

Thomas E. Kavet

Economic and Information Systems Consulting

Grandview Road
Williamstown, Vermont 05679-9003 U.S.A.
Telephone: (802) 433-1360
Cellular: (802) 793-3195
Fax: (802) 433-1480
E-Mail: Kavet@aol.com

Economic and Revenue Impacts in Vermont Associated with the Expiration of the Northeast Dairy Compact

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Background

This analysis is based on prior regional economic impact analysis performed for the Northeast Dairy Compact Commission in 2001 and more recent analysis associated with specific Vermont revenue impacts for the Vermont Legislative Joint Fiscal Office.

The prior economic impact analysis, a summary of which is attached¹, involved the development of a comprehensive 43 region economic model in conjunction with Regional Economic Models, Inc. of Amherst, MA (hereafter, REMI). This model is similar to that used by the Vermont Public Service Department, the Vermont Department of Commerce and Community Development and the Vermont Joint Fiscal Office for various State applications. The Dairy Compact REMI model, however, contains greater regional detail than any of the current State models in use, providing county level data for the State of Vermont.

The Dairy Compact model was designed to be a framework for analyzing potential economic impacts at the regional level in states affected by the Compact, and not a single economic impact assessment. It allowed the input of a wide range of assumptions that may affect economic impacts, both in the short term and longer term. The model design recognized that there are many unresolved and still-debated theoretical and methodological issues surrounding key model assumptions and allowed alternative analyses of many such issues. Because of this, there is a range of model results that may be plausible and were analyzed within this model construct, as well as those considered “most likely.”

The economic and revenue impact analysis presented herein is based on this model and related economic research. Various model assumptions are outlined in the attached Section 5. Additional technical detail, supporting technical appendices and source bibliography material related to this analytic summary are available upon request.

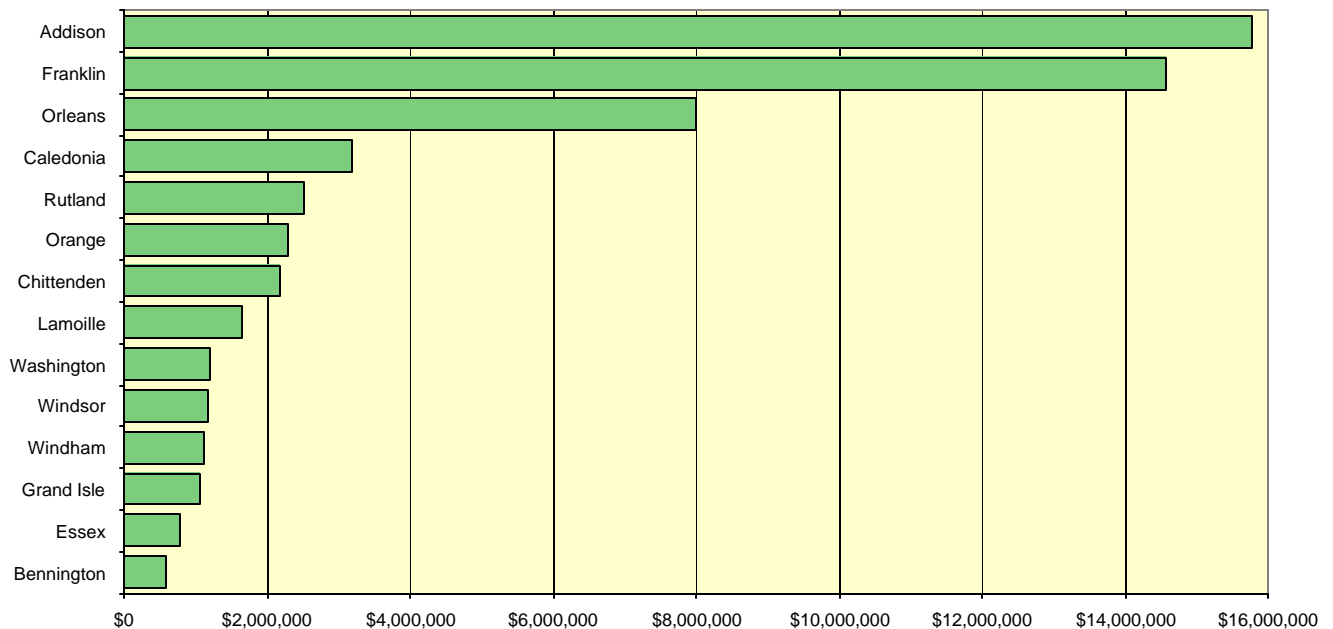
¹ See attached Section 5 of the Interstate Dairy Compact Congressional Impact Report, entitled, “Regional Economic Impact Analysis”

Summary Economic and Revenue Impacts in Vermont

Since the inception of the Northeast Dairy Compact in 1997 through calendar 2000 (the last year for which regional data are available) Vermont dairy farmers have received more than \$56 million from Compact-related over-order payments. Average annual payments have totaled more than \$15 million, with more than \$22 million in payments made in 2000, the highest single year. Commensurate with its share of production in the New England milkshed, Vermont has received more than 40% of all Compact payments.

More than two-thirds of all Compact payments in Vermont have been concentrated in Addison, Franklin and Orleans counties. These three counties, combined, received more than \$38 million in over-order payments between 1997 and 2000, about 28% of total Compact payments. The distribution of Compact payments by county between 1997 and 2000 is illustrated in the below chart and the map on the following page.

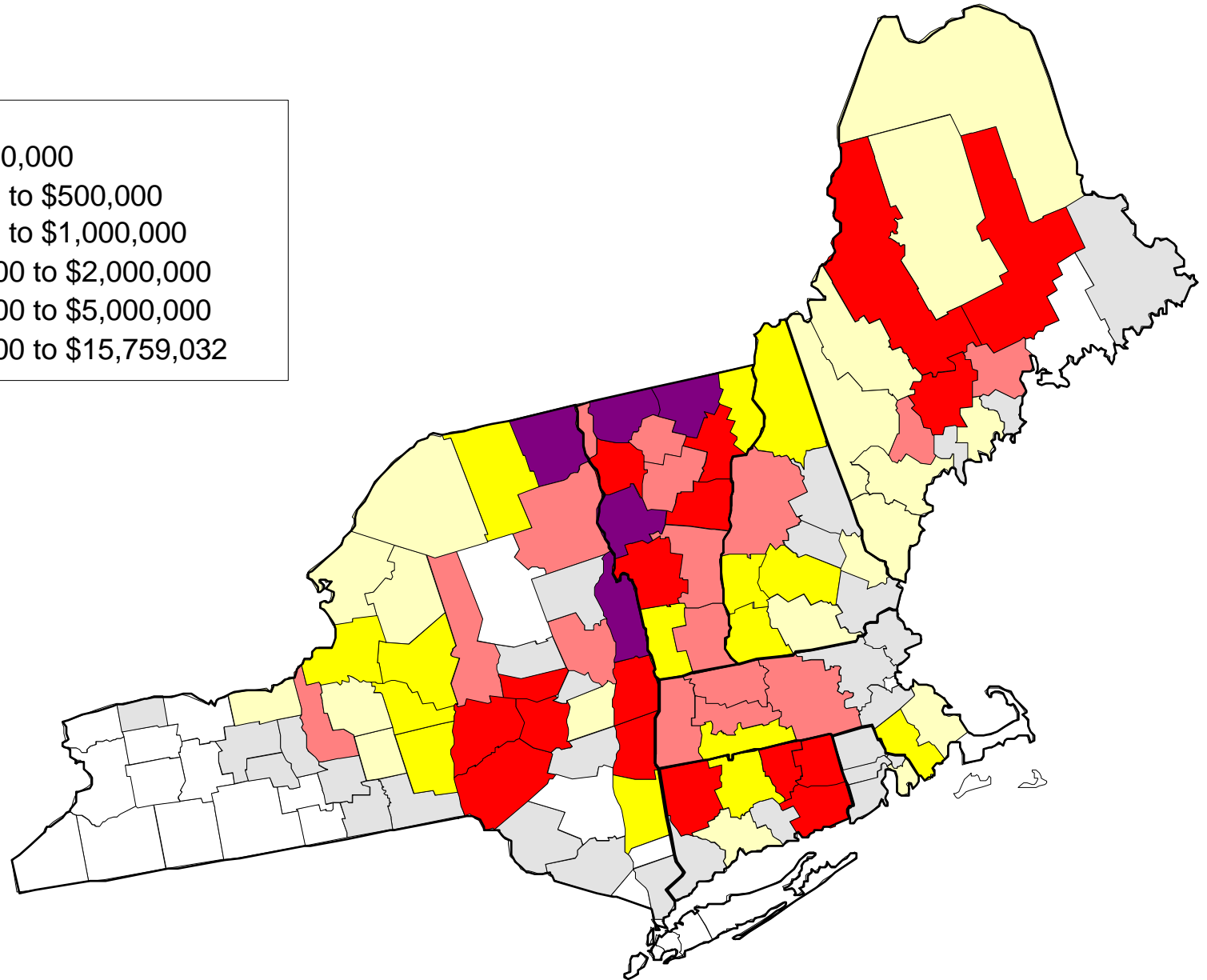
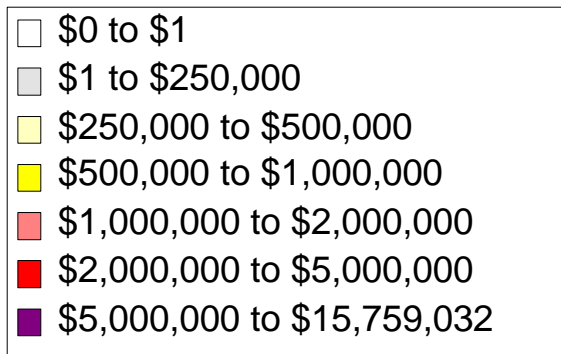
Northeast Dairy Compact Payments to Vermont Farmers, 1997 to 2000, by County



Source: Northeast Dairy Compact Commission

The economic impact in Vermont from the expiration of the Dairy Compact is more complex than the simple removal of these payments from the income of Vermont farmers. There are many other factors involved, some of which augment these losses and others, which diminish them. In brief, these factors include some consumer benefit (to the extent retail milk prices decline in the absence of the Compact), farm production responses to lower milk prices, secondary or “multiplier” effects from these direct effects, and the future “market” price of milk.

Total NE Dairy Compact Payments by County, 1997 to 2000



No matter what set of assumptions is employed in assessing the regional economic impact of the expiration of the Dairy Compact, the State of Vermont will experience a net economic loss. Even with the relatively conservative set of assumptions employed as “most likely”², Vermont will experience a reduction in total personal income approaching \$25 million and the loss of nearly 400 jobs.

It should be noted that under some sets of assumptions, negative economic impacts could be double or more those of the “most likely” scenario. For example, if future milk prices continue to spiral downward, negative impacts could be substantially higher than cited herein.

Because Vermont has a relatively small population base and large dairy farming sector, per capita losses in Vermont Gross Regional Product (GRP) will be more than 10 times the net impact of any other New England state (see Chart 5A in attachment). Grand Isle, Addison, Orleans and Franklin counties will experience per capita GRP losses that are the highest in New England, and are triple or more the Vermont statewide average. Economic loss from the demise of the Dairy Compact will be most severe in these counties.

State tax revenue losses from the expiration of the Compact in Vermont are difficult to estimate, given the precarious condition of personal and business balance sheets in the farm sector and numerous available tax breaks, but are likely to be in the vicinity of \$1.1 million, with more than half of this in income tax reductions (\$0.6 million) and the remainder primarily in consumption tax reductions.

Longer-term economic impacts could have more substantial economic and non-pecuniary impacts in the State. The presence of the Dairy Compact over the last five years has been estimated to have prevented the loss of between 70 to 225 farms in Vermont over this period³.

Although more difficult to quantify, Vermont’s working dairy farms create a unique pastoral landscape and rural character that has been cited as an important economic “amenity” factor affecting travel and tourism expenditures in the State⁴. Although economic losses from such “intangibles” may take many years to become apparent, they are no less real for the delay or difficulty in measuring their ultimate effects. The magnitude of these economic effects could dwarf the immediate economic and fiscal impacts associated with the expiration of the Northeast Dairy Compact.

² See attached Congressional Impact Report, Section 5.

³ For the higher estimate, see Congressional Impact Report, Section 3.E., Attachment 3p, http://www.dairycompact.org/part_I_impact_attachments/3p.htm. The lower estimate is based on JFO extrapolations of limited American Farm Bureau Federation data for the State of Vermont since 1992.

⁴ See “*Interdependence of Agriculture and Tourism: Quantifying the Value of the Agricultural Working Landscape in Vermont*” by Nancy Wood, Catherine Halbrendt, Kathleen Liang and Qingbin Wang, Department of Community Development and Applied Economics, University of Vermont, paper presented at the American Agricultural Economics Association Annual Meeting, August 2000.

NORTHEAST INTERSTATE DAIRY COMPACT CONGRESSIONAL IMPACT REPORT

Section 5: Regional Economic Impact Analysis

Overview

This Section assesses the price regulation's regional macro-economic impact within the six participating Compact states and New York State, through development of a comprehensive economic model from Regional Economic Models, Inc. (hereafter, REMI)¹. The model is based on a 14-sector REMI model, as outlined in Appendix B. As described in Appendix B, the REMI model is a dynamic regional input/output and conjoined econometric model, providing detailed economic and demographic impact measures. The model consists of 43 regions (all county-defined), which may be aggregated to the six New England states and New York, as detailed in Appendix A.

The model is designed to be a framework for analyzing potential economic impacts at the regional level in states affected by the Compact price regulation, and not a single economic impact assessment. It allows for the input of a wide range of variables reflecting the presence of different assumptions which may affect economic impacts, both in the short term and longer term. This model design recognizes that there are many unresolved and still-debated theoretical and methodological issues surrounding key model assumptions, and allows alternative analyses of many of these issues.

Because of this design, there is a range of model results that may be plausible, and are presented within this initial analysis. In addition, based on assumptions considered "most likely", a narrower group of corresponding results is also identified and presented.

An overview of the initial model runs, which describes the variety of theoretical assumptions, is also presented. It is expected that there will be further refinement and updates of data inputs in the future, with possible alternative theoretical constructs, that may produce additional impact analyses.

Output from some of the initial runs are discussed below, with detailed statistical output presented in appendices posted, along with further analytic and technical information, on the Center For New England Dairy Compact Research website, www.cdcr.org.

¹ This model was developed by Thomas E. Kavet, of Economic and Information Systems Consulting in conjunction with Regional Economic Models, Inc. Thomas E. Kavet, who coordinated the model specifications, has more than 20 years of experience working with regional economic models, both as an independent consultant and a Vice President at Data Resources, Inc., the nation's largest economic consulting and forecasting firm. REMI is among the best-known and most widely used U.S. regional economic modeling systems for economic impact analysis.

The assumptions underlying this analysis are detailed following the summary model output presented below and in various appendices at the end of the report. The range of assumptions reviewed, tested and considered “most likely” are summarized in the below table. The basic model construct involved estimating the regional economic impacts of terminating the Northeast Dairy Compact. This was done both for calendar year 2000, the last year for which complete data exist and for an “average” year, based on data from the period 1997 to 2000. All output is expressed relative to baseline REMI economic projections.

Table 5A
Underlying Assumptions Tested and Considered “Most Likely” in Initial Regional Economic Impact Analyses

Assumption	“Most Likely”	Range Tested	Range Possible	Comments
<i>Annual Compact Payment Levels</i>	<i>1997 to 2000 Average</i>	<i>1997 to 2000 Average, Year 2000</i>	<i>Approximately 0.3x Average to 3x Average</i>	<i>2000 was highest payment year on record to date</i>
<i>Market Driven Over Order Premium Adjustment to Compact Payments</i>	<i>90% of Stated</i>	<i>90% to 100% of Stated</i>	<i>50% to 100%</i>	<i>Estimated for 2000 via Compact Commission data</i>
<i>Consumer Price Elasticity to Demand for Milk</i>	<i>-0.32</i>	<i>-0.32 to -0.51</i>	<i>-0.1 to -0.7</i>	<i>Most extensive study estimated elasticity at -0.32</i>
<i>Price Reduction Pass Through Percentage to Consumers</i>	<i>25%</i>	<i>0% to 100%</i>	<i>0% to 100+%</i>	<i>Studies show price transmission tends to be asymmetric. Price declines are generally not fully passed through to consumers</i>
<i>Windfall Profit In-Region Income Gain Share for Producers and Retailers</i>	<i>Approximately 34.2% for producers and 50.3% for retailers</i>	<i>0% to 100%</i>	<i>0% to 100%</i>	<i>Based on in-region ownership shares and company-specific financial data from firms owned outside of region</i>
<i>NE Production Change Associated With Presence of Compact in 2000</i>	<i>3.5%</i>	<i>0% to 7%</i>	<i>0% to 10%</i>	<i>Based on projections from 1986 to 1996 vs. actual NE production levels</i>
<i>NY State Offset to NE Production Changes</i>	<i>28.4%</i>	<i>0% to 100%</i>	<i>0% to 100%</i>	<i>Based on NE milkshed production patterns evident in Compact Commission data</i>

Summary of Initial Model Results

Model results analyzed to date from the initial range of model specifications (which are detailed in the subsequent section and various appendices), yielded the following general observations:

- Regardless of model input assumptions, the aggregate economic impacts of the Dairy Compact across the entire New England and New York region are relatively small, representing changes in total real Gross Regional Product (GRP) of between -0.002% and $+0.00002\%$ (stated effects are based on the hypothetical elimination of the Dairy Compact in 2000). Relative to the aggregate regional economy, the potential range of macro-economic impacts from Compact price regulation can only be described as miniscule.
- Economic impacts in many individual rural New England counties, however, could be pronounced, with aggregate percentage impacts exceeding 200 times those of the region as a whole, and even greater impacts within the farm sector in these counties. In some New England counties, farm employment could decline by more than 5% if the Compact were eliminated, with total real GRP losses exceeding 0.5%.
- Aggregate economic impacts among regions that contain large urban population concentrations and relatively little agricultural activity, such as the greater Boston metropolitan area, extending from suburban NH to RI, central and southwestern CT, and York and Cumberland Counties in ME, are extremely small but positive under most model assumptions employed to date. This reflects one of the basic economic transfers inherent in the Compact, from milk consumers, largely concentrated in these urban areas, to dairy farmers, largely located in rural areas. Under no model specification run to date, however, did positive impacts exceed $+0.011\%$ of real GRP in any region analyzed, and most were in the barely measurable range of $+0.001\%$ to $+0.005\%$.
- Aggregate economic impacts in New York State are highly dependent upon assumptions regarding production changes stimulated by the Compact and the assumption that in the absence of the Compact, some milk from New York would substitute for any decline in New England production. This assumption is considered likely, based on information from the Dairy Compact on potential milk inflows to the New England milkshed. Unless very large production impacts are assumed (some as high as 7% were tested), and New York production changes that entirely offset any New England changes, New York would not register a net economic benefit in the absence of the Compact. These results, however, could vary significantly by individual county. Although individual New York counties are not disaggregated in this analysis, it may be inferred that those counties currently supplying the New England milkshed would suffer considerably from the loss of the Compact and those potentially, but not currently, supplying the New England milkshed could benefit.

- In contrast, by assuming little or no production impact from the Compact, or production offsets outside of New York, more extreme negative impacts are registered in New York under the Compact removal hypothesis. This reflects the fact that many New York farmers receive benefits from the Compact while New York consumers remain largely unaffected by Compact-related milk price adjustments. Dairy farmers in 39 New York counties currently receive about 30% of all Compact payments to farmers, with the greatest concentrations in Washington, Clinton, Montgomery, Ostego, Rensselaer, Delaware, Columbia and Schoharie counties. Elimination of the Northeast Dairy Compact under these set of assumptions could result in losses of more than 650 jobs in New York, more than half of which would be in the farm sector.

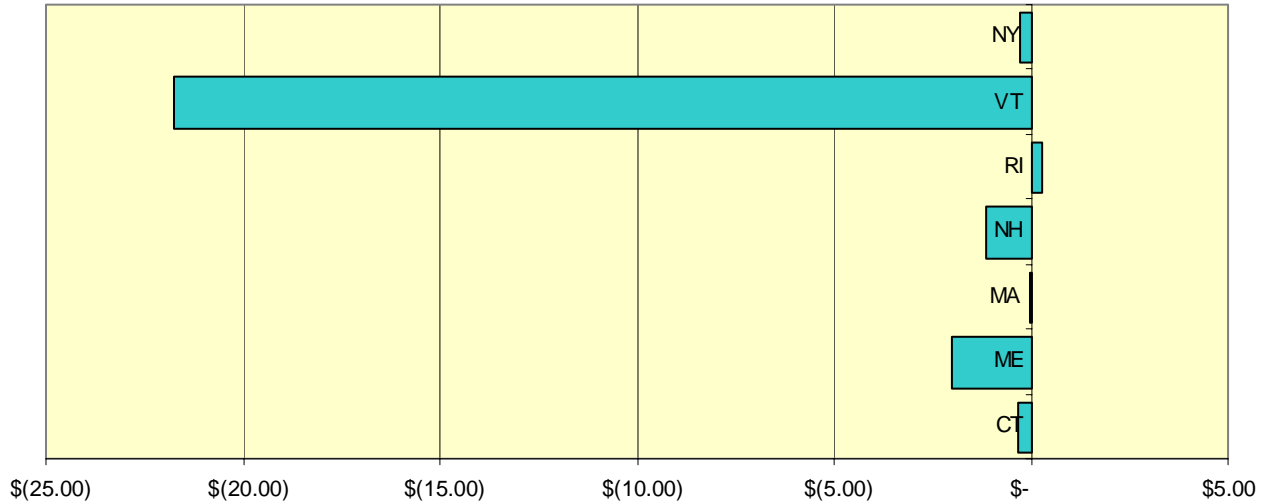
- In most analyses performed to date, the counties most likely to experience aggregate economic decline in the absence of the Compact, include:
 - Litchfield, New London, Tolland and Windham counties in Connecticut;
 - Androscoggin, Franklin, Kennebec, Oxford, Penobscot, Piscataquis, Somerset and Waldo counties in Maine;
 - Berkshire, Franklin and Hampshire counties in Massachusetts;
 - Cheshire, Coos, Grafton and Sullivan counties in New Hampshire;
 - All fourteen Vermont counties, and;
 - Washington, Clinton, Montgomery, Ostego, Rensselaer, Delaware, Columbia and Schoharie counties in New York.

In the set of analytic assumptions considered “most likely,” the following regional economic impacts were observed:

- Aggregate regional economic impacts from the loss of the Dairy Compact are negative, though relatively small. Total GRP in the Compact states and New York would decline by 0.002%, or about \$23 million dollars, with total employment losses of about 500 jobs.

- On a per capita basis, the aggregate annual regional GRP loss would be about \$0.70 per person. As illustrated in the below Chart 5A, per capita GRP declines are evident in every state except Rhode Island, which would show an annual per capita gain of \$0.30, with the largest per capita negative impacts in Vermont at -\$21.74. Of note, even Massachusetts, with its large urban population centers, would experience slight net economic loss from the discontinuation of the Northeast Dairy Compact.

**Chart 5A: Projected Per Capita Change in Annual GRP from Loss of the Northeast Dairy Compact
(Assumes Average 1997-2000 Payment Levels)**

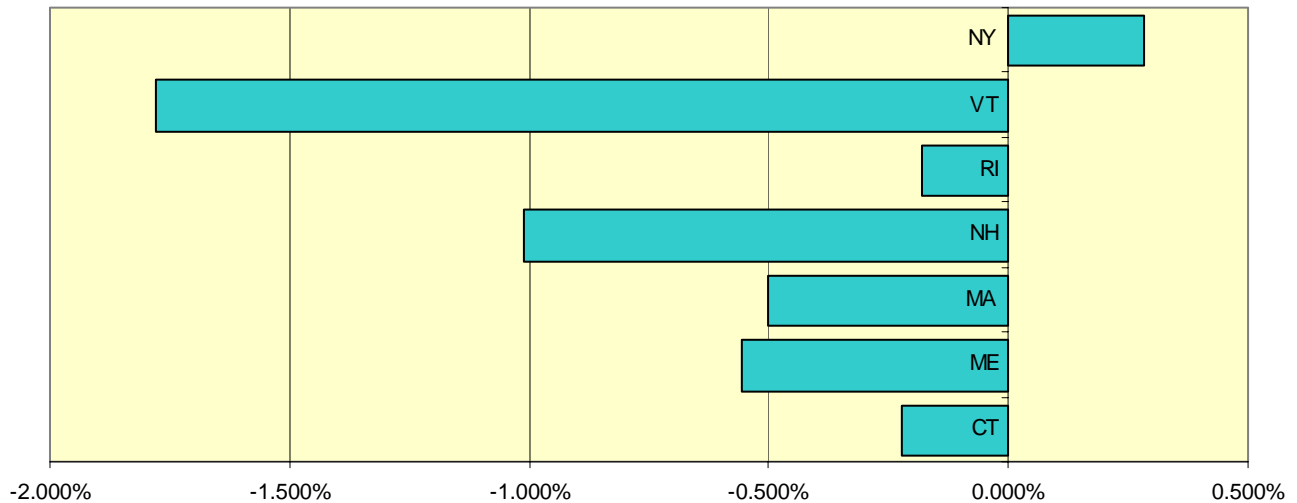


	CT	ME	MA	NH	RI	VT	NY
Series1	\$(0.33)	\$(2.01)	\$(0.02)	\$(1.13)	\$0.30	\$(21.74)	\$(0.26)

Source: REMI, Center for New England Dairy Compact Research

- The farm sector in the Compact states would be more significantly impacted, with farm employment declining by about 0.8% in the region. Declines in the farm sector would be registered in every NE state, ranging from 0.180% in Rhode Island to 1.779% in Vermont.

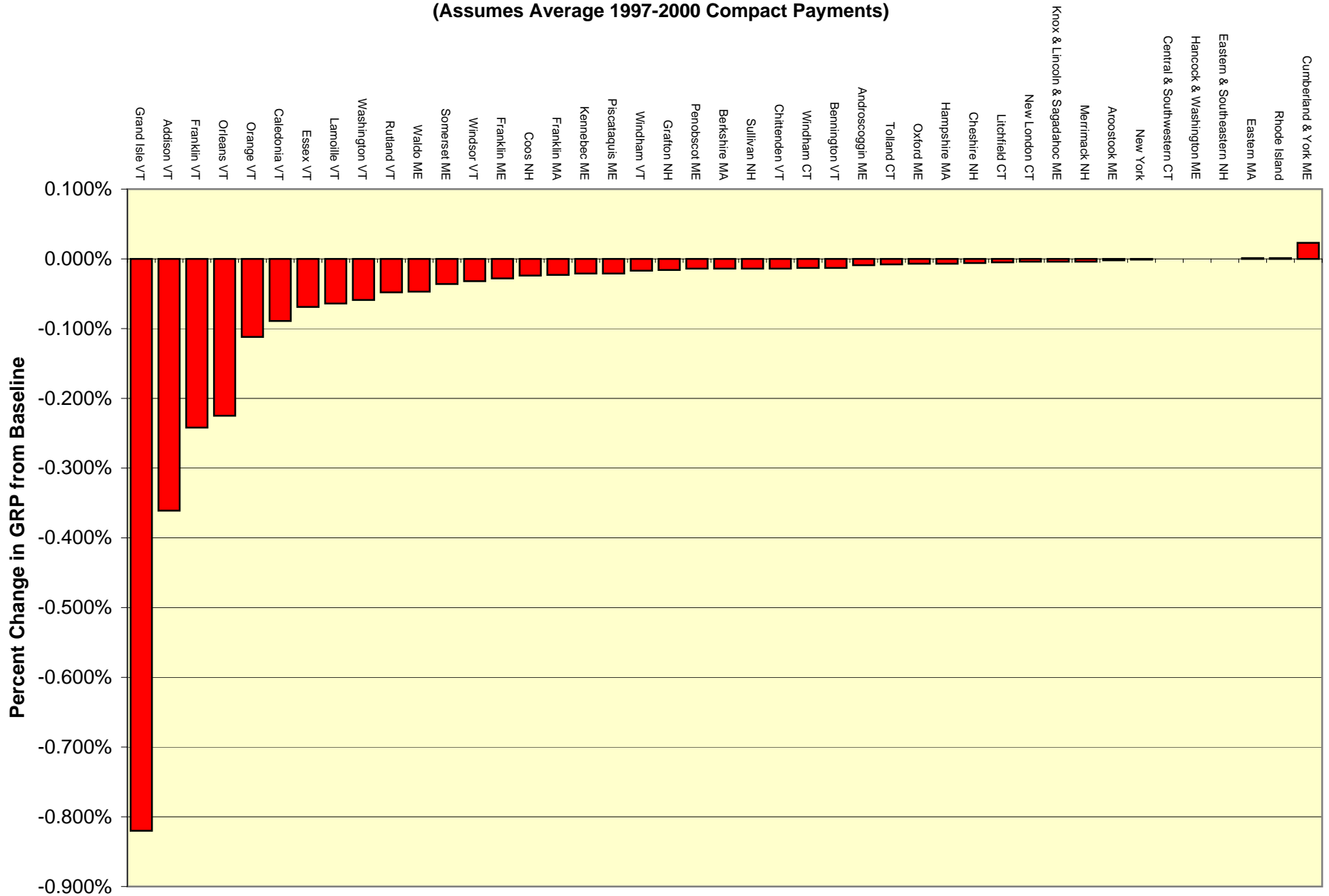
**Chart 5B: Projected Percent Change in Farm Employment from Loss of the Northeast Dairy Compact
(Assumes Average 1997-2000 Payment Levels)**



	CT	ME	MA	NH	RI	VT	NY
Series1	-0.222%	-0.554%	-0.501%	-1.010%	-0.180%	-1.779%	0.282%

Source: REMI, Center for New England Dairy Compact Research

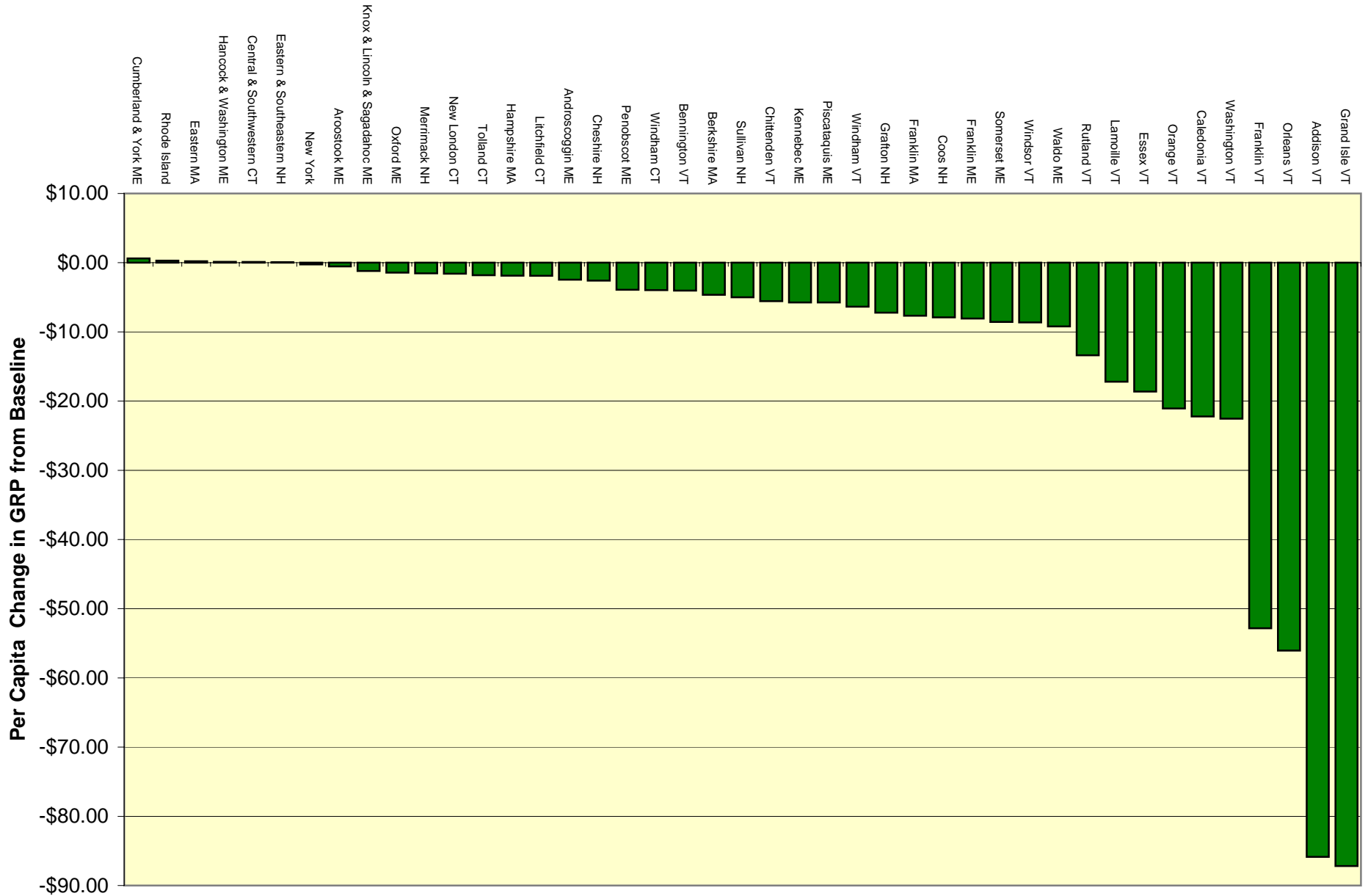
**CHART 5C: Projected Percent Change in GRP from Loss of the Northeast Dairy Compact
(Assumes Average 1997-2000 Compact Payments)**



Source: REMI, Center for New England Dairy Compact Research

- Among the 43 regions analyzed, percent changes in real GRP range from more than -0.8% in Grand Isle, Vermont to +0.02% in Cumberland and York, Maine. The distribution of real GRP percent change by region is illustrated in Chart 5C.
- The distribution of GRP changes on a per capita basis are displayed in Chart 5D, ranging from \$0.61 in Cumberland and York, Maine, to more than -\$85.00 per person in Grand Isle and Addison Counties in Vermont. This is illustrative of the general regional distribution of economic impacts associated with the Northeast Dairy Compact: They tend to be extremely small but positive (in the hypothetical absence of the Compact) in the more densely populated urban regions, slightly negative in most other regions and severely negative in predominantly rural agricultural regions.
- Despite small per capita gains in the more urbanized regions, such as \$0.21 in the Eastern Massachusetts region, \$0.11 in Central and Southwestern Connecticut and \$0.06 in Eastern and Southeastern New Hampshire, these are more than offset by the more pronounced economic losses experienced in rural counties in these states. For example, the more extreme per capita economic losses in Franklin (-\$7.66), Berkshire (-\$4.63), and Hampshire (-\$1.88) counties more than offset the gains in Eastern Massachusetts, creating an aggregate per capita economic loss of -\$0.02 for the state as a whole. Similarly, in Maine, New Hampshire and Connecticut, the more extreme economic losses in counties such as Waldo (-\$9.21), Somerset (-\$8.56) and Franklin (-\$8.56), Maine, Coos (-\$7.90), Grafton (-\$7.23) and Sullivan (-\$4.99), New Hampshire, and Windham (-\$3.96), Litchfield (-\$1.89) and Tolland (-\$1.81), Connecticut, more than offset the smaller gains in the more urban areas, rendering aggregate per capita statewide impacts negative for all three states (see Chart 5A).
- Per Chart 5E, farm employment is likely to decline in every region except New York State, which registers a very slight net increase (0.28%) due to production offsets connected to the New England milkshed, and Hancock and Washington counties (virtually no change) in Maine, which have very little dairy farming activity. In the absence of the Northeast Dairy Compact, the largest percentage declines in farm employment would occur in Grafton (-3.69%) and Coos (-3.23%) counties in New Hampshire, Addison (-2.93%) and Franklin (-2.32%) counties in Vermont, Franklin County (-2.44%), Maine and Berkshire County (-2.44%) in Massachusetts.

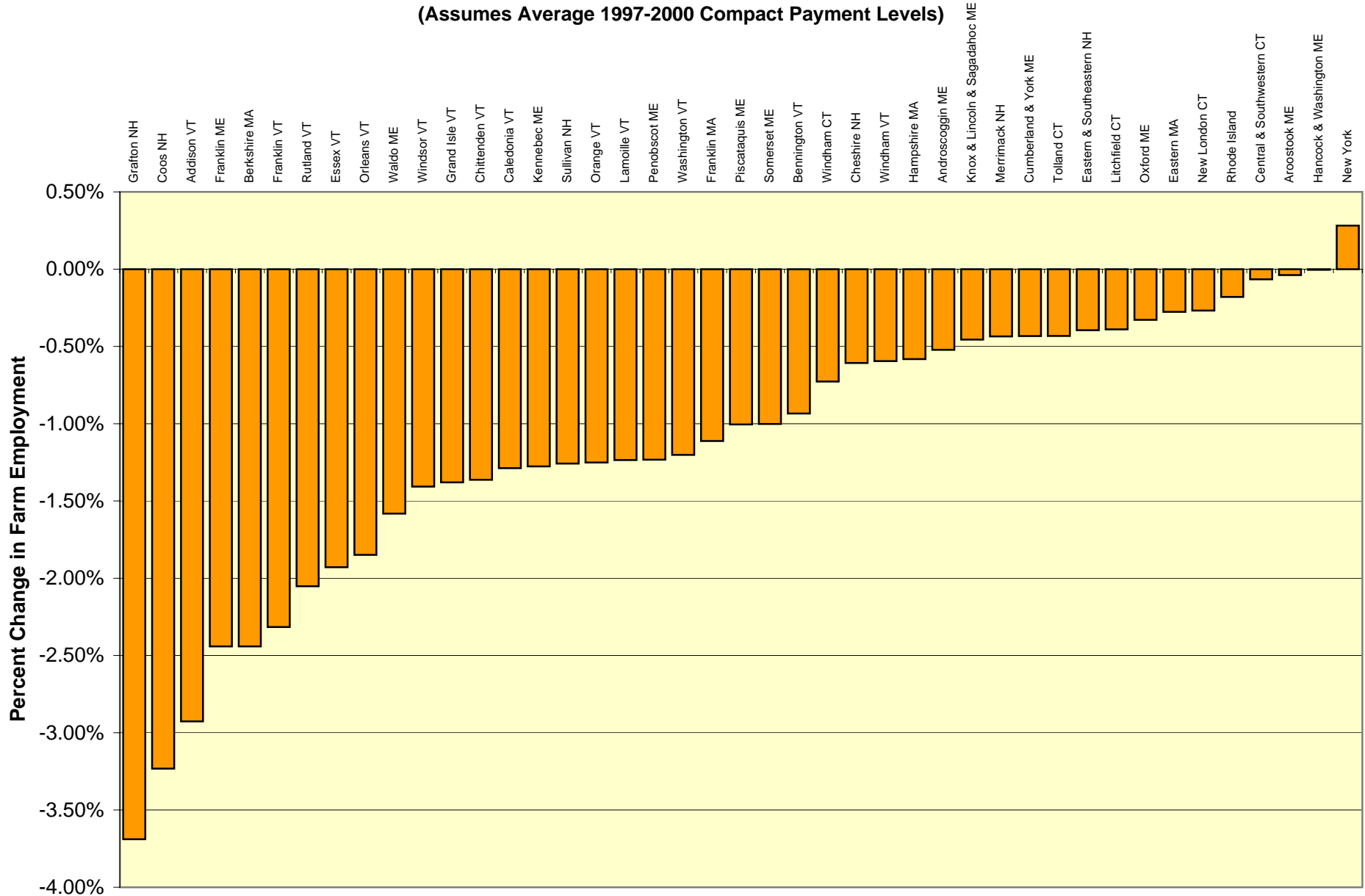
CHART 5D: Projected Per Capita Change in GRP from Loss of the Northeast Dairy Compact
 (Assumes Average 1997-2000 Compact Payment Levels)



Source: REMI, Center for New England Dairy Compact Research

CHART 5E: Projected Percent Change in Farm Employment from Loss of the Northeast Dairy Compact

(Assumes Average 1997-2000 Compact Payment Levels)



Source: REMI, Center for New England Dairy Compact Research

Initial Model Design and Assumptions

A wide range of assumptions have been employed in model runs analyzed to date. All focused on the potential economic impacts of eliminating the Compact in the year 2000, the last year for which complete annual data exists². Most model runs included Compact payments to farmers in calendar 2000, or average annual 1997-2000 payments, as income adjustments. Various potential reductions in income from substitution, associated with market-driven over-order premiums, some consumer pass-through in the form of milk price adjustments, administrative Compact office and other expenditure adjustments, and transfer payment adjustments based on Compact payments to WIC and School Lunch programs were also factored in. Some model runs also included farm production adjustments attributable to the Compact.

As noted in Section 4, there has been a great deal of debate among economists and others regarding the extent to which the presence of Compact price regulation has affected consumer prices, ranging from more than a 100% price pass-through to zero or even negative longer-term price effects³. As in Section 4, for purposes of this analysis, some consumer food price impact is regarded as likely. Given the recent consolidation in the milk processing and retailing industries in New England, and recent evidence of minimal retail price reductions in response to lower farm prices, the authors consider a price pass-through in the initial year of impact of about 25% to be “most likely.”

In the counterfactual used for the initial model runs, this assumption is expressed as a reduction in retail milk prices (the extent to which retail prices might have been less had the Compact not been in effect in 2000). Price pass-through assumptions of 100%, 50%, 30%, 25%, 10% and 0% were run

In the model runs in which less than 100% of the consumer price pass-through is assumed, the balance is retained as additional income and split between processing and retailing businesses in the region. This split was estimated to be 42.9% for processors and 57.1% for retailers, based on estimates of existing profit

² Most of the initial analysis is confined to impacts in the year 2000; however, longer term projections (to 2035) are possible and may be employed in future model runs that address issues of farm loss, potential tourism impacts, amenity values for open rural and pasture land, various pricing and profit responses among farmers, processors and retailers, price stability and other price transmission theories, various market-driven over order premium assumptions and differing retail milk price elasticity inputs.

³ See, for example, *The Public Interest and Private Economic Power: A Case Study of the Northeast Dairy Compact*, by Ronald W. Cotterill and Andrew W. Franklin, Department of Agricultural and Resource Economics, University of Connecticut, May 2, 2001; Staff Paper #341, *Impact of the Northeast Interstate Dairy Compact on Consumer Prices for Fluid Milk*, by Kenneth W. Bailey, Department of Agricultural Economics and Rural Sociology, Pennsylvania State University, June 1, 2001; *Impacts of the Northeast Dairy Compact on Retail Prices*, by Daniel A. Lass, Mawunyo Adanu, and P. Geoffrey Allen, University of Massachusetts at Amherst, and, most recently, *Impacts of the Northeast Dairy Compact on New England Retail Prices Revisited: New Data, New Lessons*, by Daniel Lass, University of Massachusetts at Amherst, Draft document, September, 2001.

margins on sales per gallon of class 1 fluid milk.⁴ The in-region share of the processing industry in calendar 2000 was approximately 34.2%⁵ while the comparable share of the retailing industry was about 37.1%⁶ during the same period. Depending upon industry investment and spending assumptions, out-of-region ownership in processing and retailing industries could affect local economic impacts associated with potential income gains in the absence of the Compact. Initial model runs encompassed a range of out-of-region investment assumptions from 0% to 100%. Given company-specific financial and other data in calendar 2000, the “most-likely” scenario posits in-region reinvestment of potential windfall profits from out-of-region firms to be 0% for processors and about 21.4% for retailers⁷. After this adjustment, effective in-region windfall profit income allocations to these industries in the “most likely” scenario is 34.2% for processors and 50.3% for retailers.

This section of the report also pursues further the issue of the price regulation’s impact on the loss of farms, and the implications of this impact for milk production, or farm output. As indicated in Section 3, there has also been a great deal of debate regarding the extent to which the price regulation has slowed the loss of farms and farmland in New England and the extent to which this may have affected farm output. Section 3, above, concludes that the price regulation has in fact been a significant factor in reducing the loss of farms, and has thereby assured the maintenance of some farm output that would otherwise have been lost. To test further this conclusion and its implications, various alternative assumptions were employed in the initial model runs.

Alternative runs were conducted based on historical trends and other analysis⁸ that suggest annual output increases in the range of about 2% to 7%. From this trend analysis, it is deemed most likely that the price regulation had a positive effect on in-region milk production in the vicinity of 3.5%.⁹ In addition, a model run was made assuming no output response to the price regulation.

⁴ These estimates were based on data from *An Analysis of Processing and Distribution Productivity and Costs in 35 Fluid Milk Plants*, by Eric M. Erba, Richard D. Alpin and Mark W. Stephenson, Department of Agricultural, Resource and Managerial Economics, Cornell University, an associated extract, entitled *Presentation at IDFA Annual Meeting in Dallas, Texas*, and retailing profit margins published by the largest three New England retailers.

⁵ See Table 3, in *The Public Interest and Private Economic Power: A Case Study of the Northeast Dairy Compact*, by Ronald W. Cotterill and Andrew W. Franklin, Department of Agricultural and Resource Economics, University of Connecticut, May 2, 2001

⁶ Source: Calculated from regional data contained in the *Marketing Guidebook*, TradeDimensions – Market Scope 2001, Wilton, CT, 203-563-3000.

⁷ See, for example, annual reports and related financial information for Royal Ahold (Stop & Shop), J. Sainsbury (Shaw’s and Star Market), and The Delhaize Group (Hannaford’s). This share was based on reported sales in New England region stores as a percentage of total company sales. Although this may not always correlate with investment in a given year – for example, in 200, Royal Ahold reported 15.6% of company sales in New England but only 11.4% of new store openings and 4.2% of store renovations in the region – but it is the only available common measure across all companies and is a reasonable long term metric for allocating investment.

⁸ See, for example, *A Regional Economic Analysis of Dairy Compacts: Implications for Missouri Dairy Producers*, by Ken Bailey and Jose Gamboa, Commercial Agriculture Program, University of Missouri, January 1999, <http://agebb.missouri.edu/commag/dairy/bailey/compact/>, in which the authors estimate a 2.1% production increase attributable to a hypothetical \$2 compact premium in Missouri.

⁹ Consistent with the analysis of Section 3, the increased milk production is attributed to the enhancement of farm viability, or the maintenance of farms in production which otherwise would have ceased production. As indicated in Section 3, there is little indication that the price regulation promoted increased, new production.

Offsetting milk supply losses from this added production were variously assumed to be entirely confined to New York state, entirely confined outside of the NY/NE region, and, the “most likely” assumption, that about one-third of the production offset occurred in New York state and the remainder outside of the NY/NE region. This assumption conforms with the analysis presented in Section 6, below. In the counterfactual, this assumption is expressed as the increase in milk production in New York State which would have been generated to provide the replacement supply for the New England farms which would have ceased operation had the Compact not been in place in 2000.

The model runs also account for regional output responses to changing retail milk prices. In this counterfactual, they represent added demand in the year 2000, to the extent retail prices are reduced. Although there are a wide range of price elasticity estimates in the current economic literature¹⁰, the price elasticity to demand assumed in all of the initial model runs is -0.32 for class 1 fluid milk.

All data on Compact payments to farmers and other Compact-related administrative expenditures by county were derived from Northeast Dairy Compact Commission records. In some model runs (including those considered “most likely”), payments to farmers were reduced by approximately 10% to reflect substitution from market-driven over order premiums in the year 2000, as estimated by the Commission. Consumer pass-through costs were allocated to New England counties on the basis of population as reported in the 2000 Census. Farm output data, consistent with Compact payments, was used to allocate all production responses within affected counties in New England and New York. The county location of milk processors was identified through internal Compact Commission data. In-region retailing operations were distributed by county, based on population.

All model input values for current and future model runs will be available in technical appendices from the Center For New England Dairy Compact Research, upon request.

Future Analysis

Future model analysis may be conducted to test various alternative model assumptions and constructs. The results of any such analyses, as well as other technical material related to the REMI Dairy Compact model, will be made available on the Center For New England Dairy Compact Research website, www.cdcr.org.

¹⁰ For an broad review of recent estimates, see, *A Regional Economic Analysis of Dairy Compacts: Implications for Missouri Dairy Producers*, by Ken Bailey and Jose Gamboa, Commercial Agriculture Program, University of Missouri, January 1999. Bailey and Gamboa also used an elasticity of -0.32 in the dairy compact model developed as a part of this study.