Price Leadership

*This note examines **price leadership** by a dominant firm. Prior to class, please prepare your answers to the problem on pages 5-6.*

In Sessions 3 and 4, we examined several strategies that can sustain profitability among competitors in an oligopoly. While collusion is (in general) not sustainable, both the Cournot and the Stackelberg outcomes often are. In contrast, price competition typically drives price down to marginal cost if the firms produce substantively identical goods.

In this note, we consider situations in which you are the dominant firm in an oligopoly or you are a dominant firm in a market with many small competitors. Your advantage is that your costs are lower than the competition (this is why you are the dominant firm). Again, products are identical, so price competition is a serious threat to overall profitability. What can you do in this instance to maximize profit? As the dominant firm, you can set a price that limits how much competition you will face. For dominant firms in markets that compete on price, this can is a highly profitable strategy—Wal-Mart being a prime example.

We will examine two cases: (1) A dominant firm with a "fringe" of small, higher cost competitors; (2) an oligopoly in which one firm, typically the largest, is the acknowledged "price leader".

1. Price Leadership with Many Small Competitors

The price leader is a dominant firm because of its superior cost position, and managers of other firms simply follow its pricing moves. What price should it set?

Theory

Figure 1 shows how a price leader should determine its price. Here D is the market demand curve, and S_F is the supply curve of the smaller fringe firms. This supply curve S_F is just the marginal cost curve for the fringe suppliers. Since they take the price as given, their MR for each additional unit sold is just the market price.

The dominant firm must determine *its* demand curve D_L, which is not the same as the market demand curve. The dominant firm's demand curve is the difference between market demand and the supply of the fringe firms, and is indicated by the bold line in the figure. (Note the kink in the bold line at the price P_2). For example, at price P_1, the supply of the fringe firms is just equal to market demand; thus the dominant firm can sell nothing at this price. At a price P_2 or less, fringe firms will not supply any of the good, so the dominant firm faces the market demand curve. At prices between P_1 and P_2, the dominant firm faces the demand curve D_L.

Corresponding to D_L is the dominant firms' marginal revenue curve, MR_L. The dominant firm's marginal cost curve is MC_L. To maximize its profit, the dominant firm produces the quantity Q_L where $MR_L = MC_L$. From the dominant firm's demand curve (<u>not</u> the market demand curve), the firm finds the optimal price to set, P^*. At this market price, the dominant firm sells Q_L, the fringe suppliers collectively sell Q_F, and the total quantity sold is $Q = Q_L + Q_F$.

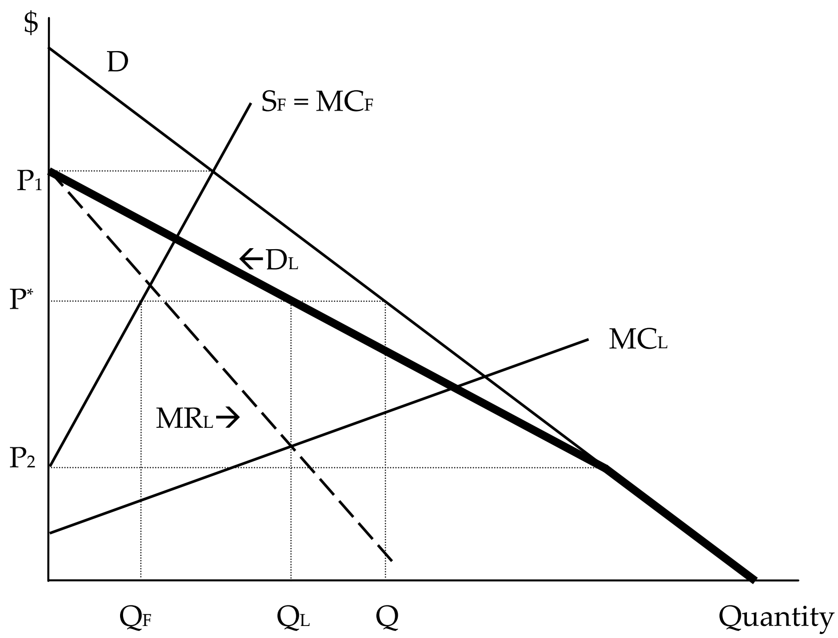

FIGURE 1. *Dominant Firm Price Leadership*

Intuition. Here's the intuition behind what the dominant firm is doing in setting its price. In this context, the dominant firm is choosing not to produce as much output as it is capable of, in order to avoid driving down the market price. In doing so, however, the dominant firm is ceding some market share to the competitive (price-taking) fringe suppliers who can just eke out a small profit at the dominant firm's price. While the dominant firm *could* drive that fringe (or most of it) out of the market entirely, this is not a profit-maximizing strategy because the dominant firm would have to lower its price too much for all the units it already sells.

The profit earned by the dominant firm in this setting is (typically) much less than it would earn if everyone in the market competed on quantity instead of on price. Here it makes profit only because when it picks a price well above its marginal cost, the competition cannot set their prices any lower and increase their profits—the fringe's (marginal) costs are just too high. This superior cost position is about the best a firm can hope for if it must compete on price in a market for substantively identical products.

As usual, we illustrate the calculations involved in determining a dominant firm's pricing decision by working through a problem.

Example

The industry demand curve is: $Q = 100 - P$.

The marginal cost (supply curve) of the fringe is: $MC_F = 10 + .5 \cdot Q_F$

The dominant firm has a lower marginal cost curve than the fringe, particularly at high volume. That is what makes it a dominant firm. We use the subscript "L" to indicate items that apply to this "price leader". The leader's marginal cost function is:

$$MC_L = 10 + Q_L / 3.$$

The fringe suppliers can sell all they want at the market price, but each member of the fringe is individually too small to influence the market price. So each member of the fringe has a flat MR function equal to the market price (whatever that turns out to be). For these firms, the best strategy is to take the (leader's) price as given and produce a total quantity that sets $P = MR_F = MC_F$.

What should the leader do? The leader should calculate her revenue under the assumption that the fringe will supply according to its profit-maximizing strategy of choosing a quantity up to the point that $MC_F = P$. The demand curve *facing the leader* is the difference between market demand Q and the output of the fringe Q_F, or

$$Q_L = Q - Q_F .$$

Now substitute in for both quantities on the right-hand side to get the leader's quantity demanded as a function of the market price. We can re-arrange the fringes' marginal cost function in terms of quantity as

$$Q_F = -20 + 2 \cdot MC_F$$

so they produce where

$$Q_F = -20 + 2 \cdot P$$

And we know market demand is $Q = 100 - P$. So, plugging these in on the right-hand side of $Q_L = Q - Q_F$ get the leader's demand curve (as a function of P) yields

$$\begin{aligned} Q_L &= (100 - P) - (-20 + 2 \cdot P) \\ &= 120 - 3P. \end{aligned}$$

Once we know the leader's demand function, we can find its optimal quantity by setting its MR_L equal to MC_L. Since MC_L is given to us as a function of Q_L, we need total revenue as a function of Q_L. So rearrange the leader's demand function to get $P = 40 - Q_L / 3$, and calculate total revenue of the leader, TR_L:

$$TR_L = P \cdot Q_L = 40\, Q_L - (Q_L)^2 / 3$$

so

$$MR_L = 40 - [2/3] \cdot Q_L.$$

Now set $MC_L = MR_L$:

$$10 + [1/3] \cdot Q_L = 40 - [2/3] \cdot Q_L$$

Solving for the profit maximizing level of output for the dominant firm gives $Q_L = 30$. To complete our analysis, we find the profit maximizing price for the leader to set from *the dominant firm's demand curve*:

$$P = 40 - Q_L / 3 = \$30.$$

Given $P = \$30$, total market demand is $Q = 100 - P = 70$, and therefore the fringe supplies $Q_F = 70 - 30 = 40$. To be sure this is correct, check what individual fringe behavior implies the fringe will provide: The fringe should produce to the point where its (collective) marginal cost function is equal to the market price of $30, or

$$P = MC_F \text{ or } 30 = 10 + .5Q_F \text{ or } Q_F = 40.$$

It checks.

Remark. If this worked-out example is unclear, go back and label Figure 1 with all the relevant quantities used in this example. Then check (*i*) how each of the equations above matches a line or intersection in Figure 1, and (*ii*) the order in which we find them algebraically. Then do the problem for class below.

Problem to Prepare for Class

Please be prepared to discuss your answers to this problem in class. As usual, you do not need to turn in your work on class-session problems, and you may work with others if you wish.

WalRus, Inc.

Marge N. Avera is a pricing director for WalRus, Inc., the largest discount mass merchandiser in the US. On a day-to-day basis, Ms. Avera supervises the pricing decisions for thousands of products that WalRus carries. Because of WalRus' tremendous volume, it enjoys a cost advantage over the many small competitors that struggle to compete with WalRus. Recently, Wall Street has suggested that WalRus should reduce its average price level to pressure the competitive fringe further and expand market share. Reducing its average price level could boost WalRus' revenue in two ways: (1) drawing some new customers into the market overall, and (2) reducing existing consumers' alternatives (that is, forcing some small competitors out of the market entirely). However, Marge is concerned that reducing its average price level would lower WalRus' margins (the difference of price and marginal cost) as well, which might hurt profits. She asks you to analyze this trade-off, and offer her a recommendation.

You start by examining one large geographic market, for which WalRus has the following data. The market-level demand curve facing all sellers is estimated to be Q = 15,000 – 3,000 * P, where Q is total demand each week and P is the market price level. (Here a "unit" of demand is a composite of all of the thousands of products that WalRus and its competitors carry. The market demand curve is for this composite good). WalRus has a constant marginal cost of $2.50 per unit, and a fixed cost of $1,000 per week. The competitors that WalRus faces are many but each is small. In this market, you have estimated the marginal cost function of this competitive fringe to be $MC_F = \$3 + q_F / 1000$, where q_F is the total quantity sold by the fringe firms (measured in the same units as demand). The fringe sets its price at whatever WalRus does, knowing that it cannot afford to price above WalRus but not wanting to drive prices any lower than WalRus either.

(a) What is the optimal price level for WalRus to set in this market? What it its profit? At that price level, how much does the fringe produce?

(b) In a conference call with Wall Street analysts and institutional investors, several participants state that, based on their analyses, WalRus could destroy the competition in this market at a price level of about $3. They note that a price of $3 is still 20% above WalRus' marginal costs (called the *cost of goods sold*), and would still easily cover fixed costs.

Will WalRus find it more profitable to challenge the competition (out of business, really) at a price of $3, or should it allow some competitors to continue to exist?

About this problem. This problem is (obviously) a thinly-veiled reference to Wal-Mart. In most regions of the U.S., Wal-Mart holds an absolute cost advantage over the competitors in faces, from Costco to BJ's Warehouse Club to a myriad of local grocers. When these firms' stores are located nearby one another, Wal-Mart effectively dictates the price that everyone sells at. Wal-Mart could probably force (most of) these competitors out if it lowered its prices further, and still turn a profit. So why does Wal-Mart continue to tolerate this (substantial) fringe of suppliers? *Because it is rarely worth capturing a market share of 100% by cutting price.* Tolerating a fringe of competitors, even when you have substantially lower costs then they do, is the profit-maximizing thing to do: Once you have a large market share, capturing the last portion of the market requires lowering the price on all your existing sales, and is seldom worth it.

"The improvement is the higher price."

Application: The OPEC Cartel

Cartels are formed when several of the large low-cost producers collude and then act as a single firm to set prices against a competitive, high-cost fringe. For a cartel to be effective, to conditions must hold: (1) The cartel's members must be big enough to produce a large percentage of the total market output, and (2) most importantly, the cartel must be able to penalize defectors (*defectors* are members of a cartel who supposedly follow the agreement, but instead secretly produce more than they are supposed to).

Now *if* a cartel can achieve these two conditions, then its optimal pricing strategy is quite like dominant firm's price leadership problem facing a competitive fringe. The reasoning is similar to that which we just saw. The difference of course is that a cartel is a groups of firms (or other profit-maximizing organizations), in contrast to the single dominant firm model of Figure 1.

The most famous cartel is the Organization of Petroleum Exporting Countries, which is a cartel of *nations* rather than a cartel of firms per se. International cartels also operate in the world copper market, the uranium market, and the world market for diamonds. Nearly all cartels operate outside the U.S., because any effort to initiate a cartel in the US is considered collusion and is illegal. The attached *New York Times* article at the end of this note, which pre-dates the current run-up in world oil prices, provides an interesting inside look at how a cartel works and why they often experience uneven success at raising prices by limiting members' production.

2. Price Leadership in an Oligopoly Market

The preceding analysis about a dominant firm can also be applied to an oligopoly setting in which one firm is an acknowledged "price leader," and a few oligopoly competitors tacitly follow the leader's pricing decision. This outcome is typically better for all firms involved than engaging in a price war, but is usually feasible only if there is a dominant firm (in terms of market share) that is the unchallenged market price setter. (It might be dominant by virtue of being first to market if consumers have brand loyalty, for example, or simply because it has superior cost position).

Successful price leadership in an oligopoly assumes sequential moves, rather than simultaneous choices. However, when firms compete on price this sequential-move assumption is very plausible, since the follower(s) can just wait and move their prices whenever the leader does.

We illustrate the analysis with an example. For simplicity, here we consider a duopoly case. Please note the remark at the end of this example that compares the outcome under price leadership with the outcomes when the firms' compete by quantity (either simultaneously, a lá Cournot, or sequentially a lá Stackelberg).

Example

This problem uses the same economic facts of the industry we examined in the note on *Strategies in Oligopoly Markets* for Session 3. Here is the demand and cost information for the market and firms involved. Two firms produce identical products; the market demand curve facing the two firms is:

$$Q = 200 - 2 * P$$

Here is the cost structure for firm 1 and firm 2:

$$TC_1 = 5 * q_1 \quad \text{and} \quad TC_2 = 0.5 * (q_2)^2$$

As we originally specified price competition in this market (*see pp. 2-3 in Session Note 3)*, the outcome was that the market price falls to the marginal cost of the producers, or P = MC = \$5, and at that level firm 1 produces q_1 = 185 units and firm 2 produces q_2 = 5.

Now imagine that firm 1, which has a tremendous cost advantage at high volumes, signals that it wishes to act as a price leader (dominant firm). The "signaling" commonly occurs through pronouncements by the largest firm in the trade press about the need for higher prices to "restore economic vitality" to the market, or simply though public statements to the investment community about a pending price increase. No effort to reach or make any agreement is attempted among the firms; no one is practicing collusion here. Rather, firm 1 takes the lead in posting a price change visible to its competitor, and firm 2 might find it in its best interest to match this price change rather than undercut the leader's price.

If firm 1 expects that this is the game they will play, then its optimal price can be found using the same logic in the analysis with a competitive fringe. Let firm 1 be the low-cost, dominant firm price leader, and firm 2 be the "fringe." The quantity that the leader can sell at any price is $q_1 = Q - q_2$, where Q is the market demand curve. Since firm 2 is a price taker, its MR curve is completely flat at the leader's price choice P (whatever that turns out to be). So firm 2 will set $P = MR = MC_2 = q_2$.

Using $q_2 = P$ and the market demand curve $Q = 200 - 2 * P$, we get the demand curve facing the leader,

$$\begin{aligned} q_1 &= Q - q_2 \\ &= (200 - 2 * P) - P \\ &= 200 - 3 * P \end{aligned}$$

Now profit maximize for firm 1, the price leader. From $q_1 = 200 - 3 * P$, we know that

$$P = 66.67 - .33\, q_1$$

so total revenue of the price leader is

$$TR_1 = 66.67\, q_1 - .33\, (q_1)^2$$

and

$MR_1 = 66.67 - .67\ q_1$

Now since MC_1 = \$5, setting $MR_1 = MC_1$ and solving for q_1 yield the leader's profit-maximizing output level of q_1 = 92.45 units. From the *leader's* demand curve, it will chose a price of P = \$35.85.

What will firm 2 supply? It will produce up to the point where P = MR = MC = q_2, and therefore q_2 = 35.85 units.

CHECK: Total market demand at P = \$35.85 will be Q = 200 − 2 * \$35.85 = 128.30 units. Notice that firm 2 supplies 35.85, and firm 1 (leader) provides 92.45 which together equals 128.30. It checks.

Now calculate profits for the two firms when firm 1 acts a price leader and firm 2 follows the lead. Firm 1 will make \$2,852.21 profit and firm 2 will make \$642.61.

Remark. These profits are much better for each of our duopolists than if they engaged in cutthroat price competition and drove the price down to marginal cost of \$5. Thus there is much to be gained—by both firms—by letting firm 1 be the price leader.

But notice that the duopolists' profits are still less than the two firms each can earn if they learn to play Cournot quantity competition by controlling capacity. Under Cournot behavior, firm 1 made \$3,200 (> \$2,852.21), and firm 2 made \$900 (> \$642.61).

Thus the industry will still make every effort to "rationalize capacity"—playing a price leadership strategy is a second-best outcome to playing the capacity-based oligopoly business strategies we studied last week. And of course, being the first mover in the "capacity game" is even better.

Application: Commercial Banking[1]

One of the most striking examples of successful price leadership in recent years is the way commercial banks set the price for loans they make, known as the *prime rate.*

Commercial banks borrow money from individuals and companies who deposit funds in checking accounts, savings accounts, and certificates of deposit. They then use this money to make loans to household and corporate borrowers at a higher rate. The largest commercial banks in the United States compete with each other to make loans to large corporate clients. The main form of competition is over price—in this case, the interest rate charged corporate clients. If competition becomes aggressive, this interest rate falls

[1] This example is adapted from Pindyck and Rubinfeld, *Microeconomics*, 6th edition (2005).

closer to the banks' marginal cost (which is their cost of funds), and so do profits. The incentive to avoid aggressive competition leads to prices well above the banks' marginal costs, and to a profitable form of price leadership.

The interest rate that banks charge large corporate clients is called the *prime rate*. Because it is widely cited in newspapers, it is a convenient focal point for price leadership. Most large banks charge the same or nearly the same prime rate; they avoid making frequent changes in the rate that might be destabilizing and lead to competitive warfare. The prime rate changes only when money market conditions cause other interest rates to rise or fall substantially. When that happens, one of the major banks announces a change in its rate and other banks quickly follow suit. Different banks act as leader from time to time, but when one bank announces a change, the others follow promptly.

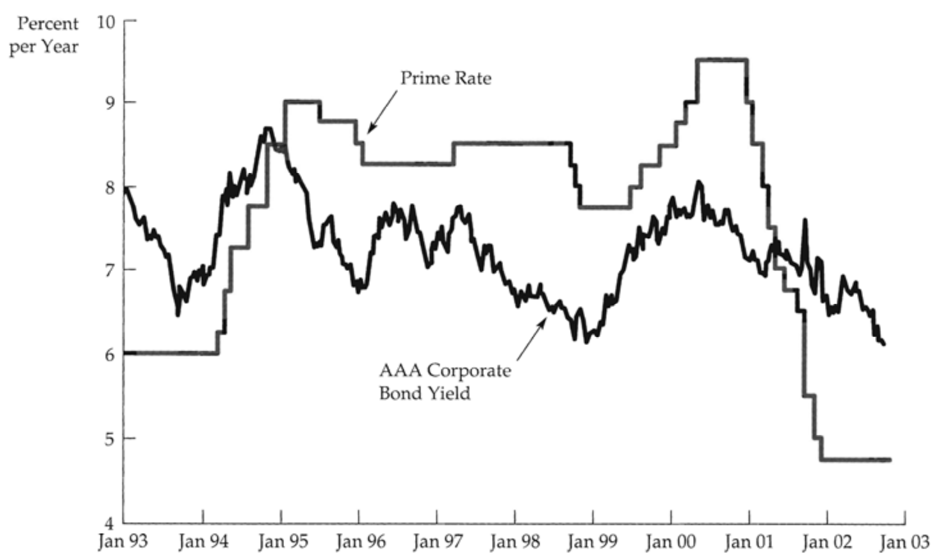

FIGURE 2. *The Prime Rate and AAA-Corporate Bond Rate, 1993-2003*

Figure 2 shows the evolution of the prime rate from 1993 to 2003. It also shows the interest rate on high-grade (AAA) long-term corporate bonds. Although other market interest rates fluctuated considerably during this period, the prime rate changed only after other rates had changed substantially. In most cases, each change in the prime rate was initiated by one (or sometimes two) banks, and *all* commercial banks changed their rates within the same day.

Return to Full

The **New York Times**

October 24, 1999, Sunday, Late Edition - Final

SECTION: Section 3; Page 1; Column 4; Money and Business/Financial Desk

LENGTH: 2449 words

HEADLINE: An Oil Outsider Revives a **Cartel**

BYLINE: By AGIS SALPUKAS

BODY:
THE price of crude oil has doubled since early last year. Higher prices for gasoline, heating oil and other products are hitting every consumer's pocketbook.

Is OPEC flexing its muscles again? Not exactly. There's a new oil **cartel** in town, and after a shaky start two years ago, its members have achieved -- for now, at least -- the unity necessary to hold to their production quotas. And that means higher prices.

In a sense, this cartel is simply the 11 members of the Organization of Petroleum Exporting Countries plus two -- Mexico and Norway. But the world's oil-producing and exporting nations are wielding power this time around mainly because of a shove not from the Middle East but rather from Mexico -- and especially from its persistent energy minister, Luis K. Tellez, a novice in the world of oil.

When Mr. Tellez began his mission, he was worried about the devastating impact that falling oil prices were having on the economy in Mexico, which in 1997 relied on oil for 38 percent of its revenues. But his leadership has been felt the world over. "Without Tellez, this coalition would not have been possible," said Dr. Gary Ross, chief executive of PIRA Energy Group, a consulting firm based in Manhattan.

The coalition has shown such cohesion that some analysts predict that crude oil could rise to an extraordinary level -- $30 a barrel -- by the end of the year, a price not seen since January 1991, during the Persian Gulf war. Already, the price of crude oil has more than doubled, to $23.45 a barrel from $11 early this year.

Not that the coalition is home free. Prices hit $24 a barrel last month, but slipped back when traders thought they saw hints of cracks in the cartel's solidarity. After all, if one country breaks ranks, the cartel's tenuous grip on the world market could crumble.

For the moment, though, there seems little easing in the cartel's united front or in rising oil prices.

For one thing, the bullish global economy strengthens the group's grip. World oil inventories have been declining, but in the past year demand has been rising sharply. Most Western economies are in high gear, and as Asian economies have recovered from their turmoil last year, their need for oil has grown, too. World demand, now about 76 million barrels a day, could outrun supply by about three million barrels a day as early as this quarter, said Frederick Leuffer, an oil analyst at Bear Stearns.

"If the oil exporters stay with their cuts, inventories of oil will run down hard and push the price up to close to

$30," Mr. Leuffer said, echoing a view shared by many oil experts. "Everyone is on the edge of their seat about when the discipline will break or when the first increase will be made in the production quotas."

EVERYTHING was different in the early months of 1998, when the coalition was forged. With oil prices at $15 to $16 a barrel, oil producers were hurting. Mexico was in particularly dire straits, forced to make a series of painful cuts in government spending that hit its people where it hurt most: in health, education and other basic services.

Mr. Tellez, an economist who had no previous experience in the oil industry, decided to try to steer the world's oil-producing nations in a new direction. When he became energy minister in 1997, the soft-spoken Mr. Tellez knew neither his colleagues nor much about the arcane world of oil politics.

But he jumped headlong into the oil patch, and within a year he was able to persuade a few key oil ministers and officials from Saudi Arabia and Venezuela to form a new coalition of oil-producing nations.

"It certainly demonstrates a new configuration," said Daniel Yergin, the chairman of Cambridge Energy Research Associates, a consulting group based in Cambridge, Mass. "Mexico's role has become central, whereas before it was more peripheral."

Unknown in the industry just two years ago, Mr. Tellez has become a force. "Tellez is now a significant player in the world of oil," Mr. Yergin said. How long he remains one depends upon Mexico itself, for he made no promises about Mexico's participation in the group beyond the end of next year.

In some ways, Mr. Tellez seems an unlikely world-shaker. A short, slight 41-year-old with receding dark hair, he was trained as an economist specializing in international finance, and his experience in government had been largely with a contentious project that gave tenant farmers title to the land they farmed.

In a recent interview in the lobby of the Four Seasons Hotel in Manhattan, where he spoke at a meeting of oil industry experts, Mr. Tellez reminisced about his plunge into the murky waters of oil diplomacy.

After getting his doctorate in economics at the Massachusetts Institute of Technology in 1986, Mr. Tellez, who runs and plays tennis to remain trim, taught economics at his alma mater in Mexico for a time.

In 1987, he joined the Finance Ministry, and two years later helped to put together a plan, led by Treasury Secretary Nicholas F. Brady, that reduced Mexico's foreign debt. In 1990, he moved to the Agriculture Ministry, and in 1994 was made chief of staff to President Ernesto Zedillo, whom he had known since his early days as an economist.

Then it was on to the Energy Ministry, where the last months of 1997 were particularly bleak, he recalled, with oil prices falling to $17 a barrel in December.

At one point, "we sold a shipment of oil for $7 a barrel," he said. "Such a price has not been seen since the Great Depression." As revenues plunged, Mexico had to cut its budget twice.

Oil producers seemed unable to change the disastrous policies that led to the price spiral. But Mr. Tellez managed to break through this wall of paralysis, mainly with what he called "gentlemen's agreements" among Saudi Arabia, Venezuela and Mexico.

In February 1998, he began his effort to break the logjam by consulting with President Zedillo, who gave him his full support. He then contacted Erwin Arrieta, oil minister of Venezuela, a founding member of OPEC. Mr. Arrieta agreed on the need for action, and the two men met in Miami, discussing, among other things, the possibility of Mexico forging a coalition with Norway, another major non-OPEC producer.

It was an unusual initiative, one that could be politically touchy back in Mexico, which as a big oil exporter -- particularly to the United States -- had long kept its distance from OPEC. Any sign of change would raise concerns that Mexico was giving up its carefully guarded independence.

Still, with the support of Mr. Arrieta, and using various oil experts as intermediaries, he tried to find out whether Ali Naimi, the Saudi oil minister, would be willing to talk to him. Word came back that he would.

The Saudis, who as the world's largest exporters play a leading role in OPEC, had helped set off the latest crisis in oil prices by pushing through a higher production ceiling for OPEC late in 1997. Mr. Naimi's support would thus be crucial in any attempt to halt the slide.

WHEN Mr. Tellez called him at his office in Riyadh in February 1998, he found that they had similar concerns. Their countries' budgets were being torn to shreds by falling oil revenue, and no one seemed to be taking any action to limit production.

"It was simple," Mr. Tellez said. "It was important to do something."

Mr. Naimi invited him and Mr. Arrieta for secret talks -- the first time a Mexican oil minister had been granted such a meeting.

On the way, Mr. Tellez made a stop in Norway, also a big oil exporter, to see what position that country would take. The Norwegian energy minister, Anne Enger Lahnstein, and other Norwegian officials listened to him, he said, but did not commit themselves. Only later did Norway, which also had a tradition of not cooperating with OPEC, go along with production cuts.

With only one assistant in tow, Mr. Tellez flew to Riyadh, where he and Mr. Arrieta, who arrived with a full staff on a private jet, sat down with Mr. Naimi in a luxurious official guest house in March 1998.

With oil prices still languishing around $14 a barrel, the three wasted little time, taking only one day to agree to cut the coalition's production by 1.6 million to 2 million barrels a day.

Mr. Naimi had the formidable, and delicate, task of getting other major OPEC producers to agree. Through an intense day of telephone calls, he lined up the often fractious group to support a cut of 1.6 million barrels a day.

Because their talks had been secret -- and because Mexico had never before cooperated with OPEC at such a level -- the announcement of the deal on March 22 came as a surprise to experts and analysts.

Despite skepticism that the new group would be able to stick together, oil prices began to recover quickly, from $14.65 a barrel in March to $17 a month later.

The recovery, though, was short-lived. With most Asian economies going into a severe downturn and demand falling from big oil importers like Japan and South Korea, the glut of oil started to build again.

Especially remarkable in the story of this ad hoc group has been its members' willingness to abide by the cuts through thick and thin -- even when prices kept falling last year because of the decline of the Asian economies. Skeptics were even more stunned when the group agreed on an additional series of production cuts this year -- totaling about 5.3 million barrels a day -- after its initial cuts last year.

According to Mr. Yergin, the author of "The Prize," a history of the oil industry (Simon & Schuster, 1991), it was the "specter of $5-a-barrel oil" -- a price so low that it would devastate the economies of many oil-exporting nations -- that inspired the group's cohesion.

"The source of the discipline is dire necessity and trauma that these countries went through because of the

collapse in prices," he added.

And Dr. Ross, of PIRA, said: "What these countries found is that they have a common interest. The low oil prices were extremely painful to them since it cut their revenue."

Another reason, he said, has been the willingness of political leaders of the three nations that lead the coalition -- Saudi Arabia, Venezuela and Mexico -- to back up their top oil officials.

"Everyone thought OPEC was declining and losing members," he added, particularly after 1997, when the organization seemed to lack the will to break the disastrous pattern of pumping more oil, even as prices were plunging.

BUT now, again, a single coalition accounts for more than half of world oil production, a share that OPEC itself had not held since the 1970's. And this cartel could be around for a while. Many longtime observers of OPEC and the oil industry say that the new coalition will remain potent and that it could well be a stabilizing influence on world oil prices over the long term.

One vital component of this stability is Mr. Tellez's effort: by bringing Mexico and Norway together with OPEC, he has eliminated a big reason that past productions cuts have often been ineffective.

In the old days, Mexico and Norway often acted as a thorn in the side of OPEC. When the cartel tried to cut production, they pumped all the oil they could. Sure enough, OPEC members would follow suit to protect their markets, and OPEC's resolve to keep prices stable would crumble.

This coalition also has a different look. Even after two years, the group remains informal. While OPEC has a large staff and an elaborate headquarters in Vienna, the new group has no name or offices. It subsists largely on the growing trust among the sharply different personalities of the coalition's energy officials.

They communicate mainly by telephone, E-mail and periodic meetings.

"We're getting to know each other," Mr. Tellez said. "Building up trust is very important." And he saw no reason to change this informal approach.

Trust will be vital if the cartel is to last. Mr. Tellez said that current prices were not too high and that he saw no reason for the group to increase production. He said that there were no plans to discuss such a step at a meeting to be held on Nov. 17 in Riyadh with Saudi and Venezuelan officials.

Oil traders clearly thought differently. When word of the meeting leaked out, crude oil, which had been trading in the $24 range, slid to $22.

Mr. Leuffer said the market's reaction might have strengthened the group's resolve not to raise production, since it proved what could happen if it showed the least sign that it might do so.

The United States, of course, looks on from a different angle, because it imports 56 percent of its oil, making its economy vulnerable if prices soar. For now, though, higher energy prices have not had a large-enough effect to fuel inflation, said Patrick Jackman, an economist at the Bureau of Labor Statistics, which puts together the Consumer Price Index.

Average prices for regular gasoline have risen from 95 cents a gallon last winter to about $1.29, and heating oil this winter will cost about $1.04 a gallon, up from 80 cents last winter.

"Nothing bad has happened yet, but it is something you have to keep your eye on," said William Dudley, the chief United States economist for Goldman, Sachs, adding that the core inflation rate was running at 2 percent so far the year.

Still, if the price of crude oil keeps rising, the impact on the American economy will be substantial, Mr. Jackman said, because oil is used in so many consumer products.

The full impact is yet to be felt in Mexico, either. Higher crude oil prices have helped the Government begin to recover from a huge drop in revenues in 1998, when spending cuts caused widespread hardship. Mexico's oil revenues totaled $9.7 billion in 1997, plunged to $6.4 billion in 1998 and are estimated to recover to $8.5 billion this year. But Mr. Tellez -- who can claim a great deal of credit for that recovery -- is not being hailed as a hero. That is because the money is going mainly to shore up the battered peso, not to restore services.

NONE of this has been easy for Mr. Tellez, who for most of his career was rarely in the limelight. When oil prices were still falling in 1998, even after Mexico and others had made cuts, he bore the brunt of increasing criticism in the press and among some oil experts in Mexico that his initiative had only added to the misery. Mexico had cut its production but now, with plunging prices, it was getting even less revenue, the argument went.

Mr. Tellez recalled that at one point even his mentor, President Zedillo, had second thoughts.

"Every time you get together with your friends the price goes down," he recalled the President telling him once in jest. "So be careful."

http://www.nytimes.com

GRAPHIC: Photos: Ali Naimi, the Saudi Arabian oil minister, left (Reuters), and Erwin Arrieta (Associated Press), the Venezuelan oil minister, were key figures in setting new oil production quotas for OPEC, Mexico and Norway. (pg. 16); (Fred R. Conrad for The New York Times)(pg. 1)

Graphs: "Gaining More Control"
A new oil coalition, including the members of OPEC as well as outsiders like Mexico and Norway, is producing more than half the world's oil. That is about the same share as OPEC produced at its former heights. The graph shows OPEC,s share of world oil production since 1975. *Includes Norway. (Source: PIRA Energy Group)(pg. 1)

"On Crude Oil's Coattails"
As the price of crude oil has increased, gasoline prices have followed and heating oil has started to creep higher as winter approaches. The graphs show crude oil price (West Texas intermediate), gasoline retail price (Regular gas, national average), and heating oil retail price (Residential, national average) since 1990. (Sources: Energy Information Administration; Bloomberg Financial Markets)(pg. 16)

Chart: "HOW MEXICO'S PLIGHT FORGED OPEC PLUS TWO "
Luis K. Tellez, left, Mexico's oil minister, took action in early 1998 to bolster world oil prices -- with the support of Ernesto Zedillo, Mexico's president. These factors led Mr. Tellez to approach OPEC members, as well as Norway, another outsider, to build a new coalition:
*OPEC, on its own, was unable to maintain production discipline.
*A resulting oil surplus caused oil prices to fall drastically.
*Without buoyant oil revenues, Mexico made cuts in Government spending.
(pg. 1)

LOAD-DATE: October 24, 1999