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Economic Impact of the Vermont Law School on the Vermont State Economy

Prepared for the
Vermont Law School
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Contents

Executive Summary 1

Direct Expenditures 2

Secondary Impact 3

Introduction 5

Background 6

Economic Impact Estimation 7

Direct Economic Impact of the Vermont Law School 10

Payroll and Related Personnel Expenditures 10

Operations and Maintenance 13

Student Expenditures 15

Visitor Expenditures 17

Bond Payments 18

Total Economic Impact of the Vermont Law School 18

Employment Impact by Industry 20

Comparison of Total Impact with Standard Model Estimates 21

Summary 24

Appendix 25

The REMI Model 25

EXECUTIVE SUMMARY

The Vermont Law School (VLS), employing 145 persons and with a student enrollment of approximately 550 students, has an economic impact on the State of Vermont economy far larger than what we would normally expect from an institution this size. Based on data for 2014, including salaries earned by its professional staff, detailed operating expenditures, and estimated spending by students and visitor expenditures, VLS generated $31 million of expenditures in Vermont from a grand total expenditure base of $39 million. The high proportion of in-State spending gives rise to an additional 245 jobs, (an employment multiplier of 2.9), total personal income $19 million, and tax payments of approximately $3 million[1]. In addition to the sizeable quantitative impact of VLS on the State economy, it enhances Vermont's reputation as a state associated with high quality post-secondary education services and helps promote the "Vermont Brand", which is characterized by a high level of environmental quality.

For this study, we assembled the best available data for expenditures on personnel, including salaries and benefits, operating expenditures that include both academic materials and resources, and maintenance and operation of facilities in South Royalton. VLS furnished detailed accounting data for the amounts expended and the location to which the funds went. This latter element is of critical importance when estimating local impacts, as the alternative is to rely on "average" geographic purchasing patterns. As we show, reliance on such general patterns do cause large estimation errors, in this case, exaggerating the estimated impact of VLS. Our estimates presented in this report are, however, neither expansive nor conservative, but based in reality.

[1] This figure includes income and sales taxes. It does not include property taxes.

DIRECT EXPENDITURES

All measurable economic impact estimates start with direct expenditures, which are those essential to deliver VLS's educational services. They include very large expenditures, like salaries and benefits. (Benefits, as defined here, including various insurance payments on behalf of employees and their families for health, dental, life, and disability, as well as retirement plan contributions.) To these are added purchases of educational materials and, increasingly, services that include access to legal databases and on-line research services, in addition to traditional legal library materials. They also include expenditures for building maintenance and repair services, utilities, and the equipment usually found in higher education institutions.
As a private, nonprofit entity, VLS is not subject to property taxation, but does make "payments-in-lieu of taxes", which go to the town of South Royalton for various services on which VLS depends such as fire protection and infrastructure services.

For all of the direct expenditures, we use administrative records to determine where the recipients are located. In certain instances, as with health insurance payments, we use State data on the uses of insurance payments to derive the estimated spending for different types of health care services that these premiums support. For student expenditures, we estimate the types of expenditures based on VLS's empirically-derived student budget for housing, meals, transportation, books, etc.

Finally, we estimate visitor expenditures for lodging, meals, and transportation, based on the enrollment and some conservative estimates of visitors per student per year, the annual graduation ceremony, class reunions, and prospective student visits. As shown in Table 1 in the body of the report, total VLS expenditures (or those attributable to the presence of VLS, such as student and visitor expenditures) total almost $40 million in 2014, of which $31 million went to Vermont individuals and/or businesses in the form of salaries or purchases of goods and services. Salaries and related personnel expenditures accounted for nearly half of total expenditures (46%) and operating of VLS facilities accounted for 20% of the total. Student expenditures accounted for 30% of the total, with visitor and financing expenditures accounting for

less than 4% of the total. Approximately 83% of the salaries were paid to Vermont residents, and by assumption, 100% of student and visitor expenditures were made in Vermont. Operating and maintenance expenditures saw substantial "leakage" from the State, with Vermont entities receiving 23% of these.

SECONDARY IMPACT

To estimate the secondary economic impact, we use the REMI PI+ economic model for Vermont, a model created by Regional Economic Models, Inc. of Amherst, Massachusetts. The REMI model is a state-of-the-art regional economic model that incorporates both up-to-date economic data with a strong theoretical framework from which to develop impact estimates, particularly when an institution's direct expenditures are known for the region in question. We describe the REMI model in greater detail in an appendix to this report.

Based on the model, VLS total employment impact in Vermont amounted to 376 (including 131 direct Vermont employees), of which 347 were in private non-farm employment and 29 were in government, supported by the fiscal effect secondary transactions resulting from personal consumption expenditures, as well as intermediate purchases of goods and services among Vermont businesses that ultimately support VLS. The contribution to the Vermont gross state product, a measure of the economic value produced exclusively in Vermont after deducting the portion of the value of goods and services produced elsewhere shown in Table 6, amounted to $20.6 million. The total volume of Vermont transactions, measured as total output, amounted to $32 million. (Note that this measure includes varying degrees of double, triple, or more overlapping transactions, in so much as each sale of a good or service includes the value of prior sales (e.g., through retail, wholesale, or intermediate transactions), so long as they occur in Vermont. A final measure of economic impact, personal income, represents the total income generated by VLS in the form of wages and salaries, employer-paid social insurance, and various fringe benefits. These are estimated to be $19.2 million, of which $16.5 million are considered after-tax disposable income, and $2.7 million are paid as federal and State

taxes. (Note: Property tax payments derived from direct and secondary income are not part of the $2.7 million.)

As we noted, economic measures demonstrate the sizeable impact VLS has on the Vermont economy, and we have estimated these using the most accurate information available. We offer a comparison of our estimate with the naïve standard economic model estimate of the VLS impact as if only the total expenditure figure were used with the model. The resulting impact estimates, shown in Table 7, are larger than those based on actual data, attributable to the difference between VLS's operating characteristics and those of the more general educational services industry in the State, which includes all educational services from pre-kindergarten through post-secondary education. We show these results to underscore the fact that the real data give rise to sizeable estimated total economic impact and that the simple estimates often found and used for comparison purposes should be rejected as unintended erroneous exaggeration.

Finally, we note that VLS's economic impact, large as it is, is incomplete when judging only by the economic accounting measures. Intangible economic benefits flow from VLS's operation, among which are its contribution to promoting Vermont's image as place in which higher education and a highly educated population is a valuable resource for future development. Further, the State's widely regarded high-level of environmental quality and the institutions that support it are valuable to enhancing the State's overall amenity value. VLS contributes to helping shape the "Vermont Brand" directly and to the State's economic development prospects.

INTRODUCTION

This document presents an economic impact analysis of the Vermont Law School (hereafter, VLS), located in South Royalton, Vermont. VLS is similar to other higher educational institutions in that it produces a range of services beyond simple classroom-based professional education. Although such education is VLS's primary function, specialized seminars, post-graduate education short courses, and community legal service clinics are also offered services. In addition, it provides professional counseling and offers an array of other activities designed to serve a diverse community of professionals, students, and staff. In short, VLS represents a unique institution from an economic perspective and in order to gauge its economic impact most accurately, we need to apply actual VLS expenditure and operational data reflecting the full range of educational offerings and not rely on a standardized educational sector template in performing an economic impact analysis.

VLS is shown be a very strong contributor to the local economy. By virtue of the unusually high proportion of operating expenditures made in Vermont, itself a product of relatively high salaries of its professional staff, VLS is responsible for a high level of job and income creation. VLS generates not only strong payroll-related spending, but when combined with student and visitor expenditures, resulting employment growth is very strong. The 2.9 employment multiplier for VLS, discussed in the section on total economic impact, is dramatic evidence that VLS produces a highly localized impact in a small state that normally sees a high proportion of expenditures flow from the State for goods and services produced elsewhere.

This report is presented in three sections: In the first, we provide a very brief background on VLS. In the second, we discuss the general concept of economic impact analysis and the use of economic models for estimating impacts, identifying areas of key concern specific to VLS's operations. In the third section, we present

quantitative estimates of the economic impact of VLS in Vermont and offer an analysis of VLS's role in the Vermont economy.

BACKGROUND

The Vermont Law School is the only law school located in the State of Vermont. It is located in the east-central part of the State in the rural town of South Royalton, with Interstate highway access to the rest of Vermont and nearby New Hampshire. VLS presently has a student enrollment of approximately 550 full-time students in residence and also serves 150 students through on-line learning programs. Summer course enrollment is approximately 110 students. Full-time faculty and staff number 145, of which approximately 50 are full-time faculty. There are about 20 part-time faculty and adjunct instructors. VLS provides no housing directly to students, who rely on the region's rental market to supply housing. The VLS campus consists of 19 structures located on 13 acres, providing classroom space, offices, a community center, and library. Many of the structures are characteristic of those found in older, rural New England towns, although they have renovated interior space.

VLS has a direct payroll of $14 million (including salaries and social insurance), and total personnel related expenditures of approximately $18 million, including health care insurance and fringes. Facility operating expenses and other payments amounted to $8.1 million.

In addition to the expenditures made by VLS itself, students incur significant living expenses. VLS recommends that students in the juris doctoral program (the majority of enrolled students) plan on an annual budget of $21,000 per year, which includes room and board, books, transportation, food, utilities and personal expenses.[2] Based

[2] Other sources, such as the American Bar Association's Standard 509 report indicate a living allowance of $23,227 per year, or 10 percent more than that estimated by VLS should be expected. To the degree that the higher amount is the true average student expenditures per year, our spending related impact estimates will be low by as much as the difference in expenditures estimates.

on the enrollment data, regular students would spend $11.5 million and summer students would spend approximately $625,000. In addition to student spending, VLS students draw personal visitors to the region and VLS generates visits from prospective students and from professionals attending conferences there. When all expenditures are considered, VLS accounts for nearly $40 million in direct total expenditures, of which a significant portion are directed towards Vermont businesses, thus giving rise to significant beneficial secondary impacts within the State.

ECONOMIC IMPACT ESTIMATION

Accurate economic impact estimation begins with an accurate accounting of what an institution or business spends in a given time period for all aspects of its operations. For our study, we rely on the VLS accounting database, which provides information on nearly every expenditure recorded for its operations. To this, we include estimates of student and visitor spending, based on empirical observation, supplemented by State expenditure data for visitors. In the absence of "hard" data as to the composition of these latter two expenditure types, we rely on the informed judgment of VLS personnel as how much and on what students spend.[3]

Without actual data regarding VLS operations, the default method of estimating its economic impact would be to use the total operating expenditures or total employment as inputs to a regional model which can convert expenditures or employment into output and then assigning those as demands on the set of producing industries and associated labor. We have found that even with the best regional models currently available, this approach falls short when the institution's

[3] We note that U.S. Bureau of Labor Statistics has also prepared estimates for the composition of student expenditures, but again, in view of the specialized education provided at VLS and the known spending opportunities afforded by the South Royalton area, we think the VLS student budget has likely been tested and adjusted over time to be representative of actual student expenditures.

operations and/or character of services provided are atypical in the context of that regional model. The regional model we use here is the REMI PI+ model for the State of Vermont; a model constructed using the latest regional economic data and a sound theoretical framework.[4] The model is described in greater detail in the appendix to this report. However, even with the best models, it is often necessary to collect data for cases in which the default measures, in this case, those for statewide educational services, inaccurately estimate the operating expenditures of an institution like VLS. Default estimates in the REMI model are given for an aggregate of all educational institutions taken together (i.e., where all educational services ranging from elementary through graduate education is combined into a single category), or as post-secondary education grouping, in which junior college, college, university, and graduate schools are combined. As we show later, estimates based on these groupings appear not to fit the VLS case very well.

In addition to knowing the dollar value of actual VLS expenditures, we need to ascertain whether expenditures involve local Vermont businesses or persons, since expenditures for out-of-state produced goods and services most often have little or no impact on the State economy.[5] For major expenditures, we extracted the exact amounts and locations of expenditures made through a VLS vendor-specific purchase database. Although this process is somewhat labor intensive because the expenditure data require post-coding to find the industry classification of the vendor, the resulting high-quality data justify the effort. We relied on Internet searches to find vendors' industry classification. The usual alternative to this approach is to use a standard set of estimated expenditure proportions of the total expenditures by industry, scaled to total expenditures of the entity in question. For each industry, such estimates can be extracted from a so-called "input-output" economic model, a tool that provides such information for each industry's

[4] The REMI model is a product of Regional Economic Models, Inc. (REMI), an economic modeling company located in Amherst, Massachusetts.

[5] In some instances VLS was able to identify purchases made from non-Vermont businesses that use Vermont based personnel. In those instances, we used their informed judgment as to the proportion of those expenditures that were retained in Vermont. Apart from these cases, it is always possible that some expenditure made by VLS in nearby New Hampshire may result in some return flow of expenditures in Vermont. For our impact estimates, we ignore these, with the increased likelihood that we have slightly underestimated VLS impacts.

expenditures. The U.S. input-output model from the U.S. Department of Commerce's Bureau of Economic Analysis is one such model often used for this purpose. Its use, however, forces the assumption that VLS is like the cross-section average of all U.S. schools, including public, private, and elementary through graduate school creating a composite school with an "average" set of operating requirements.

By convention, economic impact estimates for institutional operations are divided into two types. The first set consists of the so-called "direct impact" estimates, while the other set consists of "secondary impact" estimates.[6] The estimates themselves are usually presented as several related concepts, commonly including gross state product, employment, and personal income. The operating impact estimates are made over the year or years for which the direct expenditures are known. The secondary effects can carry-over slightly beyond the period of any direct expenditure, as VLS vendors make purchases to restock or otherwise spend to keep their businesses operating.

Workers producing for these secondary suppliers are able to purchase additional consumption goods and services with the additional income they earn, generating yet additional transactions among the secondary effects. Taken together, these secondary effects can represent a sizeable volume of business activity (often called "multiplier effects"). We note that small regions generally experience relatively lower multiplier effects than larger ones because purchases are made outside the immediate area will generate little return flow in business transactions.

Enterprises that operate for a sustained period of time, such as VLS, can also give rise to secondary investment, some of it designed to exploit opportunities created by having a concentration of students in South Royalton and surrounding communities. In

[6] Secondary impact estimates are often further disaggregated into "indirect" and "induced" impact estimates, but for purposes here, the distinction between these latter two is not important here. For the sake of simplicity, our interest is in the combined secondary effects.

this way, it is possible to have a longer-run economic impact that leads back to VLS operation, but attribution in whole or in part, can sometimes be difficult.

Finally, economic impact estimates often include fiscal impact measures. In the case of VLS, payments-in-lieu of taxes for 2014 amounted to $122,000 paid to South Royalton, and other Vermont taxes and fees were $57,000. In addition, secondary impacts linked to student and visitor expenditures, faculty travel, and facility maintenance generate significant tax revenues. We present estimated secondary impact related taxes attributable to VLS in the section on Total Economic Impact.

DIRECT ECONOMIC IMPACT OF THE VERMONT LAW SCHOOL

In fiscal 2014, the Vermont Law School generated total direct expenditures of $39.9 million, of which $30.5 million was expended in Vermont. We define direct expenditures to consist of payroll and fringes, facility operations, staff travel, tax-like payments, student living expenditures, and visitor expenditures.

Payroll and Related Personnel Expenditures

In Table 1, we see that total payroll and related labor expenditures amount to approximately $18 million, paid primarily to recipients in Vermont, who received $15 million or 82% of the total. The difference went to persons outside of Vermont and we assume that none of this flows back into Vermont. Personnel costs represent the largest VLS direct impact on the State economy (46 percent in total), with more than four-fifths of that occurring in Vermont. VLS estimates that 90 percent of the VLS payroll (131 persons) resides in Vermont. Other employer paid insurance ($2.5 million) and fringes ($1.3 million) together amount to $3.8 million, all paid entirely in Vermont. A substantial proportion of these expenditures subsequently flow

Table 1
Vermont Law School Direct Economic Impact, Total and Vermont, Fiscal Year 2014

Payment Type	VLS Total Expenditures		VLS Expenditures in Vermont	Vermont Share of VLS Total Expenditures
	$	%	$	%
Payroll	$13,085,991	32.8%	$11,578,942	88.5%
Social Insurance (FICA)	$918,189	2.3%	$0	0.0%
Fringes	$1,252,590	3.1%	$1,252,590	100.0%
Health Insurance	$2,503,214	6.3%	$2,012,494	80.4%
Travel	$489,667	1.2%	$187,603	38.3%
Total Personnel and Related	***$18,249,651***	**45.7%**	***$15,031,630***	**82.4%**
Operations and Maintenance	**$8,058,327**	**20.2%**	**$1,812,822**	**22.5%**
Payments-in-Lieu of Taxes	$122,033	0.3%	$122,033	100.0%
Other Vermont Taxes/Fees	$56,954	0.1%	$56,954	100.0%
Total Taxes	*$178,987*	0.4%	*$178,987*	100.0%
Student Expenditures	**$12,159,233**	**30.4%**	**$12,159,233**	**100.0%**
Visitor Expenditures	**$342,000**	**0.9%**	**$342,000**	**100.0%**
Bond Payments	**$948,000**	**2.4%**	**$948,000**	**100.0%**
TOTAL	**$39,936,197**	**100.0%**	**$30,472,672**	**76.3%**

Source: VLS and KRA, Inc.

as a secondary impact to national insurance and financial service providers, of which Vermont has very few. Also included under personnel expenses is travel. This travel includes both administrative and faculty personnel. We used the VLS vendor payment records to identify likely reimbursements of travel and conference expenditures to individuals and made the assumption that payments going to persons outside of Vermont were likely traveling to Vermont, while payments going to persons in Vermont were likely to be traveling from Vermont to out-of-state locations. We observed a total of approximately $490,000 of travel expenditures, of which nearly $190,000 was spent in the State by incoming or outgoing travelers. We allocated travel to specific purposes based on data from certify.com, which decomposes travel spending in proportions shown in Table 2. We used this distribution for both in- and outbound

travelers, but assumed that travelers from Vermont would have zero hotel expenditures in Vermont.[7]

Table 2
Travel Expenditures by Function

Function	Percentage of Travel Exp.
Meals	21%
Flight	17%
Miscellaneous	17%
Hotel	13%
Gas	11%
Car	8%
Cell	5%
Supplies	3%
Shipping	2%
Tolls	2%
Parking	1%
Total	100%

Source: http://www.certify.com/Infographic-TheAverageCostOfBusinessTravel.aspx

Certain personnel expenditures, notably health and dental insurance expenditures, require further disaggregation to derive the ultimate amount going to the different insurance and health care industries as defined in the REMI model. The $2.5 million VLS expended on healthcare represents not only the cost of insurance company administrative services, but also the costs of ambulatory care, hospital care, nursing home residency, rehabilitative services, and pharmaceuticals. To find the correct proportions of funds going to each of these categories, we used data from the 2012 Vermont Health Care Expenditure Analysis, which gives detailed expenditure data for the providing industry, from which comparable proportions can be calculated. The proportions we used to classify expenditures for REMI model use are shown in Table 3. With the exception of drugs and supplies, all categories of health services tend to

[7] This also represents a conservative impact assumption, since some in-state travel will involve local hotel usage.

be located in Vermont, and thus help create a strong secondary effect.[8] A similar disaggregation was performed for dental insurance, in which 88 percent of dental insurance goes to ambulatory care and 12 percent goes to administrative functions.

Table 3
Composition of Vermont Health Care Services, 2012

Providing Industry	% of Total
Ambulatory Care	25.46%
Hospitals	47.97%
Nursing & Rehabilitation	0.36%
Social Assistance	0.01%
Drugs, Supplies	14.43%
Insurance Administrative Services	11.77%
Total	**100.00%**

Source: Green Mountain Care Board. March, 2012,
http://www.leg.state.vt.us/reports/2014ExternalReports/299512.pdf

Operations and Maintenance

We use a VLS vendor-transactions database to identify the value of goods and services purchased by VLS, and we use the state location from that file to determine whether the provider was a Vermont entity. Where vendors' state location was not provided, VLS reviewed the payments to identify the provider location. To ensure that we accurately identified the actual geographic location of the provider and not just the mailing address, VLS reviewed the 50 largest transactions, and provided a Vermont proportion of the transaction value if the provider received payments outside Vermont but still operated in Vermont. We note that only seven of such providers received their payments at addresses outside Vermont. For these, VLS estimated the proportion of its expenditures that actually went to Vermont-based suppliers.

Operations expenditures include non-personnel related educational services costs, personnel-related services (characteristically, overhead functions), and facility-related

[8] We note that some health care service will leave the State in the case where insured personnel use facilities in nearby New Hampshire for healthcare. We had not adjusted for such use, and as such, have probably overstated the Vermont direct expenditures by a small amount, probably not more than $100,000.

costs. More than 1,100 transactions were reviewed as to size and location of business, accounting for total expenditures on operations of $8.1 million. From this figure, we excluded payments made to individuals as reimbursement for travel, which were treated separately, as described above. For the 295 providers, who together account for 95 percent of the total expenditures, we reviewed each account as to the type of good and/or service provided. The smallest vendor in this group received an annual payment of $2,700. The average annual size of individually reviewed expenditures was $36,900 per vendor.

We used Internet-based searches to find descriptions of each vendor's service or product, which we then classified according to their "NAICS" code and, in turn, their REMI sector for those expenditures in Vermont.[9] The REMI divides the State economy into 70 different sectors. Of the group of 295 large vendors, 147 were located in Vermont, and seven were located outside Vermont but still had Vermont-produced value.[10] In total, Vermont businesses supplied $1.8 million of total VLS operating costs, about one-fifth of its non-personnel operating costs.

After accounting for large vendors (i.e., those who together accounted for 95% of total non-personnel operating costs), estimates for composition of the remaining 5 percent of operating expenditures were needed. We opted to allocate these expenditures, totaling approximately $339,000, according to the composition of educational operating expenditures as represented by the 70 sector U.S. input-output accounts for 2007, accessible through the REMI model. The model details the composition of purchases for producing educational services. Although it is certain to create some small duplication of expenditures in some sectors and is likely to misclassify others, it does assign the five percent residual to many categories of purchases that would otherwise be missed because of their small size. Once allocated, these expenditures represent *demand* for goods and services to be used in Vermont. This is not to say

[9] The North American Industry Classification System code. For more information on NAICS codes, see: http://www.census.gov/eos/www/naics/

[10] These seven firms had Vermont proportions of total value ranging from 12 percent to 95 percent.

that they are automatically classified as produced by Vermont firms, only that the demand is present and the usual geographic pattern of supply will apply.[11] We show the proportion of educational expenditures as well as the estimate expenditures from the $339,000 residual to each producing industry in Table 4.

Student Expenditures

As shown above in Table 1, student expenditures of $12.2 million are the second largest direct impact, amounting to 30 percent of total expenditures (and 40% of VLS's Vermont expenditures.) Student expenditures are estimated using the VLS estimated student budget of $21,000 per 9-month year ($568 per week, using a 37 week school year.) The expenditures for summer students (based on a 110 student summer enrollment figure) are estimated using the weekly rates for the 10 week summer term. The estimated expenditures for specific goods or services for all students are shown in Table 5.[12] We divided transportation costs into mode-specific categories based on the U.S. Bureau of Labor Statistics (BLS) detailed student spending data.[13]

Rental housing is the largest expenditure category, with 32 percent of the total, adding nearly $4 million in direct rental income to property owners. Purchased food and beverage and personal goods and services each accounted for 13 percent, and together amounted to over $3 million spent at local stores and restaurants. Utilities accounted for approximately $1.4 million of expenditures, while books and equipment, motor vehicle fuel, and air transportation accounted for approximately $975,000, $825,000, and $792,000, respectively. We note that the largest four expenditure categories account for nearly 70 percent of student spending and that the suppliers of

[11] This supply may or may not be generated by Vermont producers. The proportion of Vermont production is controlled by the regional purchase coefficient in the REMI model.

[12] We have estimated student expenditures on a school-year or summer term basis, using enrollment figures as the basis of the calculations. We note that most housing rentals in South Royalton require a twelve month lease. During the three summer months, we assume that the expenditures of students not enrolled in the summer term and otherwise engaged in non-school work or leisure activities are not directly attributable to VLS, but to the fact that the rent must be paid there. To the degree that this assumption is too severe, our impact estimates will be somewhat conservative.

[13] See U.S. Bureau of Labor Statistics, Monthly Labor Review, July, 2001.

Table 4
Allocation of Small Undocumented Expenditures to Vermont Demand

Industry	Proportion of Educational Services	$ Demanded in Vermont
Forestry and logging; Fishing, hunting, and trapping	0.00070	237
Agriculture and forestry support activities	0.00000	-
Oil and gas extraction	0.00197	667
Mining (except oil and gas)	0.00190	646
Support activities for mining	0.00000	-
Utilities	0.08002	27,164
Construction	0.00396	1,345
Wood product manufacturing	0.00079	269
Nonmetallic mineral product manufacturing	0.00174	592
Primary metal manufacturing	0.00273	926
Fabricated metal product manufacturing	0.00434	1,474
Machinery manufacturing	0.01072	3,638
Computer and electronic product manufacturing	0.01322	4,488
Electrical equipment and appliance manufacturing	0.00342	1,162
Motor vehicles, bodies and trailers, and parts manufacturing	0.00136	463
Other transportation equipment manufacturing	0.00016	54
Furniture and related product manufacturing	0.00010	32
Miscellaneous manufacturing	0.00333	1,130
Food manufacturing	0.05278	17,919
Beverage and tobacco product manufacturing	0.00352	1,195
Textile mills; Textile product mills	0.00019	65
Apparel manufacturing; Leather and allied product manufacturing	0.00006	22
Paper manufacturing	0.00197	667
Printing and related support activities	0.01398	4,746
Petroleum and coal products manufacturing	0.00482	1,636
Chemical manufacturing	0.01981	6,726
Plastics and rubber product manufacturing	0.00491	1,668
Wholesale trade	0.04540	15,411
Retail trade	0.01043	3,541
Air transportation	0.00403	1,367
Rail transportation	0.00067	226
Water transportation	0.00003	11
Truck transportation	0.00457	1,550
Couriers and messengers	0.00580	1,969
Transit and ground passenger transportation	0.00095	323
Pipeline transportation	0.00019	65
Scenic and sightseeing transportation; Support activities for transportation	0.00092	312
Warehousing and storage	0.00054	183
Publishing industries, except Internet	0.01268	4,305
Motion picture and sound recording industries	0.00501	1,700
Internet publishing and broadcasting; ISPs, search portals, and data process	0.03481	11,817
Broadcasting, except Internet	0.00365	1,238
Telecommunications	0.03462	11,752
Monetary authorities - central bank; Credit intermediation and related activitie	0.01962	6,662
Securities, commodity contracts, investments	0.00479	1,625
Insurance carriers and related activities	0.00900	3,056
Real estate	0.25358	86,086
Rental and leasing services; Lessors of nonfinancial intangible assets	0.01721	5,844
Professional, scientific, and technical services	0.10268	34,859
Management of companies and enterprises	0.00558	1,894
Administrative and support services	0.04651	15,788
Waste management and remediation services	0.01401	4,757
Educational services	0.01331	4,520
Ambulatory health care services	0.00006	22
Hospitals	0.00006	22
Nursing and residential care facilities	0.00003	11
Social assistance	0.00006	22
Performing arts and spectator sports	0.00333	1,130
Museums, historical sites, zoos, and parks	0.00003	11
Amusement, gambling, and recreation	0.00114	387
Accommodation	0.00716	2,432
Food services and drinking places	0.01081	3,670
Repair and maintenance	0.01103	3,745
Personal and laundry services	0.00368	1,248
Membership associations and organizations	0.00282	958
Private households	0.00000	-
State and Local Government	0.06106	20,728
Federal Civilian	0.01189	4,036
Federal Military	0.00184	624
Farm	0.00190	646
TOTAL	1.00000	$ 339,481

Source: REMI, Inc. and KRA

these goods and services are predominately local. This will be seen to have a significant effect on local secondary economic impacts.

Table 5
Total Vermont Law School Student Direct Expenditures by Purpose, 2014

Purpose	$	%
Rental Of Tenant-Occupied Nonfarm Housing	3,910,936	32%
Purchased Meals And Beverages	1,559,501	13%
Personal Goods And Services	1,559,501	13%
Utilities	1,425,481	12%
Books And Equipment	974,688	8%
Motor Vehicle Fuel	825,025	7%
Air Transportation	791,690	7%
Financial Service Charges, Fees, and Commissions	645,731	5%
Motor Vehicle Maintenance And Repair	425,013	3%
Local Transportation	41,668	0%
TOTAL	**12,159,234**	**100%**

Source: VLS, U.S. BLS, and KRA

Visitor Expenditures

VLS draws prospective student visits to the South Royalton area to see the facilities and meet with admissions personnel and faculty. It also draws visiting students associated with its Distance Learning program. Further, VLS students draw visits from friends and family over the course of the year and to attend graduation ceremonies and participate in class reunions. Altogether, VLS estimates total expenditures among all visitors to amount to approximately $342,000 per year, based on the number of visitors and expenditure rates estimated by VLS to be $300 per visitor per day, including lodging, meals, transportation, and miscellaneous expenditures.[14] REMI has a special provision for tourism expenditures and, similar to the treatment of health insurance under the operating expenditures above, divides the expenditures

[14] We did not use the Vermont Department of Tourism and Marketing's out-of-state visitor expenditure estimates (see Chimura Economics and Analytics, "A Benchmark Study of the Economic Impact of Visitor Expenditures on the Vermont Economy – 2011", http://accd.vermont.gov/sites/accd/files/Documents/travel/Vermont%20Tourism%202011.pdf.) Anecdotal evidence indicates that the $47per person, per night expenditure rate cited by Chimura for 2011, updated with Bureau of Labor Statistics price level data, is insufficient to cover lodging costs, much less the whole set of travel costs likely to be incurred.

into detailed suppliers of goods and services purchased. Such suppliers include transportation services, automobile repair and maintenance services, food and beverage services, lodging, telecommunications, and other sectors.

Bond Payments

As of March, 2013, VLS had approximately $14 million in debt outstanding in the form of a revenue bond and a letter of credit. The revenue bond for $10.3 million was issued in 2011 by the Vermont Educational and Health Building Finance Agency. The letter of credit was underwritten by a New York State company with a Vermont trustee managing the funds. Dividend payments to bondholders are initiated in Vermont and then are processed through channels that most likely move these funds out-of-state. Some transactions costs are paid to Vermont entities. VLS paid $948,000 in debt service in fiscal 2014. The debt service transaction costs represent a demand for financial management services delivered to Vermont, but which are adjusted by the regional purchase coefficient to determine the precise level of value added by Vermont firms. To the extent that Vermont residents hold VLS-related bonds, they will receive dividend income, but there is no practical manner in which to apply a portion of dividend payments to Vermont bondholders.

TOTAL ECONOMIC IMPACT OF THE VERMONT LAW SCHOOL

Using the direct impact expenditures figures shown in Table 1, we estimated the total economic impacts of VLS in the State of Vermont using the REMI model. As shown in Table 6, total economic impacts attributable to VLS amount to 376 jobs, an increase of about 245 over and above the 131 jobs at VLS held by Vermont residents. This yields an employment multiplier of 2.9, which is significant by any standard.[15]

[15] The employment multiplier is the ratio of total jobs attributable to VLS operation divided by the number of direct VLS jobs.

Table 6
Total Economic Impact in Vermont of the Vermont Law School, 2014

Total Employment (Jobs)	**376**
Private Non-Farm Employment	347
Government Employment	29
VLS Direct Employment in Vermont (Jobs)	131
Employment Multiplier	2.9
Gross Domestic Product[16] ($2014, mil.)	**$ 20.6**
Output[17] ($2014, mil.)	**$ 32.1**
Personal Income ($2014, mil.)	**$ 19.2**
Disposable Personal Income ($2014, mil.)	$ 16.5
Tax Payments ($2014, mil.)	$2.70

Source: KRA and the REMI Model

VLS activities generate a total of 347 private sector jobs and 29 public sector jobs in Vermont. Much of the high total job impact of VLS is attributable to the direct wages and salaries earned by its staff and the accompanying student spending. Wages, salaries, and fringes of VLS direct employment jobs amount to more than $105,000 per job, and although the 131 Vermont staff earn somewhat less than out-of-state direct employees, the direct income generated by these employees account for a significant share of the total personal income associated with VLS operations. The total VLS payroll, excluding travel, shown in Table 1, amounts to $17.8 million, of which the corresponding figure for Vermont VLS resident employees is $14.9 million.

[16] Gross State Product is a measure of the value of all transactions derived from Vermont-based businesses and institutions after deducting costs of intermediate inputs purchased by these firms (regardless of their location). It consists of the value of labor inputs, proprietor inputs, energy inputs, and capital inputs. It is the economic contribution to the value of goods and services ultimately purchased by VLS.

[17] Output is the measure of transactions involved in supplying goods and services to VLS. Each transaction is counted in full, such that there is double, triple, etc. counting for intermediate goods purchases made by firms and ultimately sold for use by VLS. It includes only Vermont transactions, however, not those of out-of-state suppliers. It measures of the volume of economic transactions generated by VLS expenditures.

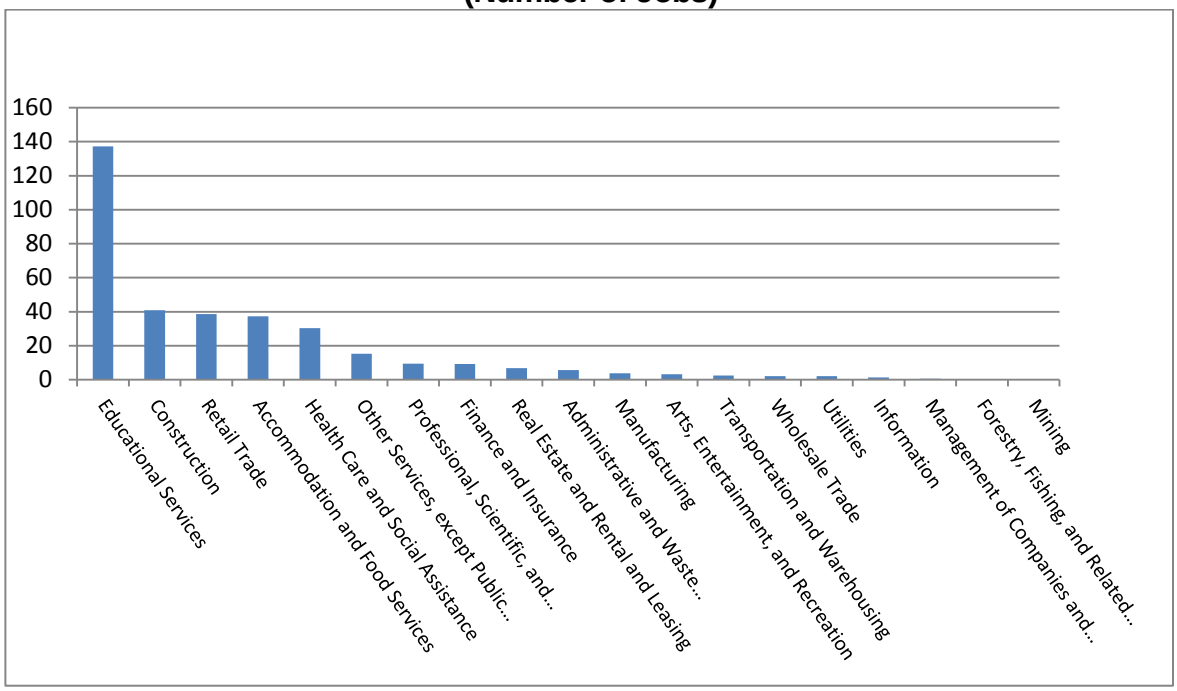
This direct income grows to $19.2 million in total personal income after considering secondary impacts. Personal taxes amount to approximately 15 percent, leaving VLS-derived disposable income of approximately $16.5 million. To this, we add student spending of $12.2 million, which yields nearly $23.2 million in Vermont available as consumer spending.

The impact of VLS on the State economy is also measurable as the amount gross state product (GSP) attributable to VLS operations. Gross state product is the value of Vermont-based production that is included in the value of total output. (It does not include the value of goods and services purchased when making goods and services that are produced elsewhere.) Based on its payroll and other all other expenditures, this is shown in Table 6 to be $20.6 million. This is figure is similar in magnitude to personal income (by definition), which is shown to be $19.2 million in Table 5. If we include the value of Vermont purchased goods and services used in VLS operations, we derive the output figure shown in Table 6 to be $33 million, again, strictly in Vermont.

Employment Impact by Industry

We show the employment by industry attributable to all VLS operating expenditures in Figure 1. Total education sector job impact, including both direct hiring at VLS and secondary impacts, totals 137 jobs. The construction, retail trade, accommodations, and health care sectors each show a significant number of jobs attributable to VLS, with much of this due to student expenditures on housing, food, and personal items.

Figure 1
Total Private Nonfarm Employment Attributable to Vermont Law School, 2014
(Number of Jobs)



Source: KRA and the REMI Model.

Comparison of Total Impact with Standard Model Estimates

Although it is possible to generate economic impact estimates for VLS without the using its accounting database to determine the types of goods and services purchased over the course of a year, the ensuing economic impact results would be considerably less accurate. To show the impact differences in these two approaches, we also ran a model simulation using these simplified default values. Utilizing a standardized higher education expenditure template (i.e., for junior colleges, colleges, universities, and professional schools) from REMI, a hypothetical institution was created and scaled to the expenditure-size of VLS. This template provided estimated expenditure proportions for personnel, operating, taxes, and even bond payments to the degree that these are typical expenditures. We use the same $27.4 million total (this is the Table 1 total for all expenditures minus student and visitor expenditures) that we used to characterize VLS direct impacts with the simplified template. To this, we add $12.2

million for student expenditures and $342,000 for visitor expenditures, obtaining the same total of $39.9 million, and thereafter let the model allocate the composition of expenditures both by industry and geography. In all other respects we applied the same adjustments to items such as student spending, and assumptions within the model regarding limited investment generated by VLS operations.[18] We see the significant differences in estimated impacts that the simplified standard model produces in Table 7.

Table 7
Comparison of Total Economic Impact: Kavet, Rockler and Associates (KRA) and Standard Methods of Estimation

Economic Measure	KRA Expenditure-Based Estimate	Standard Simple Estimate	Difference
Total Employment (Number)	**376**	**638**	**170%**
Private Non-Farm Employment	347	593	171%
Educational Services	137	393	287%
Government Employment	29	45	153%
Gross Domestic Product ($2014, mil.)	**20.6**	**35.1**	**170%**
Output ($2014, mil.)	**32.1**	**53.2**	**166%**
Personal Income ($2014, mil.)	**19.2**	**21.2**	**110%**
Total Earnings by Place of Work ($2014, mil)	25.0	28.5	114%
Total Earnings by Place of Residence ($2014, mil)	20.4	23.3	114%
Nonwage Income and Transfers	-1.2	-2.1	174%
Tax Payments ($2014, mil.)	2.6	3.1	119%
Disposable Personal Income ($2014, mil.)	16.6	18.1	109%

Source: KRA, Inc. and the REMI Model

An essential difference in the two sets of estimates stems from the geographic distribution of expenditures. Compared to our certain knowledge as to where they

[18] We "nullified" investment demand created by VLS operating expenditures. We did not want to simulate the physical creation of VLS and South Royalton as if no capital stock existed without VLS. In both the simple example and our more elaborate one using actual expenditures, we have nullified investment effects.

occur, the simplified method relies on regional purchase coefficients to determine where goods and services are produced. Notice that the simplified output estimate is $53.2 million, 166 percent of our value, which is a sizeable variance, given that the vendor data are highly likely to be accurate. Since employment, value-added, and gross state product follow from output, it's not surprising that the simplified employment estimates are relatively high as well.

We see another significant difference in the job creation effect of total spending. The KRA estimates show a total of 138 education jobs (after all secondary effects are calculated), but 393 education jobs in the case of the simplified method, almost three times the KRA estimate. The simplified method uses total education expenditures ($27.4 million) and the average local output-to-employment ratio to generate the very high estimate. Since VLS has a specialized faculty that receives salaries well above other educational institutions in the state, it would take a much higher output-to-employment ratio to maintain the employment numbers close to the actual VLS figures.

The one impact estimate that does not show an extreme increase over our empirical estimate is that for personal income, specifically disposable personal income. Table 7 shows some of the components of personal income, notably the earnings for place of work versus place of residence. (Vermont loses approximately 3% net after adjusting for commuting flows.) As a general rule, gross state product and personal income will be close to one another unless there is a large disparity owning to the characteristics of a specific industry or an imbalance in productivity and wages paid. The difference here is indicative of an imbalance between labor productivity and wages. In the simplified estimate, the estimated direct educational employment figure is large (393 jobs), with resulting high estimated value- added and state product. However, due to the relatively low wages paid in the entire Vermont educational sector, as distinct from VLS, the personal income estimate is relatively low. In this case, the simplified estimate would be very unreliable.

SUMMARY

This analysis shows that the presence of the Vermont Law School creates a substantial economic and fiscal benefit to the State of Vermont. Accounting for more than 376 direct and secondary jobs per year, $21 million in annual Gross State Product and more than $19 million in Vermont personal income, VLS represents an important component of the State and regional economy.

Economic impact estimates are generally limited to accounting data and therefore, represent only transactions that are measured and a part of the regional economic database. Beyond what the statistical data can measure, however,VLS is of benefit to the economy and State in numerous other ways. First, it attracts high quality professionals to the State that engage in a wide variety of legal education related endeavors, including substantial volunteer and non-profit activities and contributions. Second, it adds stature and credibility to one of the most important export industries in the State – higher education. Finally, VLS is strongly associated with Vermont's reputation for environmental quality and related expertise, consistent with the "Vermont Brand". This feeds back to two other key industries on which the state relies, namely tourism and agricultural and related production, both of which benefit greatly from the presence of the Law School and services VLS graduates provide to the State. Third, the value created by VLS in association with these activities and markets may be difficult to measure, but it is substantial and highly beneficial to the State. It is subsumed in the State's overall quality of life – measured in part through an economic concept called an "amenity value" - but is not an explicit part of standard economic impact accounting. It ultimately raises the the value of all public resources, land, labor and capital, but is external to quantitative economic impact measurement.

APPENDIX

The REMI Model

The REMI model is a hybrid econometric model, incorporating a time series general equilibrium approach for simulating the responses of capital and labor markets to changes in output that are driven by an extensive range of economic events, including demand level changes, production cost changes (including spatially determined ones related to transportation), and other price movements. The movement toward equilibrium is empirically derived from the time series based data that are the foundation of the model. It also incorporates an input-output model for transforming specific policy variable changes, such as spending on housing or infrastructure into demand for output for specific industries which are then channeled through to the general equilibrium mechanism of the model. For our estimates, the input-output feature of the model is not used directly.

The REMI model's general equilibrium approach entails balancing the supply of productive factors in a regional economy such as New England with the demand for goods and services beginning with capital investment spending and including job creation, consumption expenditures, secondary investment, and provision of government services. A common feature of such models to estimate the output of any given good or service from, changes in the use of capital, labor, and energy, which in turn, affect the equilibrium of factor markets for these inputs. As the availability of factors changes, new prices appear for wage rates, interest rates, and energy. These price changes are responsible for changing production costs which, in turn, will change prices of goods and services sold in the region and elsewhere. As prices in the region change relative to the rest of the nation, the region's competitive position will change, represented by changing market shares for its good and services. With these changing shares and factor prices, labor and capital resources will move to areas of highest opportunity (or leave areas with reduced opportunity) to move markets back to equilibrium. Movement of labor resources give rise to internal migration, which alters consumption demand in the

destination region and entails an array of responses that affect both public and private production of goods and services, as well as public and private investment entailed in their provision. Shifting population, in turn, affects demand for housing and affects output levels for a variety of major sectors, including construction, utilities, and state and local government services.

The version of the REMI model we have employed divides the Vermont economy into 70 industries, including private and public sectors. The industry definitions by which all private and public activities are classified are largely consistent with the North American Industry Classification System (NAICS) at a 3-digit level of detail[19]. The REMI model simulates the economic effects of changes in so-called "policy variables." These variables represent the basic components of the regional economic system, and include measures such as wage payments going to VLS faculty, school administrators, and support personnel, expenditures for maintaining facilities, and all the many other items that go into operating a professional school.

We use several different policy variables to reflect the different types of expenditures that are required for it to operate. For this, we use the data on employment, compensation, expenditures on goods and services, tax payments, etc. From these expenditures, we derive changes in employment levels, factor prices (labor and capital), consumer and producer prices for goods and services, and summary measures like regional product and personal income. Secondary impacts are those that involve either satisfying demand for the output of goods and services needed by the projects' direct suppliers, or the demand created for consumer goods by VLS personnel or that of its suppliers. When workers at supplier businesses and workers even further back on the supply-chain spend income earned directly or indirectly through VLS, this increase in spending gives rise not only to consumer goods and services purchases, but to another iterative

[19] For a full description of the NAICS classification scheme, see: http://www.census.gov/eos/www/naics/

set of responses from the producers of those goods and services. Taken together, this impact is referred to as the secondary of the project.[20]

[20] It is common to divide secondary impact into indirect and induced impact. Indirect refers to supplier related employment for the purchase of intermediate goods and services, while induce refers to consumption related expenditures linked to direct and indirect employees. For our purposes, we combine indirect and induced, as the distinction is of little interest here.