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PIRINC has prepared the enclosed report, *Mergers & Acquisitions: Global To Retail*, based on a presentation given to the Atlantic Region Energy Expo 2000 on April 26. The report considers the recent mergers that have taken place in the context of the ongoing process of consolidation of the industry and discusses implications for the Northeast and Mid-Atlantic regions of the country.

There are some particular aspects of the current wave of consolidations that stand out. First, they are financially more cautious than the last round of big mergers in the early 80s. Second, thanks to the role of the Federal Trade Commission, they are allowing other large, but not giant, players to get much bigger through the acquisition of prime assets forced onto the market.

For the Northeast and Mid-Atlantic regions, the changes in industry structure over the past several years has led to significantly greater concentration of refining in the hands of new players and at the same time, greater capacity and most likely, lower costs. Although concentration is higher, possibilities for anti-competitive action are sharply constrained by the openness of this part of the country to product imports and shipments from other regions. Openness to product imports played a critical role in ending the price spike in heating oil this past winter.

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Mergers & Acquisitions: Global to Retail

The past two years have witnessed the largest oil company mergers in history. While unique in terms of size, they are nonetheless only the latest chapter in the process of oil industry restructuring and consolidation that has been underway for a number of years.

There are some particular aspects of the current wave of consolidations that stand out. First, they are financially more cautious than the last round of big mergers in the early 80s. Second, thanks to the role of the Federal Trade Commission, they are allowing other large, but not giant, players to get much bigger through the acquisition of prime assets forced onto the market.

For the Northeast and Mid-Atlantic regions, the changes in industry structure over the past several years has led to significantly greater concentration of refining in the hands of new players and at the same time, greater capacity and most likely, lower costs. The new players have tended to have less of a retail presence than the old, but this is changing as a result of new acquisitions. Although concentration is higher, possibilities for anti-competitive action, as opposed to benefits from lower-costs, are sharply constrained by the openness of this part of the country to product imports and shipments from other regions. Openness to product imports played a critical role in ending the price spike in heating oil this past winter.

In this presentation, I plan to review the drivers of the changes in industry structure and the implications of the changes to date, especially for this part of the country. Before beginning, I have to point out that while the recent oil company mergers are spectacular within the industry, they are not quite the earthshaking events they would have been earlier. The current market capitalization of Exxon Mobil, about \$270 billion, is far less than the market capitalization of Microsoft, Cisco Systems, or Intel (all over 350 as of April 17) and somewhat larger than the combined \$230 billion market capitalization of the proposed merger participants AOL and Time Warner. We are talking after all about the “Old Economy.”

Changes in Industry Structure: The 1980s and 1998-2000

We start by comparing the most recent developments with the last round of major takeovers and consolidations that took place in the 1980s. These are summarized in this first chart. There were some very large takeovers in the early 80s, Conoco by Dupont, Getty by Texaco, Gulf by Chevron and Marathon by USX. All involved large outlays of cash. With hindsight some have proven disappointments and one an outright disaster. You may remember that Texaco was forced into bankruptcy as a result of a successful lawsuit by Getty. Dupont has recently spun-off Conoco.

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Changes in Industry Structure: The 1980s and 1998-2000	
Major Company Takeovers, Consolidations and Departures in the 80s	
•Conoco (1981 by Dupont)	
•Getty (1984 by Texaco)	
•Gulf (1984 by Chevron)	
•Marathon (1982 by USX)	
•SOHIO (1987 remaining shares bought by BP)	
•Tenneco (1988 sold off oil and gas assets)	
Major Company Takeovers, Consolidations and Departures in 1998-2000	
•Marathon and Ashland (1998 Combine downstream assets in Marathon-Ashland Inc.)	
•Shell and Texaco/Star Refining & Marketing (1998 Equilon and Motiva JVs established)	
•Dupont (1998 Spin-off of Conoco)	
•Amoco (1999 by BP)	
•Mobil (1999 by Exxon)	
•ARCO (2000 by BP Amoco)	
Differences Between Two Periods	
•Early 80s takeovers near market peak. Financial market emphasis on “unlocking value,” and increased leverage	
•Latest deals made at or near market low point. No cash outlays, no debt finance	
•A big role this time for the FTC—forcing prime assets onto the market	

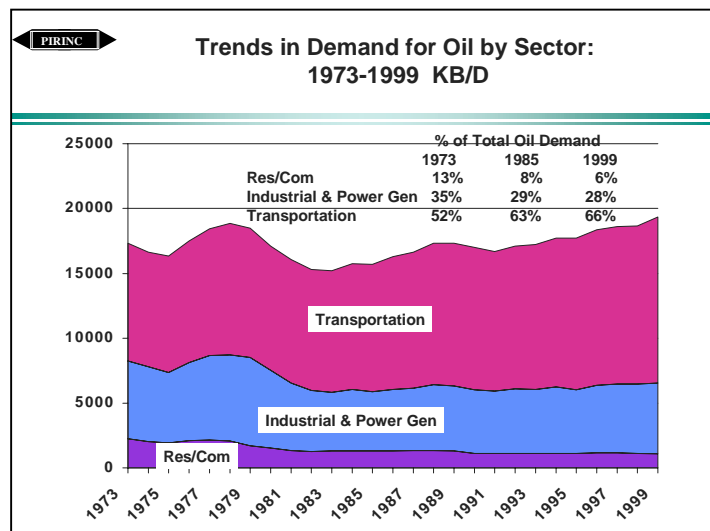
Mergers & Acquisition: Global To Retail

These took place at or not long after oil market peaks. They also took place at a time when financial markets favored “unlocking value” and increased leveraging of assets. Toward the end of the 80s, BP bought up the remaining shares of SOHIO and Tenneco withdrew from the business, selling off its oil and gas assets.

The latest round has been very different. The deals were conceived, although not necessarily concluded, at or near the low point in world oil markets. There have been no cash outlays and therefore no debt finance. This more cautious, better-timed round should lead to better outcomes than the last one. The other major difference is the key role played by the Federal Trade Commission, especially by compelling divestitures as a condition of approval that forced prime assets onto the market. As I’ll discuss shortly, the FTC required that the divestitures be done in a manner that favored other large, although not giant players. But before doing so, I want to consider the broad trends that have encouraged the process of industry consolidation.

Trends in Demand for Oil

This next chart focuses on the long-term trend in U.S. oil demand. It shows demand by sector from 1973 through last year measured in KB/D. Overall, the pattern does not suggest a growth industry. Total demand peaked in 1978 at nearly 19 MB/D, fell by about 20% between that year and 1983 and has grown very slowly ever since. Only in 1999 did total demand move above its 1978 peak. Moreover, growth has been confined almost exclusively to one sector, transportation. This sector now accounts for nearly two-thirds of the oil barrel, up from about half in the early 70s. As those in the heating oil business know all too well, the residential/commercial sector experienced a severe decline in demand, with most of it occurring in the 1980s. Today this sector uses only about half of the oil it consumed in the 1970s. Oil use by the industrial and power generation sector is also below its levels of the 1970s---by about 10-15%.



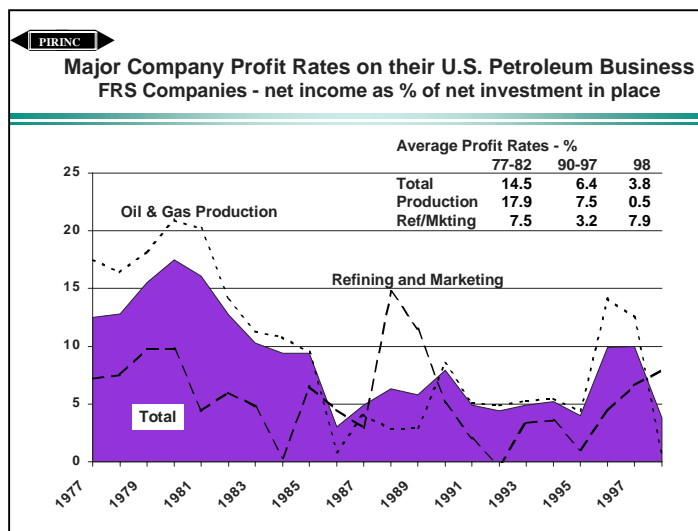
Sharp decline, followed by sluggish growth at best certainly encourages consolidation, and in some cases, outright withdrawals from the business. This was especially the case for the major companies with respect to the retail heating oil business.

Trends in Profitability

While minimal or no sales growth encourages consolidations, a reinforcing factor prolonging and deepening the process has been the generally mediocre profitability of the industry since the early 1980s. This next chart shows trends in reported profit rates of major companies on their total U.S. petroleum operations and, separately, on the upstream and downstream segments. Major in this case refers to companies required to file reports under the Federal Reporting System of the Department of Energy. Data are shown for 1977 through 1998. In the late 1970s

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and early 80s, profit rates for the major companies averaged nearly 15%, with the nearly 18% rate on production pulling up the just under 8% rate on refining and marketing investments. But since the mid-1980s, profit rates on total US petroleum operations have tended to be well below 10%, with the exceptions of 1996-97 when they approached that rate. For most of those years, profit rates for oil and gas production continued to lead refining and marketing. In 1990-97 Profit rates on production averaged a modest 7.5% while returns to refining and marketing investments averaged only about 3%, less than the return on a bank CD. With such mediocre returns, especially downstream, the pressure for rationalization and consolidation was never-ending. In 1998, with the depression in world crude prices, the modest returns to production collapsed to near zero (with the smaller producers suffering even more). The improvement in refining and marketing returns was not enough to prevent the major companies' overall profitability on US operations from falling to its lowest level since 1986.¹ It was in this environment of extraordinarily depressed profitability, that the latest rounds of mega-mergers were initiated.



Of course, thanks to rising crude prices (and gas prices as well), 1999 has been a recovery year for oil and gas production profits. The Department of Energy reports that net income from domestic oil and gas production for a sample of major companies nearly doubled last year. On the other hand, net income from domestic refining and marketing of the sampled companies was down by nearly 30%, suggesting an interruption to the limited recovery in profitability that occurred in 1998.

With these broad trends, sluggish demand and mediocre long-term profitability, in combination with a very difficult 1998 all contributed to spur the recent round of mergers and consolidations. The role of the Federal Trade Commission has been critical in determining the changes in industry structure resulting from these developments. We turn next to an assessment of the FTC's role in reshaping the industry.

¹ As I will discuss later, the downstream return shown for 1998 is somewhat exaggerated since the sample for that year was changed to bring in more independent refiners, who tend to be more profitable in their operations than the downstream operations of the traditional integrated companies in the FRS sample.

The Role of the Federal Trade Commission

This next chart summarizes key aspects of the FTC reaction to the mergers and consolidations as they were initially proposed.

The first point to note is that each of the proposed mergers and consolidations raised FTC anti-competitive concerns. They saw no mitigating considerations such as when the proposed acquisition is a so-called failing firm. Moreover, divestitures were not enough per se to gain FTC approval. The agency insisted on divestitures to a “viable competitor,” which in practice meant divestiture to single large (but not giant) acquirer approved by the FTC. As a result, each of the recent mega-mergers, and the Shell- Texaco joint venture, all forced prime assets onto the market and created opportunities for already large firms to grow larger by acquiring them.

The big winners from this process include Tosco which acquired 137 retail outlets in the Southeast and Pittsburgh from BP Amoco, and even more important, 1,740 Exxon and Mobil branded stations in the Northeast and Mid-Atlantic. The latter acquisition greatly reduces Tosco’s reliance on the wholesale market as the outlet for product from its Northeast refinery. On the West Coast, Valero has acquired the Exxon Benicia refinery in California plus 350 retail sites while Tesoro acquired the Shell Anacortes refinery along with 40 retail sites. Most recently, Phillips has acquired ARCO’s upstream assets in Alaska, at a stroke doubling its proven oil and gas reserves and oil production.

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The Role of the Federal Trade Commission

- The Big Oil Mergers and Shell/Texaco JV All Raised FTC Anti-Competitive Concerns. No Mitigating Failing Firm Considerations.**
- Divestitures Per Se Not Enough. Favored Divestitures to “Viable Competitor.”**
Divest to single large (but not giant) acquirer, approved by FTC
- Result, Opportunities for Large (But Not Giant) Firms to Grow Larger Via Acquisitions of Prime Assets.**
- The Big Winners**
 - Tosco. Acquires 137 retail outlets in Southeast and Pittsburgh from BP Amoco. Takes over 1,740 Exxon & Mobil owned, lessee-dealer, open-dealer and jobber-supplied stations in Northeast and Mid-Atlantic. Opportunity to reduce substantially its Northeast refinery reliance on wholesale market.
 - Valero. Acquires Exxon Benicia refinery and 350 retail sites.
 - Tesoro. Acquires Shell Anacortes refinery and 40 retail sites.
 - Phillips. Acquires ARCO Alaska assets. Doubles proven oil and gas reserves and oil production.

The Majors and Retail: A Yellow Pages Sampler

We now turn to implications of all these changes for the oil industry in this particular part of the country.

To start the discussion, we consider just what the major companies are doing within a very small area, but densely populated area, a 12 to 20 mile radius of Newark, New Jersey.

To do so, we explore the Yellow Pages via Yahoo for heating oil dealer and gas station listings as of early April. Results are summarized in this next chart. The search found over 100 heating oil dealer listings within a 20-mile radius with no

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The Majors and Retail: A Yellow Pages Sampler
A Check of the Yellow Pages (via Yahoo) for Newark, NJ and Beyond

Heating Oil: 100+ dealer listings within a 20 mile radius. No major brands to be found.
•Market abandoned by majors years ago. (Exxon got out of company- owned retail business in 1977)

Gasoline: Lot’s of major branded stations.
•Within a 12 mile radius, about 100 Exxon stations, 80 Amoco, 60 Shell, 50 Mobil, 30 Texaco and 7 BP. (No ARCO listings)

Local Impact of Mergers and Consolidations
•Mobil stations in New Jersey divested as per FTC consent decree. Acquired by TOSCO along with rights to continue using the Mobil brand.
•Shell, Texaco and Saudi Refining Inc. combined refining and marketing assets on the Gulf and East Coasts into new joint venture, Motiva in 1998. Provides product to both Shell and Texaco branded stations.


major brands to be found. This is no surprise since the majors got out of the retail heating oil business years ago. As you would expect with such a result, the Federal Trade Commission has not been concerned about this segment of the industry in its investigation of the recent mergers (although it has looked at terminaling operations). Gasoline is another matter entirely. Within a 12-mile radius, there are about 100 Exxon-branded stations, 80 Amoco, 60 Shell, 50 Mobil, 30 Texaco and 7 BP. There were no ARCO listings. Just looking at the list, it becomes obvious Exxon and Mobil especially were going to have a problem with the FTC in this area. Any FTC attempt to assess potential anti-competitive effects micro-market by micro-market within such a small area would, if it were doable at all, take years. Moreover, the companies would be forced to contest the findings on similar, time and resource consuming micro basis. The Newark area is just one of a number of such areas in New Jersey and other nearby states. No wonder, in the end, the FTC and the two companies agreed to cut the Gordian Knot and simply divest all the Mobil branded stations in New Jersey and the rest of the Mid-Atlantic region, and all Exxon Stations in the Northeast, as part of the settlement of the case. As noted earlier, these were all acquired by one of the region's largest refiners, Tosco.

On the other hand, with so few BP stations in the area, the FTC did not concern itself about New Jersey, or the entire Northeast, when assessing the BP Amoco merger. In the case of the BP Amoco ARCO merger, the FTC has focused its attention mainly on Alaska and the West Coast, not the Northeast. The same was the case regarding the new Joint Ventures formed by Shell, Texaco and Saudi Refining Inc. No East Coast gasoline marketing divestitures were required and today Motiva provides product to both Shell and Texaco branded stations.

None of the mega-merger partners, nor the Shell-Texaco joint venture currently operate refineries in the Northeast, easing any FTC concerns in that regard. But this statement would not have been true several years ago. This region has seen major changes in ownership of refineries over the past several years. These changes in part reflect what has been happening nationally.

Changes in Refining: Nationally and in the Northeast

The next chart focuses on changes in refining, first at the national level and then in the Northeast. At the national level, the most striking long-term development has been the decline in number of refineries from over 300 in 1981 to about 200 ten years later and down to about 150 at the beginning of this year. While the number of refineries has fallen by more than half, capacity today is down only about 15%, with little change since 1991. With the end of price and allocation controls in the early 1980s, there was an initial round of closures of very small refineries favored by those controls. Since then, the average size of refineries has continued to increase as part of the ongoing process of rationalization. Although not shown, US refineries have also gotten more complex, with more deep conversion capacity and in ability to respond to new environmental requirements including production of

 Changes in Refining: Nationally and the Northeast		
National Trends: Ongoing Process of Rationalization		
	No. of Refineries	Crude Distillation Capacity MB/D
1/1/81	324	19.8
1/1/91	202	16.6
1/1/00	154	16.5
Northeast: More capacity, different players, more concentrated ownership		
Refineries in New Jersey and Pennsylvania		
1/1/85	13	1.2
1/1/00	11	1.5
Leading Refiners	1/1/85	1/1/00
	Gulf (174)	Sun (482)
	BP (168)	Tosco (450)
	Chevron (168)	Valero (155)
	Sun (155)	Coastal (135)
	Exxon (100)	
	Mobil (100)	

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oxygenated or reformulated gasoline. Currently about one-third of all gasoline falls into these categories.

In the Northeast, the changes in number have been less drastic, from 13 in 1985 to 11 at the beginning of this in New Jersey and Pennsylvania. In contrast to the national trend, capacity has moved up---by 25% versus the 1985 level.

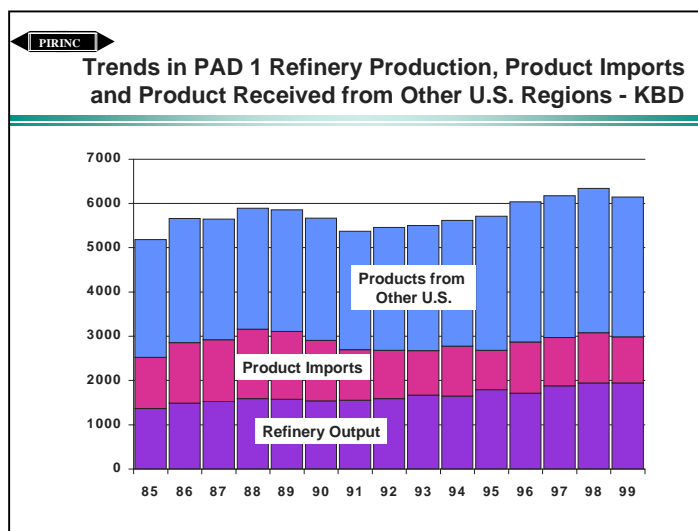
Apart from physical changes there have been two other striking developments over the past several years: the withdrawal of the majors from refining in this region and a more concentrated ownership of capacity. At the beginning of 1985, the leading refiners in the region, shown in descending order of crude capacity, were Gulf, BP, Chevron, Sun, Exxon and Mobil. The largest refiner, Gulf, had refining capacity of 174 KBD while the two smallest shown, Exxon and Mobil each had capacity of 100 KBD. The six companies accounted for about 70% of total refining capacity in New Jersey and Pennsylvania. As of the beginning of this year, only Sun remained on the list. Gulf, BP, Exxon, and Mobil had all departed while Chevron's interest (since reduced through sale of half of its refinery interest to Citgo) was no longer large enough to make the list. Sun itself acquired the former Gulf Philadelphia refinery. Three new players joined the lead group, Tosco (which acquired both the BP and Exxon refineries), Valero (which acquired the Mobil refinery), and Coastal (which acquired the former Texaco refinery that had been too small at 90 KBD capacity to make the earlier list). Together, this new, shorter list of four lead players accounts for nearly 85% of refining capacity in the region.

Higher concentration of ownership of the region's refining capacity does not necessarily mean problems for customers. The region is open to supplies from other parts of the country and from imports. Moreover, there is evidence that the new owners run lower-cost operations than the former owners. The next sections consider these aspects in greater detail.

Trends in PAD 1 Products from Local Refiners, Imports, and Other US Regions

The chart below shows trends since 1985 in PAD 1 refinery output, product imports, and product shipments from other US regions.

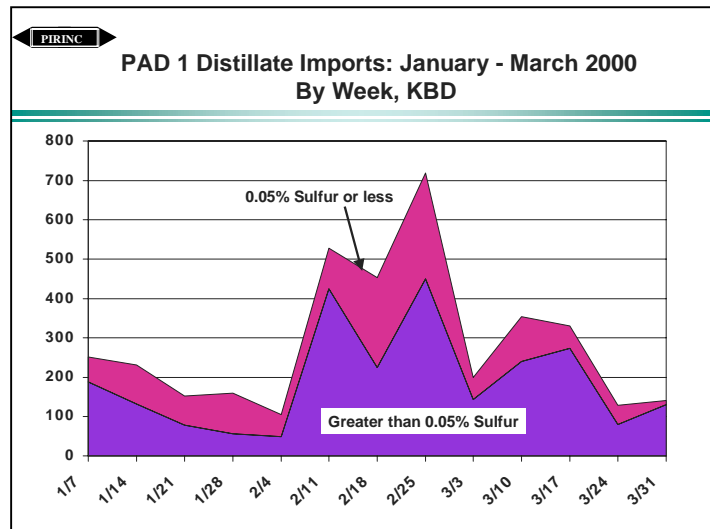
Refinery output, although growing, still represents only a small fraction of total supplies. In 1999, refinery output in PAD 1 was over 1.9 million barrels/day, up from 1.4 in 1985. But output from the region's refineries accounted for only 32% of all products produced or shipped to the region last year. This share was up from the 26% share of 1985 but still far too low to view the region as anything other than wide open to products from other sources. About half of products produced in or entering PAD 1 come from other parts of the U.S., mainly from PAD 3, which includes the Gulf Coast refineries. Product imports accounted for just over 1 million barrels/day of supply last year, or about 17% of the total.



While product imports are by far the smallest component of the three product-supply sources, they have served as a critical safety valve for the region, as was demonstrated during the recent spike in heating oil prices.

Distillate Imports into PAD 1

This chart shows the weekly movements in PAD 1 imports of distillate from the beginning of the year through the end of March. Imports surged from the 100 to 200 KBD range in the early weeks of the year to a peak of 700 KBD toward the end of February. The increase in imports was the key factor, along with the end of the late-January to early February severe weather, in bringing the price spike to an end. Imports have since moved back toward normal levels. Note that most of the imports was distillate with more than 0.05% sulfur, or heating oil.



Fuel specifications for distillate used as a transportation fuel are of course tighter than 0.05% both here and in other major regions. They are getting tighter still with the EPA favoring eventually moving to near-zero sulfur. This means the cost of producing distillate for transportation uses will be moving up as the EPA (and Environmental agencies elsewhere) succeed in tightening specs. In principle, there would be advantages in having a uniform specification for distillate regardless of whether used for heating or transport. Distribution would be less complicated and less costly if the need for segregation of product were eliminated. But against these advantages would have to be set some potentially high costs. Moving to a unified, tighter spec distillate would mean higher costs for the fuel. Even more important, it would limit possibilities to shop the market, especially when local supply is tight, as was the case this past winter, since only tighter spec sources could be tapped. The problem would be worse, the tighter the uniform specs here relative to what is available elsewhere.

The New Entrants to the Federal Reporting System

Recent changes to Federal Reporting System (FRS) for major oil companies offers some evidence that the current owners of refineries in the Northeast run somewhat lower-cost operations than those they replaced.

Up until 1998, the FRS had focused on large oil and gas producing companies. As a result, data regarding refining and marketing operations included only the integrated, downstream operations of these same companies. In 1998, the reporting system was expanded to include a number of large, independent refiners, including refiners operating in the Northeast. The next chart looks at these newcomers and considers how their refining and marketing operations compare to the incumbent, integrated companies.

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Eleven newcomers were added to the system, of which 10 were independent refiners. These include Tosco, Sunoco, Valero, and Citgo, which have refinery operations in this region, and Motiva, which has marketing operations in the Northeast although its refineries are elsewhere.

The data for 1998 indicate that the new entrants as a group run lower cost operations than the integrated companies. Their raw material input and product purchase costs per barrel were slightly lower, (\$13.94 versus \$14.17) while their

direct operating costs per barrel were much lower, by nearly 90 cents/barrel. In an open market such as the Northeast, at least some of any cost savings would be passed on to customers.

Their average product realizations were also lower, a result of greater reliance on third party sales. As shown, only 36% of their gasoline volumes were sold through dealer and company-operated stations, versus 50% for the integrated incumbents. Here, however, the recent mergers have created opportunities for adding retail volume, with the Tosco acquisition of 1,740 Exxon and Mobil branded stations the most spectacular example.²

Concluding Remarks

The next chart concludes the presentation with a summary of key points.

The big oil mergers are a further stage in what has been an ongoing process of industry consolidation. The FTC has required divestitures in a manner that created new opportunities for large firms to get larger.

In this region, the mergers continue a process that has featured withdrawal of the majors and greater concentration of refining in the hands of current owners. But the newer owners seem to run lower-cost operations than the former, and have also expanded local capacity. They also operate in a region wide open to product imports and shipments from elsewhere in the US, mainly the Gulf Coast. This situation places sharp limits

² On the other hand, Tosco has expanded capacity significantly at its refineries, especially at its Linden, New Jersey refinery. Currently, refining capacity at Linden is 250 KB/D, up from 200 when it acquired the refinery in 1993.

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The New Entrants to the Federal Reporting System		
To Take Account of Industry Changes, the DOE Added 11 Newcomers to the List of "Major" Companies subject to FRS requirements.		
•10 are independent refiners: Equilon, Motiva, Tosco, Valero, Tesoro, Lyondell-Citgo, Citgo, Sunoco, Clark, and Ultramar Diamond Shamrock		
•New Refiners Seem to Run Lower-Cost Operations than the Incumbent, Integrated Group.		
Statistics for 1998	New Entrants	Incumbents
Raw Material Input and Product Purchases per Barrel	\$13.94	\$14.17
Direct Operating Costs per Barrel	\$4.02	\$4.89
•But Average Product Price Lower		
Average Price per Barrel	\$19.84	\$20.36
•And Fewer Retail Sales		
% of Gasoline Sales Through Dealer and Company-Operated Stations	36%	50%
•But Mergers Create Opportunities for Adding Retail Volumes		

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Conclusions and Implications	
•The Big Oil Mergers A Further Stage in Industry Consolidation	
•The FTC Required Divestitures Created New Opportunities for Large (but not Giant) Firms to Get Larger.	
•In the Northeast, Withdrawal of Majors, Greater Concentration of Refining in Hands of Current Owners. They have expanded regional capacity.	
• But Current Owners Seem to Run Lower Cost Operations than Former, Mainly, Integrated Companies.	
•Region Wide Open to Product Imports, Shipments from Gulf Coast. Sharp limits on potential for anti-competitive behavior Favors at least some pass-through to customers of lower operating costs	
•Availability of Product Imports a Critical Safety Valve---as Demonstrated This Past Winter.	

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on any potential for anti-competitive behavior and favors at least some pass-through of lower operating costs to customers.

Finally, the availability of product imports is a critical safety valve for the region, as was demonstrated this past winter. The surge in distillate imports played the key role in ending the price surge that developed in late January through early February.