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RAISING REVENUES WITH THE AUCTION OPTION FOR THE TELECOMMUNICATIONS SPECTRUM

INTRODUCTION

As the annual federal budget cycle proceeds, Congress urgently is seeking ways to reduce the deficit while avoiding measures, like tax increases, that would harm the economy. One idea that meets these criteria is allowing the Federal Communications Commission (FCC) to auction licenses for unassigned radio frequencies to the highest bidder, rather than giving them away as it now does. Legislation pending in Congress that would allow the FCC to auction a limited number of such licenses could reduce the federal deficit by as much as $3.4 billion over two years. In addition, and as important, auctioning would make the licensing system far more efficient.

The telecommunications spectrum – the range of frequencies at which communications can be transmitted – is an integral part of the American economy, and one of its most valuable resources. Since 1927, the federal government has awarded licenses for use of radio frequencies. Licenses for most of the available frequencies were assigned long ago, as the telecommunications industry developed. Yet the FCC regularly makes new frequency assignments, due to the occasional reallocation of underused frequencies and technological advances that make more of the spectrum usable. The unassigned parts of the spectrum can be used for a variety of communication services, from cellular telephones to microwave television transmissions.

Government Giveaway. The issue is how best to assign licenses for these frequencies. The FCC currently is allowed to use two methods: "comparative hearings," in which the merits and abilities of each competing applicant are weighed, and lotteries, in which assignments are made by random selection. The first system is slow and cumbersome. The second sparks an enormous

number of applications, as firms and individuals seek to increase their chances of winning licenses. This results in tremendous costs to the FCC, applicants, and the public. Under either system, these valuable resources are given away free by the federal government, although licensees generally are able to resell their licenses.

Revenue Raiser. These shortcomings could be solved by providing the FCC with a third option for the assignment of telecommunications licenses: auctioning licenses to the highest bidder. Licenses could be distributed to those individuals or firms who bid the highest and thus value them most. Not only would this process be quicker than the existing two, but instead of costing the federal government money, it would raise revenues. George Bush's budget proposal for fiscal 1990 endorsed the auction idea, estimating $3.4 biilion in revenues over two years. A bill specifically to authorize auctions (S. 170) has been introduced in the Senate by Senator Phil Gramm, the Texas Republican. This bill would authorize auctions, on an experimental basis, for part of the currently unassigned spectrum.

Auctioning spectrum licenses is a proposal that not only makes good budget sense, but is also economically sensible. While it would help reduce the overgrown federal deficit, it also would encourage better and more efficient use of the telecommunications spectrum. It is an idea that deserves serious consideration.

Authorization of auctions, of course, is not the only needed reform of spectrum management. Many other changes need to be pursued. The need for broader reform, however, should not delay action on the modest step of auctioning licenses.

ALLOCATION AND ASSIGNMENT OF SPECTRUM

The term "spectrum" describes the range of frequencies by which electromagnetic information can be distributed. Frequencies usually are measured in units of cycles per second, or "hertz" (abbreviated "Hz"). At low frequencies, from about 10 to 10,000 Hz, the signals are audible. At the other end, beginning at about 10^{22} Hz, they take the form of infra-red radiation, visible light, and cosmic rays. In the middle are frequencies ranging from about 3,000 Hz to 300 billion Hz, which can be used for telecommunication.[1]

The Communications Act of 1934 provides the FCC with a two-step process for making these frequencies available to users. First, spectrum must be "allocated" to particular uses or services. Thus, portions of the spectrum are set aside for television broadcasts, radio broadcasts, amateur radio, cellular telephones, public safety use (such as police radios), and various

1 See, *United States Frequency Allocations: The Radio Spectrum*, chart produced by the National Telecommunications and Information Administration.

other communication services. Second, licenses for specific frequencies within each service are "assigned" to individual users (except for services such as Citizen's Band radio, which are used on a shared basis).[2]

The rights and duties of each licensee vary considerably from service to service. Generally, licensees must avoid any harmful interference with other spectrum users and must use their frequencies only for the allocated purposes. Licensees, however, generally are free to sell their licenses to others, subject to certain rules and restrictions.

Unused Reserve. Most of the currently usable spectrum was assigned by the federal government to licensees long ago. Yet a sizeable amount still has to be assigned. Much of this is spectrum available from previously underused services. For instance, in 1970, the FCC reallocated a large amount of spectrum that had been designated for Ultra-High Frequency (UHF) television, leaving a large block in an unused reserve. In recent years, the Commission has been allocating these frequencies to other uses, ranging from cellular telephones to mobile radios (such as taxi radios).

In some cases, assigning these frequencies is very simple. The potential user merely has to specify to the FCC the frequency desired and the place from which transmissions would be made and demonstrate that use of the license will not interfere with that of any existing licensee. The problems come, however, when there are competing applicants for the same frequency. When the frequency is a valuable one, this is most often the case. In such cases, the FCC must decide which applicant should receive the license.

Hearings and Lotteries. For most of the FCC's history, such decisions had to be made through a "comparative hearing" process. In this, the FCC weighs the readiness and ability of each competing applicant to serve the public. Each applicant has the opportunity to make its case to the Commission, pointing out the advantages it possesses. Interested members of the public also may comment.

In 1982, Congress authorized the FCC to select licensees for some services through random lotteries. For a typical lottery assignment, the FCC announces specified "windows" of time during which it will take applications. After dismissing unqualified applicants, and making adjustments for preferences given to minorities and other groups, the winning applicants for each market simply are chosen by lot in drawings held at FCC headquarters.

PROBLEMS WITH CURRENT ASSIGNMENT METHODS

Both of the methods used by the FCC suffer from severe drawbacks:

2 In some areas, such as television and radio broadcasting, licenses must be renewed periodically (five years for television and seven years for radio).

1) Comparative Hearings

Comparative hearings can be long, burdensome, and inflexible. Years can elapse as lawyers present the comparative merits of each side. For broadcast licenses, for example, the hearing process typically lasts two years. Even the hearings held for cellular radio licenses, where most applicants were planning essentially similar commercial activities, averaged eighteen months.[3] It is also a costly process for the applicants and the taxpayers. Even without considering the costs of delays incurred, the cost per applicant of the cellular comparative hearings has been estimated at about $130,000 for the applicant, and another $5,000 for the FCC.[4]

Perhaps worse, even after this costly procedure, it is often difficult or impossible for the Commission to determine which applicant will best serve the "public interest." The Commission may find itself not only trying to decide which applicant is most sincere in its expressed desire to serve the public, and which has the financial resources to do so, but also may have to pass judgment on the applicant's entire business plan to determine if it would meet the needs of consumers.

Futile Exercise. Comparative hearings traditionally have been defended on the grounds that much more than economics is involved when an FCC license is issued. Broadcast frequencies, for instance, have become the prime media for providing news to the American people. In truth, however, most of the assignments made today by the FCC are for purely commercial enterprises, such as cellular telephones and inter-company radio communications, rather than for major media outlets. Trying to determine which applicants for these various commercial services will do the best job serving the public typically is a futile exercise. In such determinations there are few intangible "public interest" questions at stake.[5]

Once the Commission makes its selection, there is no guarantee that the particular firm or individual granted the license will provide the service promised. This is because licensees have considerable freedom to sell their licenses to others. Approximately two-third of today's television licenses, for example, were obtained by their present holders through purchases from license holders, not through FCC assignment.[6] Thus after a license is awarded, after perhaps years of legal wrangling and costly hearings, the

3 Evan Kwerel and Alex Felker, *Using Auctions to Select FCC Licensees*, Federal Communications Commission, Office of Plans and Policy Working Paper No. 16 (May 1985), p. 12.

4 *Ibid.*, p. 17.

5 Of course, in many cases, given the problems with comparative hearings, lotteries could be beneficial even for mass media outlets. Recognizing this, the FCC recently proposed that lotteries be used to assign new television and radio licenses. See, "FCC Proposes Lottery for Issuing Licenses," *Washington Post*, January 31, 1989, p. C3.

6 *Spectrum Auctions: FCC Proposals for the Airwaves* Hearings before the Subcommittee on Telecommunications, Consumer Protection, and Finance of the House Committee on Energy and Commerce, 99th Cong., 1st Sess. (1986), p. 9 (statement of Mark S. Fowler).

winning applicant usually can sell its license to another individual or firm without a new comparative hearing.

2) Lotteries

Recognizing the drawbacks of the comparative hearing process, Congress in 1982 authorized the FCC to make some assignments through lotteries. Since then, lotteries have been used to make assignments for a wide variety of services, including cellular telephone services, low-power television stations, and microwave pay television services.

While an improvement, the lottery process creates its own problems. A lottery is simple in theory, but the trouble is that lotteries have encouraged an explosion in the volume of frequency applications. Since the licenses are awarded free of charge, any qualified applicant can win, and the license can be sold later to others who wish to use them for the allocated purposes, investors and speculators have filed applications simply to have the chance of winning a valuable asset. And those who intend to use the spectrum themselves often must file applications for more frequencies than they need to ensure that they win a sufficient number of frequencies. Although in many services the Commission has adopted rules to discourage excessive numbers of filings, such as filing fees, the problem continues.

Explosion in Applications. This problem was perhaps best illustrated in the case of cellular radio. Before deciding to use lotteries, the FCC received fewer than 1,200 applications for licenses in the top 90 markets in the United States. For the next set of markets (the 91st to 120th largest), the FCC announced that it would use lotteries – and received over 5,000 applications, even though the markets were less valuable. For the even less valuable 121st to 305th markets, it received almost 93,000 applications. The FCC has just completed the application process for the remaining cellular markets – those in rural areas – and received a staggering total of over 288,000 applications.[7]

Cellular radio is not the only area that saw an explosion in filings. For the "special mobilized radio" service, the Commission received about 60,000 applications for the top 50 markets.[8] For the "multipoint distribution service," a form of pay television, the Commission received almost 16,500 applications.[9]

Although the cost per lottery application is small, the large number of applications filed makes the total costs of the process large. In fact, the costs may approach the value of the license itself. This is because additional persons will have the incentive to file applications until the value of their chance of winning is less than the cost of the application. Example: if a

7 According to Claudia Borthwick, Mobile Services Division, Common Carrier Bureau, Federal Communications Commission.

8 According to Betty Woolford, Land Mobile and Microwave Division, Private Radio Division, Federal Communications Division.

9 Kwerel and Felker, *op. cit.*, p. 5.

license is worth $100,000 and 100 applicants are expected, it would make sense for a person to file an additional application as long as filing costs are $1,000 or less. In addition, the FCC incurs costs. For cellular lotteries, this cost has been estimated at $5,000 per market. Added to that is the cost from the delay in processing the applications due to the high volume. For cellular licenses, these delays were about one year.[10] Thus, potential licensees lost revenue, and the public was deprived of valuable services, during this time.

THE AUCTION OPTION

These high public and private costs could be reduced substantially if the FCC were allowed a third method of assigning licenses: auctions. Under this method, frequencies would be assigned to the highest qualified bidder, who would pay the bid price to the U.S. Treasury. In this way, the time and expense required for assignment would be kept to a minimum, while the taxpayers could reap benefits from selling these valuable assets.

While never before used in the case of spectrum allocations, auctions have been used by the federal government in other areas. The Department of the Interior, for instance, has been auctioning leases for oil and gas production on the outer continental shelf for over 35 years. The U.S. Treasury has reaped a total of about $55 billion from bids under this program.[11] Auctions also are used in a wide variety of other situations, ranging from the issuance of Treasury bills to the sale of unclaimed property.[12]

Under the terms of S. 170, Senator Gramm proposes that:

- The FCC be authorized to assign six frequency bands to users by using auctions.[13] Each of these bands currently is unassigned. Four are also currently not allocated to any particular service, while the other two are currently allocated to a "general purpose mobile service," to be used for a range of mobile radio activities.[14]

- The Commission would be barred specifically from auctioning licenses for any frequencies already assigned, or for any that are allocated to mass media use, public safety, or amateur radio.

- Payments for licenses would be made in four equal payments, or if the licensee chose, in a discounted lump-sum payment.

10 *Ibid.*, p. 17.

11 U.S. Department of the Interior, Mineral Management Service, *Mineral Revenues: The 1987 Report on Receipts from Federal and Indian Leases*, p. 27. Including rents and royalties, the total income to the federal Treasury during that time was more than $87 billion.

12 Kwerel and Felker, *op.cit.*, p. 7.

13 849-841, 894-896, and 940-941 Mhz.

14 Under a temporary license, two of the unallocated bands are being use by GTE to provide air-to-ground telephone service for passengers on airlines. Under the terms of this license, however, this is only a temporary assignment, pending final determination of the use for these bands.

♦ ♦ The authorization for the auction program would automatically expire five years from the date of enactment. Continuation of the program thus would require renewal by Congress.

The Gramm bill is a good first step toward spectrum license auctions. In the longer term, the FCC could be authorized to use auctions for other new license assignments.

The auction approach has many advantages. Among them:

1) Lower costs for applicants. Auctions would reduce the total costs for applicants, compared with either today's comparative hearing or lottery methods. Due to the simplicity of the process, application costs would be low – probably less than a tenth of the costs that would be incurred under a comparative hearing, estimate FCC economists Evan Kwerel and Alex Felker.[15] Of course, the cost per application under an auction system likely would be higher than that for a lottery process. Yet since many fewer applications would be made, the total cost would be much less.

2) A decrease in delays. Auctions save resources by reducing delays in granting licenses. While comparative hearings and lotteries can take years to complete, an auction can be conducted quickly. Kwerel and Felker estimate that for a medium size cellular market, comparative hearings would require eighteen months to complete and lotteries, twelve months; but an auction would need only about three months. The result would be not only savings for the eventual licensees, but gains to consumers, who would not have to wait as long to enjoy communication services.

3) Decreased cost and increased revenue to the taxpayer. Because auctions are more efficient, the costs to the FCC, and the taxpayer, could be reduced substantially. Kwerel and Felker estimate that processing costs could be 80 percent less than under a lottery and 95 percent less than under a comparative hearing process.[16] More important perhaps are the revenues generated for the federal Treasury. The exact amount is unclear, since they would depend not only on the perceived profitability of the licensed services at the time of auction, but on how assignments are made. If frequencies were assigned on a nationwide basis, providing the winning bidder the right to use a frequency across the country, revenues could be significantly larger than if separate licenses were awarded in different geographic areas.

In any case, it appears that revenues from auctions would be considerable. When Senator Gramm first introduced his bill last year, it was estimated that the proposal would generate about $800 million in revenue. This figure was based on a 1985 study by a communications consulting firm, Transcomm, Inc., which estimated that an additional megahertz of spectrum for cellular radio (for the largest thirty markets) would be worth about $133 million, or about $800 million for six megahertz. This was assumed to reflect the value of the

15 Kwerel and Felker, *op. cit.*, p. 17.
16 *Ibid.*

spectrum auctions. Although the frequencies auctioned would not necessarily be used for cellular radio, they probably would be used for services as or more economically valuable. The Congressional Budget Office has estimated that auctions would bring in a similar amount, calculating revenue of $500 million for the sale of four megahertz.[17]

Rising Market Value. These estimates, however, are likely much too low. In an analysis published last September, Kidder, Peabody and Co. estimated that a cellular frequency is worth about $70 per each potential customer in urban areas, and $20 per potential customer in rural areas. Nationally, this translates into about $563 million per megahertz, or $3.38 billion for the six megahertz in the Gramm bill.

This estimate is in line with prices recently paid by buyers of cellular licenses. In 1986, for instance, Southwestern Bell purchased the cellular radio interests of the Metromedia Company. Southwestern Bell's initial offer of $1.65 for Metromedia's holdings translated into about $450 million per megahertz, indicating that six megahertz could raise about $2.7 billion. The market value of these frequencies likely is even higher today, given the skyrocketing value of cellular radio firms in recent years.[18]

COMMON MYTHS ABOUT AUCTIONS

Despite the advantages of an auction system, past proposals to authorize the FCC to use this approach have encountered stiff political opposition. Much of this has been based on myths about the auction process. Among the more common myths:

Myth #1: Existing license holders will have to enter an auction to keep their licenses.

Some critics believe that existing license holders, including television and radio stations, would lose their existing rights under an auction system. This is untrue. Auctions would be held only to assign currently unassigned spectrum rights. Auctioning existing spectrum rights would be unfair to current licensees, since owners typically have invested large amounts of money in their licenses.

Myth #2: Auctions would eliminate oversight of communications.

Under the Gramm proposal, none of the rights and responsibilities of FCC licensees would change. A licensee acquiring its license through an auction would be treated no differently from one obtaining a license through a comparative hearing, a lottery, or a purchase from another licensee. The FCC

17 Congressional Budget Office, *Reducing the Deficit: Spending and Revenue Options*, p. 226.
18 See "Craig McCaw Goes Establishment: He's Selling British Telecom a Stake In His Fast-Track Cellular Business," *Business Week*, February 4, 1989, P. 40.

would continue to allocate the spectrum for particular uses, and licensees still would be bound by the regulations that pertain to their particular service.

This is not to say that further deregulation is not a desirable and important goal. The deregulation accomplished by the FCC over the last eight years has benefitted consumers greatly – and should be continued and extended.[19] For example, reform of the allocation process is needed – spectrum users should be given greater ability to put their frequencies to the most valuable use, without being forced into narrow service categories.[20] Yet, these questions are distinct from the issue of whether assignments should be made by auction.

Myth #3: An auction system would be another tax on the communications industry.

Although an auction indeed would raise revenue for the government, it would not constitute a new tax. Unlike a tax, the revenue received from auctions simply would be a market payment for the right to use a valuable asset. Some critics of auctions have proposed that instead of auctions the federal government should charge a fee for use of the spectrum. Yet, without a market bidding process, the government would have no way to measure accurately the economic value of a frequency. Worse, if the fee were based on a measure such as gross revenues, productive activity would be discouraged. Licensees who made the best use of their assigned spectrum, and thus received more income, would have to pay more. Increased productivity therefore would be discouraged. Similarly, a "transfer fee," under which a licensee would pay a fee whenever a license is sold, also would be detrimental. Since sales would be discouraged, fewer licenses would be transferred to those who could put them to best use.

Myth #4: An auction system would allow large firms to buy all the available spectrum.

An auction system would not significantly affect the ultimate ownership distribution structure of FCC licenses. Even under the current system, firms can purchase desired licenses in private sales. Thus, even when a lottery or comparative hearing is used to make an initial assignment, the ultimate licensee normally will be the one placing most value on the license. An auction merely would eliminate the need for a resale and would ensure that the taxpayer receives some of the value of what is being sold.

Of course, current rules restricting undue concentration of ownership, as well as "warehousing" of unused spectrum, would continue to apply to auctioned frequencies. As important, a firm would have no incentive to bid for excessive amounts of spectrum simply because it has the cash to do so. If

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19 See, William Russell, "The Federal Communications Commission," in Charles L. Heatherly and Burton Yale Pines, eds., *Mandate for Leadership III: Policy Strategies for the 1990s* (Washington, D.C.: The Heritage Foundation, 1989), pp. 401-407.

20 See, Milton Mueller, "Privatization of the Airwaves," Reason Foundation Federal Privatization Project Issues Paper, April 4, 1988; John O. Robinson, *Spectrum Management Policy in the United States: An Historical Account*, Federal Communications Commission Office of Plans and Policy Working Paper No. 15, April 1985.

the expected returns from a license did not equal or exceed the cost, a rational firm would just as soon put its capital elsewhere. Conversely, a cash-poor firm with the ability to put a frequency to better use than others would likely have no trouble raising enough cash in the capital markets to make an adequate bid.

CONCLUSION

Using auctions to assign spectrum licenses makes good budget and economic policy. The current methods available to the FCC for assigning spectrum each have serious flaws. Comparative hearings are slow and costly, while lotteries encourage an excessive number of bids. By contrast, auctions would provide a swifter and more efficient method of assigning these valuable resources to those who would put them to best use.

Helping the Consumer. The legislation introduced by Senator Gramm and endorsed by the Bush Administration would allow the FCC to test the auction concept. Under the proposal, a substantial amount of revenue could be raised for the taxpayer — perhaps as much as $3.4 billion. And despite the claims of some opponents, the auctioning approach would not jeopardize the positions of existing licensees, alter the rights and obligations of FCC licensees, create a new tax, or enhance the ability of large firms to acquire spectrum.

Auctioning spectrum licenses is an idea that may receive considerable attention in the near future because of the need to reduce the federal budget deficit. Even without their budgetary impact, auctions deserve serious consideration, for they would encourage better use of the telecommunications spectrum. It is a clear illustration of how steps to reduce the deficit, rather than being painful sacrifices, actually can help the economy and the consumer.

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McKenna Senior Policy Analyst
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Explosion in Applications. This problem was perhaps best illustrated in the case of cellular radio. Before deciding to use lotteries, the FCC received fewer than 1,200 applications for licenses in the top 90 markets in the United States. For the next set of markets (the 91st to 120th largest), the FCC announced that it would use lotteries – and received over 5,000 applications, even though the markets were less valuable. For the even less valuable 121st to 305th markets, it received almost 93,000 applications. The FCC has just completed the application process for the remaining cellular markets – those in rural areas – and received a staggering total of over 288,000 applications.[7]

Cellular radio is not the only area that saw an explosion in filings. For the "special mobilized radio" service, the Commission received about 60,000 applications for the top 50 markets.[8] For the "multipoint distribution service," a form of pay television, the Commission received almost 16,500 applications.[9]

Although the cost per lottery application is small, the large number of applications filed makes the total costs of the process large. In fact, the costs may approach the value of the license itself. This is because additional persons will have the incentive to file applications until the value of their chance of winning is less than the cost of the application. Example: if a

7 According to Claudia Borthwick, Mobile Services Division, Common Carrier Bureau, Federal Communications Commission.

8 According to Betty Woolford, Land Mobile and Microwave Division, Private Radio Division, Federal Communications Division.

9 Kwerel and Felker, *op. cit.*, p. 5.

license is worth $100,000 and 100 applicants are expected, it would make sense for a person to file an additional application as long as filing costs are $1,000 or less. In addition, the FCC incurs costs. For cellular lotteries, this cost has been estimated at $5,000 per market. Added to that is the cost from the delay in processing the applications due to the high volume. For cellular licenses, these delays were about one year.[10] Thus, potential licensees lost revenue, and the public was deprived of valuable services, during this time.

THE AUCTION OPTION

These high public and private costs could be reduced substantially if the FCC were allowed a third method of assigning licenses: auctions. Under this method, frequencies would be assigned to the highest qualified bidder, who would pay the bid price to the U.S. Treasury. In this way, the time and expense required for assignment would be kept to a minimum, while the taxpayers could reap benefits from selling these valuable assets.

While never before used in the case of spectrum allocations, auctions have been used by the federal government in other areas. The Department of the Interior, for instance, has been auctioning leases for oil and gas production on the outer continental shelf for over 35 years. The U.S. Treasury has reaped a total of about $55 billion from bids under this program.[11] Auctions also are used in a wide variety of other situations, ranging from the issuance of Treasury bills to the sale of unclaimed property.[12]

Under the terms of S. 170, Senator Gramm proposes that:

♦ ♦ The FCC be authorized to assign six frequency bands to users by using auctions.[13] Each of these bands currently is unassigned. Four are also currently not allocated to any particular service, while the other two are currently allocated to a "general purpose mobile service," to be used for a range of mobile radio activities.[14]

♦ ♦ The Commission would be barred specifically from auctioning licenses for any frequencies already assigned, or for any that are allocated to mass media use, public safety, or amateur radio.

♦ ♦ Payments for licenses would be made in four equal payments, or if the licensee chose, in a discounted lump-sum payment.

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10 *Ibid.*, p. 17.

11 U.S. Department of the Interior, Mineral Management Service, *Mineral Revenues: The 1987 Report on Receipts from Federal and Indian Leases*, p. 27. Including rents and royalties, the total income to the federal Treasury during that time was more than $87 billion.

12 Kwerel and Felker, *op.cit.*, p. 7.

13 849-841, 894-896, and 940-941 Mhz.

14 Under a temporary license, two of the unallocated bands are being use by GTE to provide air-to-ground telephone service for passengers on airlines. Under the terms of this license, however, this is only a temporary assignment, pending final determination of the use for these bands.

♦ ♦ The authorization for the auction program would automatically expire five years from the date of enactment. Continuation of the program thus would require renewal by Congress.

The Gramm bill is a good first step toward spectrum license auctions. In the longer term, the FCC could be authorized to use auctions for other new license assignments.

The auction approach has many advantages. Among them:

1) Lower costs for applicants. Auctions would reduce the total costs for applicants, compared with either today's comparative hearing or lottery methods. Due to the simplicity of the process, application costs would be low – probably less than a tenth of the costs that would be incurred under a comparative hearing, estimate FCC economists Evan Kwerel and Alex Felker.[15] Of course, the cost per application under an auction system likely would be higher than that for a lottery process. Yet since many fewer applications would be made, the total cost would be much less.

2) A decrease in delays. Auctions save resources by reducing delays in granting licenses. While comparative hearings and lotteries can take years to complete, an auction can be conducted quickly. Kwerel and Felker estimate that for a medium size cellular market, comparative hearings would require eighteen months to complete and lotteries, twelve months; but an auction would need only about three months. The result would be not only savings for the eventual licensees, but gains to consumers, who would not have to wait as long to enjoy communication services.

3) Decreased cost and increased revenue to the taxpayer. Because auctions are more efficient, the costs to the FCC, and the taxpayer, could be reduced substantially. Kwerel and Felker estimate that processing costs could be 80 percent less than under a lottery and 95 percent less than under a comparative hearing process.[16] More important perhaps are the revenues generated for the federal Treasury. The exact amount is unclear, since they would depend not only on the perceived profitability of the licensed services at the time of auction, but on how assignments are made. If frequencies were assigned on a nationwide basis, providing the winning bidder the right to use a frequency across the country, revenues could be significantly larger than if separate licenses were awarded in different geographic areas.

In any case, it appears that revenues from auctions would be considerable. When Senator Gramm first introduced his bill last year, it was estimated that the proposal would generate about $800 million in revenue. This figure was based on a 1985 study by a communications consulting firm, Transcomm, Inc., which estimated that an additional megahertz of spectrum for cellular radio (for the largest thirty markets) would be worth about $133 million, or about $800 million for six megahertz. This was assumed to reflect the value of the

15 Kwerel and Felker, *op. cit.*, p. 17.
16 *Ibid.*

spectrum auctions. Although the frequencies auctioned would not necessarily be used for cellular radio, they probably would be used for services as or more economically valuable. The Congressional Budget Office has estimated that auctions would bring in a similar amount, calculating revenue of $500 million for the sale of four megahertz.[17]

Rising Market Value. These estimates, however, are likely much too low. In an analysis published last September, Kidder, Peabody and Co. estimated that a cellular frequency is worth about $70 per each potential customer in urban areas, and $20 per potential customer in rural areas. Nationally, this translates into about $563 million per megahertz, or $3.38 billion for the six megahertz in the Gramm bill.

This estimate is in line with prices recently paid by buyers of cellular licenses. In 1986, for instance, Southwestern Bell purchased the cellular radio interests of the Metromedia Company. Southwestern Bell's initial offer of $1.65 for Metromedia's holdings translated into about $450 million per megahertz, indicating that six megahertz could raise about $2.7 billion. The market value of these frequencies likely is even higher today, given the skyrocketing value of cellular radio firms in recent years.[18]

COMMON MYTHS ABOUT AUCTIONS

Despite the advantages of an auction system, past proposals to authorize the FCC to use this approach have encountered stiff political opposition. Much of this has been based on myths about the auction process. Among the more common myths:

Myth #1: Existing license holders will have to enter an auction to keep their licenses.

Some critics believe that existing license holders, including television and radio stations, would lose their existing rights under an auction system. This is untrue. Auctions would be held only to assign currently unassigned spectrum rights. Auctioning existing spectrum rights would be unfair to current licensees, since owners typically have invested large amounts of money in their licenses.

Myth #2: Auctions would eliminate oversight of communications.

Under the Gramm proposal, none of the rights and responsibilities of FCC licensees would change. A licensee acquiring its license through an auction would be treated no differently from one obtaining a license through a comparative hearing, a lottery, or a purchase from another licensee. The FCC

17 Congressional Budget Office, *Reducing the Deficit: Spending and Revenue Options*, p. 226.
18 See "Craig McCaw Goes Establishment: He's Selling British Telecom a Stake In His Fast-Track Cellular Business," *Business Week*, February 4, 1989, P. 40.

would continue to allocate the spectrum for particular uses, and licensees still would be bound by the regulations that pertain to their particular service.

This is not to say that further deregulation is not a desirable and important goal. The deregulation accomplished by the FCC over the last eight years has benefitted consumers greatly – and should be continued and extended.[19] For example, reform of the allocation process is needed – spectrum users should be given greater ability to put their frequencies to the most valuable use, without being forced into narrow service categories.[20] Yet, these questions are distinct from the issue of whether assignments should be made by auction.

Myth #3: An auction system would be another tax on the communications industry.

Although an auction indeed would raise revenue for the government, it would not constitute a new tax. Unlike a tax, the revenue received from auctions simply would be a market payment for the right to use a valuable asset. Some critics of auctions have proposed that instead of auctions the federal government should charge a fee for use of the spectrum. Yet, without a market bidding process, the government would have no way to measure accurately the economic value of a frequency. Worse, if the fee were based on a measure such as gross revenues, productive activity would be discouraged. Licensees who made the best use of their assigned spectrum, and thus received more income, would have to pay more. Increased productivity therefore would be discouraged. Similarly, a "transfer fee," under which a licensee would pay a fee whenever a license is sold, also would be detrimental. Since sales would be discouraged, fewer licenses would be transferred to those who could put them to best use.

Myth #4: An auction system would allow large firms to buy all the available spectrum.

An auction system would not significantly affect the ultimate ownership distribution structure of FCC licenses. Even under the current system, firms can purchase desired licenses in private sales. Thus, even when a lottery or comparative hearing is used to make an initial assignment, the ultimate licensee normally will be the one placing most value on the license. An auction merely would eliminate the need for a resale and would ensure that the taxpayer receives some of the value of what is being sold.

Of course, current rules restricting undue concentration of ownership, as well as "warehousing" of unused spectrum, would continue to apply to auctioned frequencies. As important, a firm would have no incentive to bid for excessive amounts of spectrum simply because it has the cash to do so. If

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19 See, William Russell, "The Federal Communications Commission," in Charles L. Heatherly and Burton Yale Pines, eds., *Mandate for Leadership III: Policy Strategies for the 1990s* (Washington, D.C.: The Heritage Foundation, 1989), pp. 401-407.

20 See, Milton Mueller, "Privatization of the Airwaves," Reason Foundation Federal Privatization Project Issues Paper, April 4, 1988; John O. Robinson, *Spectrum Management Policy in the United States: An Historical Account*, Federal Communications Commission Office of Plans and Policy Working Paper No. 15, April 1985.

the expected returns from a license did not equal or exceed the cost, a rational firm would just as soon put its capital elsewhere. Conversely, a cash-poor firm with the ability to put a frequency to better use than others would likely have no trouble raising enough cash in the capital markets to make an adequate bid.

CONCLUSION

Using auctions to assign spectrum licenses makes good budget and economic policy. The current methods available to the FCC for assigning spectrum each have serious flaws. Comparative hearings are slow and costly, while lotteries encourage an excessive number of bids. By contrast, auctions would provide a swifter and more efficient method of assigning these valuable resources to those who would put them to best use.

Helping the Consumer. The legislation introduced by Senator Gramm and endorsed by the Bush Administration would allow the FCC to test the auction concept. Under the proposal, a substantial amount of revenue could be raised for the taxpayer — perhaps as much as $3.4 billion. And despite the claims of some opponents, the auctioning approach would not jeopardize the positions of existing licensees, alter the rights and obligations of FCC licensees, create a new tax, or enhance the ability of large firms to acquire spectrum.

Auctioning spectrum licenses is an idea that may receive considerable attention in the near future because of the need to reduce the federal budget deficit. Even without their budgetary impact, auctions deserve serious consideration, for they would encourage better use of the telecommunications spectrum. It is a clear illustration of how steps to reduce the deficit, rather than being painful sacrifices, actually can help the economy and the consumer.

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