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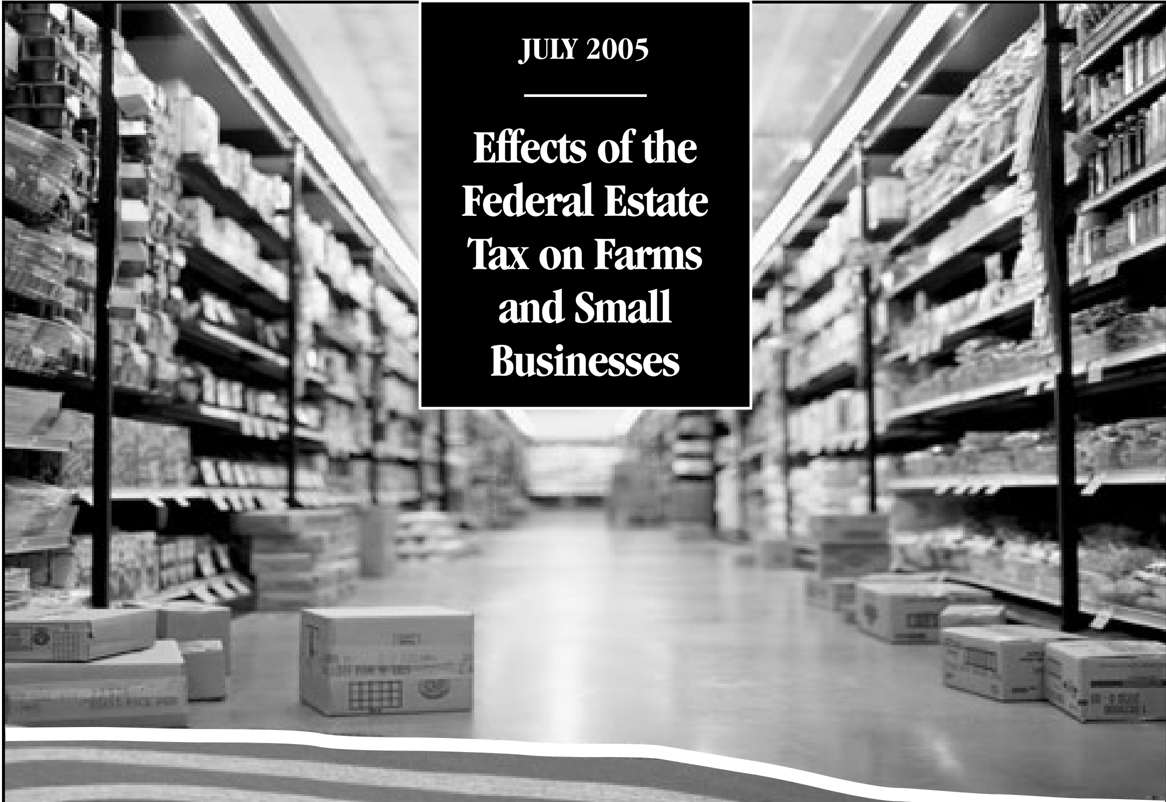

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Effects of the Federal Estate Tax on Farms and Small Businesses

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Note

Numbers in the text, tables, and figures of this report may not add up to totals because of rounding.

Preface

Critics of the federal estate tax argue that it can hinder families who wish to pass on a farm or small business, because heirs must sometimes liquidate the farm or business to pay the tax. This Congressional Budget Office (CBO) paper—prepared at the request of the Ranking Democratic Member of the Senate Finance Committee—examines the effects of the estate tax on small businesses and family farms, focusing on how it might alter the behavior of farmers and small-business owners during their lives and on the extent to which their estates have enough liquid assets to pay the estate taxes owed. The paper also looks at the impact on those groups of setting the amount of assets exempt from the estate tax at $1.5 million, $2 million, or $3.5 million. In keeping with CBO's mandate to provide objective analysis, this paper makes no recommendations.

Robert McClelland, formerly of CBO's Tax Analysis Division, wrote the paper—with additional supporting analysis from Ed Harris—under the direction of Roberton Williams and Thomas Woodward. Ben Vallis performed some of the computations used in the analysis, and Perry Beider provided useful comments.

Christian Spoor edited the paper, and Loretta Lettner proofread it. Denise Jordan-Williams prepared early drafts of the text, tables, and figures. Maureen Costantino produced the cover and prepared the report for publication. Lenny Skutnik produced the printed copies, and Annette Kalicki and Simone Thomas prepared the electronic version for CBO's Web site (www.cbo.gov).

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Summary

Recent discussion of the federal estate tax has focused in part on how it affects family farms and small businesses—particularly the possibility that having to pay the tax might jeopardize those operations. Analysis by the Congressional Budget Office (CBO) and others points to few strong conclusions, both because available evidence is limited and because existing tax data make it difficult to determine which estates are those of farmers or small-business owners.

Under current law, if someone dies in 2005 and leaves an estate worth more than $1.5 million, the estate must file a return and pay taxes of 43 percent to 47 percent on assets (minus various deductions) above that dollar threshold.[1] Under the Economic Growth and Tax Relief Reconciliation Act of 2001 (EGTRRA), estate tax rates will decline —and the amount of net assets exempt from taxation will increase—through 2009, at which point the tax will equal 45 percent of an estate's net assets over $3.5 million. The estate tax is then eliminated in 2010. However, if EGTRRA expires as scheduled in 2011, the tax will be reinstated that year, at rates ranging from 41 percent to 60 percent on net assets of more than $1 million. The federal estate tax is projected to raise around $20 billion to $30 billion in revenues annually through 2011 and roughly double that amount in the next few years thereafter.

In recent years, fewer than 2 percent of all estates have had to pay estate taxes. But critics argue that the tax may pose a particular hardship for a small business or family farm. If building up such an enterprise results in a taxable estate without enough liquid assets to pay estate taxes, heirs may have to wholly or partially liquidate the business or farm. Purchasing sufficient life insurance might prevent that problem, but the ongoing cost of paying premiums would reduce the cash flow available to invest in the enterprise. In addition, critics charge, because the estate tax lowers the rewards from investment, a business owner or family farmer wishing to leave the enterprise to his or her heirs may be less inclined to invest in it or to hire workers—or may even be dissuaded from starting the business.

1. The estate might also have to pay income taxes, but this analysis focuses only on estate taxes.

The amount of estate tax owed on a farm or business can be reduced in several ways. If a decedent has left heirs minority interests in a business, the estate may claim a reduced value for those interests for tax purposes, thus lowering the taxable value of the estate. In addition, until 2004, family-owned businesses could take a special deduction—the qualified family-owned business-interest (QFOBI) deduction—to lower their estate taxes. Moreover, certain types of businesses can spread their tax payments over 15 years in some circumstances. For farmers, a special method of calculating the value of a family farm can lower the amount of estate tax owed. Finally, as the amount of assets exempt from taxation increases under EGTRRA, the estate tax will affect fewer small businesses and farms (at least until the law expires).

Possible Effects of the Estate Tax on Entrepreneurship

Economic studies have had limited success in identifying how the estate tax may influence the behavior of farmers and small-business owners. Those effects depend on the underlying motives of the individual entrepreneur, which are themselves unclear. At one extreme, if business owners or farmers leave estates only because they die before managing to spend all of their accumulated assets, the existence of the estate tax will have no impact on their entrepreneurial behavior. However, if they intend all along to leave estates and thereby pass on active businesses, the estate tax could affect how much they invest in their farms or businesses. Because the tax reduces the after-tax return on investment, it could lead people to invest less than they would otherwise (or leave them with less money to invest if they held assets in liquid form or bought life insurance to cover future estate tax pay-

ments). Conversely, because the tax reduces the net size of estates, people might choose to save and invest more to offset it.

Unfortunately, research into the estate tax has not reached strong conclusions about the relative strength of such incentives. A large body of research has, however, found that income taxes may discourage entrepreneurial effort. Because the estate tax can be seen as equivalent to an additional income tax, the observed reactions of farmers and business owners to the income tax suggest that the estate tax may also reduce entrepreneurial effort.

Affordability of the Estate Tax

Information about whether the estates of farmers and small-business owners can afford to pay estate taxes comes primarily from tax returns. CBO's analysis examined data from estate tax returns filed in 1999 and 2000 (the most recent data available when the analysis was conducted). Determining from tax returns what constitutes a family farm or small business is difficult, however. Returns identify the decedent's occupation and industry, but those categories are broad. For lack of better identifiers, this analysis considered the estates of farmers to be those reporting an occupation of either farmer or farm worker (about 4,500 estates per year) and the estates of small-business owners to be those claiming the QFOBI deduction (about 1,500 per year).

According to those definitions, the estates of farmers were smaller than the average estate in 1999 and 2000, and estates claiming the QFOBI deduction were generally larger than average. That situation, combined with the progressivity of the estate tax, meant that the typical effective tax rate for farmers (the share of wealth they paid in estate taxes) was lower than the average for all estates, whereas the typical effective tax rate for estates claiming the QFOBI deduction exceeded that average.

The vast majority of estates, including those of farmers and small-business owners, had enough liquid assets to pay the estate taxes they owed. However, estates involving farms or small businesses were less likely than the average estate to have sufficient liquid assets to cover their estate taxes. In 2000, about 8 percent (or 138) of the estates of farmers who left enough assets to owe estate taxes faced a tax payment that exceeded their liquid assets, compared with about 5 percent of all estates that owed taxes. For estates claiming the QFOBI deduction, the corresponding figure was about 34 percent (or 164 estates). Those numbers are upper bounds, however, because the definition of liquid assets used on estate tax returns excludes some money held in trusts, which could also be used to pay estate taxes.

For returns filed in 2000, the threshold for filing was gross assets worth at least $650,000 or $675,000, depending on the year of death—less than half the 2005 level of $1.5 million. Had the current filing threshold been in effect in 2000, far fewer estates, especially those of farmers, would have had to file estate tax returns.

The scheduled expiration of EGTRRA in 2011 has engendered uncertainty and led to proposals that would permanently extend the higher exemption levels and lower tax rates in EGTRRA. This analysis looked at the effects of freezing the exemption level at three amounts: $1.5 million, $2.0 million, or $3.5 million. Any of those exemption levels, along with a 48 percent tax rate and a large QFOBI deduction, would substantially reduce the number of small businesses and farmers affected by the estate tax.

Effects of the Federal Estate Tax on Farms and Small Businesses

The United States has had an estate tax since 1916, when the tax was imposed to offset a decline in tariff revenues caused by World War I.[1] Lawmakers have altered the estate tax many times, raising the top statutory rate to as much as 77 percent and increasing or decreasing the amount of assets exempt from taxation. Most recently, the Taxpayer Relief Act of 1997 (TRA-97) and the Economic Growth and Tax Relief Reconciliation Act of 2001 (EGTRRA) modified the estate tax in ways that will cause it to change every year through 2011.

Under those laws, a unified credit applies to the sum of all taxable gifts made during a taxpayer's lifetime plus the value of assets left at death.[2] In 2005, the credit effectively shelters up to $1.5 million from the unified estate and gift taxes.[3] Only estates worth more than that amount must file an estate tax return, a provision that leaves the vast majority of estates exempt—fewer than 2 percent have to file returns. In calculating whether those estates owe estate taxes, various deductions and exemptions are permitted. For example, a surviving spouse can inherit an unlimited amount without paying taxes. That option, combined with the use of a "bypass trust," allows married couples to double the amount of wealth that can go to their heirs without taxation.[4] Assets bequeathed to qualified charities are deductible from the value of the estate, as are such items as funeral expenses and executors' commissions. The resulting net estate is subject to tax rates of 43 percent to 47 percent (depending on its size); if the amount of tax owed exceeds the unified credit, the estate must pay the excess.[5] In recent years, just under half of the estates filing returns have been liable for estate taxes.

The amount of assets exempt from the estate tax has been raised—and the top tax rate reduced—in recent years under TRA-97 and EGTRRA. Those trends are scheduled to continue for the next five years (see Table 1). TRA-97 initially sheltered up to $600,000 from taxation, an amount that was scheduled to rise to $1 million by 2006 before EGTRRA accelerated the increase. Under TRA-97, estate tax rates ranged from 37 percent to 55 percent, although a 5 percent surtax on estates valued between $10 million and $17.184 million phased out the benefit of the unified credit, effectively raising the marginal tax rate (the rate on an additional dollar of wealth) to 60 percent for estates in that range.

1. For a history of the estate tax through 2000, see Joint Committee on Taxation, *Description and Analysis of Present Law and Proposals Relating to Federal Estate and Gift Taxation*, JCX-14-01 (March 14, 2001).
2. Taxpayers are currently allowed to give $11,000 annually to each of any number of recipients without paying gift taxes (a threshold that rises by $1,000 for every 10 percent increase in the consumer price index). The unified credit applies to any gifts in excess of the annual limit.
3. Taxable gifts that cumulatively total more than $1 million are subject to gift taxes. At death, estate taxes are levied on the sum of cumulative taxable gifts and the value of the taxable estate. The estate tax liability on that sum is reduced by any gift taxes paid previously.
4. In essence, a trust is created at the first spouse's death with assets equal to the amount exempt from taxation. The surviving spouse is the beneficiary of the trust, with the heirs becoming the beneficiaries when the surviving spouse dies. Because the size of the trust equals the exemption level, creation of the trust does not trigger the estate tax, and wealth above the exemption amount may be passed on to the spouse tax-free through the unlimited spousal deduction. When the surviving spouse dies, tax is due on the wealth bequeathed to heirs in excess of the exemption level, but none is due on the trust because it is not part of the second spouse's estate.
5. For more details about the estate tax, see Jane G. Gravelle and Steven Maguire, *Estate and Gift Taxes: Economic Issues*, Report for Congress RL30600 (Congressional Research Service, updated June 24, 2005).

Table 1.

Scheduled Changes in Tax Rates and Exemption Amounts for Estate and Gift Taxes Under EGTRRA

	Estate Tax			Gift Tax	
	Lowest Tax Rate (Percent)	Highest Tax Rate (Percent)	Exemption Amount (Millions of dollars)	Highest Tax Rate (Percent)	Exemption Amount (Millions of dollars)
2002[a]	41	50	1.0	50	1.0
2003[a]	41	49	1.0	49	1.0
2004[a]	43	48	1.5	48	1.0
2005[a]	43	47	1.5	47	1.0
2006	45	46	2.0	46	1.0
2007-2008	45	45	2.0	45	1.0
2009	45	45	3.5	45	1.0
2010[b]	0	0	n.a.	35	1.0
After 2010	41	55/60 [c]	1.0	55/60 [c]	1.0

Source: Congressional Budget Office.

Note: EGTRRA = Economic Growth and Tax Relief Reconciliation Act of 2001; n.a. = not applicable.

a. Between 2002 and 2005, the credit for estate taxes levied by states was reduced by 25 percentage points each year and replaced by a deduction. Thus in 2005, estates could only deduct estate taxes paid to states. (See Box 1.)

b. Under EGTRRA, the estate tax will be repealed in 2010, and the maximum tax rate on gifts will equal the top individual income tax rate, 35 percent.

c. Estates valued at $10 million to $17.184 million are subject to a maximum tax rate of 60 percent in order to eliminate the value of the exempt amount of assets. Estates valued at more than $17.184 million are taxed at an average rate of 55 percent.

Under EGTRRA, the maximum tax rate was lowered to 50 percent in 2002; it is scheduled to fall to 45 percent by 2007. The amount of wealth exempt from taxation rose to $1 million in 2002 and $1.5 million in 2004 and will increase to $2 million in 2006 and $3.5 million in 2009. In 2010, the estate tax will be eliminated. The following year, however, with the scheduled expiration of EGTRRA, the estate tax will be reinstated at the levels defined in TRA-97: an effective exemption of $1 million and a maximum tax rate of 55 percent. (EGTRRA also affected the estate taxes levied by many states; for details, see Box 1.)

Critics of the estate tax argue that it may pose a special hardship for families trying to pass along a farm or small business. This analysis evaluates the evidence of the tax's effects on those operations, focusing on how it might influence the behavior of farmers and small-business owners during their lives and the extent to which their estates lack enough liquid assets to pay estate taxes. The analysis also looks at how raising the exemption amount would affect the number of estates that lack sufficient liquid assets to cover their estate tax liabilities.

Provisions of the Estate Tax That Affect Farms and Small Businesses

Lawmakers first made special provisions for small businesses under the estate tax in 1958 when the Small Business Tax Revision Act allowed some estates containing "closely held businesses" to pay their estate taxes over 10 years.[6] Subsequent laws added other provisions targeted toward estates that include farms or small businesses.

- **The Tax Reform Act of 1976** allowed estates to value farms and closely held businesses at their "current use" value rather than their "highest and best use" value, with the stipulation that heirs keep the property in its current use for at least 15 years. The law also extended to 14 years the period over which estates with closely held business assets could pay estate taxes.

6. A closely held business is defined as either a sole proprietorship or a partnership or corporation in which one-fifth of the business's value is included in determining the gross estate or in which there are 45 or fewer owners. The value of the business is defined in terms of the total capital (for partnerships) or the voting stock (for corporations).

Box 1.

Estate Taxes Levied by States

In addition to the federal government, many states impose taxes on large estates. Prior to the enactment of the Economic Growth and Tax Relief Reconciliation Act of 2001 (EGTRRA), every state and the District of Columbia levied a tax on estates that was at least equal to the amount of state-level estate taxes allowed as a credit on the federal estate tax return. Most states used that federal credit to determine the size of their estate tax levy: 32 states and the District of Columbia defined their tax levels on the basis of the federal tax credit in effect on the date of a person's death, and five states used the federal credit in effect on a specific date. The other 13 states either assessed inheritance taxes on heirs or charged their own estate tax and used the federal credit as a minimum tax in cases in which the state tax was less than the federal credit.

EGTRRA phased out the federal credit for state estate taxes over four years, replacing it with a deduction in 2005. Eliminating the credit meant that state estate taxes would disappear for the 32 states and the District of Columbia that tied their tax directly to the federal credit. Seven of those states and the District acted to "decouple" their tax from the federal credit, redefining the levy to equal the federal credit on a date before the passage of EGTRRA. The other 25 states allowed their estate taxes to phase out with the federal credit and thus are levying no state-level estate tax in 2005.

- **The Economic Recovery Act of 1981** shortened to 10 years the period during which heirs had to continue using farms or closely held businesses to be able to value assets at their current use and increased to $750,000 the maximum reduction from using that valuation; liberalized the conditions under which estates with closely held businesses could pay estates taxes over time; and extended the opportunity to pay taxes over time to certain holding companies.

- **TRA-97** provided an exclusion of up to $675,000 for qualified family-owned business-interest (QFOBI) assets, in addition to the basic exclusion available to all estates.[7]

The current-use provisions in the 1976 law are one method whereby estates can lower their tax liability by discounting (claiming a reduced value of) assets that are subject to the estate tax. Another approach, which is particularly important to family farms and small businesses, involves minority discounts. Those discounts reflect the fact that a minority share in an ongoing business operation is generally worth less than the equivalent share of the market value of the whole business, because the majority owners can act in ways that adversely affect the value of the minority owner's share. (For example, if the majority owners were also officers of the company, they could enact policies that would increase their income at the expense of minority owners' assets.) Heirs to a family farm or small business often receive minority interests in the operation; in that case, the estate can reduce its tax liability by claiming minority discounts.

What Is a Small Business?

Examining how the estate tax affects small businesses is hampered by the lack of a clear consensus about what constitutes a small business. The Small Business Administration, for example, defines a small business as one that is "independently owned and operated" and that meets certain limits on the number of employees and average annual revenue. Those limits vary by industry, however, ranging from 100 to 1,500 employees and from $750,000 to $28.5 million in annual revenue.[8] Similar

7. EGTRRA implicitly repealed the exclusion for family-owned business interests in 2004 because the amount of the effective exemption in that year—$1.5 million—exceeded the $1.3 million previously available to small businesses by combining the QFOBI and the general estate tax exemption. EGTRRA continued the provisions allowing special valuation and tax-deferral options for farms and small businesses, however.

8. See Small Business Administration, "Size Standards," at http://app1.sba.gov/faqs/faqindex.cfm?areaID=15.

variation exists in the standards used in the tax code: a small business can have gross receipts of no more than $500,000 for calculating certain excise taxes but up to $50 million for some stock sales.[9]

Laws governing the federal income tax establish three types of small businesses: S corporations, limited partnerships, and sole proprietorships. S corporations and limited partnerships are generally treated as "pass-through" entities, meaning that income from the business is taxed at the individual level, not the corporate level. An S corporation may have no more than 35 owners of its stock; no such limit exists for a limited partnership. A sole proprietorship is any taxpayer who has income from a business and files a Schedule C along with his or her federal income tax return. Sole proprietors must pay payroll taxes (both the employer's and employee's shares) on their earnings but may use business and home-office deductions not available to regular wage and salary workers.[10]

Laws governing the federal estate tax define two forms of small businesses: family-owned businesses (which are eligible for the QFOBI deduction) and closely held businesses. A family-owned business must satisfy a lengthy set of requirements on ownership and income (see Box 2). A closely held business has no constraints on its size but faces other limits. All sole proprietorships qualify as closely held businesses, but partnerships and corporations must meet one of two requirements: the estate must own at least 20 percent of the business's value or the business must have no more than 45 partners or shareholders.

The variety of definitions and forms of small business that exist precludes a comprehensive examination of the effect of the estate tax on small businesses. Instead, this analysis examines the business forms that have been previously studied or for which data are available. For example, when using data from tax returns, the analysis defines a small business as one for which an estate claimed a QFOBI deduction.

9. See Joint Committee on Taxation, *Overview of Present Law and Selected Proposals Regarding the Federal Income Taxation of Small Business and Agriculture*, JCX-19-0 (March 2001).

10. C corporations are omitted here because they have no limit on their number of shareholders and are not pass-through entities. Another type of business, a limited liability corporation, is defined by state law and may be a partnership or an S corporation.

Potential Effects of the Estate Tax on the Behavior of Farmers and Business Owners

How farmers and owners of small businesses react to the estate tax is a central consideration in determining its effects. One possibility is that, like others who do not expect their estates to be large enough to be subject to the tax, people in those groups do not alter their behavior in response to the estate tax. Alternatively, like others who expect to owe the tax, they may choose to save more than, less than, or the same as they would have otherwise. In addition, they may have different motives than the rest of the population or face different incentives as a result of the targeted provisions of the estate tax. Little direct evidence exists about the effects of the estate tax on entrepreneurial effort. However, like the income tax, the estate tax may reduce business investment and hiring by farmers and business owners to some degree and thus slow the rate of growth of their enterprises.

Why Do People Accumulate Assets?

The estate tax potentially reduces the inheritance available to heirs. Whether the tax affects decisions about how much to work and save depends on people's motives. At one extreme, people may save only to meet their own retirement needs and leave estates because they unintentionally fail to spend all of their assets. In that case, estates will not play a role in their planning, so they should act no differently in the face of the estate tax. At the other extreme, people may intend to leave the largest possible estate to their heirs. In that case, by raising the cost of leaving assets to heirs, the estate tax may lead them to work, save, and invest less during their life. Or, by reducing the after-tax size of the inheritances that heirs receive, it may lead such savers to work, save, and invest more to compensate for the loss to taxes.

Observed behavior offers mixed evidence about people's motives in regard to their potential estates. On the one hand, the very existence of bequests—intentional or otherwise—may argue that saving is not driven solely by one's needs during one's lifetime. People can purchase annuities, which give them regular payments until death and leave nothing to their heirs, or reverse mortgages, which provide them with a stream of income in life at the expense of not passing their home equity on to their

Box 2.

How the Estate Tax Defines a Family-Owned Business

To qualify as a family-owned business—and thus be able to claim the qualified family-owned business-interest (QFOBI) deduction on an estate tax return—a business owned at least partly by an estate must be either a sole proprietorship or an entity to which one of the following three conditions applies:

- At least 50 percent of the entity is owned by the decedent or members of the decedent's family;
- At least 70 percent of the entity is owned by members of two families, and at least 30 percent is owned by the decedent or members of the decedent's family; or
- At least 90 percent of the entity is owned by members of three families, and at least 30 percent is owned by the decedent or members of the decedent's family.

The business must satisfy other requirements as well:

- It cannot have been publicly traded within three years of the decedent's death.
- No more than 35 percent of the business's adjusted ordinary gross income for the year of the decedent's death can be income from a personal holding company.
- The decedent must have been a citizen or resident of the United States at the date of death, and the business must be located in the United States.
- The business interest must be includable in the gross estate.
- The interest must have passed to or been acquired by a qualified heir from the decedent.
- The adjusted value of the qualified family-owned business interest must exceed 50 percent of the adjusted gross estate. (That value is reduced to the extent that the business holds passive assets or excess cash or marketable securities.)
- The decedent or a member of the decedent's family must have owned the business for five of the eight years before the decedent's death. In addition, the decedent's family must have materially participated in the business for five of those eight years.

heirs.[11] The infrequency with which people choose those investments (even in light of their costs from adverse selection) suggests that individuals accumulate assets with the intention of leaving bequests.

On the other hand, surveys of the wealthy indicate that passing on assets to heirs is not their primary reason for saving.[12] Moreover, people who want to maximize their bequests should act to minimize the estate and gift taxes they will pay. But analysis has shown that many individuals fail to take obvious steps to reduce those taxes; for example, many people whose estates will be taxed do not use the annual gift tax exemption of $11,000 per recipient per donor.[13]

11. See Edward J. McCaffery, "Grave Robbers: The Moral Case Against the Death Tax," *Tax Notes*, vol. 85, no. 11 (December 13, 1999), pp. 1429-1443.

12. See Christopher Carroll, "Why Do the Rich Save So Much?" in Joel Slemrod, ed., *Does Atlas Shrug? The Economic Consequences of Taxing the Rich* (New York: Russell Sage and Harvard University Press, 2000), pp. 465-484.

13. Because $11,000 may be passed by each parent to each heir tax-free, two parents leaving an estate to two heirs could give them up to $44,000 per year without taxation. However, parents typically give far less than that maximum. See James Poterba, "Estate and Gift Taxes and Incentives for Inter Vivos Giving in the United States," *Journal of Public Economics,* vol. 79, no. 1 (January 2001), pp. 237-264; and Kathleen McGarry, "The Cost of Equality: Unequal Bequests and Tax Avoidance," *Journal of Public Economics,* vol. 79, no. 1 (January 2001), pp. 179-204.

Lessons from the Income Tax

The estate tax could affect farmers and business owners differently from other people because of the business aspects of their wealth accumulation. In one survey, some small-business owners stated that the high levels of the estate tax were powerful disincentives to invest and hire new employees.[14] Economic studies of the estate tax have not reached strong conclusions about its effects on entrepreneurial behavior. However, estate taxes reduce after-tax returns on investment just as income taxes do, and a large body of research suggests that the income tax discourages entrepreneurial effort to some degree.[15]

To cast the burden of the estate tax in a more familiar form, the Congressional Budget Office (CBO) translated the estate tax into its income tax equivalent. That translation involved calculating what income tax rate, if applied annually to an entrepreneur's income for a certain number of years, would result in the same amount of assets after death as an estate tax with a flat 43 percent rate (the lowest applicable rate in 2005 under EGTRRA). Although actual situations would be complicated by issues such as a person's reason for leaving an estate and by uncertainty about when the person will die, CBO made several simplifying assumptions for the analysis: that all income is invested at a fixed rate of return, that all returns are reinvested in the farm or business, and that the owner knows when he or she will die. Applying that translation to predicted estate taxes, as calculated using a simplified version of CBO's estate tax model, provides estimates of the equivalent income tax rates that an entrepreneur faces. (The appendix explains CBO's method in more detail.)

Table 2.

Income Tax Rates Equivalent to a 43 Percent or 14 Percent Estate Tax

(Percent)

	43 Percent Estate Tax[a]		14 Percent Estate Tax[b]	
Rate of Return on Capital	20 Years Until Death	30 Years Until Death	20 Years Until Death	30 Years Until Death
6	31	26	9	7
8	28	22	8	6
10	25	19	7	5

Source: Congressional Budget Office.

Note: Each entry equals the annual income tax rate imposed on capital income that would yield the same total asset value at death as assets subject to an estate tax of either 43 percent or 14 percent (but not subject to income taxes), assuming a given rate of return on capital and a given life expectancy.

a. The minimum estate tax rate in 2005.

b. The typical estate tax that estates would have owed had the tax rates of 2005 been in effect in 2000.

In some circumstances, the estate tax is equivalent to a high marginal income tax rate. For example, a 31 percent income tax imposed annually on earnings from an investment that yielded 6 percent a year for 20 years would result in the same after-tax wealth as a 43 percent tax on that investment 20 years from now (see Table 2). Thus, for a person who expects to live 20 years, a 43 percent estate tax is equivalent to a 31 percent income tax (assuming a 6 percent rate of return).[16]

Higher rates of return and longer life spans are both associated with lower income tax rates, because deferring

14. See Joseph H. Astrachan and Robert Tutterow, "The Effect of Estate Taxes on Family Business: Survey Results," *Family Business Review*, vol. 9, no. 3 (September 1996), pp. 303-314.

15. See Donald Bruce, "Effects of the United States Tax System on Transitions into Self-Employment," *Labour Economics,* vol. 7, no. 5 (2000), pp. 545-574; Robert Carroll and others, "Personal Income Taxes and the Growth of Small Firms," in James Poterba, ed., *Tax Policy and the Economy* (Cambridge, Mass.: MIT Press, 2001), pp. 121-147; Robert Carroll and others, "Entrepreneurs, Income Taxes and Investment" in Joel Slemrod, ed., *Does Atlas Shrug? The Economic Consequences of Taxing the Rich* (New York: Russell Sage and Harvard University Press, 2000), pp. 427-455; Robert Carroll and others, "Income Taxes and Entrepreneurs' Use of Labor," *Journal of Labor Economics,* vol. 18, no. 2 (2000), p. 324-351; Julie B. Cullen and Roger H. Gordon, *Taxes and Entrepreneurial Activity: Theory and Evidence in the U.S.*, Working Paper No. 9015 (Cambridge, Mass.: National Bureau of Economic Research, June 2002); Robert W. Fairlie and Bruce D. Meyer, "Trends in Self-Employment Among White and Black Men: 1910-1990," *Journal of Human Resources,* vol. 35, no. 4 (2000), pp. 643-669; William M. Gentry and R. Glenn Hubbard, "Tax Policy and Entry Into Entrepreneurship" (draft, June 2004); Douglas Holtz-Eakin, John W. Phillips, and Harvey S. Rosen, "Estate Taxes, Life Insurance and Small Business," *Review of Economics and Statistics,* vol. 83, no. 1 (February 2001), pp. 52-63; David Joulfaian and Mark Rider, "Differential Taxation and Tax Evasion by Small Business," *National Tax Journal*, vol. 51, no. 4 (December 1998), pp. 676-687; and Herbert J. Schuetze, "Taxes, Economic Conditions and Recent Trends in Male Self-Employment: A Canada-U.S. Comparison," *Labour Economics,* vol. 7, no. 5 (2000), pp. 507-544.

16. By comparison, the top statutory income tax rate is 35 percent.

taxes rather than paying them annually yields benefits. Under an income tax, realized returns from an investment are taxed before they are reinvested, whereas the estate tax only taxes those returns at the end of the owner's life. In essence, returns grow on a "pretax" basis with respect to the estate tax, yielding a greater after-tax estate than would a tax of the same rate that was applied as returns were reinvested. A greater rate of return increases that gap, so a given estate tax translates into a lower equivalent income tax when rates of return are higher.[17] For example, a life expectancy of 30 years and a rate of return of 6 percent suggest an equivalent income tax of 26 percent (see Table 2). But a 10 percent rate of return—about the annual nominal increase in stock indexes since World War II—over 30 years suggests an equivalent income tax of 19 percent.

Looking at the income tax rates implied by a 43 percent estate tax is appropriate for entrepreneurs whose net worth is already large enough that their estates would incur tax liability if they died immediately, because every additional dollar they saved would be taxed at a marginal rate of 43 percent or more under the estate tax. Many farms and small businesses are currently worth less than $1.5 million, however, and owners of those enterprises would face no estate tax were they to die immediately. If the owner's decision to reinvest in the farm or business determines whether an estate will exceed the filing threshold for the estate tax, then the average tax rate may be a more appropriate comparison than the marginal tax rate. Had the estate tax rates of 2005 been in effect in 2000, the typical estate tax (for those owing tax under current exemptions and rates) would have been about 14 percent of the gross estate. That rate implies much lower income tax rates for every rate of return (see Table 2). For example, a person expecting to live 20 years and earning a 6 percent return faces estate taxes equivalent to an income tax of 9 percent; with a life expectancy of 30 years and a 10 percent rate of return, the estate tax is equivalent to only a 5 percent income tax.

A more realistic picture comes from simulating equivalent income tax rates using information on actual estates that filed estate tax returns in 2000 and claimed QFOBI deductions. The question posed in that analysis is, What income tax rate applied to an investment made earlier in a decedent's life would yield the same after-tax wealth at the time of death as the person's actual estate, net of estate taxes? To simulate that rate, CBO assumed that the person invested an amount at age 45 large enough to grow, by 4 percent annually, to the gross estate reported on the estate tax return.[18] The analysis suggests that under 2000 estate tax law, two-thirds of such estates with gross assets of more than $675,000 (the filing threshold that year) would have owed no estate taxes, so the equivalent income tax for them was zero. On average for all such estates filing returns in 2000, estate taxes were equivalent to a 4 percent income tax applied annually over the simulated investment period. For only those estates with estate tax liability, the average equivalent income tax rate was 11 percent, and the median rate was 9 percent.

The estate tax differs from the income tax in that it comes due not at a fixed date but rather at an unknown time in the future. Because the returns and assets of an enterprise vary over time, the amount of estate tax due also varies.[19] That variation could be particularly risky for a farmer or business owner: if the estate does not hold enough liquid assets to pay the estate tax, then heirs could be forced to sell the farm or business.

That problem can be ameliorated with life insurance, although predicting what the value of the business will be at the time of the owner's death may be difficult.[20] However, the proceeds from life insurance are themselves subject to estate taxes, unless owners employ devices such as an irrevocable life insurance trust.[21] Alternatively, a farmer or business owner might elect to keep enough liquid assets on hand to pay the estate tax, providing greater

17. The inverse relationship between rate of return and equivalent income tax rate also implies that to the extent that higher rates of return are associated with greater risk, an estate tax encourages risk-taking more than an income tax does.

18. With no knowledge of the amount or timing of actual investments, CBO assumed that the person made the full investment at age 45 and reinvested all returns in the farm or business. If death occurred before age 55, the analysis assumed that the investment took place 10 years before death. In all cases, the simulation assumed a 4 percent annual rate of return, roughly the historical average.

19. See James Poterba, "The Estate Tax and After-Tax Investment Returns," in Joel Slemrod, ed., *Does Atlas Shrug? The Economic Consequences of Taxing the Rich* (New York: Russell Sage and Harvard University Press, 2000), pp. 329-349.

20. See Douglas Holtz-Eakin, John W. Phillips, and Harvey S. Rosen, "Estate Taxes, Life Insurance and Small Business," *Review of Economics and Statistics,* vol. 83, no. 1 (February 2001), pp. 52-63.

21. Such devices must be used with caution because a business owner cannot borrow against an irrevocable life insurance trust, even if the survival of the business is at stake.

Box 3.

Estimating the Number of Estates Belonging to Farmers

Along with using the number of estates claiming the qualified family-owned business-interest deduction to indicate small businesses, the Congressional Budget Office used two methods to estimate the number of farmers represented on estate tax returns. The broader measure defined a farmer as anyone who was reported to have worked in the "agricultural crop" or "livestock" industry *or* anyone whose occupation was listed as "nonhorticultural farmer," "farm worker," "farm supervisor," or "farm manager." That definition included people not usually considered farmers, such as bookkeepers and secretaries working for dairy farms, investors in farm real estate, and commodity brokers. The narrower measure defined a farmer as anyone who worked in one of those two industries *and* had one of those four occupations. The two definitions yielded similar samples of estates (see the table at right).

Even that narrower definition may be far too broad, however: almost 40 percent of the estates in that sample reported no farm assets. Defining a farmer only as a nonhorticultural farmer working in the agricultural crop or livestock industry would substantially reduce the number of estates but not alter the conclusions of the analysis. Similarly, defining a farmer's estate as one in which farm assets accounted for at least 35 percent of the gross value of the estate would not qualitatively change the conclusions. (That definition would result in a sample size of about 5,500 estates in 2000.) Further, some estates may have listed farm assets in other categories, such as limited partnership assets. Because only the largest estates are required to file returns, the estates considered in this analysis belong to wealthy people in farming industries, not to subsistence farmers or migrant workers.

Gross Estates of Farmers in 2000

	Broad Sample	Narrow Sample
Total Number of Estates	5,308	4,641
Gross Value of Estate (Dollars)		
Average	1,814,000	1,801,000
Median	987,000	982,000
Standard deviation	19,737,000	20,861,000
Interquartile range[a]	647,000	640,000
5th percentile	660,000	664,000
95th percentile	3,182,000	3,035,000

Source: Congressional Budget Office based on data from the Internal Revenue Service's Statistics of Income files.

a. The distance between the 75th percentile and the 25th percentile.

flexibility in access to funds. Whether through life insurance premiums or personal saving, paying the estate tax can be translated from a lump-sum payment into a series of expenditures similar to regular income tax payments.[22]

Affordability of the Estate Tax

Unlike the issue of whether the estate tax influences behavior, which must be examined through surveys and economic modeling, the issue of whether estates can afford to pay taxes can be addressed using more-concrete data. The estate tax return that must be filed within nine months of a person's death (if the gross value of the estate exceeds the filing threshold) contains a variety of information: the value of the estate before and after various credits and deductions; the decedent's occupation and industry; and the estate's assets, such as personal residence, business assets, liquid assets, and so forth. CBO used data from estate tax returns filed in 1999 and 2000 (the most recent years for which data were available when the analysis was conducted) to compare the size of estates left by farmers and small-business owners with those of the population at large and to compare estates' tax liability with their liquid assets.

22. Note that money allocated to paying estate taxes does not leave the economy, so there is little change in economic activity. Life insurance premiums and money deposited in financial institutions are both loaned and invested.

Several factors complicate those comparisons. First, the distribution of estates filing estate tax returns is extremely asymmetrical. The average size of an estate filing a return may therefore be a misleading indicator of the overall group, because a small number of very large estates can dramatically raise the average. For that reason, this analysis reports not only averages but also medians (the midpoint of a distribution) and other percentile statistics that shed more light on the distribution of estates.

Second, the information about occupation, industry, and assets reported on estate tax returns makes it difficult to identify whether a decedent owned a family farm or small business. Thus, CBO had to make assumptions in classifying estates, and those classifications are only approximate (see Box 3 for more details). For the purposes of this analysis, a small-business estate is defined as one claiming a QFOBI deduction—about 1 percent of the estates filing returns in 2000.[23] A farm estate is one in which the decedent is identified as a "farmer" or "farm worker" of any kind—about 4 percent to 5 percent of estates filing returns. Because of those data limitations, CBO's analysis may have omitted some estates that contained small businesses and may have included too few or too many family farms.

Characteristics of Estates Filing Returns in 1999 and 2000

The distribution of assets reported on estate tax returns is highly skewed. In all, about 104,000 estates, with an average worth of $1.9 million, filed returns in 1999, and about 108,000 estates, with an average worth of $2.0 million, filed returns in 2000 (see Table 3). Those average values do not represent the typical estate: 80 percent of the estates that filed returns were worth less than the average.[24] The median estate filing a return had a net worth of about $1.0 million in 1999 and in 2000. (The filing

23. CBO used that definition rather than sole proprietorship because although it is possible to identify sole proprietors from income tax returns, the same is not the case with estate tax returns. Those returns need not note the presence of a Schedule C in a decedent's final income tax filing, and the required reporting of types of assets in an estate cannot reliably identify all sole proprietors.

24. That asymmetry can be seen another way: the 5th percentile of estates filing returns in 1999 was about $648,000, meaning that 95 percent of estates filing returns were at least that large. If the distribution of assets was symmetrical, the 95th percentile would be about $1.35 million; that is, only 5 percent of estates would exceed that amount. The actual 95th percentile is $4.7 million.

Table 3.

Characteristics of Estates That Filed Estate Tax Returns in 1999 or 2000

	1999	2000
Estates Filing Tax Returns		
Total Number of Estates	103,993	108,322
Gross Value of Estate (Dollars)		
Average	1,899,000	2,024,000
Median	1,027,000	1,092,000
Standard deviation	8,770,000	10,016,000
Interquartile range[a]	861,000	888,000
5th percentile	648,000	684,000
95th percentile	4,700,000	4,924,000
Estates Owing Estate Tax[b]		
Total Number of Estates	49,869	52,000
Gross Value of Estate (Dollars)		
Average	2,410,000	2,540,000
Median	1,171,000	1,231,000
Standard deviation	12,087,000	13,787,000
Interquartile range[a]	1,037,000	1,077,000
5th percentile	726,000	753,000
95th percentile	6,207,000	6,358,000
Amount of Tax Paid (Dollars)		
Average	460,000	469,000
Median	125,000	131,000
Standard deviation	2,360,000	1,939,000
Interquartile range[a]	304,000	306,000
5th percentile	7,000	6,000
95th percentile	1,682,000	1,762,000

Source: Congressional Budget Office based on data from the Internal Revenue Service's Statistics of Income files.

Note: Estates are subject to the tax law in effect in the year of death, but they do not have to file estate tax returns until nine months after the date of death. As a result, returns filed in a given year may be subject to different tax law. Returns filed in 1999 or 2000 could claim different effective exemptions, depending on the date of death: $625,000 for 1998, $650,000 for 1999, or $675,000 for 2000.

a. The distance between the 75th percentile and the 25th percentile.

b. CBO included only estates that owed taxes on the estate remaining at death. Estates that had paid gift taxes but did not owe additional estate taxes upon death were excluded. There were fewer than 500 such estates in 2000.

Table 4.

Estates Filing Estate Tax Returns in 1999 or 2000, by Decedent's Marital Status

	Estates Filing Tax Returns		Estates Owing Estate Tax	
	1999	2000	1999	2000
Never Married	8,151	8,726	5,301	6,060
Married	45,378	48,198	6,078	5,824
Widowed	44,948	46,164	34,535	36,307
Separated, Divorced, or Unknown	5,516	5,234	3,956	3,808
Total	**103,993**	**108,322**	**49,869**	**52,000**

Source: Congressional Budget Office based on data from the Internal Revenue Service's Statistics of Income files.

thresholds in those years ranged from $625,000 to $675,000, depending on a person's year of death.)

More than half of the estates filing returns in 1999 and 2000 had a net value that was too low to owe any estate tax. The most common reason was the unlimited spousal bequest: almost three-quarters of decedents whose estates owed no tax were married. (See Table 4 for information on the marital status of decedents whose estates filed returns.) Fewer than half of estates that filed a return owed any tax, and those estates were generally larger than ones with no tax liability. The average size of those estates was $2.4 million in 1999 and $2.5 million in 2000, with median values about half as large (see Table 3). On average, their tax payments were about $460,000 in 1999 and $469,000 in 2000. The median payment was much smaller: about $125,000 in 1999 and $131,000 in 2000.[25] The relatively large difference between the average tax paid and the median tax paid reflects the top-heavy distribution of estates and the progressivity of the estate tax.

Because the estate tax is progressive, larger estates pay a disproportionate share of estate taxes. In 1999, for example, the bottom 20 percent of estates that filed returns accounted for only about 7 percent of the total gross value of estates filing returns (see Figure 1). That bottom 20 percent of estates paid less than 1 percent of total estate taxes collected. Likewise, the top 50 percent of estates accounted for 79 percent of the gross value and paid 96 percent of the taxes. Even within that group, the distribution of wealth and estate taxes was extremely uneven. The richest 10 percent of estates filing returns held 45 percent of the wealth and paid two-thirds of the taxes, and the richest 2 percent of estates (those larger than $8.6 million) owned about 25 percent of the wealth and paid about 40 percent of all estate taxes.[26] (Total estate tax collections were $22.9 billion in 1999 and $24.4 billion in 2000.)[27]

As noted above, tax laws allow wide variation in the size of a small business—when size limits exist at all—which means that there is no inherent reason to presume that the typical estate of a small-business owner that files an estate tax return will be either smaller or larger than the typical estate filing a return. Moreover, although about 6 percent of estate tax returns report farming, forestry, or fishing as the decedent's occupation, and a similar share lists agricultural production as the decedent's industry (see Table 5), nothing in the definitions of those terms limits them to either small family farms or large agribusinesses.

In 2000, estates that claimed the QFOBI deduction were larger than a typical estate: their average value was $3.1 million (compared with $2.0 million for all estates filing returns), and their median value was $1.3 million (compared with $1.1 million for all estates). By contrast, people identified as farmers or farm workers left estates that were smaller than a typical estate: an average value of $1.8

25. In those years, the average tax payment equaled 13 percent of the value of the estate, and median payment equaled 10 percent.

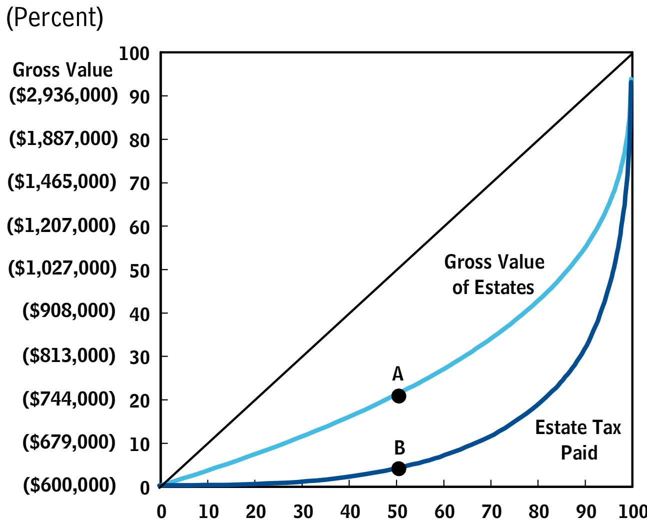
26. It is important to note that those statistics include only the wealth of estates filing returns—a small fraction of all personal wealth in the United States.

27. Barry W. Johnson and Jacob M. Mikow, "Federal Estate Tax Returns, 1998-2000," *Statistics of Income Bulletin* (Spring 2002), Figure M, p. 145, available at www.irs.gov/pub/irs-soi/00esart.pdf.

Figure 1.

Distribution of Gross Value and Estate Tax Liability of Estates Filing Estate Tax Returns in 1999

(Percent)



Source: Congressional Budget Office based on data from the Internal Revenue Service's Statistics of Income files.

Note: The Lorenz curves shown here sort estates by size from smallest to largest and show the cumulative percentage of gross value or taxes for each cumulative percentage of estates. For example, the bottom 50 percent of estates filing returns accounted for about 20 percent of the gross value of estates filing returns (Point A) and paid about 4 percent of total estate taxes (Point B).

million in 2000 and a median value of $987,000 (see Table 6).

Although several provisions of estate tax law can reduce the burden on farms and family businesses, few estates took advantage of them in 1999 or 2000. CBO estimates that about 600 estates employed the special-use valuation of assets in 1999; that figure rose to about 1,100 estates in 2000. Slightly fewer than 900 estates used the QFOBI deduction in 1999, and almost 1,500 used it in 2000. Between 500 and 700 estates deferred their taxes in 1999 and 2000.

The number of estates that claimed minority discounts on business assets in 2000 was much larger: just over 8,000. Many of the discounts appear to have been used by estates with small-business or farm assets (see Table 7). Closely held stock was the asset most commonly discounted and also had the highest average discount in dollar terms ($670,000). The largest average percentage discount (51 percent) was taken for undeveloped land or farmland, although those assets had the smallest average discount in dollars ($67,000). Those numbers are somewhat unreliable, however, because some estates may have used minority discounting informally without recording it on their estate tax return, and some may have established limited partnerships for reasons unrelated to a small business.

Even among estates that claimed the QFOBI deduction, little is known about the nature of the small business, and those estates varied widely in the types of assets they re-

Table 5.

Common Occupations and Industries of Decedents Whose Estates Filed Estate Tax Returns in 2000

	Percentage of Total
Occupation	
Professional Specialty Occupations	30
Executive and Managerial Occupations	27
Sales Occupations	17
Administrative Support Occupations	9
Farming, Forestry, and Fishing Occupations	**6**
Precision Production, Craft, and Repair Occupations	4
Operators, Fabricators, and Laborers	2
Technicians	2
Service Occupations	2
Military	1
Industry	
Professional and Related Services	29
Manufacturing	15
Finance, Insurance, and Real Estate	14
Retail Trade	12
Public Administration	7
Agricultural Production	**6**
Transportation, Communications, Utilities	6
Construction	5
Wholesale Trade	2
Personal Services	2
Entertainment and Recreational Services	1
Mining	1
Forestry, Fisheries, and Agricultural Services	1

Source: Congressional Budget Office based on data from the Internal Revenue Service's Statistics of Income files.

Table 6.

Characteristics of Farmers' and Small-Business Owners' Estates That Filed Estate Tax Returns in 2000

	All Estates Filing Tax Returns	Estates of Farmers[a]	Estates Claiming QFOBI Deduction
Total Number of Estates	108,322	5,308	1,469
Gross Value of Estate (Dollars)			
Average	2,024,000	1,814,000	3,122,000
Median	1,092,000	987,000	1,346,000
Standard deviation	10,016,000	19,737,000	22,630,000
Interquartile range[b]	888,000	647,000	1,276,000
5th percentile	684,000	660,000	726,000
95th percentile	4,924,000	3,182,000	7,605,000

Source: Congressional Budget Office based on data from the Internal Revenue Service's Statistics of Income files.

Note: QFOBI = qualified family-owned business interest.

a. Using the broad sample discussed in Box 3.

b. The distance between the 75th percentile and the 25th percentile.

ported. For example, in 2000, only about one-third of estates claiming a QFOBI deduction owned closely held stock, and just over half had any farm assets. Only 8 percent showed limited partnership assets, and just 12 percent reported "other non-corporate business assets."[28] About 8 percent of the QFOBI estates reported none of those types of assets. Of farmers' estates, about two-thirds reported farm assets, and nearly four-fifths included undeveloped land or farmland.

Estates with Insufficient Liquid Assets to Pay the Estate Tax

About 5 percent of the estates that owed estate taxes in 1999 or 2000 had a tax liability that exceeded their liquid assets (such as bonds, corporate stock, bank accounts, and insurance). That result is perhaps not surprising given that liquid assets made up more than 60 percent of the wealth of estates filing returns in those years (see Figure 2), whereas the estates that owed taxes faced effective tax rates that were much lower than that: an average rate of 13 percent and a median rate of 10 percent.[29] The large proportion of wealth held as liquid assets relative to the effective tax rate suggests that many estates may have been able to pay their estate taxes without liquidating business assets or personal residences (which constituted 22 percent and 7 percent, respectively, of the wealth of all estates filing returns). Moreover, the definition of liquid assets used on estate tax returns excludes money held in certain types of trusts, such as life insurance trusts, that could be used to pay estate taxes. Thus, 5 percent was the maximum share of total estates with liquidity problems in those years.

For farmers, business assets made up a much larger proportion of estates' wealth: 51 percent in 1999 and 43 percent in 2000. Liquid assets made up a smaller, but still substantial, share of their estates: just over 40 percent in both years. That smaller proportion of liquid assets suggests that estate taxes may be more likely to exceed liquid assets for estates of farmers, potentially requiring estates to liquidate other assets. However, farm estates are generally small, and the estate tax therefore consumes a smaller percentage of the gross estate (an average of 11 percent and a median of 9 percent in 2000). In fact, tax data show that in 1999, about 12 percent of farmers' estates that owed estate taxes faced a liability greater than their liquid assets. In 2000, the corresponding figure was 8 percent.

28. Assets of that type are defined as "assets identified as used in an enterprise owned by the decedent/donor, either as a sole proprietor, or as a partner in a business partnership."

29. Those effective tax rates are measured as the amount of estate tax owed as a percentage of the gross estate.

Table 7.

Minority Discounts Claimed by Estates Filing Estate Tax Returns in 2000, by Type of Asset

		Average Discount	
Asset	Number of Estates	Thousands of Dollars	Percentage of Undiscounted Value
Closely Held Stock	3,413	670	30
Limited Partnerships	1,304	542	33
Residential Real Estate	1,193	126	16
Undeveloped Land or Farmland	1,183	67	51
Real Estate Partnerships	1,091	346	28
Personal Residence	676	80	18
Other Noncorporate Business Assets	473	380	30
Farm Assets	261	283	24
Mortgages and Notes	139	185	24
Depletable/Intangible	130	167	22

Source: Congressional Budget Office based on data from the Internal Revenue Service's Statistics of Income files.

That situation is more pronounced for estates claiming the QFOBI deduction. Business assets made up at least 75 percent of those estates' wealth, on average.[30] In addition, the average tax owed was a higher percentage of the gross estate for those estates than for estates in general (14 percent compared with 13 percent for all estates filing returns). As a consequence, one-third of estates claiming the QFOBI deduction and owing taxes in 2000 could not pay the estate tax out of their reported liquid assets. As before, the fact that liquid assets do not include some trusts means that that figure represents the maximum number of estates with insufficient liquid assets to pay the estate tax.

Effects of Permanently Raising the Exemption Amount

As noted above, the estate tax is scheduled to be phased out under EGTRRA until it is eliminated in 2010, but then it will be reinstated in 2011. Rather than follow that schedule, lawmakers could freeze the parameters of the estate tax at levels set for years before 2010. CBO looked at the effects of keeping the tax rate at 48 percent (the top rate in 2004) and freezing the amount of assets exempt from taxation at either \$1.5 million (the level for 2004 and 2005), \$2 million (the level that will apply from 2006 through 2008), or \$3.5 million (the level set for 2009).

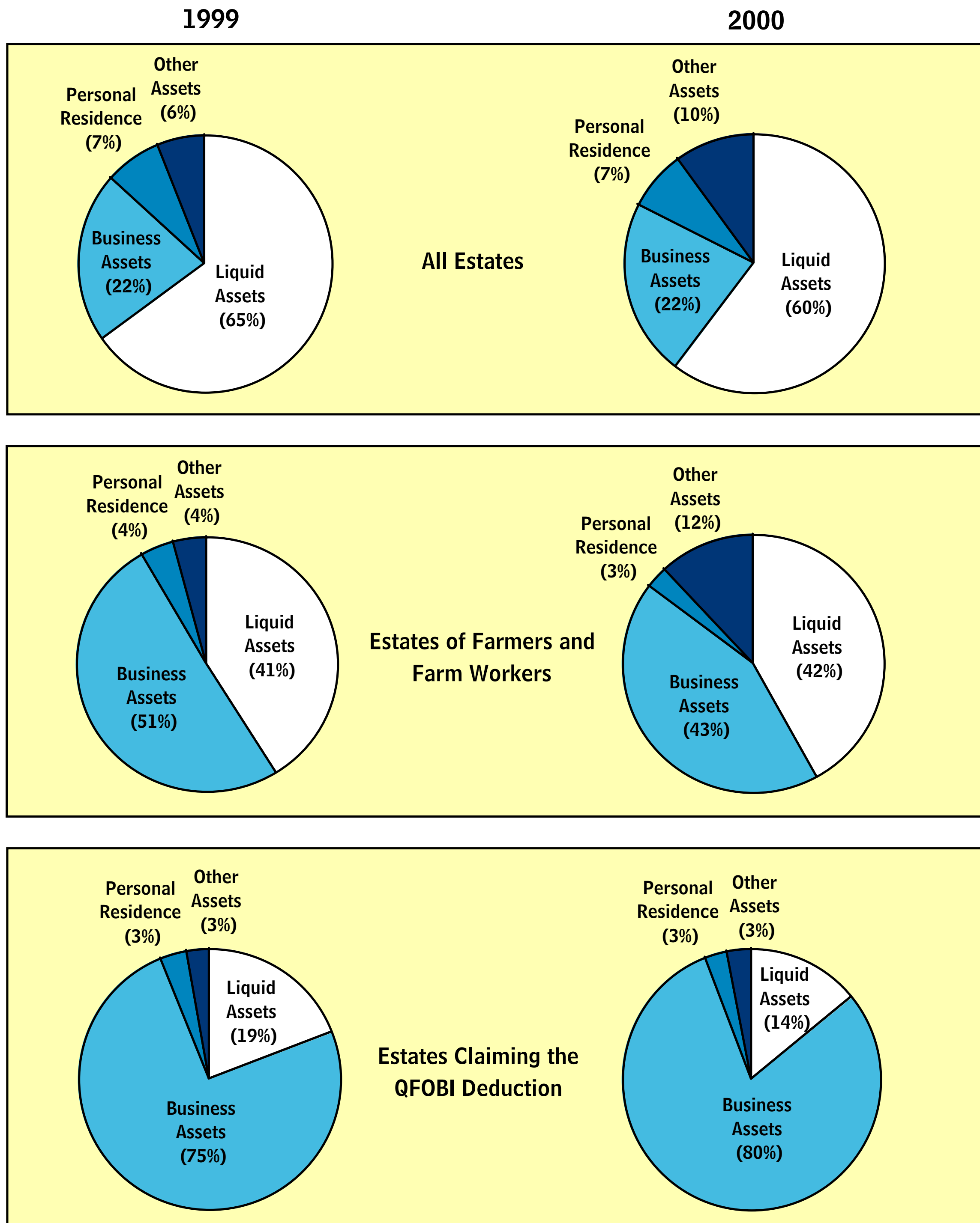
Had any of those exemption amounts been in effect in 2000, far fewer estates would have needed to file estate tax returns (see Table 8). With an exemption level of \$1.5 million, about 34,000 estates (rather than 108,000) would have had to file a return; with a \$2 million exemption, about 21,000 would have filed; and under a \$3.5 million exemption, about 9,000 would have filed. The reductions in the number of estates actually owing taxes would have been similar. Moreover, with an exemption level of \$1.5 million, only 740 estates would have had insufficient liquid assets to pay the estate tax. That number would have fallen below 200 if the exemption level had been \$3.5 million. (Again, those totals probably overestimate the number of estates with taxes in excess of liquid assets because they do not reflect money held in trusts.)

Those higher exemption amounts would have an even greater impact on farmers. Had the exemption level been \$1.5 million, only about 1,000 estates of farmers (rather than 4,600) would have had to file. That number would have dropped below 200 if the exemption level had been \$3.5 million. Fewer than 15 of those estates would have

30. Some of the assets included as "business assets" may not be used by small businesses. For example, limited partnerships may exist solely to allow heirs to receive minority discounts, and real estate other than personal residences may include vacation homes. Thus, the measures used here represent an upper bound on the percentage of assets devoted to small businesses.

Figure 2.

Assets of Estates Filing Estate Tax Returns in 1999 or 2000



Source: Congressional Budget Office based on data from the Internal Revenue Service's Statistics of Income files.

Notes: Liquid assets include government and private-sector bonds, bond funds, corporate stock, cash and cash management accounts, and insurance. Business assets consist of real estate (except a personal residence), real estate partnerships, closely held stock, mortgages and notes, farm assets, limited partnerships, and other noncorporate business assets. Other assets comprise annuities, art, and all other assets except personal residences. Asset values were augmented to correct for minority discounts.

QFOBI = qualified family-owned business interest.

Table 8.

Number of Estates Filing Returns and Number with Insufficient Liquidity to Pay the Estate Tax in 2000, Under Various Exemption Levels

Exemption Amount	Estates Filing Tax Returns	Estates Owing Estate Tax	Estates with Insufficient Liquid Assets to Pay Estate Tax Liability[a]
		All Estates	
Actual[b]	108,322	52,000	2,834
$1.5 Million	33,685	13,771	740
$2.0 Million	20,997	6,337	366
$3.5 Million	9,210	3,676	182
		Estates of Farmers[c]	
Actual[b]	4,641	1,659	138
$1.5 Million	1,005	300	27
$2.0 Million	578	123	15
$3.5 Million	187	65	13
		Estates Claiming Qualified Family-Owned Business-Interest Deduction	
Actual[b]	1,470	485	164
$1.5 Million	692	223	82
$2.0 Million	440	135	62
$3.5 Million	223	94	41

Source: Congressional Budget Office based on data from the Internal Revenue Service's Statistics of Income files.

a. Liquid assets include government and private-sector bonds, bond funds, corporate stock, cash and cash management accounts, and insurance. The number of estates with insufficient liquidity is an upper bound on the actual number because estimates of liquidity do not include money held in some trusts, which could also be used to pay estate taxes.

b. Estate tax returns filed in 2000 could be for people who died in either the last nine months of 1999 or in 2000. The actual estate tax exemption was that in effect on the date of death: $650,000 in 1999 or $675,000 in 2000.

c. Using the narrow sample discussed in Box 3.

lacked sufficient liquidity to pay the estate tax, even without using trusts.

The effects would be similar, though slightly smaller, for estates claiming the QFOBI deduction. About 700 of them (instead of 1,500) would have filed returns under a $1.5 million exemption, and just over 200 would have filed if the exemption had been $3.5 million. The number of QFOBI estates potentially facing a liquidity problem in 2000 would have fallen by three-quarters, to about 40, if the exemption had been $3.5 million. (That figure assumes that estates would have faced the same limits on the QFOBI deduction that actually applied in 2000. If the deduction had been set at $10 million, as some people have proposed, all QFOBI estates would have had sufficient liquidity to pay the estate tax in 2000.)

Raising the exemption level would also lower the income tax rates that are equivalent to the estate tax. Repeating the simulation performed above for estates that filed estate tax returns in 2000, but applying larger exemption amounts, yields lower equivalent income tax rates. With a $1.5 million exemption, the median income tax rate that is equivalent to the estate tax is only 2 percent for estates that claimed the QFOBI deduction in 2000; with a $3.5 million exemption, that median rate falls below 1 percent (see Table 9). Under 2000 law, one-third of estates taking the QFOBI deduction owed estate taxes, with an average equivalent income tax rate of 11.4 percent. With a $1.5 million exemption, the number of such estates with estate tax liability would have fallen by more than half, but their equivalent income tax rate would have risen to 13.2 percent, reflecting the fact that the estates paying taxes

Table 9.

Income Tax Rates Equivalent to the Estate Tax, Under Various Exemption Levels, for Estates Claiming the QFOBI Deduction in 2000

(Percent)

	All QFOBI Filers		QFOBI Filers Owing Estate Tax		
Estate Tax Exemption Amount	Average Tax Rate	Median Tax Rate[a]	Percentage of QFOBI Filers	Average Tax Rate	Median Tax Rate
2000 Tax Law[b]	3.6	0	33	11.4	9.1
$1.5 Million	2.0	0	15	13.2	11.2
$2.0 Million	1.1	0	9	11.8	12.4
$3.5 Million	0.7	0	6	11.1	9.6

Source: Congressional Budget Office based on data from the Internal Revenue Service's Statistics of Income files.

Notes: QFOBI = qualified family-owned business interest.

Average and median entries equal the annual income tax rate imposed on capital income that would yield the same total asset value at death as assets subject to estate tax (but not subject to income taxes) under the relevant exemption amount. Those values are based on simulations that used data on actual wealth reported on estate tax returns and assumed that assets grew at an annual rate of 4 percent from age 45 until actual age at death (or for 10 years if the person died before age 55). Because they apply to the specific individuals for whom estate tax returns were filed in 2000, the values shown here differ from the hypothetical cases shown in Tables 2 and A-1.

a. More than half of the estates that had to file returns in 2000 and that claimed the QFOBI deduction did not owe any estate taxes (because of that and other deductions and exemptions), so the median equivalent income tax rate is zero.

b. The exemption amount under 2000 law was $675,000.

would have been relatively large and thus have faced higher estate tax rates. With a $2 million or $3.5 million exemption, fewer than one-tenth of the estates that filed returns in 2000 and claimed the QFOBI deduction would have owed tax, and their equivalent income tax rate would have averaged less than 12 percent.

Appendix: Translating the Estate Tax into an Income Tax

By reducing the return on capital income, the estate tax affects people in much the same way that an income tax does. Calculating the income tax that is equivalent to the estate tax simply involves equating the net estates under an income tax and under an estate tax (assuming that the decedent reinvested all capital income in his or her enterprise), as follows:

1) $W[1+r(1-t_I)]^s = W(1+r)^s - [T_E(W[1+r]^s) - T_E(W)]$

where,

W = wealth currently available to the individual,
r = annual rate of return on an investment,
t_I = marginal income tax rate,
s = years remaining in the person's life, and
$T_E(*)$ = the estate tax function.

The left-hand side of the equation is the net estate remaining when the rate of return is reduced by an income tax. The right-hand side is the net estate remaining when the estate is reduced by the estate tax due on earnings accumulated over *s* years.[1]

Subtracting $T_E(W)$, the estate tax on existing wealth, in the bracketed term on the right-hand side is necessary for two reasons. First, the estate tax on existing wealth is a fixed cost and does not represent an incentive to individuals. Second, if it was not subtracted, an income tax on *W* would have to be included on the left-hand side, unnecessarily complicating the calculation.

Equation 1 is equivalent to:

2) $1+r(1-t_I) = (1+r)z^{1/S}$

where,

$z = 1 - [T_E(W[1+r]^s) - T_E(W)]/[W(1+r)^s]$, or the percentage of wealth retained after paying the estate tax on earnings.

The left-hand side of equation 2 describes the one-year percentage increase in wealth after paying the income tax. The right-hand side of equation 2 describes the one-year percentage increase in wealth after paying an annuitized version of the estate tax.

Solving equation 2 for t_I yields:

3) $t_I = [(1+r)(1 - z^{1/s})]/r$

The term $(1-z^{1/s})$ is the estate tax generated by one year of returns. Even with the lowest applicable marginal tax rate of the estate tax, 43 percent, the equivalent income tax rate can be quite high (see Table A-1).

That approach can easily be extended to incorporate three important factors. First, the uncertainty of a person's life span can be included by calculating equation 2 for every *s* and taking the expected value, using the appropriate mortality tables. Second, the analysis assumes that someone wishes to leave a bequest and saves 100 percent of his or her capital income. If the person does not care about leaving a bequest, the equivalent income tax rate is zero. The analysis can incorporate a rate of saving of less than 100 percent of capital income simply by lowering the rate of return. Third, if the decision about whether to

1. An alternative method is described in James Poterba, "The Estate Tax and After-Tax Investment Returns," in Joel Slemrod, ed., *Does Atlas Shrug? The Economic Consequences of Taxing the Rich* (New York: Russell Sage and Harvard University Press, 2000), pp. 329-349. In that method the income tax in a given year is compared to the expected value of the estate tax in that year (i.e., the probability of dying multiplied by the estate tax due). The method here compares the reduction in assets passed to heirs caused by the income tax and the estate tax.

Table A-1.

Income Tax Rates Equivalent to a 43 Percent or 14 Percent Estate Tax, by Rate of Return and Years Until Death

(Percent)

Rate of Return on Capital	Years Until Death: 10	20	30	40	50
	43 Percent Average Estate Tax Rate[a]				
2	41	38	36	34	32
4	39	34	30	27	24
6	37	31	26	22	18
8	35	28	22	18	15
10	33	25	19	15	12
12	32	22	17	13	10
	14 Percent Average Estate Tax Rate[b]				
2	13	12	11	10	10
4	12	10	9	8	7
6	11	9	7	6	5
8	11	8	6	5	4
10	10	7	5	4	3
12	9	6	5	4	3

Source: Congressional Budget Office.

Note: Each entry equals the annual income tax rate imposed on capital income that would yield the same total asset value at death as assets subject to an estate tax of either 43 percent or 14 percent (but not subject to income taxes), assuming a given rate of return on capital and a given life expectancy.

a. The minimum estate tax rate in 2005.

b. The typical estate tax that estates would have owed had the tax rates of 2005 been in effect in 2000.

reinvest returns determines whether the estate will be large enough to owe estate taxes, then 43 percent is not the applicable marginal tax rate. For owners of farms or small businesses who are contemplating whether to reinvest the income from the enterprise, the effective (that is, the average) estate tax rate may be more appropriate. That rate—approximately 14 percent—results in substantially lower equivalent income taxes.