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Effects of Telecommuting on Central City Tax Bases

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Telecommuting or doing work outside of a regular office, either at home or at a remote location, has become a rapidly growing way of working for many Americans. The Bureau of Labor Statistics reports that wage and salary employees who did work at home and got paid for it increased almost 90 percent from 1.9 million in 1991 to 3.6 million in 1997, the most recent year surveyed.

The events of September 11, followed by the Anthrax scares have led to increased interest in telecommuting. Congressman Frank Wolf, a long-time advocate of telecommuting, has been joined by other members of Congress in urging that those federal employees who can do their work from home, or other remote locations, be permitted to do so. Even before September 11, some businesses found that employees were happier and more productive working from their homes and they have been enacting policies to encourage telecommuting. In short, there is evidence that telecommuting soon may become a larger and more important aspect of the workplace.

If telecommuting continues to gain popularity, thousands more workers now commuting to work in downtown offices each day, may instead work from their homes or remote locations. Such a development could alter the economies of central cities and affect their tax bases. While studies have evaluated the benefits of telecommuting from environmental, traffic, productivity, and worker perspectives, there has been little discussion of the potential adverse economic effects on cities. This paper reviews the telecommuting experience in Washington, D.C. prior to September 11, evaluates its economic and fiscal effects on the city, and speculates about possible future effects on the District and other cities.

Telecommuters: wage and salary employees who at least occasionally work at home or at a location other than their central work place during their normal work hours.

Table 1
Telecommuters Who Regularly Work in the District

	Telecommuters	Full-Time Equivalent	Total Workforce	Percent FTE Telecommuters
Suburban	75,707	17,564	771,723	2.3%
District	37,845	11,732	771,723	1.5%
Total	113,552	29,296	771,723	3.8%

Source: Metropolitan Washington Council of Governments' State of the Commute Survey, September 2001

Background

Telecommuting is not new in the sense that some occupations such as sales persons have always worked much of their time away from a formal office setting, often using public telephones to get messages and contact clients. Similarly, many small businesses for years have been operated from homes. What is new is the changes resulting from the widespread availability of personal computers, internet access, e-mail, fax machines, palm pilots, and cell phones. These electronic developments make it possible to do work remotely, thus shattering traditional notions of a central workplace.

Some businesses have implemented programs in which employees are provided with facilities in their homes and encouraged to do telecommuting. In other instances, employees elect on their own to do work occasionally at home. While it may be technically feasible for some employees to do all of their work at home, most of those telecommuting also need to go to an office some of the time. In some instances, referred to as hoteling, offices are shared by several telecommuters.

Because telecommuting has been emerging in different forms, most people are not aware of the current magnitude of its use and its potential to change the locations and ways that work is performed. Not all work, of course, is suitable for telecommuting and many persons do not want to telecommute. For those that can and do want to, however, there are distinct advantages in eliminating wasted time commuting, gaining more flexibility in balancing their professional and personal lives, saving on commuting cost, and reducing job stress. Businesses may gain by having less employee turnover as a result of happier workers, perhaps less need for office space, and based on some studies[1], greater productivity. Telecommuting also provides benefits to the community in terms of less traffic congestion, reduced air pollution from vehicles, and conservation of energy.

There are some concerns, however, that telecommuting may have some adverse effects. It may, for example, increase urban sprawl because it permits people to live conveniently further from their offices. It may also have adverse economic and fiscal effects on central cities because of a reduced presence of workers downtown. To examine this possible consequence, this paper estimates how much of the District of Columbia's economy, tax bases, and revenues have been decreased by telecommuting.

Current District Telecommuting

A recent survey by the Metropolitan Washington Council of Governments[2] estimates that 75,707 suburban residents, who work in the District, telecommute. While some telecommute only occasionally, 43 percent do so one day or more a week and 14 percent telecommute three or more days a week. Overall, the average telecommuting frequency is 1.16 days per week. On average, there are 17,564 less workers from the suburbs in the District each day as a result of telecommuting. In

addition, 37,845 District residents who work in the District telecommute an average of 1.55 days per week. This results in a decrease of 11,732 full-time equivalent District residents who telecommute and are not at their regular District work sites each day.

The 29,296 total suburban and District full-time equivalent workers who are not at their regular place of employment because of telecommuting represents 3.8 percent of the 771,723 persons who work in the District. This number of telecommuters is sufficient to demonstrate a decrease in economic activity and a loss of revenue to the District. Estimating the economic and fiscal effects of telecommuting in the District requires a variety of assumptions about commuter characteristics and how behavior is altered as a result of telecommuting. Some key information is available from the COG survey.

Almost 54 percent of the suburban telecommuters drive alone an average of 18.2 miles on those days when they work in the District. District residents who commute drive an average of only 7.2 miles, but a larger 57.7 percent commute alone. Two out of three telecommuters are executives, professionals, or managers and more than three out of four have incomes over $60,000. Less than a quarter of the telecommuters are employed by the federal government. There are about an equal number of men and women who telecommute and most (88 percent) do so from their homes, with the balance using remote office facilities.

Estimating Economic and Fiscal Effects

The effects of each telecommuter on the District's economy and finances will vary depending on his or her individual characteristics and buying patterns. Since it is not possible to assess each individual telecommuter, averages for all telecommuters, modified by the information available from the COG survey, will be used to estimate effects. Because some key characteristics were not sampled in the survey, such as number of telecommuters who get free parking or number who bring their lunch to work when working in their District offices, some assumptions about behavior have to be made.

In addition there may be a problem allocating suburban commuter expenditures directly in proportion to the amount of time spent working in the District. For example, a person telecommuting several days a week may continue to make their usual purchases of liquor, clothes, gifts, toiletries, and other goods by shopping on the days they are in the District. Of course, there could still be some unplanned or unexpected purchases near home on telecommuting days. On the other hand, the flexibility of telecommuting may make it easier to do shopping in the suburbs on telecommuting days and thereby avoid shopping when working in the District. Our base estimates of fiscal effects assume that telecommuters' spending in the District varies directly in proportion to the amount of time spent working in the District. This problem does not arise, of course, for District residents who telecommute to District jobs. It is assumed that their purchases, other than for parking, restaurant coffee and lunches, and gas, will not be affected by telecommuting.

Sales and excise tax revenues, as well as lottery ticket sales, are directly reduced by suburban telecommuters not making purchases in the District. Several other tax and revenue sources may experience indirect effects from reduced economic activity resulting from telecommuting. For example, reduced demand for office space could decrease property taxes, and decreased patronage in restaurants could decrease corporate income taxes. At the current levels of telecommuting, these losses seem too negligible to estimate. If there is more substantial telecommuting in the future, indirect effects on these taxes could cause measurable revenue reductions. Ironically, because the District is prohibited from taxing income earned by suburban residents in the city, there is no potential loss of income tax revenues from suburban telecommuting.

Revenue sources with direct effects that will be examined and revenue sources with indirect effects that will not be examined include:

Direct Effects Examined:

- General sales tax @ 5.75 percent
- Sales tax on restaurant meals @ 10 percent
- Sales tax on parking @ 12 percent
- Sales tax on alcoholic beverages @ 8 percent
- Excise tax on alcoholic beverages (various rates)
- Excise tax on cigarettes @ $.65 per pack
- Motor vehicle fuel tax @ $.20 per gallon
- District Lottery

Indirect Effects Not Examined:

- Real property tax
- Personal property tax
- Unincorporated business tax
- Corporate business tax
- Public utility tax

Economic and Fiscal Estimates

Parking

With a 12 percent sales tax rate, substantial revenue decreases result from the parking not used by telecommuters. This decrease in parking sales tax occurs whether the telecommuter is a suburban or District resident. Of the 29,296 full-time equivalent telecommuters, the survey shows that 16,236 drive alone and presumably would have parked downtown. However, after reducing an estimated 50 percent of telecommuters who have free parking or pay on a monthly basis, there remain 8,118 less who park daily. Based on an average daily fee of $8, they would have paid an estimated $15.9 million in parking fees annually. The 12 percent tax foregone would be $1.9 million per year. In 2000, the District received $24.4 million from the parking sales tax. It should be noted that the $15.9 million not paid for parking represents a measurable savings benefit that is being derived by telecommuters.

Restaurant Meals

Suburban and District telecommuters do not purchase breakfast, coffee, or lunch in the District, although a small percentage of District telecommuting residents might still make these purchases near their home or remote worksite. Some of the telecommuters, however, would not have been making restaurant purchases anyway, because they make their coffee at work and bring their lunches from home. Because over two thirds of the current telecommuters are executives, professionals, or managers with relatively high incomes, we assume that 75 percent would regularly buy their lunches when not telecommuting. The average expenditure for those purchasing breakfast, coffee and lunch is estimated to be $7.00 per day. On the basis of these assumptions, the telecommuters would not spend $37.7 million and the District's tax loss at the 8 percent rate would be $3.0 million. In 2000, the District received $163 million from the restaurant sales tax.

General Sales

Suburban telecommuters would not make a variety of potential purchases ranging from clothes, to gifts, to toiletries. These purchases are subject to the District general sales tax. Assuming that the 17,564 full time equivalent suburban telecommuters would forego purchases on the same basis as though they were actual full time employees (see earlier discussion), the decrease in sales tax depends on the average taxable purchases made by persons working in the District. There is, undoubtedly, a wide variation among individuals in their spending patterns. Some who purchase most of their clothes on lunch hour could spend several thousand dollars, while others may buy all their clothes at suburban shopping areas and make only very minor taxable purchases in the District. A conservative estimate for telecommuters, taking into account that some may not change their buying patterns, is $980 annually, or an average of about $20 per week. This results in $17.2 million of purchases not

made by telecommuters, resulting in a decrease of $990,000 in general sales tax revenues. The District's total general sales tax revenue in 2000 was $315.7 million.

Alcoholic Beverages
Purchases of alcoholic beverages from liquor stores are subject to both a District sales tax of 8 percent and an excise tax that varies from $1.50 per gallon on spirits to $.30 per gallon for some wines. Some suburban residents routinely buy alcoholic beverages in the District because the private liquor stores are believed to have more competitive pricing and better selection. Estimating how much beverage sales would not occur as a result of the 17,564 telecommuters not making purchases in the District is not feasible with any degree of accuracy. If, however, we considered an average of one gallon of spirits and one gallon of wine per person in lost purchases per year, with an average $40 cost per gallon, the resulting lost sales would be $1.4 million and the combined sales and excise tax decrease would be $145,000. In 2000, the District received $17.4 million from the sales and excise taxes on alcoholic beverages.

Cigarettes
A recent survey[3] found that 16 percent of Washington area adults are smokers. However, because executives and professional who telecommute are less likely to smoke, only 10 percent is used. Applying this 10 percent against the full-time equivalent telecommuters results in 1,756 telecommuters who smoke. If we assume each smoker buys one pack of cigarettes each day worked in the District, then telecommuters would not buy 430,318 packs at a cost of $1.5 million. The decrease in District taxes would be about $280,000. In 2000, the District received $17.2 million from the excise tax on cigarettes.

Motor Vehicle Fuel
Both suburban and District telecommuters reduce the amount of gas consumed and the taxes paid on that gas. Because there are limited gas stations available in the District to most suburban commuters, it is assumed that only 20 percent of the gas not used would have been purchased in the District. For District residents, it is assumed all gas is purchased in the District. Those telecommuters who drive alone are estimated to drive 54 million fewer miles, consume 2.8 million gallons less of gas, and spend $3.4 million less for gas. As a result of their savings, the District would receive $255,000 less in motor fuel taxes. In 2000, the District received $36.7 million from motor fuel taxes.

Lottery
The District's lottery provided $69 million in net proceeds in 2000. There is no reasonable way of estimating how many lottery tickets are bought by those working in the District and how many are bought by tourists, retirees and others. For purpose of estimating lost revenues, it is assumed that half of all lottery tickets are bought by those working in the District. No decrease in lottery sales is estimated from District residents who telecommute. The 2.3 percent of the workforce who are suburban telecommuters would result in a decrease of $798,675 in lottery revenues based on a pro-rata reduction.

Comparing Costs and Benefits
The District's economy loses an estimated $75 million annually in commuter spending due to telecommuting. The estimated total District lost revenue from the direct effects described above is $7.4 million annually, an amount equal to .22 percent of the total $3.4 billion of locally raised District revenues in 2000. The costs as a percent of district revenues vary for each of the revenue sources, directly affected from 7.8 percent for parking taxes to .3 percent for general sales tax. All the directly affected revenues combined would be reduced by 1.1 percent. For all except parking tax revenues, the reduced revenues are proportionately less than the 3.8 percent of the workforce telecommuting.

Table 2: Telecommuting
Summary of Its Economic and Fiscal Effects on the District

Tax Source	Estimated Decreased Spending	Estimated Decreased Revenue	FY 2000 Total Revenue	Percent Decreased
Parking Tax	$15,911,617	$1,909,394	$24,400,000	7.8%
Restaurant Meals	37,682,011	3,014,561	163,000,000	1.8%
General Sales	17,212,720	989,731	315,700,000	0.3%
Alcoholic Beverages	1,405,120	144,903	17,379,000	0.8%
Cigarettes	1,549,145	279,707	17,177,000	1.6%
Gasoline	1,273,986	254,797	36,693,000	0.7%
Lottery	798,675	798,675	69,450,000	1.2%
Total	$75,833,274	$7,391,768	$643,799,000	1.1%
Decrease per FTE telecommuter			$252.31	

The benefits from reduced traffic congestion, air pollution, and demand for public services is not quantifiable. The District would perhaps benefit directly from reduced emergency medical service and police calls, as well as less wear and tear on streets and other facilities. However, most of the benefits would accrue to the whole region and not just to the District.

Future Outlook

The COG survey also asked suburban non-telecommuters, whose job responsibilities would allow telecommuting, whether they would be interested in telecommuting. The result identified an estimated 120,153 workers in the District who are immediate potential telecommuters. This survey was taken before September 11, and the recent renewed campaign to get more federal government telecommuting. Using the same conversion of an average 1.16 days per week, telecommuting would reduce the suburban workers in the District by the equivalent of an additional 27,875 workers each day. The loss of these workers would add $8.3 million of District costs in terms of lost revenues.

Another future possibility is that as a result of September 11th or successful experience with telecommuting, the average number of days per week will increase from 1.16 to 2.00. If this occurs, the District cost for existing telecommuters would increase from $7.4 million to $11.8 million.

Conclusion

While every dollar of revenue is important to a District that has experienced difficulties meeting its budget demands, a loss of $7.5 million, even if it received no offsetting benefits, is not sufficient to create fiscal problems. It should be noted that the $7.5 million is not a sudden one year loss of revenues. Instead, it is the result of annual losses that have grown incrementally over several years. The fiscal effects could change rapidly in the present environment as more District workers may seek to telecommute and may spend more days each week doing so.

While the District of Columbia results should not be of immediate concern to officials in most other cities, even in economically hard pressed cities, there is reason to monitor future developments. An increase in the frequency of telecommuting or the number of those telecommuting could change the outlook.

In addition, a few cities may feel much heavier

fiscal pressures from telecommuting because of their tax structures. The District had no losses from a city income tax because the city is prohibited from levying a tax on commuter earnings. A number of major cities, including Philadelphia, Detroit, and cities in Ohio, levy taxes on commuter earnings in the cities. At a typical city rate of 2 percent on a gross earnings of $60,000 (the Washington average for telecommuters), the Washington loss of revenue per telecommuter would have jumped from $262 to $1,452 and the total lost revenue would have increased by $21 million and been a cause for more immediate concern.

There are two additional reasons why cities need to be concerned about future developments. First, the Washington COG survey shows that those most likely to be able to telecommute and to want to do so are professional and managerial higher wage workers in the service sectors—employees in steel mills do not generally telecommute. In recent years, cities have relied on growth in service sector employment to offset losses in manufacturing. Thus, telecommuting could minimize the very sector where cities have seen a bright spot in their economies.

A second concern is that if telecommuting becomes more widespread, it will result in a noticeable reduction in demand for downtown office space, thereby depressing real estate values and property taxes. For this to happen, a substantial number of workers would have to telecommute virtually full time so that they would not need a downtown office space. Because the Washington COG survey found that only 14 percent of telecommuters do so more than 3 days per week, no effects on real estate values or taxes were discernible in this study. However, some proponents of telecommuting have suggested that one of the advantages of encouraging employees to telecommute is the savings on costs for office space.

Any tallying of the liabilities should be offset by a similar analysis of the benefits, but such an accounting is difficult. Many of the benefits, such as saving of time and commuting costs, accrue directly to the employees. Other benefits, such as reduced traffic and air pollution, are regional and not easily quantified to cities. From a regional and national perspective, maximizing telecommuting probably makes sense. From a narrower city viewpoint, the advantages are less clear.

Even if cities want to buck the tide and try to discourage telecommuting, it's not clear what policies could be used. Where and how people work in the private sector has never been successfully regulated by local governments. At best, cities should continue to work to make downtowns attractive to workers by providing easy transportation access, a safe and clean environment, and attractive and vibrant amenities. Telecommuting promises to be just another of the many challenges that cities have had to face and overcome over the years.

Endnotes

1 IRS' Information Technology Services, Report on OIRM Flexiplace and Hoteling Pilot, June 19- October 20, 2000. Michael A. Verespej, Industry Week, The compelling case for telework, Cleveland, September 2001.

2 Metropolitan Washington Council of Governments' State of the Commute Survey, September 2001.

3 Metropolitan Washington Public Health Assessment Center, June 2001 report.

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