

CBO TESTIMONY

Statement of
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on
Auctioning FCC Spectrum Licenses

before the
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NOTICE

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Mr. Chairman and Members of the Committee, I appreciate the opportunity to appear here to discuss the Federal Communication Commission's (FCC's) use of competitive bidding to assign licenses to use the radio spectrum.

The FCC's method of assigning licenses to use the spectrum is in transition. In the past, licenses were assigned by comparative hearing or lottery. However, the Omnibus Budget Reconciliation Act of 1993 (OBRA-93) directed the FCC to use competitive bidding--auctioning--to assign certain licenses to private applicants.

Assigning licenses by auctioning should achieve an economically efficient distribution of licenses more quickly and at a lower cost to society than would alternative methods. In addition, auctions should generate substantial federal receipts.

My testimony today will review the results of the first two FCC auctions, the problems that public auctions create for the commission's rules that exempt specific parties or licenses from the general rules governing competitive bidding, and the Congressional Budget Office's (CBO's) estimate of the receipts from auctioning licenses that permit the holder to provide broadband personal communications services (PCS).

THE FIRST FCC AUCTIONS

Private markets have long recognized the economic value of the radio spectrum. An active market exists in which private license holders sell licenses to use the spectrum to other parties. A part of each dollar that a buyer pays for a television or radio station or a cellular telephone company is for the right to use the radio spectrum. The Congress fully recognized the value of the spectrum when it directed the FCC to begin using competitive bidding in assigning licenses. Assigning licenses by auction rather than by hearings or lotteries allows the public a share of the value of the spectrum.

A measure of the FCC's success in conducting the first two auctions was that the process forced bidders to offer prices consistent with their valuation of the spectrum. A poorly structured or badly run auction might have permitted winning bidders to pay far less than "market value" to obtain a license or awarded licenses to bidders that did not place the highest value on them.

In achieving its success to date, the commission has carefully blended internal resources, the process of receiving comments from the public, and the expertise of outside consultants in designing and operating the auction procedures. Future auctions will be far more complex, however, than the two

completed this summer, and a continuing effort will be necessary to ensure similar success in the future.

In the first auction, one of several in the "narrowband PCS" group, the commission offered 10 licenses that allowed the holder to provide enhanced paging services on a nationwide basis. That auction, held in mid-July, raised \$617 million--substantially more than most observers, including CBO, anticipated. Receipts from the second auction, which offered interactive video and data services (IVDS) licenses--so-called interactive television--amounted to \$214 million, also exceeding most estimates. That auction was also notable because in its aftermath 27 successful bidders, whose payments would have accounted for \$96 million, defaulted on their bids, triggering the penalty provisions in the FCC's auction rules.

Issues Surrounding the Auction Process

In the narrowband auction, the commission chose to offer all of the licenses at once--a simultaneous auction--and to allow bidders to compete over many rounds under a complicated set of auction rules. The choice was not without risk. Complicated procedures carry with them a greater chance of breakdown in the auction process caused by misunderstanding of the rules by bidders,

miscommunication of the rules by the commission to bidders, or the failure of supporting software to reflect the commission's auction rules accurately. In the extreme, a breakdown of the auction could throw the entire licensing process into court, thereby significantly delaying new services and increasing administrative costs.

A simple sealed-bid procedure or a traditional offering of each license in sequence in an ascending-bid auction would have left more room for error and less chance for political embarrassment. Simpler procedures, however, would probably have produced lower receipts and, more important, a less efficient distribution of licenses among bidders.

The multiple-round simultaneous auction used to assign the 10 nationwide narrowband licenses increased the prospect that a bidder could win multiple licenses and exploit the lower costs in developing and marketing technology that might be offered by holding more than one license. In the IVDS auction, however, the commission chose to offer the licenses available in each service area sequentially because the efficiencies of gaining many licenses were judged to be small. In each case, the commission apparently made the appropriate choice in balancing its ability to raise receipts with a workable auction process.

The commission chose an open rather than a closed auction process in offering both the narrowband and IVDS licenses. Economists prefer an open process to a closed process--for example, a sealed-bid auction limited to a single round--in circumstances where bidders are uncertain about the value of the item being sold. When uncertainty is high, bidders may restrain themselves for fear of bidding too much and suffering what auction experts call the "winner's curse." By choosing openness, the commission encouraged bidders to disclose information. More information decreased the uncertainty about the value of the licenses being sold and the fear of bidders that they would pay too much.

Issues Raised by the Interactive Video and Data Services Auction

The major defaults that occurred in the IVDS auction illustrate the importance of auction rules and the difficulties the commission encounters in extending special standing to small businesses or ones that are owned by women or minorities.

The auction rules anticipated the possibility of defaults. Under the rules adopted by the FCC, the licenses that were defaulted on in the IVDS auction will be reauctioned. If the receipts raised in the second auction fall

short of the original winning bids, the defaulting bidder is required to pay the difference plus a 3 percent penalty.

The importance of default rules in an auction is illustrated by the Australian experience in auctioning satellite-television licenses, in which the failure to include default penalties led to disappointing results. The winning bidder in one Australian auction submitted a set of bids that ranged from the sublimely high to the ridiculously low. When notified of winning the auction, the bidder promptly defaulted on high bid after high bid until his standing high bid lay just above that submitted by a competing bidder. After defaults, the receipts to the government were reduced from A\$212 million (A\$1 = US\$0.68) to A\$117 million.

The defaults in the IVDS auction highlight the difficulties the commission encounters in determining which bidders are eligible for special "designated entity" status as a small business or one owned by a women or minority. In response to the Congress's direction, the commission has taken steps to ensure that designated entities have an opportunity to provide new telecommunications services. In the first two auctions, bidders' credits--essentially discounts of 25 percent--were offered to qualifying designated entities. But no designated entity was successful in winning a narrowband license. In the IVDS auction, however, designated entities were successful,

and bidders' credits reduced the sum of winning bids from \$248 million to the final total of \$214 million in receipts (before accounting for defaults).

Questions have arisen in the IVDS auction as to the special status of the most successful bidder as a small business owned by a woman. Regardless of the disposition of the specific case, the commission will be hard pressed to certify the claims of bidders with special status in future auctions when hundreds of licenses will be offered to hundreds of bidders. Yet the full integrity of the auction process can only be preserved if all bidders claiming special status are truly entitled to it. Practicality and resource constraints dictate, however, that the commission will have to settle for self-certification of bidders, perhaps using spot checks and more extensive reviews of actual winners. Accordingly, controversy about claims to special status could be a continuing and disruptive factor as the FCC conducts future spectrum auctions.

Future Issues

The forthcoming regional narrowband auctions will offer 30 licenses to possibly hundreds of bidders in a multiple-round simultaneous process. In one of the broadband PCS auctions likely to take place in the first half of 1995,

hundreds of bidders are apt to seek hundreds of licenses. The commission's auction rules, procedures, and software have yet to prove themselves in circumstances as demanding as those they will face over the next year.

REGARDING SPECIAL INCENTIVES AND COMPETITIVE BIDDING

When the Congress directed the FCC to assign new licenses by competitive bidding, it made it clear that receipts were not to be the driving force in spectrum management policy. Most significant, decisions about allocating the spectrum--that is, deciding how much spectrum should be set aside for specific uses--were to be made without considering their implications for receipts. In addition, many types of licenses were exempted from competitive bidding--for example, broadcast licenses. The Congress also directed the FCC to explore ways to ensure that competitive bidding did not exclude businesses that are small, owned by women or minorities, or serve rural areas from providing new personal communications services. The "pioneer's preference policy" that was adopted before the competitive bidding law was enacted is another nonmarket assignment mechanism.

The practice of granting special status, as in the pioneer's preference policy, can be justified as a means to achieve a specific goal. However, when those practices are grafted to a process of assigning licenses by competitive

bidding, the benefits bestowed on favored parties are made public. That public revelation of a benefit and its value places pressure on the FCC to be certain that the costs--forgone receipts--of any preferential treatment are effective in reaching the desired goal.

The commission is moving in the right direction on these issues. The license awards granted to encourage technological innovation will be less generous than originally proposed. Moreover, the commission is attempting to achieve the goal of diversity in providing personal communications services in a practical way. It is using a strategy of starting with relatively small incentives in early auctions and increasing those incentives in later ones if the goals of diversity are not met.

The Pioneer's Preference Policy

The FCC's now-defunct plan to award three free licenses to provide broadband PCS under the pioneer's preference program illustrates the difficulty of using license assignments as an incentive in an auction.

The purpose of the preference policy is to encourage and reward innovators of new communications services or technologies. In the 1991 FCC

order that established the pioneer's preference program, the commission argued that the program was necessary to overcome the depressing effects of regulatory uncertainties on investments in research and development directed toward new wireless services and technologies. The policy was justified under the public interest standard as a way to ensure that consumers would benefit from the early introduction of new technologies and services.

In October 1992, as part of its allocation of spectrum for broadband PCS, the commission issued a tentative decision to award three applicants licenses under the pioneer's preference policy in recognition of their contribution to improved telecommunications services and technology. After the auction law was passed in August 1993, the FCC reconsidered those awards. In December 1993, the commission announced it would stay the course, removing from the auction block one of two prime licenses that would permit the holder to provide broadband PCS services in three very strong markets--one covering the New York City area and points north, a second covering both Los Angeles and San Diego, and a third covering service in the Washington/Baltimore market.

Since then, the FCC has partially reversed its policy, in part because the generosity of the commission's award to the pioneers became the focus of public attention. The Chairman of this Committee was among those taking

the lead in suggesting that the commission needed to rethink its position yet again. Last July, the commission announced that it still planned to award licenses to the three broadband pioneers, but sought and won permission from the court to change its rules and collect substantial payments for the licenses-- 90 percent of the winning bid for comparable licenses.

Legislation that has been introduced before the Congress on implementing the Uruguay Round trade agreements would supersede the FCC's action. The broadband pioneers would be charged 85 percent of the average per-person value of comparable licenses in the top 20 markets, exclusive of the markets where preference awards have been made. If the formula results in receipts lower than \$400 million, the pioneers would be required to make payments totaling that amount.

When licenses were assigned by comparative hearing or lottery, the size of the economic benefit bestowed on a pioneer by the commission was not necessarily directly and publicly revealed (although secondary-market sales of licenses assigned by lottery eventually revealed the value of the license). The cost of encouraging the pioneer's technical progress was also not immediately evident when comparable licenses were given away.

Auctioning licenses changes that situation. In the case of the broadband preferences, one must ask whether the commission's long-held position that the licenses should be granted without charge was justifiable on cost-benefit grounds. According to CBO's February 1994 estimate, the licenses the commission proposed to award under the preferences program could bring \$500 million at auction. Other estimates place the value well above \$1 billion.

Did the pioneers provide society with benefits of comparable value? The commission never addressed that question. Its public discussion of the reasons to go forward or not was largely restricted to legalities and the details of regulatory policy. Indeed, the commission never prepared an estimate of the value of the benefit it was awarding (the value of the licenses) or of the pioneers' contributions.

Designated Entities

Similar problems arise from the Congress's direction to the commission to grant special standing to small businesses, businesses owned by women or minorities, and rural telephone companies when licenses are auctioned. The desired result is clear--those businesses will provide new telecommunications

services--but not costless. Federal receipts are decreased by incentives that limit participation in some auctions to designated entities or that grant credits, discounts, and favorable payment terms to bidders. In short, when offering incentives, the commission imposes a cost--forgone receipts--on taxpayers. For that reason alone, the FCC needs to have a clear understanding that the incentives offered are the most cost-effective in achieving a desired result.

To handle such cases, the commission has adopted a practical strategy from the beginning. For the most important PCS licenses--those with enough frequency to permit cellular telephone-like service--to be offered in the first half of 1995, the commission has set aside two opportunities to win licenses in so-called entrepreneurs' blocks. The licenses will be awarded in an auction restricted to designated entity participants. The restriction ensures that designated entities will participate in the most significant type of PCS--the next generation of cellular telephone service.

In the case of narrowband PCS, the commission began with an apparently reasonable level of incentives, but has announced that it will increase the value of those incentives in the October auction for regional licenses. The reason for doing so is that the designated entities were unsuccessful in winning any of the nationwide licenses sold in July. With the large number of future PCS auctions available to meet the Congress's

direction, that strategy of starting with moderate incentives and increasing them is prudent and reflects an awareness of the cost to taxpayers of offering incentives.

ESTIMATING AUCTION RECEIPTS

Although everyone would agree the radio spectrum has economic value, the exact value of new licenses to use the radio spectrum is highly uncertain. Estimates by government agencies of auction receipts through fiscal year 1999 have ranged from about \$8 billion to about \$13 billion.

Currently, CBO estimates spectrum auction receipts of \$8.1 billion for 1994 through 1999. That estimate, prepared in late July, is \$500 million above CBO's February baseline budget for the same period. CBO's estimate is still below the five-year total of \$12.6 billion that the Office of Management and Budget (OMB) estimated for the 1995 budget. But it is substantially above OMB's estimate of \$3.7 billion included in the 1994 budget estimate. In the middle is the House Budget Committee's estimate for OBRA-93 of \$10.2 billion for the first five years of spectrum auctions.

CBO increased its estimate this summer because the narrowband and IVDS auctions raised more receipts than anticipated. When CBO's baseline

budget is prepared in early 1995, our estimate could increase again and could even reach the five-year total of \$10.2 billion agreed to as a part of OBRA-93. If the receipts generated by the December auction of broadband licenses are as large as some observers suggest, even OMB's estimate of \$12.6 billion might prove to be low.

The value of the radio spectrum is difficult to estimate because of technological, regulatory, and economic factors. New technologies create demand for new services and increase the value of the right to use the spectrum. But technical change also can expand the supply of radio spectrum by allowing both more frequencies to be used and parts of the spectrum already in use to be used more intensively. Accordingly, increased supply may lead to lower prices.

In addition, regulatory decisions can create market power, the prospect of high profits, and soaring license values, as was the case for cellular telephone licenses. Alternatively, such decisions can undermine the foundations of monopoly profit. Consider, for example, the FCC's decision to allow radio dispatch services to offer cellular telephone services and compete with the cellular duopolists. Regulators can further decrease the part of the spectrum's value arising from artificial scarcity by allocating new frequencies for services when strong demand is evident. In doing so, the

regulators create competitive pressures that drive down prices, profits, and license values.

Most observers of telecommunications markets agree that the broadband PCS licenses--those that will allow the holder to provide cellular telephone services--are by far the most valuable the FCC is likely to offer over the next five years. Opinions differ widely, however, about how much these licenses will bring at auction. CBO examined the value of broadband PCS licenses in a 1992 study prepared for this Committee and in estimates of auction receipts prepared for the budgetary baseline projections in 1993 and 1994.

Our 1992 study estimated that bidders would pay between \$3.50 and \$15 for each person in a service area (commonly referred to as the "per pop value") for a license of 25 MHz to provide personal communications services similar to existing cellular telephone services. The low end of the range of estimates--\$3.50--was based on the prices that specialized mobile radio license holders had accepted when selling their licenses to Nextel (at the time named Fleet Call). CBO viewed the Nextel transactions as an indicator of where spectrum prices might settle if values were not forced up by scarcity from too small an allocation of spectrum. The benchmark was a less than a perfect

one, since the purchases were for relatively small amounts of frequency that were geographically scattered.

The high end of the range--\$15--was based on a financial simulation developed by Morgan Stanley & Co. of a new entrant into the market for land-mobile telephone services. That simulation showed that a firm entering the market and willing to accept a return of 15 percent after taxes could afford to pay \$15 per person for a license after covering the cost of capital investment and initial operating losses. The results of the simulation were used as an upper bound because they reflected optimism that competition would be less than cutthroat and were modeled on better-than-average markets.

In preparing estimates of spectrum receipts for prime broadband licenses for the budgetary baselines in 1993 and 1994, CBO used values near the midpoint of the \$3.50-\$15 range developed in the 1992 study. However, receipts should probably be estimated using the higher end of our range or even figures above that range, if recent developments are a guide--namely, the results of the first two auctions and the unprecedented consolidation among telecommunications providers. Concerning the latter, consolidation through mergers and strategic alliances--for example, Air Touch and U.S. West, Bell Atlantic and NYNEX, and AT&T and McCaw--will ensure that many bidders

with substantial financial resources will participate in the broadband auctions.
If those trends hold, our estimate could be significantly increased.

CONCLUSION

Clearly, the right to use the radio spectrum has substantial economic value.
Well-designed auctions will publicly demonstrate that value, and they will also
allow taxpayers a share of the benefits of using the spectrum.

