of TV hype and it attracted the consumer...that this was a new “lifestyle” that would give them an image that they didn’t have if they wore this jeans. They were willing to pay a premium for it for those reasons.”

DAVID SCHOUMACHER: So...how did other producers in the fashion trade react to the early success of the trend-setters in designer jeans?

BRENDA GALL: “Everybody jumped on the bandwagon...Any designer who had a name was putting his name on the back pocket of a jean...”

DAVID SCHOUMACHER: To keep up the momentum, even more money was poured into advertising...and department stores placed jeans in high-traffic areas.

JOHN L. WILCOX: “At its heyday, the designer jeans industry was spending something on the order of 10% of sales on advertising and promotion.”

MARCELLA FREE: “It was really the first time that television had been used so powerfully...and so much money spent on television in any kind of fashion category...a fashion that I can think of. Yes, from that point of view it had to have a big impact on people’s consciousness.”

DAVID SCHCOUMACHER: Do you think you were spending more then on advertising than other companies in your field?

JOE NAKASH: “Yes, at that time, I did...We spent 50% on advertising at that time...and we created that demand.”

BRENDA GALL: “By putting millions of dollars of money into advertising...very early on in the designer jeans phenomenon...a lot of the entrepreneurial producers were taking a very great risk...with their finances. They didn’t know if the consumer was going to like it as much as they eventually did like it...and if they hadn’t, if it hadn’t been a success...that advertising money would have put a lot of these companies in virtual bankruptcy.”

JOHN L. WILCOX: “Back in 1965, jeans were bought on the order of one pair...less than one pair per capita and that increased to almost three per capita...”

DAVID SCHOUMACHERP: It was a blue denim gold mine and the only question was...how long could you work that vein?

BRENDA GALL: “The market got overdone. When you see a designer jean on everybody’s back pocket regardless of their station in life...even though the product started at the higher end of the market, worked its way down to the masses...and then it lost its status or cachet, and then the consumer was no longer willing to pay that premium price for it.”

DAVID SCHOUMACHER: Whenever we look back on yesterday's "hot" fashions, we generally ask...What did we ever see in that? Did we really spend our good money on something like that? Well, times change and tastes change...We asked our economic analyst, Richard Gill, what the changes in taste and fashions and products might tell us about the nature of supply and demand?

(MUSIC IN-COMMENT AND ANALYSIS III)

(ECONOMICS U\$A LOGO appears on screen)

(MUSIC OUT)

RICHARD GILL: A great Greek philosopher once summed up the world in the phrase, "All is flux." He could have been talking about the jeans craze, or, for that matter, about the American economy generally. We talked a few moments ago about the wonderful law of supply and demand for setting prices. The trouble, as we also suggested, is that these curves never stay put. One year, the demand curve for jeans shoots way up there. A few years later, people tire of jeans or find substitutes in athletic sportswear...bango, back down here again. People's tastes change, their incomes change, the availability of other products changes...All such factors can shift the demand curve for any product up and down and back up again. Similarly, on the supply side. When the price of oil zoomed up in the 1970s, for example, that affected the costs of all sorts of industries that used oil as an input. They were faced with an upward shift of their supply curves. On the other hand, businesses are always finding new and cheaper technological devices for producing their products. This tends to shift the supply curve downward. There a lesson in all this, namely, that the law of supply and demand is really more a way of analyzing the deep and underlying forces that affect the prices of commodities than of determining those prices in any rigid way. All is flux in economics...which makes it a field that is sometimes frustrating, always fascinating!

DAVID SCHOUMACHER: The prices of the clothes we buy, the fuel we depend on...even the water we use are all influenced by the "laws of supply and demand." Of course the very words "Supply and Demand" now sound like a cliché, but the forces

behind them remain vital...and the interplay between supply and demand is still at the very heart of our entire market system...a subject we'll be considering in future editions of Economics U\$A. This is David Schoumacher.

ECONOMICS U\$A (LOGO AND MUSIC)

EFC LOGO

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