Economic Analysis of a State Rehabilitation Incentive Proposed for Oregon

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PREPARED BY:

ECONorthwest

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The St. Francis Hotel is a cornerstone of Albany's Main Street, but will continue to sit largely empty and deteriorating without a state rehabilitation incentive.

Executive Summary

EXECUTIVE SUMMARY

Restore Oregon engaged ECONorthwest for an economic study of a proposed state Historic Rehabilitation Incentive (hereafter referred to as "HRI") in Oregon. A capped amount of income tax credits would be auctioned to Oregon taxpayers and used to fund the program. The fund would pay for up to 25 percent of the qualified rehabilitation expenses of historic buildings. The goal of the HRI is to revitalize historic Main Streets across Oregon– Restore Oregon believes many of these are in a downward economic spiral–and to provide jobs throughout the state.

Restore Oregon was founded in 1977 as the Historic Preservation League of Oregon. It is a statewide non-profit that engages local communities in efforts to save valued historic buildings.

ECONorthwest is an Oregon-based economic consulting firm known for objective research. Established in 1974, today ECONorthwest has over 35 professionals with degrees in economics, planning, mathematics, and physical sciences.

For this study, ECONorthwest specifically considered the net impact of an HRI over the period of 2016 - 2025, answering the question:

Is Oregon's economy better off having a state Historic Rehabilitation Incentive or not?

In conducting its research objectively, relying primarily on the historical record of projects originating from the Internal Revenue Service and other federal government sources, ECONorthwest determined the following:

The state of Oregon would indeed be better off with a state HRI.

We concluded that, at a cost of $9.6 million in 2016 and growing modestly to $11.5 million in 2025, the impact of the proposed HRI to Oregon's economy would be:

- **Net new economic output** of **$32.0** million in 2016, rising to **$43.5** million in 2025.
- Between **428** and **581 net new jobs per year** in construction and related services.
- Each job would average over $53,000 in wages and benefits, and add a net **$22.8 million** to **$31 million** in **labor income** to Oregon's economy.
- More than double the amount of **federal Historic Tax Credit dollars** spent in Oregon - $11.9 million more in 2016, growing to $16 million in 2025.
- A net increase of **$30.1** to **$40.9 million** a year in **Oregon's Gross Domestic Product** (GDP).
- A **four-fold increase in the number of certified rehabilitation construction projects**, from the current pace of less than seven to 26 to 41 projects per year.
- By 2025, the net increase in real market value of historic properties rehabilitated as a result of the HRI will exceed $919 million and pay an **additional $9 million in local property taxes** per year.
- The buildings rehabilitated and reoccupied as a result of the HRI will house over **12,000 jobs by 2025**.
- In addition, by 2025, **state and local revenues** will **grow by $2.8 million** from higher rehabilitation construction spending because of the HRI.

Additional impacts of a state Historic Rehabilitation Incentive that can be inferred but were not quantified in this study, include:

- Environmental benefits of reusing the materials and embodied energy of existing buildings.
- A positive economic "halo" effect on surrounding property values from the restoration of a historic building.
- Local government savings from projects using existing downtown infrastructure rather than being extended to outlying areas of towns.
- Increased heritage tourism attracted by more historic destinations.
- The restoration of tangible assets to service in their communities for decades to come.

A snapshot of the impact of an HRI on direct development spending in Oregon for 2018 shows:

Gross total development spending with a state HRI:	$102.6M
(Less) total rehab that would have happened without an HRI:	$22.3M
(Less) cost of an HRI to state government:	$10.6M
(Less) private spending diverted from elsewhere in Oregon:	$33.8M
Net direct spending increase due to an HRI in Oregon:	**$35.8M**

Economic Analysis of a State Rehabilitation Incentive Proposed for Oregon

INTRODUCTION

Restore Oregon proposes a 25 percent Oregon state Historic Rehabilitation Incentive or HRI. It would go into effect in 2016. The incentive applies to spending on projects renovating historic commercial buildings, rather than owner-occupied houses. The buildings must be income producing, on the National Register of Historic Places, or be contributing buildings in a National Register Historic District. The incentive is limited to no more than $2 million per project, which means that only the first $8 million in rehabilitation spending on a project would be eligible for the Oregon HRI.

Many projects are large enough to also take advantage of the federal Historic Tax Credit (HTC). It requires that rehabilitation spending exceeds the owner's adjusted basis in the property, but this is a substantial threshold. However, Oregon has many small downtowns with historic buildings that need more modest rehabilitation work. Recognizing this, the HRI envisioned by Restore Oregon has a simple $10,000 minimum spending requirement.[1]

Once an HRI provision passes, owners can combine the 20 percent federal and 25 percent state HRIs, making significantly more historic rehab projects financially feasible. Less expensive projects, typical in smaller downtowns, may use only the state HRI.

Proposed Oregon HRI

Restore Oregon proposes a Historic Rehabilitation Incentive structured similarly to the popular Oregon film production credit. It would provide a 25 percent rebate on qualified rehabilitation expenses (QREs). Twenty-five percent is the most common rate in the country. The minimum qualified spending requirement is $10,000. Restore Oregon proposes this low minimum so that small projects, common in small downtowns throughout Oregon, are eligible for support. We anticipate that many of these projects are below the minimums necessary for receiving federal HTCs, making the state incentive even more important in rural communities.

Restore Oregon also proposes an upper limit. The maximum HRI available to any one project is $2 million. That would be available to projects with $8 million or more in QREs.

For any one year, the proposal limits sets an aggregate cap of $12 million and our analysis projects the cost for 2016 at just under $10M as the program ramps up.

Thirty-five other states offer a historic rehabilitation incentive, typically in the form of a state tax credit, which is usually transferred to an investor for cash to pay for construction. Transferring credits can be complex and inefficient as they are discounted and incur transaction costs. Therefore, Restore Oregon proposes modeling the HRI after the Oregon Production Investment Fund ("OPIF") that is available to film and video productions within the state.

The OPIF method is a cost-effective system from the state's perspective. It works by having the Oregon Department of Revenue auction off $500 tax credit certificates. The auction is electronic and over the internet, so administrative costs are low. The minimum bid is $475. In the October 2013 auction, the average bid for $500 certificates was $497.[2]

The money collected goes into a fund. Money from the fund is awarded to Oregon film and video productions based on a percentage of their local spending. Certificate buyers apply the credits at face value against their Oregon state income tax liabilities. They also deduct the cost of certificates from their federal income taxes as a donation (the deduction is inapplicable on Oregon income taxes.)

For this analysis, ECONorthwest assumes the Oregon HRI goes into effect on January 1, 2016 and our projections run through December 31, 2025.

Restoring the historic arch in Lake Oswego's Iron Works.

[1]ECONorthwest conducted its research under the assumption of $25,000 minimum spending per project in accordance with Restore Oregon's initial plan. Restore Oregon, after consultations throughout Oregon, found strong interest in a lower minimum. They now propose $10,000. ECONorthwest believes the number of small projects forecast in this report could well prove too low, but in the interest of being conservative, we assume the levels shown here.

[2]McDonald, S. "A Monster Deal." The Eugene Register Guard. May 11, 2014.

BACKGROUND/CONTEXT

Rehabilitating historic buildings is expensive, especially given the need for seismic upgrades and other safety improvements. Old buildings often need costly restoration, code compliance, elevators, and modern upgrades in heat, insulation, air conditioning, and wiring.

High rehabilitation costs are one reason why 35 states offer tax credits that, together with a federal HTC, make more restoration projects affordable. Oregon does not have a state funded HRI. As a result, many of Oregon's historic buildings sit empty, lifeless, and deteriorating. Ultimately, they become scars on our downtowns, affecting adjoining properties.

Another reason why states offer credits is simple economic development for depressed places. Historic buildings tend to be in old neighborhoods and rural areas. State governments see credits, especially since they are matched with federal dollars, as a good way to put people to work in areas where high paying jobs are scarce. Rehabilitation projects, using the vernacular of economics, are labor-intensive. They employ many local workers at good wage rates.

Long-term benefits are a third purpose of having state credits. This is particularly relevant in mid- to small-towns where deteriorating, old buildings repel residents and visitors alike. Fixing up one or two key historic buildings can trigger new developments around them.[3]

The economic literature suggests that historic building restorations add value to communities through the renewal of the venerable structures themselves and through enhancing neighboring buildings, as evidenced through their higher market prices.

The Public Benefit of HRIs

Building owners derive value from their properties, but if they are historic buildings, the local community may also place a significant value on them as places to work, shop, eat, reside, or fill out a neighborhood. Thus, while there are private benefits (value to the owner), buildings can also have substantial public benefits because of their historical presence in their communities. Problems arise when historic buildings are in disrepair, not up to code, or lack modern amenities. They need rehabilitation and it is expensive.

In many cases, private owners do not have a financial ability to restore buildings. In Oregon, owners of historic commercial buildings often lease their ground floors while leaving upper floors vacant, due to safety and other building concerns that are just too costly to fix. Unfortunately, it is also common for owners to have no viable business alternative but to tear down these buildings.

These are rational decisions for private goods—enterprises that are run for the benefit of a private owner. But historic buildings are also public goods. If they are not restored or maintained, the local public loses the benefits of having them in their town.

Historically relevant buildings are usually interwoven into their communities. Having an actively-used, well-maintained, and attractive historic building in town is a valued amenity, especially by longtime residents. They evoke nostalgia, a sense of place and history, and a sense of the town as a true, shared community. This improves the area's desirability as a place to live and visit.

As a classic public good, the value the public places on historic buildings is external to the private decisions of owners. The technical term for this is "positive externality." Sometimes such externalities manifest as higher neighboring property values. Economic research suggests that this is true for neighboring buildings with close proximity to well-maintained historic structures.[4,5]

Buyers and renters of properties near a restored historic building may pay a premium for their proximity to it. But for others in the public enjoying the benefits of the building, there may be no measurable cost. Economists refer to this as a "free rider" effect.

In recognition of externalities, free ridership, and the public benefit of keeping historic buildings in useful condition, the federal government and most states offer tax credits that owners can use for renovating historic buildings. By doing so, the public effectively pays some of the costs for saving them.

Basics of the Federal HTC

The federal Historic Tax Credit program is available nationwide. It applies to certified historic structures, as determined by the National Park Service. It became law in 1976 and went through a series of changes. The current law provides an income tax credit of 20 percent of the qualified rehabilitation expenses (QRE) on certified historic buildings.[6]

[3]Rypkema, Donovan; Catalyst for Change – the Impact of the Federal Historic Tax Credit: Transforming Communities; June 2014

[4]Narwold, A. "Estimating the value of the historical designation externality." International Journal of Housing Markets and Analysis. Pp. 288-295. 2008.

[5]Montgomery, S. and Lahr, M. "Historic preservation, property values, and tax rates: A municipal-level analysis in New Jersey." Rutgers University. 2009.

[6]See: http://www.nps.gov/tps/tax-incentives/before-you-apply.htm

The rules for the federal HTC are strict. The buildings must be income-producing, so private homes cannot qualify. The property must be listed on the National Register of Historic Places or be a contributing building in a National Register Historic District. Assuming the building itself is historic, rehabilitation costs are eligible for the 20 percent HRI, but only for QREs, as defined in Treasury Regulation 1.48-1(e)(2).

Qualified expenses include construction costs and labor for repairing and installing structural components. These include walls, plumbing, floors, ceilings, windows, central air conditioning and heating systems, electrical work, elevators, seismic reinforcements, and other components attached to the building. The IRS also allows many soft costs that get charged to capital accounts, such as interest and taxes during construction, and engineering, construction management, and architectural fees, to qualify for the HTC as well.

The National Park Service estimates that on average 83 percent of total project costs qualify for an HTC. The remaining 17 percent includes furniture, landscaping, carpeting, outdoor lighting, parking, sidewalks, signage, and other work unattached to the structure itself. The expense of acquiring the building and land is not counted in the total development cost and never qualifies for the HTC.

Although Oregon lacks a state HRI, building owners use federal historic tax credits, albeit at a low level. Oregon averages about seven projects a year. In the last twelve years, about two-thirds of the federal HTC projects were in Portland. The rest were in other cities throughout the state including La Grande, Medford, Roseburg, Condon, North Bend, Albany, Salem, Ashland, and The Dalles. The average historic development project in Oregon costs $7.2 million, of which nearly $6 million qualified for the 20 percent federal tax credit.

Clatsop Community College students learn how to restore historic plaster.

State HRIs

Over the 38-year history of federal HTCs, most states have introduced their own incentives. One let their program expire. Many such as Wisconsin, expanded them. Currently, 35 states offer HRIs that building owners can use in combination with federal credits to make more historic rehabilitation projects financially feasible.

State HRIs vary in size and coverage. Most cover only buildings listed on the National Register of Historic Places or contributing buildings in a National Register Historic District. They also usually apply towards the same federally accepted QREs designated by the IRS. The most common state HRI rate is 25 percent. Many others are set at 20 percent. Two states have higher rates, four less, and several limit credits by type of expense and location with in their state.

[6]See: http://www.nps.gov/tps/tax-incentives/before-you-apply.htm

TERMINOLOGY, ASSUMPTIONS, AND DEFINITIONS

ECONorthwest bases its forecast on the HRI as proposed by Restore Oregon. Details of the methodology appear on Page 17. We based the methodology on several assumptions and relied on independent government data sources. From these, we allowed the actual market data to reveal the effect state HRIs have on total rehabilitation spending. ECONorthwest then used an economic impact model of Oregon to forecast economic impacts.

The main economic question that Restore Oregon asked of ECONorthwest was, what impact would the proposed state HRI have on Oregon's economy? In other words, what would its economic impact be, how many jobs would be created, how much economic activity (that is output) would the HRI stimulate? These questions require determining both gross and net impacts.

Gross versus net

ECONorthwest distinguishes between gross and net impacts. Gross impacts arise from the total amount of historic development spending in Oregon after an HRI is instituted. Net impacts are less. They are the net change in total development spending attributable to the HRI. Importantly, net impacts also exclude dollars expended in Oregon that would have been spent in the state anyway, even if there were no HRI.

Thus, gross impacts measure all the effects stemming from HRIs regardless of the origin of the funds or the effects of having or not having a state HRI. Net impacts measure how much more economic activity goes on in Oregon because of the HRI, compared to an economy without a state credit.

Historic buildings in Oakland need repair, seismic upgrades, and vacant upper floors made code compliant.

For example, consider a building owner who spends $100,000 renovating a historic building because of the HRI. If there were no HRI, that same owner would only have spent 60 percent of that money in Oregon. Thus, the gross direct impact is $100,000 and the part of the net is $40,000 (i.e., by having an HRI the owner spends $100,000 in Oregon instead of $60,000).

The additional $40,000 comes from spending savings, diverting spending that would have been done out of state back into Oregon, or a combination of both. But besides this private capital, there is a second source of net impacts. That is the federal HTC.

Federal tax credits are an out-of-state source of money that, when spent on rehabilitation projects, have impacts. A state HRI causes more development and greater use of federal credits. Building owners spend those federal dollars buying construction in Oregon. It is money added to Oregon's economy that would otherwise not be spent in Oregon. In our example, the owner gets $16,600 in federal HTC money that is spent in Oregon.[7] The combined direct net impact on Oregon's economy is $56,600.

The effect of state HRIs in stimulating greater use of federal credits is clear from the data, which was analyzed by ECONorthwest, and in academic research.[8] The assumptions used for this research are driven by the data available.

[7]The total project was $100,000. The assumed ratio of QREs to total development cost is 0.83. The federal HTC is 20 percent of QREs. Thus, the federal credit received for the example project is $16,600 or $100,000 times 0.83 time 20 percent.

Workers convert a long-empty warehouse into modern office space.

Data

ECONorthwest received twelve years of data (2002 to 2013) on all projects receiving federal HTC approvals. The data came from the Technical Preservation Services Department of the U.S. National Park Service. Since data for 2013 may be subject to revision, ECONorthwest conducted its research primarily using 2012 projects, as the dataset for that year was complete.

ECONorthwest also used state gross domestic product (GDP) of construction. This data come from the U.S. Bureau of Economic Analysis (BEA).[9] GDP of an industry is the value of an industry's output minus the value of goods and services (the output of other industries) the industry used in producing its output.

We used the construction employment and GDP deflator forecasts published by the State of Oregon's Department of Economic Analysis June 2014.[10] The GDP deflator is a measure of national inflation. The effects of inflation are reflected in this report's forecast.

Economic Impact Model

ECONorthwest has measured economic impacts using the economic impact modeling software IMPLAN, with 2012 data for the state of Oregon. IMPLAN is widely respected and used by over 1,500 public and private agencies. The model employed uses U.S. Census and other economic data collected from Oregon businesses and households.

The advantage of IMPLAN, and the reason why ECONorthwest uses it for this study, is that it can count all the subsequent rounds of spending and labor income effects that originate from the initial production. IMPLAN has economic data that allow us to track how much spending and employment stays in the state as well as the negative effects of savings and taxes on spending impacts. Thus, the model and results in this report show just the economic impacts of spending that occur in Oregon.

Assumptions

ECONorthwest forecasted the GDP of construction in Oregon using the Oregon State economic forecast. We then determined how much QREs occur per million dollars of construction GDP in states with no HRI (current situation of Oregon) and states with 20 percent or higher HRIs (as proposed by Restore Oregon). The ratios of QRE to GDP are directly calculated from all 720 federal HTC projects nationally in 2012.

The analysis by ECONorthwest uses several other key assumptions regarding the application of state tax credits:

[8]Oakman, J. and Ward, M. "Leveraging federal economic development resources with state historic rehab tax credits." Proceedings of the National Tax Association 105th Annual Conference on Taxation. January 31, 2013.
[9]http://www.bea.gov/iTable accessed August 8, 2014.
[10]Accessed September 2, 2014 at http://www.oregon.gov/DAS/oea/Pages/revenue.aspx

1. ECONorthwest assumes that the ratio of federally qualified rehabilitation work to total construction GDP in Oregon will average what the historical national data show. We forecast rehabilitation spending under the proposed credit using the national ratio for states with credits of 20 percent or more. We forecast the no-HRI case using the ratio for states without an HRI.

2. QRE are 83 percent of the total cost of construction done when rehabilitating buildings (same assumption used by the National Park Service).

3. For this study, total development spending (direct output) is split between construction and professional services (architects, engineering, and designers). We assume professional service output equals 16 percent of the total cost of construction.[11]

4. The difference between the total cost of construction and the state and federal tax credits is the amount of private investment for building rehabilitation.

5. Forty percent the private rehabilitation investment is net new spending in the state economy (that is either paid from savings or from diverting out-of-state spending to projects in Oregon).

Definitions of Terms

In economic impact studies, total impacts include the value and work done directly for a project and all subsequent impacts that result. Thus, total impacts include jobs, output, and income indirectly related to the original construction project even if they are many steps removed from it.

Qualified rehabilitation expense is the money spent on building construction and professional services that the IRS bases the federal HTC. As noted in the assumptions, QREs average 83 percent of **total development spending**. The total development cost is the amount spent on the entire construction project and include components not attached to the building, such as sidewalks and landscaping.

Impact studies measure employment in terms of **full year equivalent jobs**. One job equals twelve person-months of work.

Labor income, as reported in IMPLAN, equals the sum of wages, salaries, self-employment earnings, and benefits.

In economic impact analysis, **output** is the value of production sold due to a project. **GDP** is the net value of production added to Oregon. The difference between these is output sold from one industry in Oregon to another. GDP is a net number. For example, the GDP of construction is its output (value of the construction done) minus purchases of output from other industries, such as lumber mills, used in construction.

State and local taxes and fees are reported by IMPLAN. In Oregon, these are largely business and personal income taxes plus various construction related fees. But it also includes other government revenue sources, such as motor fuel taxes, utility franchise fees, and vehicle registrations.

IMPLAN measures one-year economic impacts. Some effects of the proposed state HRI are ongoing and forecast separately from IMPLAN. An important impact is **property tax**, which appears in Table 3. ECONorthwest calculated the property taxes that finished rehabilitation work generates.

Whiteside Theater Marquee, Corvallis.

[11] This ratio comes from the RS Means construction cost estimator. See www.rsmeans.com.

FINDINGS

ECONorthwest forecast gross and net direct output using the methodologies, data, and assumptions described in this report. A description of how we calculate net output, or more specifically net direct spending, is found in the Methodology section. Our findings for the full forecast period can be found on Table 1, on the following page.

Total development spending on rehabilitation projects financed in part by the state HRI is forecast to be $92.3 million in 2016. This rises as program awareness widens and the economy grows. In 2025, total development spending is $123.1 million. These are gross impacts, as some of the money spent on development comes from within Oregon's economy.

Net direct development spending comes from dollars that are net new to Oregon's economy. In 2016, we forecast $32.0 million in net new direct output. This rises to $43.5 million in 2025.

The forecast of net direct development spending is the net direct output applied to the IMPLAN model, which forecasts overall economic impacts and jobs statewide. Since, by their very nature, economic models forecast averages and not the peaks and troughs of cycles, we expect a wide and unpredictable variance around the forecast averages (see caveat on Page 21).

Empty upper floors and shuttered storefronts present opportunity in Chinatown, Portland.

Tax Credit and Project Forecast

ECONorthwest forecast the cost of the HRI to state government by estimating the QREs of projects and excluding amounts in excess of $8 million for large projects. The project cap reduces the state cost by about half. Although projects in excess of $8 million represent about one-in-eight, their total cost is high.

We forecast the number of projects in Oregon under the HRI using the analysis of National Park Service data. We project 15 projects receiving federal HTCs in 2016, rising to 20 in 2025. Including small projects not availing themselves to the federal program, the number of projects rises from 26 in 2016 to 41 ten years later. Historically, Oregon has averaged about 6½ federal HTC projects annually.

Statewide Gross and Net Economic Impacts

ECONorthwest ran its economic impact model for Oregon using the direct output forecasts shown on Table 1. Although the source data for the model is from 2012, the forecasts reflect the effects of inflation over time and higher construction GDP, as illustrated in Figure 1. ECONorthwest ran the impact analysis using

Table 1: Forecast of Gross and Net Output, QREs Applicable to State An HRIs, and Total Number of Projects, 2016

Output Calculations (Millions $)	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Oregon GDP of construction	$8,301	$8,691	$9,003	$9,250	$9,501	$9,741	$9,960	$10,242	$10,515	$10,796
Gross direct output due to a state HRI:										
Rehab using federal HTC if no state HRI	$20.6	$21.6	$22.3	$23.0	$23.6	$24.2	$24.7	$25.4	$26.1	$26.8
Increased federal HTC rehab due to a state HRI	70.7	74.5	78.4	80.6	82.8	84.9	86.8	89.2	91.6	94.1
Small projects using state but not federal credits	1.0	1.3	1.8	1.9	1.9	2.0	2.0	2.0	2.1	2.2
Gross direct output	**$92.3**	**$97.4**	**$102.6**	**$105.5**	**$108.3**	**$111.0**	**$113.5**	**$116.7**	**$119.8**	**$123.1**
Net direct output due to a state HRI:										
Increase in federal HTC money spent	$11.9	$12.6	$13.3	$13.7	$14.1	$14.4	$14.7	$15.2	$15.6	$16.0
Plus private spending & savings diverted to Oregon	20.1	21.3	22.5	23.4	24.0	24.6	25.1	25.8	26.5	27.5
Net direct output	**$32.0**	**$33.9**	**$35.8**	**$37.1**	**$38.0**	**$39.0**	**$39.9**	**$41.0**	**$42.1**	**$43.5**
Alternative calculation of net direct output:										
Gross direct output	$92.3	$97.4	$102.6	$105.5	$108.3	$111.0	$113.5	$116.7	$119.8	$123.1
(Less) rehab using federal HTC if no state HRI	(20.6)	(21.6)	(22.3)	(23.0)	(23.6)	(24.2)	(24.7)	(25.4)	(26.1)	(26.8)
(Less) cost of an HRI to the state government	(9.6)	(9.8)	(10.6)	(10.4)	(10.7)	(11.0)	(11.2)	(11.5)	(11.9)	(11.5)
(Less) private spending & savings diverted from Oregon	(30.1)	(32.0)	(33.8)	(35.0)	(36.0)	(36.9)	(37.7)	(38.8)	(39.8)	(41.3)
Net direct spending change due to the RTC	**$32.0**	**$33.9**	**$35.8**	**$37.1**	**$38.0**	**$39.0**	**$39.9**	**$41.0**	**$42.1**	**$43.5**
QREs eligible for state HRI:										
Gross total QREs	$76.6	$80.8	$85.1	$87.5	$89.9	$92.1	$94.2	$96.9	$99.4	$102.2
Amount ineligible due to project size (over $8 Million)	(38.4)	(41.5)	(42.5)	(45.9)	(47.0)	(48.2)	(49.4)	(50.7)	(52.0)	(56.0)
QREs applicable to state HRI	$38.2	$39.3	$42.6	$41.6	$42.9	$43.9	$44.8	$46.1	$47.4	$46.2
Number of projects using the state HRI:										
Over $1 million in QREs	8	8	8	8	8	9	9	9	9	9
Under $1 million and using the federal HTC	7	8	11	11	11	11	11	11	11	11
Projects too small for the federal HTC	11	14	19	20	20	20	20	20	20	21
Total projects	**26**	**30**	**38**	**39**	**39**	**40**	**40**	**40**	**40**	**41**

Source: ECONorthwest.

the tax rates and caps proposed by Restore Oregon. These are constant values over time.

Table 2 shows the total economic impacts of the state HRI. They are the sum of the direct impacts (work directly done on historic rehabilitation projects) and the indirect and induced impacts. Dollar impacts are in millions. Job impacts are in full year equivalents. Thus, a job is equal to employment for one over twelve months in a year. Jobs can be full-time, part-time, or self-employed positions.

With the 25 percent HRI and at the predicted levels of use shown on Table 1, $170.0 million in economic activity in 2016 would be linked to the HRI and this will increase to $226.6 million in 2025. In terms of GDP, the impact will grow from $86.7 million to $115.7 million over those years. Most of the GDP will appear as labor income, rising from $65.7 to $87.7 million. State and local governments will see $5.9 million in revenues in 2016, rising to $7.9 million in 2025 from active construction each year. A total of 1,232 jobs in 2016 would be linked to having an HRI in Oregon. In 2025, 1,643 jobs would.

On a net basis, relevant because it forecasts an overall improvement in economic activity, the HRI raises output by $58.9 million in 2016. This grows to $80.1 million in 2025. The GDP is higher by $30.1 million in 2016 and $40.9 million in 2025. The net increase in jobs rises from 428 to 581 over the same period.

There are also net fiscal impacts. State and local government revenues from active construction, on a net basis, will range from $2.1 to $2.8 million. Government will also see higher property tax receipts, which are not included in the IMPLAN results on Table 2, from the investments in building rehabilitation. Such work enhances the value of structures put in place and a large portion of that is subject to property taxation.

These picturesque storefronts in Jacksonville could collapse in a major earthquake. The proposed rehabilitation incentive could be used for seismic upgrades.

Neighboring properties may also increase in taxable value. In addition, the restored buildings become places of work and those employed become taxpayers.

OTHER ECONOMIC EFFECTS

Besides economic spending impacts, restoring historic buildings has other effects. Several research studies claim halo effects, which is the improvement in values of properties neighboring restored historic buildings. Another is the increase in property taxes resulting from the direct investment in restoring buildings. And

Table 2: Total Gross and Net Economic Impacts from Implementing a State 25 percent HRI in Oregon, 2016 – 2025

Total Economic Impacts	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Gross Impacts:										
Output ($M)	$170.0	$179.3	$188.8	$194.2	$199.4	$204.4	$209.0	$214.9	$220.6	$226.6
GDP ($M)	86.7	91.5	96.4	99.1	101.8	104.3	106.7	109.7	112.6	115.7
State/local taxes & fees ($M)*	5.9	6.2	6.6	6.8	6.9	7.1	7.3	7.5	7.7	7.9
Labor income ($M)	65.7	69.3	73.0	75.1	77.1	79.1	80.8	83.1	85.3	87.7
Jobs (full year equivalent)	1,232	1,299	1,369	1,408	1,446	1,482	1,515	1,557	1,599	1,643
Net Impacts:										
Output ($M)	$58.9	$62.5	$66.0	$68.2	$70.0	$71.8	$73.4	$75.5	$77.5	$80.1
GDP ($M)	30.1	31.9	33.7	34.8	35.7	36.6	37.5	38.5	39.5	40.9
State/local taxes & fees ($M)*	2.1	2.2	2.3	2.4	2.4	2.5	2.6	2.6	2.7	2.8
Labor income ($M)	22.8	24.2	25.5	26.4	27.1	27.8	28.4	29.2	30.0	31.0
Jobs (full year equivalent)	428	453	478	495	507	521	532	547	561	581

**IMPLAN reports state and local taxes and fees arising from the construction work done rehabilitating historic buildings each year, but not property taxes due to rehabilitation, as those occur in future years. ECONorthwest estimated future property taxes in Table 3.*

Source: ECONorthwest.

since restorations are motivated primarily by expected revenues from businesses occupants, there are the jobs contained in the rehabilitated buildings, which may be construed as beneficial, especially in otherwise underperforming downtowns.

Halo Effect

A widely cited benefit of historic building restoration is the halo effect. That is, by converting an otherwise unused or deteriorated historic building into an attractive, actively-occupied structure, neighboring buildings benefit. In a sense, this creates a halo around the restored building, making the area more desirable. Economists measure this using a method called "hedonic" analysis. It compares changes in the market prices of buildings to see if proximity to a restored historic building has a positive effect.

Hedonic analysis is challenging and costly. ECONorthwest did not perform one for this report, but we did review the economic literature and found most studies citing increases in neighboring properties from having historic buildings rehabilitated. We found studies focus on housing, not commercial buildings because accurate assessments of market value effects require large numbers of transactions of similar building types. In most communities, there are ample housing sales data but commercial building transactions are few in number and similarity.

Most research on the halo effect of housing shows a positive impact on neighboring properties. One of the better papers on the halo effect, for example, states, "The results suggest that a house's value is increased by 3.8 percent by having a historical house within 250 ft. and by 1.6 percent by having a historical home located between 250 and 500 ft. away."[12]

Property Tax Effect

Renovating buildings raises their market values. Assessors base property taxes on those values. ECONorthwest estimated the effect of the Oregon HRI on property taxes. This was done by determining the net change in total rehabilitation work assuming the HRI is in effect and subtracting the amount of such spending that would have occurred without there being an HRI. Adjustments were made for inflation and increases are cumulative, as buildings are long-lived assets.

In Table 3, we used an assessed-to-real market value ratio of 78.4 percent and that 21.7 percent of the real estate would be exempt (government-owned, social welfare, or other exemption). The average statewide property tax rate is $16.30 per $1,000 on taxable assessed values. These assumptions are drawn from state property tax statistics for 2013.[13]

We find that property taxes would be $0.7 million higher in 2016 because of the state HRI and that this will increase to $9.0 million by the year 2025.

Table 3: Net Increased Real Market Value and Property Tax Assessments on Restored Buildings, 2016 – 2025, Million $

Value and Property Taxes - Million $	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Cumulative real market value	$71.7	$148.7	$231.6	$318.1	$408.3	$502.3	$600.0	$702.3	$808.5	$919.1
Estimated property tax*	0.7	1.5	2.3	3.1	4.0	4.9	5.9	6.9	8.0	9.0

**Assume a 78.4 percent taxable assessed to real market value ratio with 21.7 percent of property value exempt from property taxes.*

Source: ECONorthwest.

[12]Narwold, A. and Sandy, J. "Historic designation and residential property values." International Real Estate Review. 2008. Vol. 11, pages 83-95.
[13]Oregon Property Tax Statistics. Fiscal year 2013-14. Page 3 and tables 1.5 and 1.7.

Jobs Contained in Buildings

One effect of renovating historic buildings is that it often brings them back into use for commercial purposes. ECONorthwest estimated the number of jobs in buildings that would be renovated should an HRI be enacted in Oregon. The forecast is based on proprietary employment and building stock data.

As shown in Table 4, our analysis forecasts employment in buildings benefitting from historic rehabilitative tax credits between 2016 and 2025, eventually growing to 12,378. This is the expected employment in the buildings given the cumulative amount of rehabilitation spending, normal vacancy rates, and ECONorthwest-calculated employment densities. These densities vary from 262 square feet per job in offices to 22,318 square feet for multifamily buildings (the employees being building maintenance, apartment leasing agents, and the like).

Jobs contained in restored buildings are not necessarily net increases in employment for Oregon because job locations are mobile. A business moves into a historic building not at the exclusion of employing anyone at all, but rather the alternative of moving into a modern vacant building elsewhere in the community. However, since historic buildings typically are in downtowns, improving them so that they can house jobs makes use of central locations and existing infrastructure. Thus, many of the jobs shown on Table 4 will have the effect of improving the vibrancy of historic downtowns.

CONCLUSION

ECONorthwest analyzed hard economic data originating from federal government sources and primarily from the IRS. Our analysis was rigorous and unbiased. Although, clearly in gross impact terms construction spending results in many jobs, we were initially skeptical that the HRI would support job growth in net impact terms. However, the analysis demonstrates, and by a substantial margin, that indeed the proposed HRI would result in Oregon having more employment, higher payrolls, and greater net economic output. The HRI would be clearly a net plus for the economy and, as designed, the traditional main streets of towns throughout the state would capture many of those impacts.

Empty storefront with potential upper story apartments awaits restoration in Klamath Falls.

Table 4: Employment Contained in Rehabilitated Buildings, 2016 – 2025

Jobs Contained in Rehab Buildings	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Total Employees	1,136	2,315	3,536	4,769	6,014	7,268	8,528	9,800	11,083	12,378

Source: ECONorthwest.

Appendix

METHODOLOGY

Any comparisons between states require consideration for differences in the size of states construction spending.

This analysis also used descriptions of state HRI programs as reported by the National Trust for Historic Preservation.[14] In some cases, ECONorthwest went to state websites to verify reported tax credit levels or dates they were enacted.

ECONorthwest based its forecast of construction in Oregon on the long-term forecast of construction employment and the GDP price deflator from the June 2014 state economic forecast published by the state Office of Economic Analysis.[15] The state forecast extends to 2024. ECONorthwest extended that by one year to 2025, so that a forecast for the Oregon HRI matched the ten-year period proposed by Restore Oregon. The data were extended by simple application of the 2023-24 year growth rate to 2025.

Analytical Steps

In the first step of its analysis, ECONorthwest compared the total QREs on federally approved historic rehabilitation projects in states with HRIs of 20 percent or more to expenditures in states without any HRIs. ECONorthwest divided these two totals by the aggregate GDP of all construction in each set of states. The GDP of construction is a measure of construction activity. From this we found the ratios of QREs to construction GDP.

ECONorthwest did the calculations for 2012, the last year for which a full set of data was available. Importantly, ECONorthwest had access to useable descriptions of existing state HRI programs that were consistent through that calendar year. Such data were unavailable for all but 2007. This precluded an assemblage of a time series (i.e., set of observations taken over time that allows economists to see cause and effect relationships).[16] Although a time series analysis was preferable, the QRE to GDP ratios for 2012 were similar to those of 2007.

The second step of analysis was the forecast of Oregon construction GDP. ECONorthwest calculated the ten-year average ratio of real construction GDP to construction employment in Oregon (2004–2013). Assuming this continues, ECONorthwest applied the ratio to the state's forecast of construction employment and the GDP price deflator so to forecast the Oregon GDP of the construction sector in current dollars.

ECONorthwest multiplied the observed ratios to the GDP forecast, yielding two projections. The first, using the ratio of states with no tax credits, gave us a forecast of how much QREs would occur in Oregon if an HRI is not present. The second uses the ratio of states with HRIs of 20 percent or more. The result is a forecast of total QREs in Oregon if the state were to have a 25 percent HRI.

The proposal has a $2 million tax credit cap (equal to $8 million in QREs). The cap is not inflation adjusted, so over time the number of projects affected increases. Using the National Park Service data on all projects nationally and adjusting the reported QREs for inflation, ECONorthwest estimated how many Oregon projects each year from 2016 to 2025 would exceed the $8 million QRE cap and by how much.

The forecast shows that in 2016, about 11.8 percent of all federally approved projects will incur over $8 million in QREs and do so by an average of $18.1 million. By 2025, 13.5 percent will exceed the cap by an average $19.8 million each. This cap favors smaller projects and limits the total amount of state incentives applied. Between 2001 and 2013, nineteen of the 86 projects in Oregon that used federal HTCs exceeded $8 million in qualified expenses and would have been unable to take the full 25 percent state HRI had one been available.

"Minor projects" are those in Oregon that are too small to qualify for the federal HTC, but would use the state HRI. Our analysis assumes the number of minor projects will equal the number of federal HTC projects, albeit with a low QRE of $75,000 on average (in 2016) per project. We forecast this rising with inflation. We also assume a ramp-up in the number of minor projects, at 60 percent of federal projects in 2016, 75 percent in 2017, and 100 percent thereafter.

"Small projects" are those using the federal HTC, but with QREs under one million dollars. They too are expected to ramp up at 60 percent, 75 percent, and 100 percent over the first three years of the program. Restore Oregon expects a ramp-up because building owners of small projects have less knowledge about historic rehabilitation programs. The ramp-up reflects outreach and education efforts by Restore Oregon and the State Historic Preservation Office.

ECONorthwest forecast the number of small projects in Oregon based on the National Park Service database of all projects (2012-13) nationally. From that, ECONorthwest forecasts that 58.7 percent of federally approved projects will spend less than $1 million on qualified rehabilitation in 2016. This falls to 55.6 percent by 2025 because inflation pushes more projects over the upper boundary.

As stated earlier, ECONorthwest built an IMPLAN model for Oregon. We calculated the direct output (i.e., spending) for each of the ten years, 2016 – 2025. Direct output is the total cost of rehabilitation construction

[14]http://www.preservationnation.org/take-action/advocacy-center/additional-resources/historic-tax-credit-maps/state-rehabilitation-tax.html accessed August 12, 2014.
[15]http://www.oregon.gov/DAS/OEA/pages/economic.aspx#most_recent_forecast accessed August 15, 2014.
[16]ECONorthwest was able to calculate QRE to construction GDP ratios for 2007 and the results were similar to those reported here for 2012.

projects above what they would be without an HRI. The results of running this data through the IMPLAN model are the total gross economic impacts of instituting the Oregon HRI.

ECONorthwest also ran the net direct spending through the IMPLAN model, which yielded the total net economic impacts of the Oregon HRI. The initial steps, however, are the calculations of construction spending in Oregon and the proportion of spending that would be for projects under the state HRI. The calculations of these are explained below:

CALCULATIONS OF MODEL INPUTS

Before running the IMPLAN model, ECONorthwest first calculated the gross and net direct output. For that, we measured the historic effect of state HRIs has on historic building rehabilitation spending. We also forecast total state construction output.

Ratio Calculation

A critical input into this analysis is the ratio of QREs to total construction GDP by state. The ratio determines how ECONorthwest forecast the amount of rehabilitation spending in Oregon with and without an HRI. Using 2012 data, which is the last full set of data available to us, we sorted states according to their HRI programs.

ECONorthwest used 2012 National Trust for Historic Preservation data on the amount of rehabilitation construction by state under the federal HTC. We identified the 24 states that have statewide HRIs of 20 percent or more.[17] Their average HRI rate was 24 percent. We summed the total amount of rehabilitation construction for them. We did the same for 20 states that had no HRI in 2012. The result was a set of two numbers. They are total federal HTC construction in states with 20 percent or more HRIs and total federal HTC in states with no HRI.

Since the amount of rehabilitation construction activity in a state is a function of the total construction industry (i.e., large states naturally would have more projects), ECONorthwest divided the two numbers by the total construction, of all types, in each set of states. For this ECONorthwest used 2012 construction GDP data from the BEA for the 50 states and District of Columbia. Construction GDP is the value of construction output. That is approximately the same as the value of what is built minus the costs of fuels, materials, and services purchased from other industries used by the construction industry.

As shown in Table 5, the twenty states, including Oregon, that lacked any state HRI saw 87 rehabilitation projects totaling $559 million in qualified expenses, which equals 0.206 percent of all construction output in those states. The 24 states that had at least a 20 percent HRI had 544 projects with $2.127 billion in QREs. That is 0.929 percent of total construction in those states – more than a four-fold increase.

ECONorthwest used these findings in its forecast for Oregon. For the base case, where no HRI is instituted, we assume Oregon will average QRE spending on historic buildings receiving federal HTCs equal to 0.206 percent of Oregon's construction GDP. For the case where Oregon does have a 25 percent incentive, we assume QREs will be 0.929 percent of construction output with two small modifications. As noted in assumptions, we include a two-year ramp up period for projects under a million and a small number of minor projects receiving state credits, but too small for the federal HTC.

State Construction GDP Forecast

ECONorthwest ran its construction forecast off of the State of Oregon's official forecast. Specifically, we used the state forecast of construction employment. We compared the ratio of real (inflation adjusted) construction GDP in Oregon to state construction employment and assumed that ratio would apply for the ten-year forecast. We then put inflation back in, using the same official state economic forecast, to arrive at a forecast of Oregon construction industry output. Figure 1 is an illustration of the forecast.

Gross and Net Direct Output

ECONorthwest ran IMPLAN using gross output and net output. Gross direct output is the increase in total development spending in Oregon if Oregon has a 25 percent HRI. Net direct output is the portion of total development spending that is both a net increase due to the HRI and is paid for from sources outside of Oregon.

Table 6 is an example of how ECONorthwest calculates gross and net direct output. It uses 2018 because this is the first forecast year that the HRI is fully implements and adopted in small projects.

CAVEATS

Value of an Economic Impact Analysis

Although widely reported, economic impact analysis is often misunderstood. Economic impact studies measure spending effects from the point of the initial

[17]In 2012 the following states had statewide HRIs of 20 percent or more: Arkansas, Colorado, Connecticut, Delaware, Georgia, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Massachusetts, Minnesota, Missouri, New Mexico, North Carolina, North Dakota, Ohio, Oklahoma, Pennsylvania, Utah, Virginia, and Wisconsin.

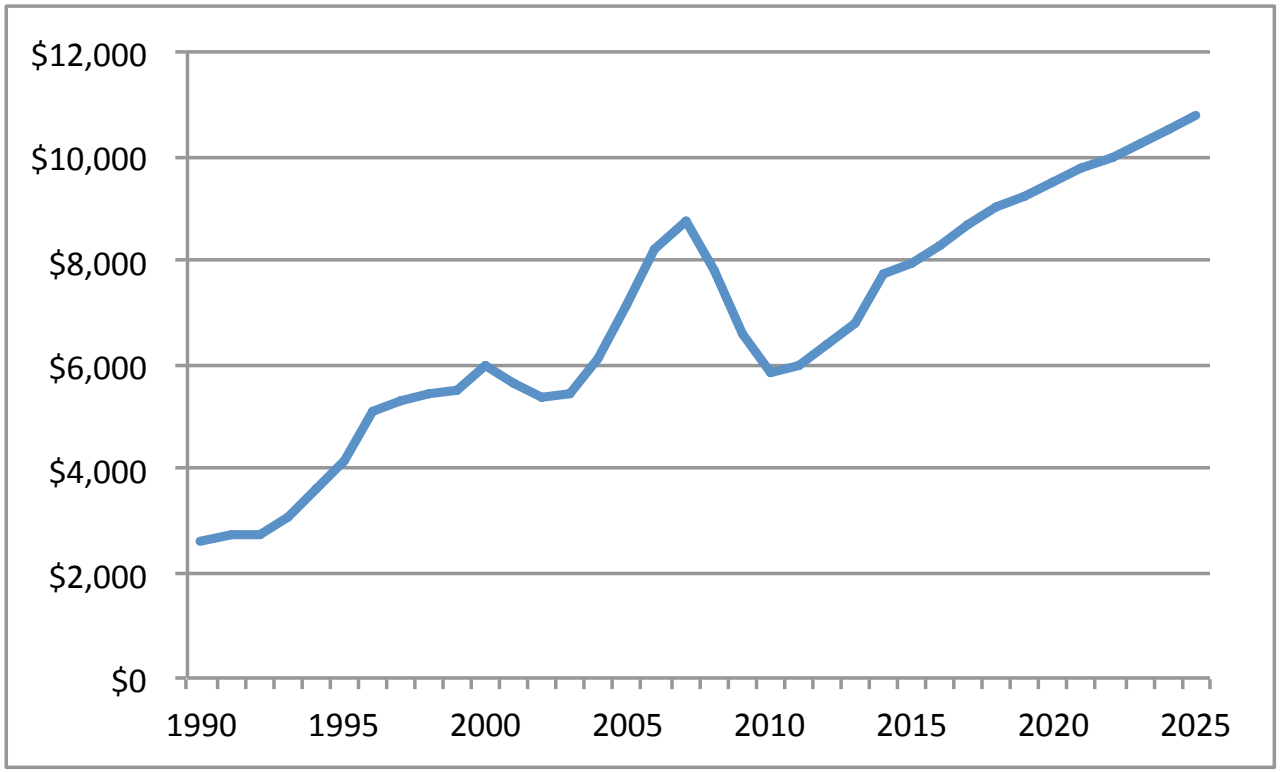
Table 5: Ratio of Federal HTC Rehabilitation Spending to Total Construction by State According to Status of HRI Programs, 2012

2012 Federal HTC Rehabilitation Activity	No State HRI	Low HRI (5%-10%)	20%+ State HRI	Total
Number of states	20	7	24	51
Total rehabilitation projects	87	89	544	720
Total QRE ($ million)	$559	$453	$2,127	$3,139
State GDP, construction ($ million)	271,433	80,770	228,870	581,073
QRE as % of construction GDP	0.206%	0.561%	0.929%	0.540%

Sources: Technical Preservation Services Department of the U.S. National Park Service, BEA, and calculations by ECONorthwest.

Note: District of Columbia is included in the BEA data as a state.

Figure 1: Oregon GDP of the Construction Sector, Millions $



Sources: BEA, Oregon Office of Economic Analysis, and ECONorthwest

spending (direct impacts) up through the chain of suppliers of goods and services (indirect impacts), as well as subsequent spending by households (induced impacts). These are "supply-chain" effects. But those are not the only impacts a proposal may have on an economy.

By its very nature, economic impact analysis does not tell you how much better off the economy is with that initial spending than without. Nor does it say include downstream impacts, such as on those benefiting from whatever was built, like the businesses and households that would occupy the building or who would work or shop there.

Importantly, economic impacts are spending impacts, not measures of benefits. And not all spending impacts are benefits. Some are costs. For example, a teenager going down a street at night breaking car windows causes large economic impacts because all the car owners have to spend money replacing their windows. The window companies make greater sales, the tow-truck drivers get more work hours, and the glass installers have more jobs. If the teenager breaks even more windows, you get even higher economic impacts. But there is no benefit. Indeed, not all spending is productive, efficient, wise, or positive.

That being said, as long as there is a recognized improvement to the overall economy from a policy, in this case offering a state HRI, net economic impacts are positive and relevant. And in the context of Restore Oregon's questions, knowing the net economic impacts of an HRI is especially important.

An economic impact study tells how much work (jobs) arises from spending caused from having an HRI. An impact analysis works through the complex math and measures the statewide increases in sales, wages, incomes, and taxes. Critical for a state policymaker is whether or not those impacts are better than

Table 6: Calculations of Gross and Net Direct Development Spending Due to a State HRI, 2018

Gross and Net Direct Calculations	Million $ in 2018
Gross direct output (total development spending):	
Rehab construction using federal HTC if no state HRI	$22.3
Increased federal HTC rehab spending due to state HRI	78.4
Small rehab projects using a state HRI, but not federal HTC	1.8
Gross total development spending with a state HRI	$102.6
Net direct output (total development spending):	
Increases in out-of-state money sources approach:	
Increase in federal HTC money spent due to a state HRI	$13.3
Plus private spending & savings diverted into Oregon	22.5
Net direct spending change due to the HRI	$35.8
In-state spending changes approach:	
Gross total development spending with a state HRI	$102.6
(Less) total rehab that would have happened without an HRI	(22.3)
(Less) cost of an HRI to the state government	(10.6)
(Less) private spending diverted from elsewhere in Oregon	(33.8)
Net direct spending change due to the HRI	$35.8

Source: ECONorthwest.

what otherwise would occur. In other words, are there net economic impacts? ECONorthwest conducted its research with that question in mind, and found that there are indeed positive net economic impacts from having an HRI like the one proposed by Restore Oregon.

Volatility

At the state level, the records of historic rehabilitation projects are lumpy. That is, there are relatively few projects in any one year, especially compared to the thousands of construction projects we see, and some rehabilitation projects are much more costly than others.

For consideration: according to the National Park Service, 86 projects received federal HTCs between 2001 and 2013 in Oregon. The eight most expensive projects accounted for over half the total QREs incurred in Oregon. One year there was just one project and in another, 16. There were two years with less than a million dollars in total QREs. In five, total QREs exceeded $50 million. The average change from one year to the next was plus-or-minus $46 million.

The lumpy quality of the data does matter. Economic forecasts, by their very purpose, forecast the most probable outcomes, which are averages. When forecasting a volatile series, like historic rehabilitation spending in Oregon, the actual outcomes will vary considerably around the forecast. That is because of the lumpy character of the data, policymakers must expect considerable volatility.

Gross direct output is total spending in Oregon on rehabilitation projects using the state HRI. The calculation begins with the $22.3 million that would be spent anyway in Oregon on federal HTC rehab projects, even if there were no state HRI. We add to that the increase in federal HTC rehab spending that Oregon would attract if it has an HRI in 2018. That is an additional $78.4 million. Finally, owners of projects that do not qualify for the federal credits will use the state HRI and spend about $1.8 million on them. The sum is the gross output of $102.6 million.[18]

Facade restoration in Astoria's historic downtown.

Net direct impacts are the shares of gross spending that is net new to Oregon's economy. There are two ways to calculate it and both arrive at the same number. The simpler method is to estimate how much additional federal HTC money would be spent because the state HRI makes more historical rehabilitation projects feasible, and add to it the net increase in private spending done in Oregon as a result.

Our analysis estimates that building owners in Oregon will apply for and spend $13.3 million in additional federal HTCs. Add to that the amount of additional spending private building owners and developers will spend in Oregon due to more projects becoming feasible. As assumed, 40 percent of the increased private spending will come from one of two sources. They are diversions from spending that would have gone out-of-state, but are attracted back to Oregon because the HRI makes work in Oregon more feasible. The other source is private money that is pulled from savings and invested in rehabilitation. This is estimated at $22.5 million in 2018.

Thus the net direct impact is $35.8 million. Out of the entire $102.6 million in rehabilitation spending using the state HRI during 2018, the net direct impact is slightly more than a third of that. This is money building owners will spend in Oregon that otherwise would not have been spent in the state but for the availability of an HRI.

Table 6 shows an alternative calculation, where we deduct dollars from in-state sources from the gross total. In-state sources are the state tax credit, private spending that would have been spent in Oregon anyway even if the HRI were not in place, and rehabilitation work that would have occurred even if Oregon did not have an HRI in 2018. The result of both methods is the same. Net direct output impact is $35.8 million.

Thus the net direct impact is $35.8 million. Out of the entire $102.6 million in rehabilitation spending using the state HRI during 2018, the net direct impact is slightly more than a third of that. This is money building owners will spend in Oregon that otherwise would not have been spent in the state but for the availability of an HRI.

Construction on Furman Hall, Oregon State University.

[18]The calculation is complex. It begins by multiplying the 2018 forecast for construction GDP in Oregon, which for 2018 is about $9.0 billion by 0.206 percent. The latter is the 2012 QRE to construction GDP ratio of states with no HRI. This comes from Table 5. The result of the multiplication is $18.6 million. That is the amount of QREs on projects receiving federal HTCs in Oregon in 2018 if the state does not have an HRI. We convert that into total development spending by dividing by 0.83, the share of rehab construction spending that is qualified (one of the key assumptions). The result is $22.3 million. If Oregon has a 25 percent HRI, the QRE to GDP ratio would be 3.51 times higher (0.929 versus 0.206 percent), so total development spending would go up by $78.4 million. We add too that about $1.8 million in qualified rehabilitation spending, resulting from the state HRI, but on projects too small to qualify for federal credits. This is 19 projects (the same number as receiving federal HTCs and based on the 2012 analysis on Table 5) times $75,000 in state QRE with adjustments for inflation and the 0.83 total to QRE assumption. The grand total is $102.6 million of rehab construction done in 2018 that uses federal credits and/or state credits.