CORPORATE TAX BURDEN COMPARISON:

BIOTECHNOLOGY INDUSTRY

By

Eng Braun
Administrator
Division of Research and Analysis
Wisconsin Department of Revenue

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SUMMARY STATEMENT

Businesses base their location decisions on a wide variety of factors. Tax burden is one of those factors. This report attempts to assess the tax burden of the biotechnology industry in Wisconsin compared to 4 other states. It compares the business taxes incurred by three hypothetical biotechnology corporations, each at a different stage of a biotechnology firm's development – the start-up corporation, the developing corporation, and the established corporation. The taxes included in the comparison are the corporate income tax, franchise fees/taxes, property tax and sales tax.

Eng Braun
Administrator
Division of Research and Analysis
Wisconsin Department of Revenue

Eng Braun is Administrator of the Division of Research and Analysis at the Wisconsin Department of Revenue. She was appointed to this position in June 1992. The Research Division conducts tax research and analysis in the areas of state and local fiscal policy, and prepares revenue estimates and the state economic forecast. Prior to heading the Research Division, Eng spent 5 years as an Economist in the Division, and 10 years as the Director of the State Tax Policy Bureau.

Division of Research and Analysis
Wisconsin Department of Revenue
2135 Rimrock Road
P.O. Box 8933
Madison, WI 53708
Tel: (608) 266- 2700
e-mail: ebraun@dor.state.wi.us

Wisconsin Department of Revenue
Division of Research and Analysis
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A. INTRODUCTION

Businesses consider a wide variety of factors in making location decisions. Because tax systems vary among states, the expected amount of tax paid is one of the factors in business location decisions.

The purpose of this report is to compare the direct business tax liabilities incurred by three hypothetical biotechnology corporations arising from the major taxes in each of five states. Taxes included in this comparison are the corporate income, franchise, property and sales taxes. The tax liabilities are calculated for each state using hypothetical biotechnology corporations. The methodology and assumptions used in calculating the taxes are described in the appendix.

The three hypothetical biotechnology corporations are:

- A start-up corporation that has been in operation for only one year. The corporation's primary activity is research and development. It has limited assets and all of its business activities occur within the home state. It has only three employees and is operating at a net loss.

- A developing corporation that has been in business for approximately 13 years and plans to begin manufacturing products in the near future. It has significant assets but is still operating at a net loss. The corporation's primary activity is research and development and all of its business activities occur within the home state. The corporation has 35 employees.

- An established corporation that is approximately 25 years old and is the only company of the three profiled to be making a profit. The corporation still conducts research and development, but its primary activity is manufacturing. It has 80 employees operating in several states

The five locations included in this comparison are: Boston, Massachusetts; Chicago, Illinois; Los Angeles, California; Milwaukee, Wisconsin; and Minneapolis, Minnesota. The states chosen currently have considerable biotechnology activity, and it was assumed that the hypothetical corporations were located in each state's largest city. The local tax rates used in the analysis are those that would be applicable to a biotechnology corporation in each designated city. To the extent that local tax rates in other areas of those states differ, the resulting tax burdens of the hypothetical corporations in other cities in those states would differ.

B. TOTAL TAX BURDEN SUMMARY

Table 1 shows the total tax liability ranking of each corporation by location. For this comparison, total tax liability is the sum of sales, property, income and franchise taxes. A ranking of 1 denotes the highest tax liability among the five locations compared.

TABLE 1
TOTAL TAX LIABILITY

	Start-Up Corporation		Developing Corporation		Established Corporation	
	Tax	Rank	Tax	Rank	Tax	Rank
Boston, MA	$ 11,781	5	$ 42,939	5	$ 909,328	4
Chicago, IL	35,842	1	116,955	1	1,668,656	1
Los Angeles, CA	17,888	3	53,772	4	553,284	5
Milwaukee, WI	33,044	2	68,961	2	998,564	3
Minneapolis, MN	14,635	4	57,751	3	1,306,962	2

As shown in Table 1, for each of the three corporations, the total tax burden is highest in Chicago. Boston has the lowest burden for the start-up and developing corporations. Tax liability in Milwaukee is second highest for the start-up and developing corporations and third highest for the established corporation. Tax burdens vary considerably in the five locations. For the start-up corporation, taxes in Boston, Minneapolis and Los Angeles are about half those in Chicago and Milwaukee. The same is true for the developing company, except that Milwaukee joins the lower tax locations with burdens about half those in Chicago. For the established corporation, Los Angeles has the lowest burden; Boston and Milwaukee have taxes not quite twice as high, and Minneapolis and Chicago have taxes two to three times higher than Los Angeles.

Table 2 provides a breakdown of total tax liability by tax type. As the table shows, the significance of each tax varies by the stage of development of the hypothetical biotechnology corporation. A discussion of each tax follows.

TABLE 2
STATE TAX LIABILITY BY TYPE OF TAX

	Start-Up Corporation							
	Sales Tax		Property Tax		Franchise Fee/Tax		Income Tax	
	Amount	%	Amount	%	Amount	%	Amount	%
Boston, MA	$ 7,146	60.7%	$ 4,138	35.1%	$ 497	4.2%	$ -	0.0%
Chicago, IL	31,864	88.9%	3,794	10.6%	184	0.5%	-	0.0%
Los Angeles, CA	11,054	61.8%	5,906	33.0%	128	0.7%	800	4.5%
Milwaukee, WI	20,682	62.6%	12,337	37.3%	25	0.1%	-	0.0%
Minneapolis, MN	10,004	68.4%	4,531	31.0%	-	0.0%	100	0.7%
	Developing Corporation							
	Sales Tax		Property Tax		Franchise Fee/Tax		Income Tax	
	Amount	%	Amount	%	Amount	%	Amount	%
Boston, MA	$ 7,932	18.5%	$ 33,576	78.2%	$ 1,431	3.3%	$ -	0.0%
Chicago, IL	35,049	30.0%	69,261	59.2%	12,645	10.8%	-	0.0%
Los Angeles, CA	29,485	54.8%	22,798	42.4%	689	1.3%	800	1.5%
Milwaukee, WI	23,840	34.6%	45,096	65.4%	25	0.0%	-	0.0%
Minneapolis, MN	11,105	19.2%	45,646	79.0%	-	0.0%	1,000	1.7%
	Established Corporation							
	Sales Tax		Property Tax		Franchise Fee/Tax		Income Tax	
	Amount	%	Amount	%	Amount	%	Amount	%
Boston, MA	$64,412	7.1%	$ 697,831	76.7%	$30,247	3.3%	$116,838	12.8%
Chicago, IL	172,869	10.4%	1,439,485	86.3%	12,557	0.8%	43,745	2.6%
Los Angeles, CA	164,807	29.8%	300,854	54.4%	1,816	0.3%	85,807	15.5%
Milwaukee, WI	122,161	12.2%	669,470	67.0%	25	0.0%	206,908	20.7%

Minneapolis, MN	90,177	6.9%	983,475	75.2%	-	0.0%	233,310	17.9%

Start-Up Stage: In every state, the sales tax accounts for the largest share of tax liability for the start-up corporation, ranging from 60% to nearly 90% of total tax liability. Property tax also comprises a significant portion of the total tax for start-up corporations, and is more than 30% of total tax liability in every state but Illinois. Income tax is not a factor for the start-up corporation because it has no taxable income; the only income tax liability that occurs is because of the minimum taxes in California and Minnesota.

Developing Stage: In the case of the developing corporation with assets but no taxable income, the property tax imposes the greatest tax burden in most states. Property taxes range from 42% to 79% of total tax liability. Only in Los Angeles was property tax liability second to another tax: sales tax. As shown in the table, sales tax liability ranged from nearly 20% to over 50% of total tax liability. As with the start-up corporation, income tax is not a significant factor because the corporation has no taxable income.

Established Stage: For the established corporation, with considerable assets in a manufacturing plant, property taxes are by far the most significant of the taxes compared. Property tax liability ranged from 54% to 86% of total tax liability. As shown in the table, sales tax liability accounted for 7% to 30% of total tax liability and income tax liability for 3% to over 20% of total tax.

C. PROPERTY TAX

Table 3 shows the property tax rankings of each city for the three hypothetical corporations. Table 4 summarizes property tax exemptions relating to business property and tax rates in each location.

TABLE 3
PROPERTY TAX LIABILITY

	Start-Up Corporation		Developing Corporation*		Established Corporation **	
	Tax	**Rank**	**Tax**	**Rank**	**Tax**	**Rank**
Boston, MA	$4,138	4	$33,576	4	$697,831	3
Chicago, IL	3,794	5	69,261	1	1,439,485	1
Los Angeles, CA	5,906	2	22,798	5	300,854	5
Milwaukee, WI	12,337	1	45,096	3	669,470	4
Minnesota, MN	4,531	3	45,646	2	983,475	2

*Assumes has been in operation at least 13 years.

**Assumes has been in operation at least 20 years.

TABLE 4
PROPERTY TAX PROVISIONS FOR 1999/00

	Property Tax Exemptions	**Full Value Tax Rate ($ per $100 value)**
Boston, MA	All personalty	3.42
Chicago, IL*	All personalty	3.07/6.92
Los Angeles, CA	Intangibles	1.08
Milwaukee, WI	Manu. M&E, computers, motor vehicles, intangibles	2.65
Minnesota, MN*	All personalty	4.05/5.22

*The first rate applies to the start-up firm; the second rate applies to the developing and established firms.

Start-up Corporation. Because the corporation's holdings are primarily personal property, taxes are lower in those states that exempt all personalty; conversely, Milwaukee and Los Angeles rank high because some personal property is taxed in their states. The start-up corporation does not receive the benefit of Wisconsin's exemption of manufacturing machinery and equipment (M&E) since it does not do any manufacturing. However, its computers are exempt. Chicago's low ranking is attributable to Cook County's assessment (before equalization) of newly constructed industrial property at 16% of market value for the first 10 years, compared to 36% of market value for established properties.

Developing Corporation. This corporation's property taxes in Chicago and Minneapolis rank highest due to high tax rates in those cities. Los Angeles ranking is low because of its low tax rate and the effect of Proposition 13 limits on increases in assessments of long-standing properties.

Established Corporation. This corporation by virtue of its manufacturing activity hold significant value in both manufacturing machinery and equipment and computers, both of which are exempt in Wisconsin. As a result, Milwaukee's property tax ranks low for this corporation. Los Angeles also ranks low due to its low tax rate and the effect of Proposition 13 on assessments of long-standing properties. Chicago's property tax ranks highest for this corporation in spite of its exemption of personal property. This is due to the high full value tax rate levied on established properties.

D. SALES TAX

The variation among states in sales tax treatment of purchases has a significant impact on total sales tax costs. Exempting purchases of machinery and equipment (M&E) used in manufacturing from the sales tax, or taxing purchases at a lower rate, provides a tax incentive to invest in new equipment. In those states where all equipment purchases are taxed at the general sales tax rate, the cost of investing in new equipment is higher than in those states that provide exemptions or lower sales tax rates.

Table 5 and 6 shows the sales tax rankings and significant provisions that would apply if the three hypothetical corporations were located in each city.

TABLE 5
SALES TAX LIABILITY

	Start-Up Corporation		Developing Corporation		Established Corporation	
	Tax	Rank	Tax	Rank	Tax	Rank
Boston, MA	$ 7,146	5	$ 7,932	5	$ 64,412	5
Chicago, IL	31,864	1	35,049	1	172,869	1
Los Angeles, CA	11,054	3	29,485	2	164,807	2
Milwaukee, WI	20,682	2	23,840	3	122,161	3
Minneapolis, MN	10,004	4	11,105	4	90,177	4

TABLE 6
SALES TAX EXEMPTIONS, TAX YEAR 2000

	Fuel & Electricity		Machinery & Equipment		Sales Tax
	Mfg.	R&D	Mfg.	R&D	Rate
Boston, MA	Yes	Yes	Yes	Yes	5%
Chicago, IL	No	No	Yes	No	8.75%*
Los Angeles, CA	No	No	Yes**	Yes**	8.25%
Milwaukee, WI	No***	No	Yes	No	5.6%
Minneapolis, MN	Yes	Yes	Yes	Yes	7%

* Different rates apply for purchases of fuel and electricity and transportation equipment.

** M&E for certain start-up companies in business for less than three years are exempt.

***An income tax credit is available for sales tax paid on fuel and electricity used in manufacturing.

Boston had the lowest sales tax liability for all three corporations. Of the five locations, Boston had the lowest tax rate (5% state rate with no local tax on these items) and exemptions for purchases of machinery and equipment, and fuel and electricity used in both manufacturing and research and development. Minneapolis exempts the same items as Boston, but imposes a higher tax rate (7% combined state and local rate).

Chicago has the highest sales tax burden for each corporation. Of the purchases compared, only manufacturing machinery and equipment are exempt from tax in Chicago.

E. INCOME TAX

The Table 7 shows the corporate income tax liabilities and rankings for the three hypothetical corporations. Key provisions of the income tax appear in Table 8.

TABLE 7
INCOME TAX LIABILITY

	Start-Up Corporation		Developing Corporation		Established Corporation	
	Tax	Rank	Tax	Rank	Tax	Rank
Boston, MA	$ -	-	$ -	-	$116,838	3
Chicago, IL	-	-	-	-	43,745	5
Los Angeles, CA	800	1	800	2	85,807	4
Milwaukee, WI	-	-	-	-	206,908	2
Minneapolis, MN	100	2	1,000	1	233,310	1

TABLE 8
INCOME TAX PROVISIONS, TAX YEAR 2000

	Apportionment Factors	Effective Top Tax Rate*	NOL Carryover		Combined Reporting
			Back	Forward	
Boston, MA	100% sales**	9.50%	0 Years	5 Years	No
Chicago, IL	100% sales***	7.30%	3 Years	15 Years	Yes
Los Angeles, CA	3 factors, dbl. wtd. sales	8.84%	0 Years	5 Years	Yes
Milwaukee, WI	3 factors, dbl. wtd. sales	8.137%	0 Years	15 Years	No
Minneapolis, MN	75% sales, 12.5% prop., 12.5% payroll ***	9.80%	0 Years	15 Years	Yes

* Includes other corporate income tax surcharges or special taxes.

** For qualifying manufacturing corporations; otherwise, three factors with double-weighted sales.

*** Effective for tax years beginning 1/1/01.

Start-Up and Developing Stages. As shown in Table 7, the income tax is a significant factor only for the established corporation. Both the start-up and the developing corporation operating at a loss have negative gross income. As a result, those corporations have an income tax only because there is a minimum tax liability, as in California and Minnesota.

Provisions that could be important for corporations operating at a loss are the net operating loss (NOL) carryover periods and combined reporting requirements. As Table 8 shows, Massachusetts and California allow losses to be carried forward to offset taxes in five future years; Illinois, Minnesota and Wisconsin allow losses to be carried forward for 15 years. Illinois, California and Minnesota also have combined reporting, which allows affiliated companies filing a combined return to have the loss from one company offset income of the affiliated companies.

Established Stage. The highest income tax burdens for the established corporation occur if the company is located in Minneapolis and Milwaukee. Minnesota's apportionment formula results in 45% of its income being apportioned to the state and it has the highest effective tax rate of the states compared. The apportionment formula in Wisconsin results in 60% of income being taxed in the home state. The corporation located in Los Angeles would also apportion 60% of its income to California, but a portion of its tax liability would be offset by an investment credit. The corporations in Boston and Chicago would apportion only 30% of income to the home state.

The lowest tax burden occurs in Illinois, and it results from a single sales factor apportionment factor that apportions only 30% of income to the state, a lower tax rate and an investment credit that offsets tax liability.

All five states compared have some version of research credits, provisions of which are summarized in Table 9. Massachusetts, California, Minnesota and Wisconsin all define expenses eligible for the basic research credit similarly (using a base year formula of 1984 to 1988 data), and Wisconsin includes expenses for research facilities. However, the percent of those expenditures allowed as credit is very different: California allows 12%; Massachusetts 10%; Wisconsin 5%; and Minnesota 5% of the first $2 million of expenses and 2.5% of remaining eligible expenses. Illinois defines eligible increases in research expenses based on recent year expenditures. As such, expenses eligible for the 6.5% credit are less.

TABLE 9
RESEARCH CREDIT

	Applicable Incremental Expenses	Credit %	Credit Amt.
Boston, MA	$2,781,579	10%	$ 278,158
Chicago, IL	1,049,563	6.5%	68,222
Los Angeles, CA	2,781,579	12%	333,790
Milwaukee, WI	3,231,392	5%	161,570
Minneapolis, MN	2,781,579	5% of first $2 million, 2.5% of remainder	119,539

Massachusetts, Illinois and California also allow credits for certain business investments. Massachusetts, California and Minnesota all impose requirements that tax liability not be reduced below a certain amount by credits available to the corporations. In Massachusetts, credits cannot reduce tax liability below 50% of pre-credit tax amounts. In California, the credit cannot reduce tax liability below $800, and in Minnesota an additional fee calculation (up to $5,000) determines the minimum tax.

Each state compared has some form of enterprise or development zone program that could provide certain tax incentives to a business locating in a zone. These incentives are typically negotiated on a case-by-case basis by the state departments of development or commerce with businesses. As such, they are not included in this comparison.

F. FRANCHISE/TAX FEES

The term "franchise tax" as used in this study refers to franchise taxes based on capital stock, net worth or other asset-related measures as well as annual corporate filing fees that may be paid to the Secretary of State or similar offices in the various states. Franchise taxes measured by corporate net income are included under the income tax.

Other than annual filing fees, only Massachusetts and Illinois have state-levied franchise taxes. However, Los Angeles and Chicago both impose local level taxes. Minnesota has no annual filing

fees for domestic corporations. The total taxes and rankings, and franchise tax provisions are shown in the tables below. Franchise tax burdens are substantial only for the established corporation in Boston and for both developing and established corporations in Chicago.

TABLE 10
FRANCHISE TAX FEE LIABILITY

	Start-Up Corporation		Developing Corporation		Established Corporation	
	Tax	Rank	Tax	Rank	Tax	Rank
Boston, MA	$ 497	2	$ 1,431	3	$ 30,247	2
Chicago, IL	184	3	12,645	2	12,557	3
Los Angeles, CA	128	4	689	4	1,816	4
Milwaukee, WI	25	5	25	5	25	5
Minneapolis, MN	0	1	0	1	0	1

TABLE 11
FRANCHISE TAX PROVISIONS, TAX YEAR 2000

	Annual State Filing Fees	State Franchise Tax Provisions		
		Tax	Tax Base	Rate Per $1,000
Boston, MA	$85	Yes	Property Value	$2.60
Chicago, IL	75	Yes	Capital Stock	$1
Los Angeles, CA	10	No	-	-
Milwaukee, WI	25	No	-	-
Minneapolis, MN	-	No	-	-
	Annual State Filing Fees	City Franchise Tax Provisions		
		Tax	Tax Base	Rate Per $1,000
Boston, MA	-	No	-	-
Chicago, IL	$125	Yes	Employment	$4 per Employee
Los Angeles, CA	-	Yes	Gross Receipts	Varies
Milwaukee, WI	-	No	-	-
Minneapolis, MN	-	No	-	-

G. TAX POLICY IMPLICATIONS

Some general conclusions can be drawn from the tax comparisons:

- Income tax credits are not beneficial for start-up and developing corporations, especially if they are nonrefundable credits, because these corporations have no taxable income and therefore no tax liability against which to offset the credits.

- Sales tax exemptions and property tax exemptions are thus better suited than income tax credits for these corporations.

- For the established profitable corporation that has multistate operations and sells its products nationally, an apportionment formula based solely on sales will give it a better comparative advantage than a 3-factor formula (even if sales are double-weighted).

APPENDIX

A. METHODOLOGY

This comparison calculates the state and local tax burden arising from the major taxes that a biotechnology corporation would pay in each state, including the corporate income, franchise, property and sales taxes. For the comparisons to be meaningful, it is important to define the components of each of the major taxes.

As used in this comparison, the term "income tax" includes corporate income taxes and franchise taxes that are based on corporate net income. The term "franchise tax" includes annual filing fees and taxes that are based on capital stock, net worth or any measure other than corporate net income. While it is necessary to make these distinctions for comparison purposes across the states, use of the terminology in this way should not be interpreted to contradict the important legal distinction between the corporate income and franchise taxes.

This approach, within the limits of the assumptions applied, quantifies only the most significant tax differentials among the states. Since the comparison relies on hypothetical corporations, variations in the relationship of real property, inventories or other assets to income could have a substantial impact on the tax burdens in different states. In addition, other factors such as unemployment and worker's compensation costs, state and local taxes on individuals, transportation costs, wage rates for labor, and short-term tax and other locational incentives aimed at attracting industry all vary among the states and have an impact on the costs of doing business. These factors are beyond the scope of this study.

It is important to note that state and local taxes are only one of the many costs of doing business. Other significant factors affecting location decisions include the accessibility of markets, raw materials and suppliers; availability of skilled a labor force and labor costs; the availability and quality of transportation and other public services; regulatory processes; and the quality of life. It is difficult to rank taxes among the many factors due to the unique nature of each location decision. Each corporation will have its own ranking of the different factors and it is difficult to predict how often taxes will rank as an important cost of doing business.

B. ASSUMPTIONS

States and cities often offer special tax incentives to individual companies as a way to encourage companies to locate in particular areas. These incentives can apply to any tax and can significantly reduce or eliminate tax liability for a company. Because of the company-specific nature of these incentives, this comparison does not account for these special tax incentives. For purposes of this comparison, tax incentives are limited to tax provisions available to all businesses operating in a state.

1. Property Tax

General Assumptions. Property taxes are calculated for 1999/2000 (i.e., levied in 1999, payable in 2000). Table A.1 shows the property owned by each hypothetical firm located in the cities under analysis. It is assumed that the property owned by the start-up firm and the developing firm are located entirely in the cities under analysis; it is assumed that 90% of the property owned by the established firm is located in-state in the city being analyzed, and 10% located out of state.

TABLE A.1
FULL VALUE OF PROPERTY LOCATED IN CITES UNDER ANALYSIS

	Start-Up Corporation	Developing Corporation	Established Corporation
REAL ESTATE:			
Land	-	$2,360,241	$363,234
Buildings	$123,431	18,454,507	638,267
PERSONAL PROPERTY:			
Mfg. Machinery & Equipment	-	3,678,060	-
Other Non-Mfg. Machinery & Equipment	300,596	2,487,118	672,992
Computer Equipment	44,615	3,695,003	185,304
Copiers, faxes	-	553,027	26,587
Furniture & Fixtures	41,355	1,398,607	41,835
Inventory	-	11,319,976	-
Transportation	20,222	69,413	108,420
Intangibles	12,133	1,318,193	836,783
TOTAL	$542,352	$45,334,145	$2,873,422

The full value of property is generally assumed to be the net book value of the land and personal property accounts. The book value of land is increased by 50% to reflect the impact of increases in land value on the current market value, which is usually the basis for assessment of land. However, each location may measure full value differently due to differing assessment practices and different depreciation factors used in calculating the value of personal property. Sales ratio data that compares assessments to actual sale prices and state-specific depreciation factors are incorporated to calculate the full value of property as measured in each city. Assessment ratios are then applied to calculate assessed values. The sales ratio, assessment ratio and tax rate used for each location are described below.

Boston. The 1999/00 property tax rate for commercial property (including all taxing jurisdictions) was $34.21 per $1,000 of assessed value. Property is assessed at 100% of market value; however, sales ratio studies indicate that the median assessment is at 98% of market value. All personal property is exempt in Massachusetts.

Chicago. The 1999/00 property tax rate (including all taxing jurisdictions) was $8.536 per $100 of assessed value. Newly constructed properties used for industrial purposes are assessed at 16% of market value in Cook County for the first 10 years; the assessment level increases to 23% of market value in year 11, 30% in year 12 and to full assessment of 36% in year 13. Ongoing industrial properties are assessed at 36% of market value. It is assumed that a biotech firm would be classified as industrial property. For equalization purposes, the 1999 equalization factor of 2.2505 is applied to the local assessment to arrive at the assessed value used for tax purposes. All personal property is exempt in Illinois.

Los Angeles. The 1999/00 property tax rate (including all taxing jurisdictions) was $1.078822 per $100 of assessed value. Under Proposition 13, real property is generally assessed at 100% of its 1975/76 full value subject to an increase in assessed value of not more than 2% per year for each year since 1975/76. However, newly constructed property or property that has changed ownership is assessed at its current full value. The analysis assumes that real property in Los Angeles is assessed at 75.94% of full value, based on sales ratio studies conducted by the California Board of Equalization. Real property for start-up firms IS assessed at 100% of full value. Personal property is assessed at 100% of full value which is determined by California-

established useful lives and depreciation factors. Intangibles and inventories are exempt. Motor vehicles are subject to a license tax in lieu of property taxes at a rate of 2% of market value.

Milwaukee. The 1999/00 property tax rate (including all taxing jurisdictions) was $26.51 per $1,000 of full value. Manufacturing machinery and equipment, computers, inventories, intangible property and motor vehicles are exempt from property tax in Wisconsin.

Minneapolis. The 1999/00 total tax rate (including all taxing jurisdictions) was $146.158 per $100 of assessed value. Commercial and industrial property is also subject to the Fiscal Disparity Law, which increases the tax rate by 0.28%. Thus the analysis assumes a tax rate of $146.567 per $100 of assessed value. In addition, the 1999/00 Referendum Market Value tax rate was 0.09459% of full value. Industrial and commercial property is assessed at 2.7% of the first $150,000 full value and 4% of full value over $150,000. Sales ratio studies indicate that full value is actually estimated at 90.6% of fair market value in the City of Minneapolis. All personal property is exempt in Minnesota.

2. Sales Tax

General Assumptions. As used in this study, the term "sales tax" refers to one-time taxes imposed on the purchase price of items. The sales tax rate used in the comparison is the state sales tax rate plus the local tax rate applicable in the specified cities where the hypothetical corporations are located. The comparison calculates the amount of sales tax that would be paid by the hypothetical corporations on their purchases of personal property (shown in the following table). This comparison follows the same assumptions as used in the property tax analysis that 90% of the property purchased by the multistate corporation will be located and used in the home state and therefore subject to sales (or use) tax in that state. Similarly, it is assumed that 100% of purchases of the start-up and developing corporations would be located and used in the home state and subject to sales tax there.

It is assumed that each of the hypothetical corporations purchases new and replacement personal property on a regular basis. The purchases of new personal property are considered to reflect the normal replacement of a corporation's existing property plus additional new property to increase output or otherwise improve productivity.

Items considered manufacturing M&E are only those items used directly in the manufacturing process. However, some states also exempt equipment used in other stages of the manufacturing process and equipment used in research and development. The comparison assumes that 50% of the equipment included in "other non-manufacturing equipment" category is not used at all in the manufacturing process. This equipment would include building maintenance and janitorial equipment and non-computer office equipment. The study assumes that 25% of the category is packaging-related equipment and the remaining 25% includes fork lifts and belts for transporting goods and other materials-handling equipment.

TABLE A.2
PURCHASES POTENTIALLY SUBJECT TO SALES TAX
IN CITIES UNDER ANALYSIS

Type of Purchase	Start-Up Corporation	Developing Corporation	Established Corporation
Mfg. Machinery & Equipment	$ -	$ -	$ 479,986
Research Equipment	223,300	198,749	206,491
Other Non-Mfg. Equipment	17,846	77,148	141,397
Computer Equipment	53,538	54,467	286,808
Furnitures and Fixture	47,263	8,308	835,427
Transportation Equipment	24,266	18,725	24,611

Fuel and Electricity for Mfg.	-	-	510,146
Fuel and Electricity for Research	3,103	68,315	153,623
Total Purchases	$ 369,316	$ 425,712	$2,638,489

Motor vehicle taxes imposed on the purchase price are included in the sales tax calculations, even though the tax may not be referred to as a general sales tax by the state imposing the tax.

Also, computations are made for the amount of sales tax paid on purchases of fuel and electricity used in the manufacturing process. Energy use is assumed to consist solely of electricity and natural gas. It is assumed that 60% of the amount spent is assumed to be for natural gas and 40% is for electricity. Some states provide special treatment for other fuels, such as coal, but information is not available to break down fuel use by type of fuel.

For purposes of this comparison, items included in the computer equipment category are assumed to be office-related equipment, such as mainframe and personal computers, printers, servers, and software. Computer equipment that would be part of manufacturing or research and development equipment, or used to perform those functions, is included in the M&E category.

Boston. The state rate is 5%. No local rate applies to the items in this study. Purchases of machinery and equipment used in manufacturing and in research and development are exempt from tax. Fuel and electricity used directly in manufacturing, research and development, and to heat an industrial facility are also exempt from tax.

Chicago. The state rate is 6.25%; the city rate is 2.5%, for a combined state and local rate of 8.75%. The city rate for motor vehicles is 1%, making the combined state and local rate 7.25% for these purchases. Machinery and equipment purchases are exempt from tax. Consumption of electricity and natural gas is subject to an excise tax measured by kilowatt-hours or therms used, respectively. Self-assessing purchasers may, instead, pay 5.1% of electricity purchases and 5% of natural gas purchases. The Chicago local rate for natural gas consumption is 1.5%. This comparison applies the self-assessing rates to purchase prices.

Los Angeles. The combined state and local rate is 8.25% (6% state rate and 2.25% local rate). All electricity and most fuels used in manufacturing and research and development are exempt from tax. Purchases of machinery and equipment used in manufacturing and research and development are generally taxable. However, purchases of machinery and equipment, including packaging and materials handling equipment, for certain start-up companies in business for less than three years are be exempt from tax.

Milwaukee. The state sales tax rate is 5% and the local rate is 0.6%, for a combined state and local rate of 5.6%. Purchases of manufacturing machinery and equipment are exempt from tax. Purchases of fuel and electricity used in manufacturing are taxable, but an income tax credit is available for the amount of sales tax paid. Purchases of equipment, fuel and electricity used for research and development are taxable.

Minneapolis. The state rate is 6.5%; the local rate is 0.5%, for a combined state and local rate of 7%. Purchases of fuel and electricity used in manufacturing and in research and development are exempt from tax. Purchases of machinery and equipment for manufacturing and for research and development are taxable, but a full refund is available. As such, they are considered exempt from tax for purposes of this study.

3. Corporate Income Tax

General Assumptions. The income tax calculations are based on a taxable year beginning on January 1, 2000, based on income before deductions for taxes, as shown in Table A.3.

TABLE A.3
INCOME ASSUMPTIONS

	Start-Up Corporation	Developing Corporation	Established Corporation
Income Before Tax	$ (205,465)	$(7,529,255)	$8,961,390

The comparison assumes that the start-up and the developing corporations are taxed only in their home state. The established firm is a multistate corporation that apportions some of its income to other states; it is assumed that all of the income of this corporation is subject to apportionment. The apportionment ratios used in this comparison are as follows:

- Total real and tangible property in-state / Total real and tangible property everywhere = 90%
- Total payroll costs in-state / Total payroll costs everywhere = 90%
- Sales destined for in-state purchasers / Sales destined for purchasers everywhere = 30%

The 90% ratios for property and payroll and the 30% ratio for sales reflect the assumption that the corporation sells its products on a regional or national basis. The remaining 10% of property and payroll and 70% of sales are assumed to be allocable to other states. The allocation of some property, payroll and sales to other states is not taken into consideration in computing the income tax burden of the corporation; the allocation would affect the total state tax burden of the corporation to the extent that they were subject to tax in other states.

Using these assumptions, income apportioned on the basis of the simple average of the 3 factors–property, payroll and sales–results in an apportionment percentage of 70%. This means that 70% of the income of the profitable corporation is subject to tax in states that apportion using this method. Many states, including Wisconsin, require corporations to apportion most income with a formula that double-weights the sales factor. Double-weighting the sales factor reduces the apportionment percentage to 60%. Income apportioned based only on the sales factor would further reduce the apportionment percentage to 30%.

A deduction is allowed for the amount of sales tax paid in the current year on purchases of new personal property. Since states generally follow federal law, which requires sales taxes to be capitalized into the cost of the asset, the current year sales tax liability is used as a simplified proxy for the depreciation and other deductions that the hypothetical corporations would claim based on the cumulative effect of all capitalized sales tax.

Purchases of fuel and electricity used in manufacturing are deductible as part of the cost of goods sold. In the few states where such purchases are subject to sales tax, the amount of net income subject to tax is reduced by the amount of sales tax on fuel and electricity. The cost of the fuel and electricity, exclusive of sales tax, is assumed to be included in the figure for statements.

This comparison includes only tax credits available to all biotechnology corporations that have made the investments or expenditures required. Special state tax credits and other incentives associated with enterprise or redevelopment zone programs are not included in the study. Such special tax credits are not included because of the difficulty in developing the detailed assumptions necessary to compute the tax credits, and because the credits may not be generally available or applicable to all corporations. Similarly, investment credits that require creation of additional jobs are not included.

Tax credits that are applicable to all biotechnology corporations, such as credits for property or sales taxes paid or for certain research and development expenses, are included in the study. Assumptions have been developed for each corporation for use in computing the amount of

credits available in each state for research and development expenditures (Table A.4). These assumptions include amounts spent for research wages, supplies, equipment, computer rental, and contract research expenses.

TABLE A.4
EXPENDITURES FOR IN-STATE RESEARCH AND DEVELOPMENT TAX CREDIT

Research Expenditures	Start-Up Corporation	Developing Corporation	Established Corporation
Research Wage Expenses	$ 96,802	$1,479,783	3,888,651
Research Supplies Expenses	24,937	576,344	1,148,783
Research Computer Rental Expenses	-	-	35,618
Applicable Contract Research Expenses	-	246,763	754,012
Qualified Research Facility Expenditures	2,373	429,693	317,861
Total Expenditures	$124,112	$2,732,583	$6,144,924

Some states, such as California, and Minnesota, impose a corporate alternative minimum tax patterned after the federal alternative minimum tax. It is assumed that none of the corporations in the study are subject to the alternative minimum tax.

Boston. The income tax rate is a flat 9.5%. Income is generally apportioned based on a formula that double-weights the sales factor. However, manufacturing corporations that qualify may apportion income using a single sales factor apportionment method beginning in tax year 2000, making the apportionment percentage 30% for this study.

A credit is available against either income or franchise taxes for 3% of the cost of qualifying property. Qualifying property is depreciable property with a useful life of four or more years. Motor vehicles do not qualify for the credit. The credit cannot reduce tax liability below 50%. The credit will be for 1% of the cost of qualifying purchases in 2003.

A credit is available for 10% of increases in research expenses, including wages, supplies, computer rental and qualified contract research expenses. A 15% credit is available for increases in payments to a qualifying university or scientific research organization. Increases are determined using gross receipts and expense information from1984 to 1988 and the four most recent years.

Chicago. Two income taxes are imposed on the same tax base: the regular income tax rate is a flat 4.8% and the personal property replacement tax is 2.5%. The total tax is equal to the sum of the two taxes. A single sales factor apportionment formula is being phased-in, and will take effect 1/1/01. However, it is used in the calculations for purposes of the comparison.

A standard exemption of $1,000 is allowed under the regular income tax to the extent of the apportionment percentage. A credit is allowed against the regular income tax in an amount equal to an apportioned share of the replacement tax multiplied by the regular income tax rate of 4.8%.

A credit is available against income tax for increases in research and development expenditures, including applicable wages, supplies, computer rental and qualified contract research expenses and research payments to a qualified organization. Increases are measured over a base year period of expenses in the three tax years immediately preceding the current year.

Los Angeles. The income tax rate is a flat 8.84%, with a minimum tax of $800. Income is apportioned using a double-weighted sales formula, making the apportionment percentage for this study 60%.

An investment credit, equal to 6% of the cost, is available for qualified manufacturing and research and development tangible personal property used in any stage of the manufacturing or research and development process. The credit cannot be applied to expenditures for which a sales tax exemption was claimed.

A credit is available for increases in expenditures for research and development, including wages, supplies, computer rental and contract research expenses. The credit is 12% of the excess of qualified research expenses over the base period research expenses. For existing companies, the excess is determined using gross receipts and expense information from 1984 to 1988 and the four most recent years. A credit is also available for 24% of basic research payments to a qualified university or research organization.

Credits cannot reduce tax liability below $800 annually. For tax years beginning in 1998, the credit is available for certain computer purchases.

California has an alternative minimum tax. This study assumes that none of the corporations are subject to the alternative minimum tax.

Milwaukee. The corporate income tax rate is a flat 7.9%. Income is apportioned using a three-factor formula that double-weights the sales factor. As such, the apportionment percentage for this study is 60%.

A credit is available for the amount of sales tax paid on fuel and electricity used in manufacturing.

A credit is available for increasing research expenses, including wages, supplies, computer rental and contract research expenses. The credit is equal to 5% of increases, determined using gross receipts and expense information from 1984 to 1988 and the four most recent years. Also included in the credit are expenditures for research facilities, including amounts to construct and equip new facilities or to expand existing facilities.

A recycling surcharge equal to 3% of gross tax liability is imposed on corporations with more than $4 million in gross receipts. The minimum fee is $25; the maximum fee is $9,800.

Minneapolis. The income tax rate is a flat 9.8%. Income is apportioned based on a three-factor formula that weights the sales factor at 75% and each of the property and payroll factors at 12.5%, making the apportionment percentage 45% for this study. (The 75%/12.5%/12.5% factors take effect for tax years beginning 1/1/01).

An additional fee is imposed on corporations based on the weighted sum of property, payroll and sales. The fee ranges from $100 for corporations with a weighted sum of at least $500,000 but less than $1 million, to $5,000 for corporations with a weighted sum in excess of $20 million.

A credit is available for increases in research expenses, including wages, supplies, computer rental, qualified contract research expenses and basic research payments to qualified research organizations. Increases are determined using gross receipts and expense information from 1984 to 1988 and the four most recent years. The credit is also available for contributions to qualified nonprofit organizations that are operated to make grants to small, technologically innovative enterprises in Minnesota during their development stages. The credit is 5% of the first $2 million of qualified expenses and 2.5% of expenses over $2 million.

4. Franchise Tax

General Assumptions. The term "franchise tax" as used in this study refers to franchise taxes based on capital stock, net worth or other asset-related measures as well as annual corporate

filing fees that may be paid to the Secretary of State or similar offices in the various states. Franchise taxes measured by corporate net income are included under the income tax.

The hypothetical corporations are assumed to be domestic corporations for franchise tax and filing fee purposes. All intangible property, such as patents and copyrights, is assumed to be located in the state.

Boston. The franchise tax is imposed on the book value of all properties in the state that are not subject to local taxation. For this study, taxable property includes all tangible personal property and inventory. The rate of tax is $2.60 per $1,000 of value. An investment tax credit, discussed in greater detail under the income tax section, is available against both the income and franchise taxes.

An annual filing fee of $85 is paid to the Secretary of State.

Chicago. The state franchise tax is imposed at a rate of $1 per $1,000 on an apportioned share of the amount of capital stock and paid-in capital, with a minimum tax of $25 and a maximum tax of $1 million per year. The tax is apportioned according to a two-factor formula based on real and personal property (including intangibles) and sales.

An annual report is filed with the Secretary of State along with a $75 filing fee.

The city of Chicago also imposes an annual license fee of $125. In addition, businesses with 50 or more employees earning at least $900 per quarter are required to pay an employers expense tax of $4 monthly for each qualifying employee.

Los Angeles. There is no state franchise tax. However, a "Statement of Officers" must be filed annually with the Secretary of State. There is an annual filing fee of $10 for this form.

In addition, the city of Los Angeles imposes an annual license fee. A business pays the lesser of two taxes measured on in-state gross receipts. A city tax referred to as a payroll tax is $33 for the first $4,000 or less of gross receipts plus $8.25 per $1,000 or fraction thereof of gross receipts over $4,000. The other tax is $118.25 for the first $100,000 of gross receipts plus $1.18 per $1,000 or fraction thereof of gross receipts over $100,000.

Milwaukee. There is no franchise tax. A $25 annual filing fee is paid to the Secretary of State.

Minneapolis. There is no franchise tax and no annual filing fee for domestic corporations.

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