

ECONOMIC IMPACT OF UNDOCUMENTED WORKERS  
IN OREGON COUNTIES WITH CONCENTRATED  
HISPANIC POPULATIONS

by

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A THESIS

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Continued federal and state policies aimed at reducing the livelihood of undocumented workers may force these populations to move to other locations. With the loss of undocumented workers and their families, Oregon can expect to see losses in population, employment, industrial production and state and local revenue. As undocumented populations are unevenly distributed across the state similarly to Hispanic populations, this study expects six counties, Hood River, Jefferson, Malheur, Marion, Morrow and Umatilla, will see more than an eight-percent population loss, double the expected state loss rate, and proportionally greater economic losses. By estimating the undocumented population in each of Oregon's 36 counties, this study further details potential economic losses in the six Oregon counties with concentrated Hispanic, and consequently, undocumented populations.

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## CHAPTER I

### INTRODUCTION

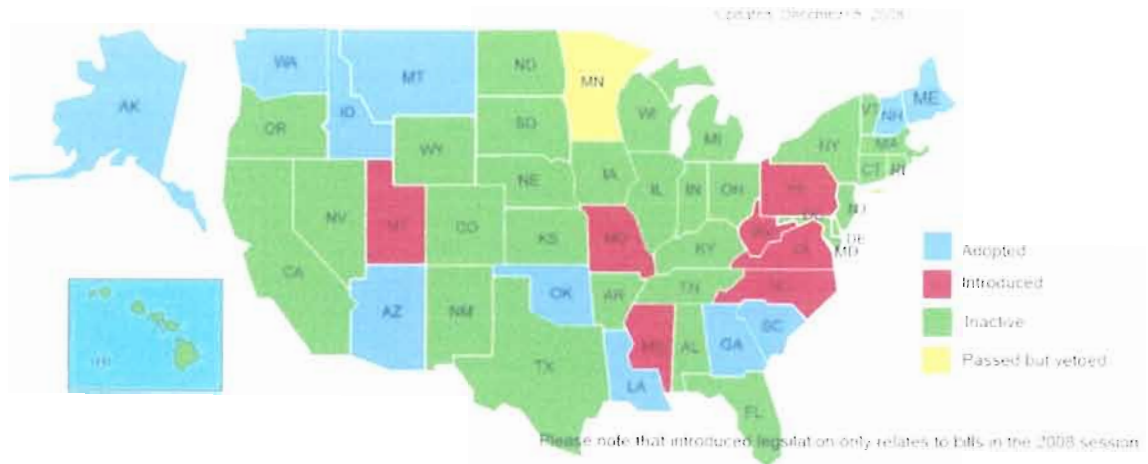
The federal REAL ID Act of 2005 became law in May 2005. It was enacted primarily as a means to combat terrorism in the United States. However, one provision of the Act “requires states to meet certain minimum security standards in order for the drivers’ licenses and personal identification cards they issue to be accepted for federal purposes” (Garcia, Lee and Tatelman, 2005, p. 3). The Act included provisions on how states issued driver licenses, but “if a state granted a certain category of individuals (i.e., aliens, legal or illegal) permission to obtain a license, nothing in the implementing regulations were to infringe on that state’s decision or its ability to enforce that decision” (pp. 43-44).

On February 06, 2008, the Oregon Senate passed Senate Bill 1080 requiring the proof of legal presence in the United States prior to the issuance of a driver’s license, instruction permits and identification cards (Oregon State Legislature, 2008). This bill, largely aimed at undocumented Hispanic immigrants, is an example of state government policy aimed at restricting the movement and working ability of migrant workers that are already part of the US and Oregon economy.

Other US states have also complied with the REAL ID Act. However, eleven states have passed binding legislation against it, including the neighboring states of Washington, Idaho and Montana (The American Association of Motor Vehicle Administrators, 2008). California and Nevada comply with the READ ID Act, but Hispanic populations in Oregon are more concentrated near the Washington and Idaho borders. Each of the latter states provides a less restrictive environment for undocumented immigrants. This will impact Oregon’s economy if undocumented workers and their families choose to locate to Washington or Idaho. See Map 1.1

below for the distribution of Anti-REAL ID Act legislation by state in 2008. States in blue have passed legislation against the REAL ID Act of 2005.

Map 1.1 Anti-REAL ID Legislation by State, 2008



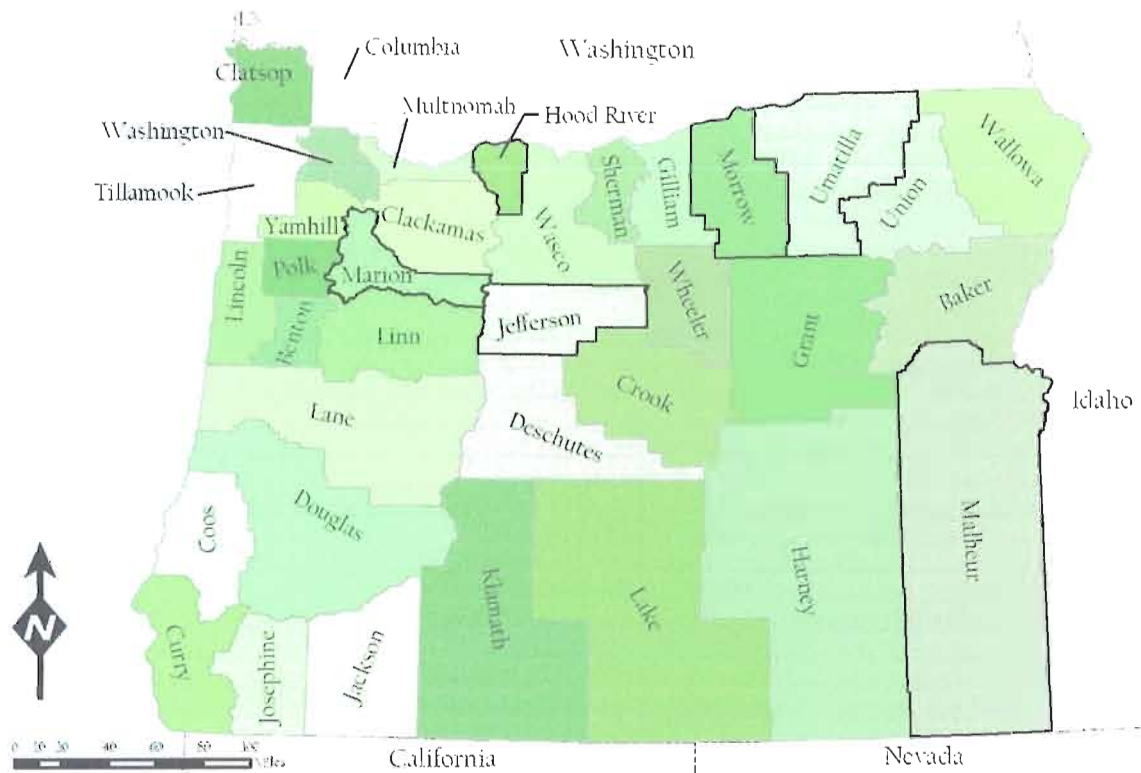
Source: The American Association of Motor Vehicle Administrators, 2008

In addition to restricting driver licenses, the federal “no-match” rule would potentially eliminate the ability of undocumented workers from retaining employment. Originally started as the “no-match” letter, “[the Social Security Administration] (SSA) sends a “no-match” letter when the names or Social Security numbers (SSNs) listed on an employer’s Form W-2 do not match SSA’s records. The letter’s purpose is to notify workers and employers of the discrepancy and to alert workers that they are not receiving proper credit for their earnings, which can affect future retirement or disability benefits administered by SSA (National Immigration Law Center, 2008). The “no-match” rule, “would have unlawfully used the error-ridden SSA database for immigration enforcement by requiring employers to fire workers who are unable to resolve discrepancies in their Social Security records (ACLU, 2009). The Department of Homeland Security rescinded the rule in July 2009 after a federal court blocked the rule in October 2007 and multiple organizations filed lawsuit, “charging that enforcement of the rule would put authorized workers at risk of losing their jobs and would cause discrimination against workers who look or sound ‘foreign’” (ACLU).

With the “no-match” rule, REAL ID Act and Oregon Senate Bill 1080, policies aimed at the undocumented population may force this population to leave the state. This study will take

prior studies, such as Jaeger's (2008) study on the "Potential Economic Impacts in Oregon of Implementing Proposed Department of Homeland Security "No Match" Immigration Rules" and disaggregate it to the Oregon county level. The study will first estimate the undocumented population in each Oregon county, then focus on four key industry sectors with high proportions of undocumented workers. If the entire undocumented population is forced to leave the state due to Oregon's laws, regulations and the access to work, the study expands to estimate total potential payroll and employment losses in six counties: Hood River, Jefferson, Malheur, Marion, Morrow and Umatilla. Refer to Map 1 below for the location of Oregon's counties; the six counties above have darker outlines. Lastly, a description of potential state and local revenue effects is considered.

Map 1.2 Location of Oregon Counties



Following the results of the study in Chapter IV will be an examination of the implications of policies aimed at undocumented populations. The implications of policy depend on federal and other states' policies, particularly if policies in neighboring states provide a more welcoming environment for undocumented workers. Less restrictive policies in Washington and Idaho, for

example, could potentially reduce Oregon's ability to remain competitive in several key industries. Lastly, the two remaining chapters detail limitations of the study with suggestions for future study, followed by the conclusion of the findings of this study.



## CHAPTER II

### REVIEW OF EXISTING DATA AND LITERATURE

#### A. Hispanic and Undocumented Populations

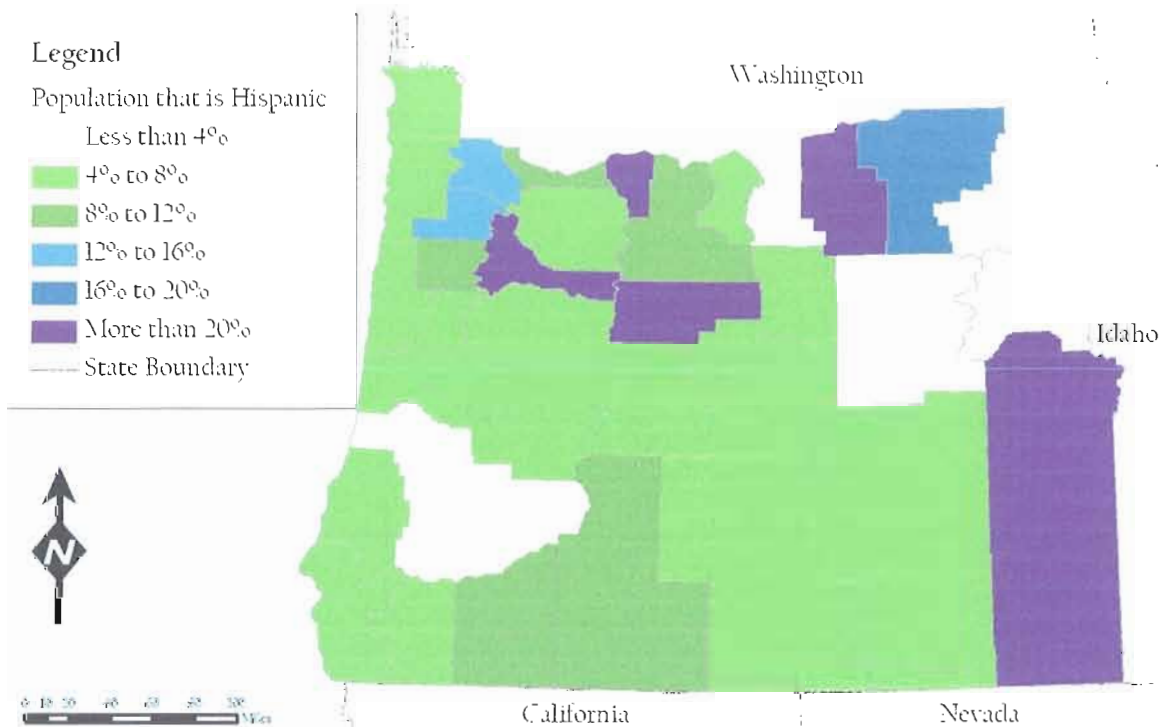
The undocumented population in Oregon is not merely a subset of the Hispanic population in Oregon. By definition, an undocumented person must be foreign-born. According to the 2000 US Census, Hispanics represented just 44% of the foreign-born population in Oregon. In the same year, 89% of the foreign-born Hispanic population was Mexican-born. Thus, the Hispanic immigrant experience is largely a Mexican immigrant experience. That stated, foreign-born Mexicans comprise over 73% of undocumented population in Oregon (Passel and Cohn, 2009, p. 22). This, in turn, suggests the undocumented immigrant experience is largely a Mexican undocumented immigrant experience. Of the remaining undocumented immigrants, their experience may not mirror that of undocumented Mexicans or Hispanics. According to Passel and Cohn (2008), “[the] unauthorized population is relatively small compared with the legal population, which leads to a large margin of sampling error” (p. 6). In reviewing existing data and literature, Hispanic and undocumented are not used interchangeably, but policies and issues affecting the undocumented affect a sizeable section of Oregon’s Hispanic population.

#### **Changing Demographics in Oregon:**

According to the 1990 Census, there were roughly 112,000 Hispanics in Oregon, representing just below 4% of the state’s population. By 2000, the number of Hispanics more than doubled in Oregon, up to 275,000. In the same year, Hispanics accounted for just over 8% of the state’s population. In 2007, according to the Pew Hispanic Center (2008), there were over 396,000 Hispanics in Oregon, or nearly 11% of the state’s population. Since 1990, Oregon has added an average 17,000 new Hispanics to the state population each year.

While the Hispanic Population in Oregon is increasing, the distribution of this population group is not even. Certain counties have a much higher concentration of Hispanics than the state as a whole. In four Oregon cities, Hispanics represent a majority of the population in the 2000 US Census: Nyssa in Malheur County, Gervais and Woodburn in Marion County and Boardman in Morrow County. Map 2.1 provides a spatial representation of the proportion of Hispanics by county in Oregon.

Map 2.1 Proportion of Total Population that is Hispanic in Oregon Counties, 2007



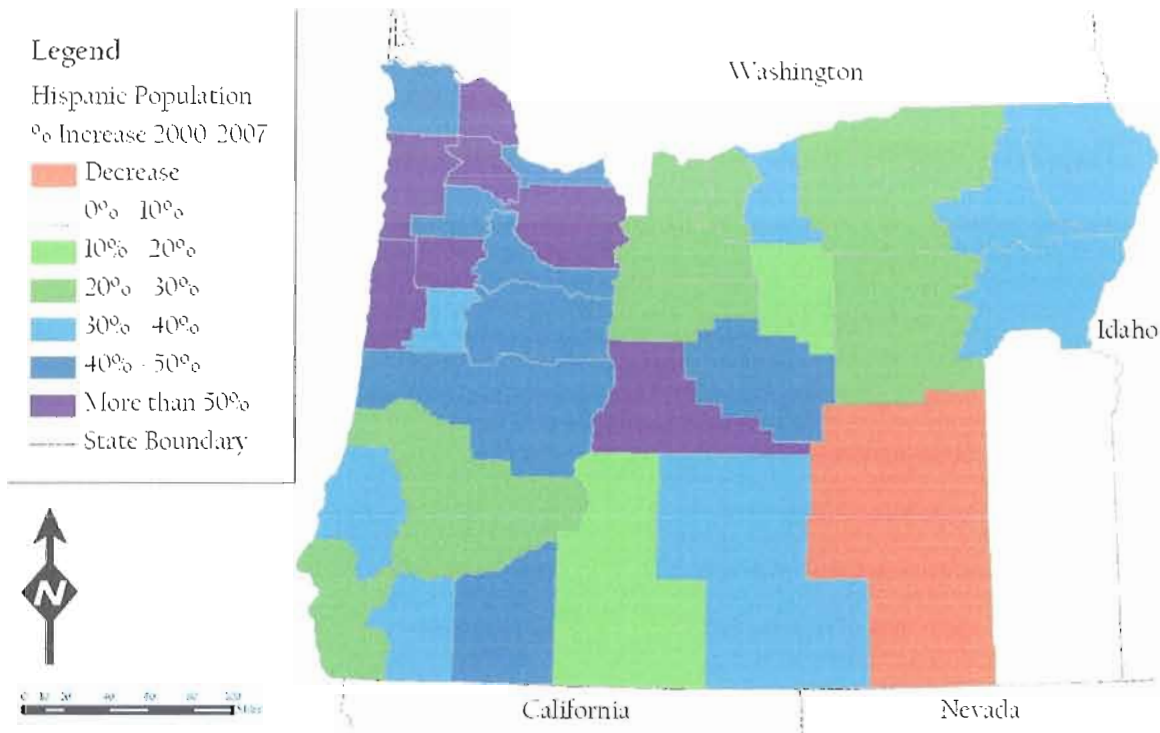
Source: Pew Hispanic Center, 2008

Examining the map, counties immediately to the south and west of Portland have higher concentrations, along with agricultural areas east of the Cascades. In five counties, Hood River, Jefferson, Malheur, Marion and Morrow, Hispanics make up more than one-fifth of the county's population in 2007. Umatilla County, at 19% Hispanic, is just shy of one-fifth of the population, but is also included in the detailed study.

Since 2000, 37% of the population growth in Oregon is Hispanic, an increase from 28% proportion of growth during the 1990s. Hispanics are representing an increasing proportion of Oregon's growth and are growing more rapidly in Oregon's metropolitan counties. Map 2.2

below provides the percentage growth in the Hispanic population in Oregon counties. Note that Northwestern Oregon (including Portland Metro) and Central Oregon (around Bend) have the highest percentage increases.

Map 2.2 Percentage Increase in Hispanic Population in Oregon Counties, 2000-2007



Source: Pew Hispanic Center, 2008

Of the Hispanic population in Oregon, the Pew Hispanic Center also found the following: (1) 46% of Oregon's Hispanic population is foreign-born, representing approximately 178,000 people in 2007, and (2) 83% of Oregon's Hispanic Population is of Mexican origin, representing approximately 324,000 people in 2007. According to the American Community Survey (2005-2007 Estimates), of the 379,000 estimated Hispanics in 2006, 318,000 (84%) identify as Mexican origin. Of the Mexican origin population, an estimated 153,000 are foreign-born (over 87% of the foreign-born Hispanic population of 175,000 in 2006). From these two different data sets, it is clear the foreign-born Hispanic population is overwhelmingly of Mexican origin.

### Hispanic and Undocumented Immigrants in the US:

Immigration policies have changed depending on the origin of the immigrant population. According to Hattery (2008), "Immigration policy...was a mechanism by which the US government could exercise some control over the changing racial/ethnic composition of the population." (p.103) Policies directed at controlling Latino immigration from Mexico, however, have not succeeded. As Golash-Boza and Parker (2008) point out, "Every time the US government has implemented a plan to deter immigration through enforcement, the efforts have been costly and ineffective." (p.110) The *Bracero Program*, intended to bring migrants to the US during World War II and in the post-war era boom, contributed to non-migrant families moving to the US for improved working conditions and wages (Massey, Durand and Malone, 2002, p.43). Comprehensive immigration reform in 1986 intended to reduce cross border migration (Sanderson and Utz, 2009; Massey, Durand and Malone). Instead, migrants remained in the US for longer periods of time or even permanently due to added difficulty of crossing the border (pp.48-49). Through the 1970s, 80% of the Mexican migrant labor force in the US was temporary. By 1997, only 40% was considered temporary (Golash-Boza and Parker, p.115). In 1992, 20% of migrants returned to Mexico within six months. By 2000, only 7% of migrants did within six months (p.111). According to Hanson (2006), "While expanded border enforcement has reduced attempted illegal entry at what used to be major crossing points in California and Texas border cities, it appears to have had a small effect on deterring illegal immigration overall (measured either in terms of changes in smuggler prices or the average probability a Mexican national migrates to the United States)" (p. 37).

Not only are Hispanic migrants staying longer, but a larger number of migrants are living in the US. In 2002, there were 9.8 million Mexicans alone in the US, 5.3 million of them undocumented (Golash-Boza and Parker, p.113). According to estimates by Passel (2006), the number of undocumented Mexicans in the US increased to 6.2 million, with approximately 12 million total undocumented people (p.1). In 2005, Hispanic/Latino migrants made up nearly 80% of the undocumented migrants in the United States (Passel [2006], p. 5.). Undocumented migration is the principle way Mexican immigrants arrive in the US, contributing to 80% to 85% of the total flow of Mexican migration (Sanderson and Utz, p.138). Mexican migrants typically work in few labor industries. In 2005, according to Passel [2006], "[Undocumented workers] were 24% of all workers employed in farming occupations, 17% in cleaning, 14% in construction and 12% in food preparation industries" (p.11).

With an increasing number of undocumented workers, there are several migrants with mixed status. Guest-worker programs remain in place, but force people to work for one specific employer with little option of changing occupations due to conditions. The program creates a “vulnerable workforce”, who has no option of staying long term, nor any rights to legitimate working condition disputes (Golash-Boza and Parker, p.119). In addition to guest-worker programs, temporary workers on visas for diplomats, international missions and workers effectively hold workers as “hostages” (p. 120). Beyond mixed-status individuals, undocumented workers are from mixed-status households, where some family members have documentation while others do not (Fennelly, 2005, p.15). Nearly one-half of all Mexican households in the United States with legal residents and citizens have at least one undocumented household member (Massey and Bartley, 2005).

On the national level, undocumented immigrants have different experiences at the state level. According to Takei, Saenz and Lee (2008), “[In California,] anti-immigrant sentiments have been leveled against Mexican immigrants along with allegations that they draw more resources from the state than they contribute. Furthermore, a series of propositions have been formed to limit or eliminate the resources that immigrants, especially Mexican immigrants, can access” (p. 74). The experience in Texas, however, is different. Undocumented Mexican immigrants in Texas earn less income than native-born Mexican origin populations, but the difference is not as striking as it is in California (p. 83). Undocumented immigrants in Texas are also more highly concentrated and face less harsh labor conditions and state immigration policies (pp. 75-86).

Other states have also enacted policies directly affecting undocumented workers. According to Goodman and Richardson (2008), “Arizona adopted the Legal Arizona Workers Act, which... prohibits any employer from intentionally or knowingly employing an unauthorized alien” (p. 83). Similar but less “aggressive” legislation has been passed in states including Arkansas, Colorado, Louisiana and West Virginia (pp. 83-90). Goodman and Richardson argue that, “[the] lack of a federal solution [to undocumented immigration] will encourage more states to enact their own legislation to deal with the issue...rather than wait for federal action. (p. 90).

Between urban and rural areas, immigrant experiences also vary. According to Fennelly and Federico (2008), “rural respondents...perceive immigrants more negatively than urban or suburban respondents, and are more concerned about the impact of immigration on American

jobs and the economy” (p. 172). Other studies find differences depending upon how long an immigrant population has been established in a rural community (Nelson and Hiemstra, 2008). Even in communities with an established immigrant population, anxieties remain over allowing immigrants a permanent place (Nelson, 2008). Hispanic growth in rural areas is responsible for decreased wages for high-school educated US-born men, but increased wages overall for US-born workers due to higher demand for skilled labor (Newman, 2003). The favorability of opinions over undocumented immigration rise with education level, income for individuals and the strength of the US economy (Martin and Midgley, 2006).

### **Hispanic and Undocumented Immigrants in Oregon:**

In 2004, between 40% and 50% of the foreign-born population in Oregon was unauthorized migrants (Passel, 2005, p. 15.). In Oregon alone, there were 140,000 to 150,000 undocumented people in 2005, with over 95,000 in the workforce (Jaeger, p.15; Passel and Cohn [2009], p. 29). Of the undocumented population in Oregon, 73% to 89% are Mexican-born (Passel and Cohn [2009], p. 22). This makes the undocumented experience largely one that affects the Hispanic community in Oregon.

The experiences of Hispanic immigrants vary across Oregon. Woodburn, in Marion County is the most studied community of Hispanic immigrant populations (Nelson, Nelson & Hiemstra). Beyond Woodburn, there is little other study conducted on Hispanic or undocumented populations in Oregon.

## **B. Economic Impacts of Undocumented Populations**

### **Economic Impacts in the US:**

Capps and Fix (2005) provide a synopsis to debunk undocumented myths, two of which relate to impacts of the undocumented population:

- (1) “*Myth: Undocumented immigrants come to the United States to get welfare.* In 2003, over 90% of undocumented men worked—a rate higher than that for U.S. citizens or legal immigrants...Moreover, undocumented immigrants are ineligible for welfare, food stamps, Medicaid, and most other public benefits.”

- (2) “*Myth: Undocumented immigrants do not pay taxes.* Undocumented immigrants pay the same real estate taxes—whether they own homes or taxes are passed through to rents—and the same sales and other consumption taxes as everyone else. Additionally, the U.S. Social Security Administration has estimated that three quarters of undocumented immigrants pay payroll taxes, and that they contribute \$6–7 billion in Social Security funds that they will be unable to claim.”

At the federal level, Social Security contributions are an income source, with no current system of expenditure for undocumented workers. At present, few states have directly examined the contribution of undocumented workers to revenue and economic output. In the handful of studies available, there are similar results in the net return to government funds. Examining state by state and subtracting government expenditures for undocumented immigrants from revenues, Waslin (2008) found the following:

- Iowa’s undocumented population contributes up to \$62 million in state revenue and \$77.8 million in federal revenue, effectively subsidizing services for undocumented residents (p. 2).
- Texas’s undocumented population added \$420 million to the state’s net budget and \$17.7 billion to the gross state product (p. 3).
- Virginia’s undocumented workers contribute up to \$453 million to the state’s revenue (p. 3).

However, according to Hanson, et al (2001), “the federal government is a net [revenue] gainer [from immigration], while many states lose because redistributive programs are often locally funded and because the federal government provides more public goods whose cost does not rise with immigration” (p. 64). The limit of Hanson, et al’s study is that it examined all immigrant populations in this context, not solely the undocumented population.

#### **Economic Impacts in Oregon:**

The economic impact of undocumented immigrants in Oregon is in line with Waslin’s (2008) comparison. Each undocumented immigrant contributes an estimated \$1,848 in tax revenue to the state each year (Jaeger, p.10). With changing policies in Oregon, including driver license restrictions in 2008 and “No-Match Rule”, which according to Jaeger, “would require employers to verify the legal status of workers. It is believed that implementation of this proposal would

effectively eliminate from the workforce all workers who do not have the required valid documentation for employment (p.3). Table 2 below shows the expected short-term impacts with the loss of Oregon's undocumented workers:

**Table 2.1 Short Term Impacts of a Departure of Undocumented Workers from Oregon\***

	Baseline model	Estimated Change	Short-term impacts	Percent change
Population (millions)	3,700,758	-150,000	3,550,758	-4.1%
Employment (no. of jobs)	2,264,537	-173,537	2,091,000	-7.7%
Industry output	292,351	-17,689	274,661	-6.1%
Employee compensation	86,579	-4,788	81,791	-5.5%
Proprietor income	10,482	-892	9,589	-8.5%
Other property income	41,030	-2,446	38,584	-6.0%
Indirect business tax	10,729	-651	10,078	-6.1%
Total value added	148,819	-8,777	140,042	-5.9%

\* Millions of dollars except where noted

Source: Jaeger, 2008

Jaeger's study assumed the loss of Oregon's entire undocumented population due to the implementation of the "No-Match" rule. His study used estimates of population and workforce from the Pew Hispanic Center and the Oregon Center for Public Policy. Using the IMPLAN input-output model<sup>1</sup>, he calculated the short-term and long-term impacts of the departure of undocumented workers. To do this, he adjusted data from the IMPLAN model to account for employment losses of undocumented workers. The IMPLAN model was used since it is able to account for direct, indirect and induced effects. The direct effects are related specifically to the loss of undocumented workers. According to Jaeger, indirect effects "capture the interconnections of the regional economy resulting from the buying and selling of commodities among industries in the region" and induced effects include "the impact that changes in income or profits have on consumer spending in the region" (p. 12).

Jaeger stated that the IMPLAN model is static model, so he used "empirical studies from labor economics on the supply and demand elasticities in labor markets of various levels" (W Jaeger, personal communication, February 11, 2009). Jaeger's study provides a basic framework for the

<sup>1</sup> IMPLAN datasets and software allow researchers to analyze state and local economic changes. See <http://www.implan.com> for an overview and resources available.



impact to the state with the loss of undocumented workers. Using an input-output model, however, presents an obstacle at the county level. Jaeger cautioned that “editing the model to remove segments of the population is not straightforward.” Nonetheless, he added, “the impacts [at the county level] would be similar to those for the state model with simultaneous changes.” (W Jaeger, personal communication, February 11, 2009). Given Jaeger’s study, it is possible to extend his economic impacts to the county level with estimates of the undocumented population in each county.

The undocumented population not only contributes to Oregon’s employment base and industrial output, but it is also contributes to federal, state and local revenue. According to the Oregon Center for Public Policy (2007):

- “Undocumented immigrants contribute annually to Oregon between \$65 million and \$90 million in property taxes, state income taxes, and excise taxes” (p. 3).
- “Undocumented immigrant workers in Oregon pay between \$56 million and \$79 million annually in Social Security taxes, and another \$13 million to \$18 million annually in Medicare taxes. Employer contributions match these payments” (p. 3).
- “Oregon employers pay \$28 million to \$39 million in state unemployment insurance taxes on behalf of undocumented workers” (p. 4).

While the undocumented population contributes to government revenue, the actual undocumented population received very little in services. The OCCP report stated, “Undocumented workers are ineligible for the Oregon Health Plan, food stamps, and temporary cash assistance. They may receive some emergency services, and their children (most of whom are probably U.S. citizens) may attend public school” (p. 4).

Oregon is one of a handful of states with studies that have examined the economic impact of undocumented workers. This allows for a framework to study at a more localized level, similar to the Center of Urban Economic Development in Chicago’s study of Chicago’s undocumented population. This study builds from existing studies to examine the undocumented population at the county level in Oregon. At the county level, it is possible to see how certain localities are disproportionately impacted by the presence of an undocumented population.

## CHAPTER III

### METHODOLOGY

#### A. Data

##### County Populations in Oregon:

Primary data came from several sources, including the US Census Bureau. The datasets used from the Census include Summary File 1 (100-percent data), as well as Summary File 3 (Sample Data) from the 2000 Census. This gave data for Oregon and its 36 counties. Additionally, data from the American Community Survey was used, specifically the 2005-2007 three-year estimates. While over a three-year period, data was assumed to be most accurate for the year 2006, as the Census Bureau states, “Three-year estimates...represent the average characteristics over the three-year period of time.” The American Community Survey (ACS) provides data for geographic areas having more than 20,000 people. As a result, the nine least populated counties have not had sample data available since 2000. Additionally, some ACS data (specifically, country of birth) is only available for highly metropolitan counties. In Oregon, this data is limited to Multnomah and Washington Counties.

In addition to US Census data, several secondary data sources from the Pew Hispanic Center were used. These include estimates of the Hispanic population from 2007 for every county in the US, available at: <http://pewhispanic.org/reports/report.php?ReportID=96>. Additionally, Passel and Cohn’s [2009] report on the Unauthorized Populations in the US in 2008 was also used. Passel and Cohn’s work provided the framework for estimating the undocumented Mexican population in each county to determine the overall undocumented population in each county, as described below.

### County Employment Data:

The primary data sources used for employment data include the 2006 Regional Economic Information System (REIS) from the Bureau of Economic Analysis (BEA). Data from four different datasets were combined together to give income data, as well as industries including farming, construction, manufacturing and accommodation/food service. These industries have proportionally higher undocumented workers than other industries. Data also came from the 2007 County Business Patterns of the Oregon Labor Market Information System (OLMIS) in industries. BEA and OLMIS data differ by one year due to the latest information available. While data was available for every Oregon county, six counties were selected for this study. These counties were selected as the Hispanic population in each county is near or above 20% of the total population. See Table 3.1 below for a summary of these six counties' populations:

Table 3.1 Population Data for Selected Oregon Counties, 2000, 2007

County	2000 Population		2007 Population	
	Hispanics	% of Total Pop	Hispanics	% of Total Pop
Hood River	5,107	25.0%	5,542	26.0%
Jefferson	3,372	17.7%	4,149	20.1%
Malheur	8,099	25.6%	8,628	27.7%
Marion	48,714	17.1%	68,229	21.9%
Morrow	2,686	24.4%	3,269	29.2%
Umatilla	11,366	16.1%	13,815	18.8%
<b>OREGON</b>	<b>275,314</b>	<b>8.0%</b>	<b>396,140</b>	<b>10.6%</b>

Source: Pew Hispanic Center, 2008

While five of the counties are largely rural or micropolitan, the six counties are distributed throughout the state, representing the Willamette Valley, Central Oregon, the Columbia River Gorge, the Lower Columbia Basin and far Eastern Oregon. Furthermore, these six selected counties in Oregon have 12.8% of the state's population, but 28.9% of the Hispanic population. Industries in these counties depend upon agriculture, plant maintenance & production and nurseries. These industries have much higher concentrations of undocumented workers (Passel [2006], p. 11).

Secondary data includes Jaeger's (2008) study on Oregon employment as a whole, as well as Passel's [2006] and Passel and Cohn's [2009] study on undocumented workers. The data was

used to calculate the number of undocumented workers in various occupations with higher-than-average concentrations of undocumented workers.

## **B. Undocumented Population Estimates**

The number of undocumented immigrants in Oregon is difficult to directly calculate. The Pew Hispanic Center uses a “residual method”, done by removing all legal populations from the total. The population that remains is considered to be undocumented, or “unauthorized” (Passel [2006], pp. 14-17). The Oregon Center for Public Policy estimated the population from both 1990 and 2000 estimates, extrapolating based on the estimated flow over the decade (OCCP, 2006 & 2007). Jaeger’s 2008 study used both Passel’s [2006] study and the OCCP study from 2007. With no statistical increase in the undocumented population since 2007, Passel and Cohn’s (2009) study provides the best estimate of the overall undocumented population in Oregon, with between 130,000 and 160,000 undocumented people. The mid-level estimate of the undocumented population has hovered at 150,000 since 2005 (OCCP [2007]; Jaeger; Passel and Cohn [2009]), and was used in this study to calculate individual county undocumented populations.

Since there was a steady increase in undocumented workers from 1990 to 2007, a nominal increase was used to calculate 2007 populations of the foreign-born population and the Mexican-born population. Mexican-born populations were used as a proxy since they represent between 73% and 89% of Oregon’s undocumented population (Passel and Cohn [2009], p. 22). Additionally, according to Passel and Cohn, “the...share [of the undocumented population from Mexico] has remained nearly constant for three decades” (p. 21).

The first step in the estimation was to calculate the foreign-born population in each county. Of Oregon’s 36 counties, 27 had American Community Survey (2006) data available to estimate the 2007 population. The remainder of the counties (nine) were calculated as the proportion of the remaining foreign-born population from Oregon (removing the 27 counties), and using proportions from 2000 Census data. Of the nine low-population counties, one county (Morrow) had over 60% of the foreign-born population, and had the second-highest percentage of any county in Oregon of foreign-born in its population, behind Hood River County.

After estimating the foreign-born population in each county, the next steps of calculations involved estimating the foreign-born Mexican population in each county. For 34 of Oregon's 36 counties, the most recent data for the foreign-born Mexican population is from the 2000 Census. As a result, the foreign-born Mexican population was found by taking the mean of three estimates:

- (1) *Calculate the foreign-born Mexican population from their proportion of the total foreign-born population.* Foreign-born Mexicans represented 39.0% of the state's foreign-born population in 2000, and 42.6% in 2006, according to the US Census and American Community Survey. By assuming each county had the same proportional change in Mexican-born ratio to total foreign-born, each county now has an estimate of the Mexican-born population for 2007. Counties with higher proportions of Mexican-born in the foreign-born population will see an overestimate of the population while lower proportions will be underestimated. By this method, Morrow County increased from 88.2% to 96.2%, while Columbia County saw an increase in the Mexican-born proportion from 10.4% to 11.3%.
- (2) *Calculate the foreign-born Mexican population from the proportion of the state's total Mexican-born population in 2000.* Available in the data sets are the Mexican-born population in each county from 2000. Assuming each county still has the same proportion of Mexican-born out of the state's total Mexican-born population, each county has a second population estimate of the Mexican-born population for 2007 from the state's 2007 estimate. This method will overestimate counties with high Mexican-born growth in the 1990s that slowed in the 2000s, which includes six counties in Oregon (Fry [2008], p. 17). Counties with recent growth in the Mexican-born population would see an underestimate (13 counties in Oregon, according to Fry, p. 13).
- (3) *Calculate the foreign-born Mexican population from the growth in the Hispanic population in each county.* Generally and for the purposes of this study, the Mexican-born population is considered to be of Hispanic origin. By calculating the proportion of the 2000 Hispanic population that is Mexican-born, the same proportion can be used to calculate the Mexican-born population from the 2007 Hispanic population (available from Pew Hispanic Center). This method produced lower estimates in counties with higher proportions of Hispanics than the other two methods, yet produced the highest total estimate of the Mexican-born population for 2007.

The three calculation methods above provide ways to estimate the Mexican-born population in each Oregon county. Since each method will likely underestimate and overestimate a handful of counties, a mean provides a simple way to limit the deviations of the estimates. Since the undocumented population of each county is itself an estimate, using the mean reinforces that these estimates should only be used to illustrate differences in the undocumented populations across the counties.

Using Passel and Cohn [2009], the Mexican-born population in each county from 2007 is used to calculate the undocumented population in each county. Again, as 73% to 89% of the undocumented population is Mexican-born, and there is an estimated 150,000 undocumented people living in Oregon, between 109,500 and 133,500 of the undocumented population is estimated to be Mexican-born. By calculating each county's proportion of the Mexican-born population, the result is the estimated undocumented Mexican-born population. Finally, the remainder of the population (11% to 27%) must be other undocumented populations, giving each county an estimate of the undocumented population. Since the undocumented population is estimated between 130,000 and 160,000, proportionally distributing this population to each county provides a high and low estimate for each county as well.

On the following page are estimates of the undocumented population in each Oregon county for 2007. Counties in italics are six counties with the highest percentage of the total population that is estimated to be undocumented. Further detailed numbers and calculations are provided in Appendix A.

### C. Potential Economic Impacts

Once estimates of the undocumented population in each county are available, it is possible to estimate potential economic impacts to Oregon counties. This study will limit the focus of potential economic impacts to six counties with the highest concentration (by percentage) of undocumented people: Hood River, Jefferson, Malheur, Marion, Morrow and Umatilla Counties. The above counties, not surprisingly, also have the six highest concentrations of Hispanic populations (by percentage).

Table 3.2 Undocumented Population Estimates for Oregon Counties, 2000, 2007

County	Undocumented Population (2000)	Undocumented Population (2007) - Low Estimate	Undocumented Population (2007) - High Estimate	Undocumented Population (2007) - Mid Estimate	% of Total Population that is Undocumented (2007)
Baker	92	107	151	123	0.8%
Benton	1,166	1,325	1,882	1,529	1.9%
Clackamas	6,565	8,042	11,421	9,280	2.5%
Clatsop	712	825	1,172	952	2.5%
Columbia	79	117	166	135	0.3%
Coos	370	456	648	526	0.8%
Crook	478	622	884	718	3.1%
Curry	99	110	156	127	0.6%
Deschutes	806	1,441	2,046	1,662	1.1%
Douglas	376	447	634	515	0.5%
Gilliam	10	11	16	13	0.8%
Grant	46	51	72	58	0.8%
Harney	46	47	67	54	0.8%
<i>Hood River</i>	<i>2,766</i>	<i>2,798</i>	<i>3,973</i>	<i>3,228</i>	<i>15.2%</i>
Jackson	4,371	5,125	7,279	5,914	3.0%
<i>Jefferson</i>	<i>1,480</i>	<i>1,585</i>	<i>2,251</i>	<i>1,829</i>	<i>8.8%</i>
Josephine	506	595	845	687	0.8%
Klamath	1,692	1,745	2,478	2,013	3.0%
Lake	121	136	193	157	2.2%
Lane	3,987	4,786	6,796	5,522	1.6%
Lincoln	842	1,107	1,572	1,278	2.8%
Linn	1,363	1,558	2,212	1,798	1.6%
<i>Malheur</i>	<i>2,105</i>	<i>2,225</i>	<i>3,160</i>	<i>2,567</i>	<i>8.2%</i>
<i>Marion</i>	<i>23,037</i>	<i>27,398</i>	<i>38,909</i>	<i>31,613</i>	<i>10.2%</i>
<i>Morrow</i>	<i>1,369</i>	<i>1,513</i>	<i>2,149</i>	<i>1,746</i>	<i>15.6%</i>
Multnomah	19,595	22,910	32,535	26,434	3.8%
Polk	2,219	2,651	3,765	3,059	4.1%
Sherman	32	36	51	42	2.5%
Tillamook	539	697	989	804	3.2%
<i>Umatilla</i>	<i>4,665</i>	<i>5,159</i>	<i>7,326</i>	<i>5,953</i>	<i>8.1%</i>
Union	158	164	233	189	0.8%
Wallowa	11	12	18	14	0.2%
Wasco	985	1,088	1,545	1,255	5.3%
Washington	22,862	27,975	39,728	32,279	6.2%
Wheeler	15	16	22	18	1.3%
Yamhill	4,437	5,120	7,271	5,907	6.1%
<b>OREGON</b>	<b>110,000</b>	<b>130,000</b>	<b>160,000</b>	<b>150,000</b>	<b>4.0%</b>

Source: American Community Survey, 2005-2007; Jaeger, 2008; Massey and Bartley, 2005; Passel and Cohn, 2008, 2009; Pew Hispanic Center, 2007, 2008, 2009; US Census, 2000; author's calculation

### **Undocumented Employment by Industry Sector:**

The Bureau of Economic Analysis (2006) data allows for a break-down by various employment sectors. From the Pew Hispanic Center, there are recent studies that estimate the share of undocumented workers in employment sectors in the US (Passel [2006], Passel and Cohn [2009]). By knowing the proportion of workers that are undocumented in key industry sectors, it is possible to estimate the undocumented employment in those sectors for the state as a whole. Jaeger assumed Oregon has the same proportion when calculating short-term and long-term impacts of employment loss (p. 18). This study uses the estimates for the state to calculate the undocumented share in four industry sectors for six Oregon counties.

Undocumented workers are concentrated in four sectors of the BEA: Farm employment (24%), Construction (14%), Manufacturing (7%) and Accommodation & Food Service (12%) (Jaeger, p. 18; Passel [2006], p. 11; Passel and Cohn [2009] pp. 15-16). Because these studies generate somewhat different conclusions, this study uses the lowest percentage in order to be as conservative as possible with sector employment estimates. From Jaeger and Passel [2006], this study assumes 65% of the undocumented population participates in the labor force, resulting in an estimated 97,500 undocumented workers in Oregon. More recent data (Passel and Cohn [2009]) suggests higher participation rates, but with changing economic situations, undocumented workers have higher unemployment rates and less economic participation than documented workers (p. 14). Table 3.3 below shows the total employment and undocumented employment in six counties. The total employment data come directly from the Bureau of Economic Analysis, while the undocumented employment is assumed to be 65% of the county's undocumented population (from Table 3.2).

The six counties in Table 3.3 were selected as they have the highest concentration (by percentage) of undocumented people. Table 3.4 below provides total employment and undocumented employment in the four high-undocumented industry sectors for Oregon. Total employment in each sector is again available from the BEA. Undocumented employment is calculated using the percentages from Passel [2006] and Passel and Cohn [2009], shown to the right in the table. Table 3.5 below shows BEA data for each county in the four industry sectors.



Table 3.3 Total and Undocumented Employment in Selected Oregon Counties, 2006

County	Total Employment	Undocumented Employment	% of Employment that is Undocumented
Hood River	15,578	2,098	13.5%
Jefferson	8,964	1,189	13.3%
Malheur	18,344	1,669	9.1%
Marion	177,424	20,549	11.6%
Morrow	5,507	1,135	20.6%
Umatilla	39,848	3,869	9.7%
<b>OREGON</b>	<b>2,304,410</b>	<b>97,500</b>	<b>4.2%</b>

Source: Bureau of Economic Analysis, 2006; author's calculation

Table 3.4 Total and Undocumented Employment in Selected Industry Sectors, 2006

Employment Sector	Total Employment	Undocumented Employment	% of Sector Employment that is Undocumented
Farming	68,056	16,333	24%
Construction	147,742	20,684	14%
Manufacturing	220,370	15,426	7%
Accommodation/ Food Service	155,720	18,686	12%
<b>ALL INDUSTRIES</b>	<b>2,304,410</b>	<b>97,500</b>	<b>4.2%</b>

Source: Bureau of Economic Analysis, 2006; Passel, 2006; Passel and Cohn, 2009; author's calculation

Table 3.5 Industry Sector Employment for Selected Oregon Counties, 2006

County	Farming	Construction	Manufacturing	Accommodation/ Food Service
Hood River	1,743	859	1,395	1,438
Jefferson	785	301	1,740	529
Malheur	2,779	526	1,138	1,100
Marion	8,221	11,635	12,454	10,489
Morrow	1,076	179	880	182
Umatilla	3,175	1,677	3,716	2,319

Source: Bureau of Economic Analysis, 2006

By using the data above, this study estimates the undocumented employment in each county for each industry sector. It is unreasonable to assume 24% of each county's farm employment is undocumented, the percentage estimated nationally and assumed statewide. At the county level, certain industry sectors are more pronounced than others. For example, each of the six counties has more than double the proportion of their population in farm employment compared to the state. These six counties also have more than double the proportion of undocumented workers

as compared to the state. This study assumes that a higher proportion of farmworkers would lead to a higher proportion of undocumented farmworkers, provided the county has a higher proportion of undocumented workers in general. Thus, calculating undocumented sector employment requires controlling for two varying proportions.

As a base calculation, this study uses the following:

$$Y_c = E_c * (\epsilon_s/E_s) * (1 + \kappa) \quad (1)$$

In the above formula:

$Y_c$  = Undocumented sector employment in county

$E_c$  = Total undocumented employment in county

$\epsilon_s$  = Undocumented sector employment in the state

$E_s$  = Total undocumented employment in the state

$\kappa$  = Ratio of % sector employment in the county to the % sector employment in the state

For farming in Hood River County from the above:

$E_c$  = 2,098 (from Table 3.3)

$\epsilon_s/E_s$  = 16,333/97500 - 16.8% (from Table 3.4)

Ignoring  $1 + \kappa$ , the rough assumption is that there are approximately 351 undocumented farmworkers in Hood River County. However, the county has a high proportion of overall farmworkers, suggesting that the above result is too low. To normalize the result, it is important to examine  $\kappa$ , the sector employment ratio. In Hood River, 11.2% of the total workers are farmworkers (from Tables 3.5 and 3.3), compared to 3.0% for the state (from Table 3.4), or 3.79 times the state proportion. Since the ratio will vary from sector to sector and county to county, it is important to select a method that reduces sufficiently large ratios, yet increases underestimates. Natural logs were selected to provide a continuum and adjust large ratios. Thus:

$$\kappa = \ln (\% \text{ of sector employment in the county} / \% \text{ of sector employment in the state}) \quad (2)$$

By using natural logs, the six counties collectively had 73.4% of their undocumented employment in the four sectors, compared to 73% for the state as a whole. Additionally, natural logs prevent the industry from becoming over-saturated with a particular population. In other words, without controlling for the increased proportion of undocumented workers, the number of undocumented workers in the sector would exceed the total number of workers in the sector. Lastly, natural logarithms provide a way to express exponential growth and decay, and are also used by the US Census to measure average annual rates of change (Day, 2008). While the proportion of undocumented workers in a sector increases, the proportion of legal workers in the sector will decrease most likely by exponential decay, since there is likely to be at least some participation of legal workers in a sector.

Lower population counties had higher participation in the four sectors while higher population counties had lower participation in the four sectors, suggesting more diversified employment with higher populations. For details on calculations using these two formulas, see Appendix B. Tables 4.1-4.4 provide estimates of the undocumented employment in each of the four industry sectors.

#### **Industry Payroll and Employment:**

With the potential exodus of undocumented people from Oregon, payroll and employment will also directly fall. However, there are also indirect and induced effects, which cause other employees to lose their positions. By using Jaeger's study for Oregon, it is possible to calculate the payroll and employment loss in each county, accounting for direct, indirect and induced effects.

County Business Pattern data from OLMIS (2007) provides data to estimate the change in annual payroll in industries with higher concentrations of undocumented workers. By using the proportion of undocumented workers in each county calculated from BEA data, estimates for the changes in payroll are also possible. Since undocumented workers, on average, have lower median worker incomes than US-born and legal foreign-born workers, employment by industry will decrease proportionately more than payroll with this method. However, considering Jaeger's employment changes from "direct, indirect and induced" effects (as discussed above in Chapter II), total employment losses will exceed the loss of just undocumented workers (p. 19).

OLMIS data provide a breakdown by industry sector. For this study, however, only total employment is used. There are three reasons for this choice:

- (1) *The data sets are from two different years and sources.* BEA data is federal data from 2006. OLMIS data is state data from 2007. There will be some differences in employment between the two years and also differences in how each agency categorizes employment into employment sectors.
- (2) *OLMIS data only include covered employment.* From Rankin (2008), “Covered employees are those whose employers pay state unemployment insurance and report employment quarterly to the state. Uncovered employees are not covered by state unemployment insurance, and primarily include the following groups: self-employed; temporary agricultural labor; “casual labor”; home-based domestic services; family member employees; others” (p. 1). OLMIS data, as a result, has less total employment and will give lower sector employment, particularly in agriculture. Additionally, since undocumented workers make up a larger proportion of “temporary” and “casual” workers, actual employment and payroll reductions due to undocumented workers in agriculture may be overstated for covered employment.
- (3) *Some OLMIS data are confidential.* If there are very few employers (typically less than 10) in a particular industry in a county, employment and payroll are not included. Some sectors of agriculture are not included, particularly in Jefferson, Malheur and Morrow Counties, where agricultural data had to be separated from mining. For Hood River and Morrow Counties, only total leisure & hospitality employment is available, which is largely made up of accommodation & food service employment.

Mindful of the differences between BEA and OLMIS data on the total employment, calculations for each industry sector are not calculated separately. The percentage of employment that is undocumented is used from Table 3.3. OLMIS data, again, provides lower total employment in each county as uncovered employment (employment not covered by state unemployment insurance) is not included.

OLMIS data includes total payroll, allowing calculation of the mean payroll per worker per year. Workers include both documented and undocumented employment at, on average, different pay rates. Assuming undocumented workers earn 64% of the wage of legal workers in general (from Passel and Cohn [2009], p. 35), total payroll losses in each county due to the departure of

undocumented and legal workers are calculated. To calculate the payroll losses, there must be an estimate of payroll per undocumented worker and payroll per legal worker in each county, by using the following:

$$p_L = p_m / (q * r_u + r_L) \quad (3)$$

In the above formula:

$p_L$  = mean payroll per legal worker per year

$p_m$  = mean payroll per worker per year (includes legal and undocumented)

$q$  = ratio of undocumented worker wages to legal worker wages (0.64)

$r_u$  = proportion of undocumented workers in the county labor force

$r_L$  = proportion of legal workers in the county labor force ( $1 - r_u$ )

Once the mean payroll per legal worker per year is known, the mean payroll per undocumented workers per year is 64% of the result ( $p_u = 0.64 * p_L$ ). Following this calculation, there must be an estimate of the direct employment loss, and the indirect/induced loss. From Jaeger, indirect and induced effects increase the employment loss by 78% in the short-term (p. 19) or between 11% and 51% in the long-term (p. 24). Jaeger found the long-term impacts by assuming the inverse elasticity of wages is between 0.2 and 0.4. This study will use the average employment loss of the two long-term studies to present a simple “middle case”. Total payroll losses are then calculated by the following:

$$P_T = p_L * n_L + p_u * n_u \quad (4)$$

In the above formula, additional variables include:

$P_T$  = total payroll loss

$n_L$  = legal employment loss due to indirect and induced effects

$n_u$  = undocumented employment loss (direct effect)

The results appear in Table 4.5 (short-term) and Table 4.6 (long-term).

Data from Jaeger’s study of can be combined with the estimates of the undocumented population from each county to arrive at economic impacts from the departure of undocumented workers from specific Oregon counties. To calculate expected employment changes, the proportion of the

undocumented population in each county to the total population in the state is used to disaggregate Jaeger's measures. The results appear in Table 4.7 (short-term) and Table 4.8 (long-term).

## CHAPTER IV

### FINDINGS AND IMPLICATIONS

#### A. Potential Economic Impacts

With continued state and national policies aimed at preventing undocumented workers from locating and accessing work, one can expect a loss of population from Oregon counties. The size of Oregon's expected population loss depends upon the severity of state policy compared to neighboring states. At present, Washington and Idaho have less restrictive identification requirements for driver licenses (see Chapter I), suggesting undocumented families may move to neighboring states. Overall, this would make Oregon less competitive in industry sectors that employ higher proportions of undocumented workers, particularly agriculture, construction, manufacturing and accommodation & food service. With the loss of population comes additional employment losses, payroll losses and local, state and federal revenue losses.

In the following scenario, it is assumed that Oregon could potentially lose its entire undocumented population, identical to the assumption put forth in Jaeger's study. While the loss of entire undocumented population is implausible, the estimated population losses, industry sector employment losses, payroll losses and total employment losses serve to illustrate the total economic impact of undocumented workers in Oregon counties. Even with market adjustments, key industries in Oregon may find relocation to a neighboring state a more suitable option than accordingly raising wages due to a smaller labor supply.

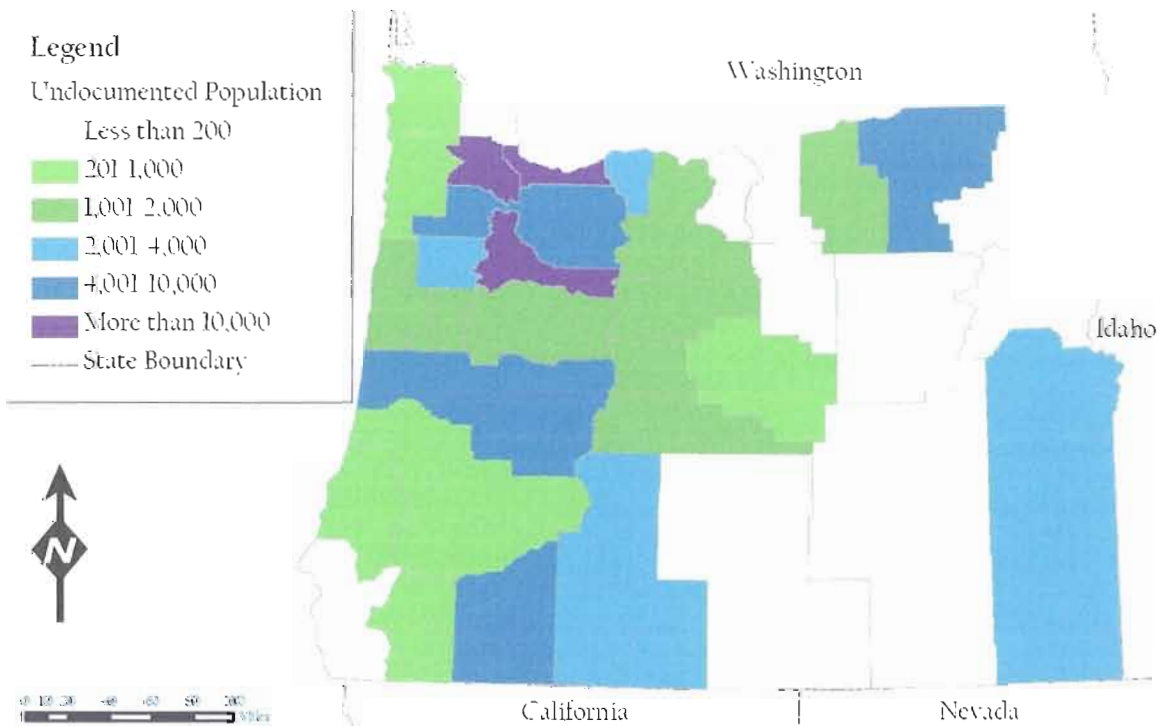
#### **Undocumented Population Loss:**

From several studies, Oregon could expect the loss of 150,000 undocumented people (with estimates ranging between 130,000 and 150,000). Since the undocumented population is unevenly spread across the state, certain counties will lose a much larger proportion of their population.

Using the foreign-born Mexican population in Oregon to estimate the number of undocumented people in each county, Map 4.1 graphically represents the number of undocumented people in each county. The three principle counties of the Portland Metropolitan area along with Marion County (Salem) have the highest number of undocumented people. This supports Passel and Cohn’s (2009) finding that, “a much greater share of unauthorized immigrants than of the U.S.-born population lives in metropolitan areas (p. 3). In Oregon, over 82.2% of the undocumented population live in metropolitan counties compared to 77.5% of the legal population. In the US, “approximately 94% of unauthorized immigrants live in metropolitan areas, compared with about 80% of the U.S.-born population” (p. 3).

From Map 4.1 below, it is evident that a high proportion of the undocumented population lives in the Portland Metropolitan area along with the Salem area in Northwestern Oregon. However, there are several counties each of the Cascades with relatively high populations of undocumented people, despite being relatively rural. These include Klamath, Malheur, Hood River and Umatilla Counties (all in blue and east of the Cascade divide).

Map 4.1 Estimated Undocumented Population in Oregon Counties, 2007

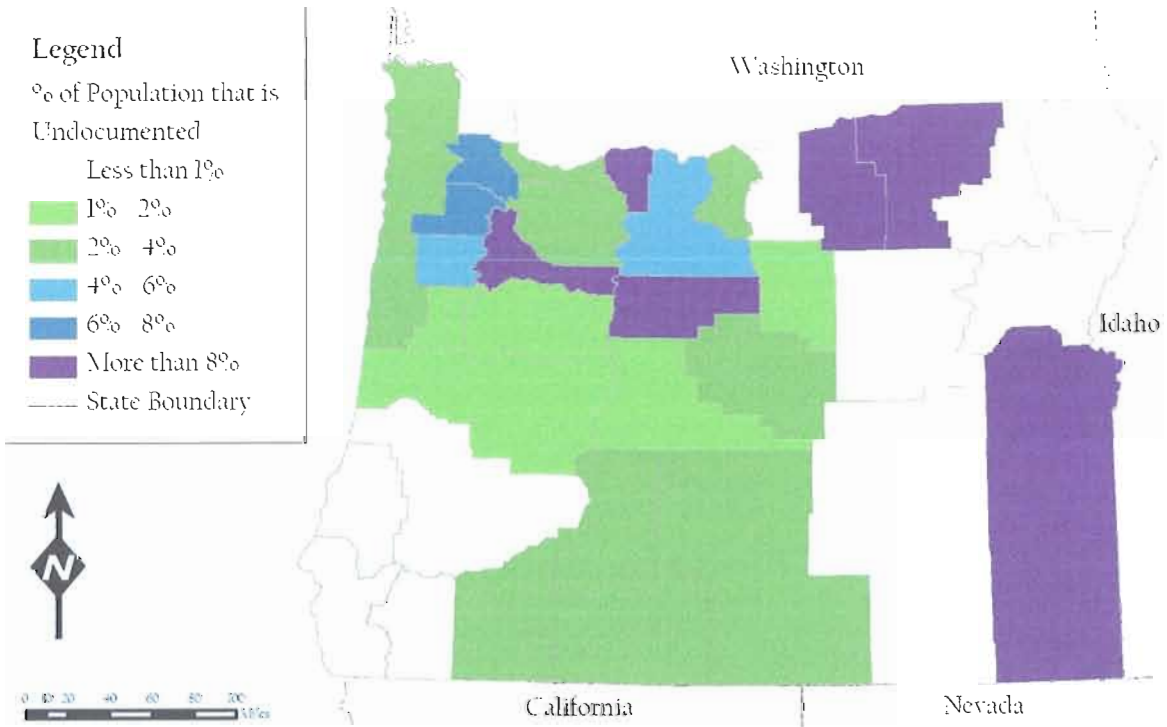


Source: ACS, 2007; Jaeger, 2008; Passel and Cohn, 2009; Pew Hispanic Center, 2008; author’s calculation



Oregon, however, does have a higher proportion of the undocumented living in rural areas compared to the US. Viewing the proportion of population that is undocumented in each county (see Map 4.2 below) provides a different image. Five counties east of the Cascades (Hood River, Jefferson, Malheur, Morrow and Umatilla) all have relatively high proportions of undocumented people, along with Marion County west of the Cascades. Washington and Yamhill Counties, in the western portion of Portland’s Metropolitan Area, also have high proportions of undocumented people.

Map 4.2 Estimated Proportion of Population that is Undocumented in Oregon Counties, 2007



Source: ACS, 2007; Jaeger, 2008; Passel and Cohn, 2009; Pew Hispanic Center, 2008; author’s calculation

The six counties with highest proportion of Hispanic people (Hood River, Jefferson, Malheur, Marion, Morrow and Umatilla) are the six counties with the highest proportion of undocumented people (refer to Map 2.1). These six counties have 12.5 % of the state’s total population but nearly one-third of the state’s undocumented population (31.3%). Counties on the western side of Portland and Salem also have higher proportions than the state as a whole. Malheur County ranked second in proportion of the Hispanic population, but fifth in proportion

of the undocumented population. There are two reasons for lower undocumented proportions: (1) Malheur County is an “established” Hispanic county, where Hispanic growth was much higher in the 1980s and 1990s, giving time for the established undocumented to become legal (Kandel and Cromartie, 2005, p. 13); (2) Malheur County experienced overall population decline in the 2000s, arguably suggesting less available work for the undocumented population, and in turn a lower proportion of undocumented people.

#### Undocumented Employment Losses by Industry Sector:

Limiting the study to the six high-proportion undocumented counties, certain industry sectors have even higher concentrations of undocumented workers. The most compelling case is in the agricultural sector, where undocumented workers make up 24% of the employment base on the national level. If the same level is assumed in Oregon, Table 4.1 provides estimates of undocumented farm employment in the six counties.

Table 4.1 Undocumented Farm Employment in Six Oregon Counties, 2006

	Farm Employment	Undocumented Farm Employment	% of Farm Employment that is Undocumented
Hood River	1,743	820	47%
Jefferson	785	416	53%
Malheur	2,779	737	27%
Marion	8,221	4,993	61%
Morrow	1,076	549	51%
Umatilla	3,175	1,291	41%
<b>OREGON</b>	<b>68,056</b>	<b>16,333</b>	<b>24%</b>

Source: Bureau of Economic Analysis, 2006; author's calculation

In three counties, undocumented workers make up a majority of the farmworkers. Marion County tops the list as it has a high proportion of undocumented workers, but is less farm intensive than the other counties. Malheur County is near the state average primarily because the county is farm intensive, suggesting a higher proportion of legal workers are involved in agriculture.

Tables 4.2 and 4.3 below provide estimates of the undocumented population in construction and manufacturing, respectively. In construction, twice the proportion of undocumented workers is in the industry when compared to the state. In Hood River and Morrow Counties, more than

40% of the construction workers are estimated to be undocumented. Malheur County is again near the state proportion, primarily because of population decline, and hence, lower number of construction workers overall. For manufacturing, around one-quarter of the workers are undocumented in two counties, Jefferson and Morrow, far higher than the state participation rate of 7%. Morrow County is of particular interest, since its port has grown into the second largest port in Oregon in terms of tonnage (Jacklet, 2008; Oregon Explorer, 2009).

**Table 4.2 Undocumented Construction Employment in Six Oregon Counties, 2006**

	Construction Employment	Undocumented Construction Employment	% of Construction Employment that is Undocumented
Hood River	859	378	44%
Jefferson	301	89	30%
Malheur	526	69	13%
Marion	11,635	4,458	38%
Morrow	179	77	43%
Umatilla	1,677	475	28%
<b>OREGON</b>	<b>147,742</b>	<b>20,684</b>	<b>14%</b>

Source: Bureau of Economic Analysis, 2006; author's calculation

**Table 4.3 Undocumented Manufacturing Employment in Six Oregon Counties, 2006**

	Manufacturing Employment	Undocumented Manufacturing Employment	% of Manufacturing Employment that is Undocumented
Hood River	1,395	206	15%
Jefferson	1,740	470	27%
Malheur	1,138	102	9%
Marion	12,454	1,361	11%
Morrow	880	211	24%
Umatilla	3,716	573	15%
<b>OREGON</b>	<b>220,370</b>	<b>15,426</b>	<b>7%</b>

Source: Bureau of Economic Analysis, 2006; author's calculation

Table 4.4 below examines undocumented employment in the accommodation and food service sector. In each of the six counties, the proportion of undocumented workers is more than double the state participation rate. In four of the counties, one-third or more of the accommodation and food service workers are undocumented.

**Table 4.4 Undocumented Accommodation/Food Service Employment in Six Oregon Counties, 2006**

	Accom/Food Service Employment	Undocumented Accom/Food Service Employment	% of Accom/Food Service Employment that is Undocumented
Hood River	1,438	528	37%
Jefferson	529	197	37%
Malheur	1,100	282	26%
Marion	10,489	3,412	33%
Morrow	182	62	34%
Umatilla	2,319	631	27%
<b>OREGON</b>	<b>155,720</b>	<b>18,686</b>	<b>12%</b>

Source: Bureau of Economic Analysis, 2006; author's calculation

With such high proportions of undocumented workers in these four industry sectors, the loss of undocumented workers would drastically change the ways these industries operate in the six counties. From a basic supply and demand perspective, the supply of labor would reduce due to loss of undocumented workers, which would put upward pressure on wages (shifting the supply curve to the left [reduced quantity of labor], will shift the market equilibrium to a higher point on the demand curve, [higher wage per worker]. Legal unemployed workers could also potentially occupy the positions of the departed undocumented workers. However, as discussed below in Chapter V, undocumented workers largely have employment positions that legal workers will not occupy.

#### **Industry Payroll and Employment Losses:**

The industrial sectors above examined only undocumented employment without considering the impact to legal employment. With Jaeger's study, there are three effects to employment: direct, indirect and induced (see Chapter II). Table 4.5 below accounts for the short-term loss in undocumented workers and the consequent loss of legal workers due to indirect and induced effects. In this table, only covered employment (see Chapter III) is examined, but the percentage loss in payroll is also only for covered employment.

In the state as a whole, if the entire undocumented population is forced to leave Oregon, there is a reduction of over \$4 billion in yearly payroll, representing over 6% of the state's total covered payroll in the short-term. For each of the counties, the effect on payroll is more pronounced.

Morrow County may potentially lose nearly one-third of its payroll, with Hood River and Jefferson losing around one-fifth of their respective payrolls. The other counties may all expect to lose more than double the proportion of the covered payroll when compared to the state.

**Table 4.5 Potential Short-Term Payroll Losses in Six Oregon Counties, 2007**

	Employment	Payroll	Undocumented Employment Loss	Additional Employment Loss
Hood River	12,025	\$ 317,985,526	1,620	1,263
Jefferson	6,459	\$ 197,347,682	857	668
Malheur	12,972	\$ 363,141,048	1,180	920
Marion	140,248	\$ 4,853,665,329	16,243	12,667
Morrow	4,177	\$ 151,946,510	861	671
Umatilla	29,593	\$ 945,139,707	2,873	2,241
<b>OREGON</b>	<b>1,728,351</b>	<b>\$ 68,380,292,793</b>	<b>73,127</b>	<b>57,029</b>
	Total Payroll Loss	Loss as a % of Total Payroll		
Hood River	\$ 63,909,610	20.1%		
Jefferson	\$ 39,032,570	19.8%		
Malheur	\$ 48,493,854	13.4%		
Marion	\$ 832,890,970	17.2%		
Morrow	\$ 48,028,776	31.6%		
Umatilla	\$ 135,023,843	14.3%		
<b>OREGON</b>	<b>\$ 4,171,483,123</b>	<b>6.1%</b>		

Source: Oregon Employment Department, 2007; Jaeger, 2008; author's calculation

To an extent, a short-term model over-estimates the impact of the loss of undocumented workers. A segment of the unemployed legal population could potentially occupy positions formally occupied by undocumented workers. As Jaeger points out, “employers will consider offering a higher wage to attract labor...and attempt to substitute capital for (now more expensive) labor where possible” (p. 23). Jaeger’s study estimated a low case and high case, depending on the elasticity of wages (see Appendix C). Here, a middle case is used, assuming the loss of undocumented workers and the loss of legal workers through indirect and induced effects, but also incorporates market adjustments. The results are in Table 4.6 below.

Payroll losses are less pronounced in the long-term, with the state losing just over 4% of the total payroll, provided loses its entire undocumented labor force. The payroll loss in Morrow County is less pronounced in the long-term, but still represents over one-fifth of the total payroll. With

such a large change in the availability of low-wage undocumented workers, the upward pressure on wages may be so drastic that existing industries may be unable to remain competitive, even in the long-term scenario.

**Table 4.6 Potential Long-Term Payroll Losses in Six Oregon Counties, 2007**

	Employment	Payroll	Undocumented Employment Loss	Additional Employment Loss
Hood River	12,025	\$ 317,985,526	1,620	509
Jefferson	6,459	\$ 197,347,682	857	269
Malheur	12,972	\$ 363,141,048	1,180	371
Marion	140,248	\$ 4,853,665,329	16,243	5,106
Morrow	4,177	\$ 151,946,510	861	271
Umatilla	29,593	\$ 945,139,707	2,873	903
<b>OREGON</b>	<b>1,728,351</b>	<b>\$ 68,380,292,793</b>	<b>73,127</b>	<b>22,987</b>
	Total Payroll Loss	Loss as a % of Total Payroll		
Hood River	\$ 42,955,723	13.5%		
Jefferson	\$ 26,235,057	13.3%		
Malheur	\$ 32,594,293	9.0%		
Marion	\$ 559,813,048	11.5%		
Morrow	\$ 32,281,699	21.2%		
Umatilla	\$ 90,753,907	9.6%		
<b>OREGON</b>	<b>\$ 2,803,789,172</b>	<b>4.1%</b>		

Source: Oregon Employment Department, 2007; Jaeger, 2008; author's calculation

When considering total employment (covered and uncovered), the number of jobs lost is even greater. Since undocumented workers earn less per capita than legal workers, the net percent change in employment is also greater. Table 4.7 gives the expected total employment loss in the six counties due to direct, indirect and induced employment in the short-term. Table 4.8 gives the expected employment loss in the six counties due to direct, indirect and induced employment in the long-term.

Total employment losses, whether in the short-term or long-term, are quite substantial for each of the counties listed. With the relatively large change in employment, there will be a largely diminished supply of labor, putting considerable upward pressure on worker wages. The upward pressure on wages is counter to the availability of jobs with the loss of undocumented workers. As David Jaeger (2006) points out, “for out-of-work natives to replace the

undocumented workers would require them to take jobs at substantially lower skill levels and substantially lower wages” (p. 3).

**Table 4.7 Potential Total Short-Term Employment Losses in Six Oregon Counties, 2007**

County	Employment	Change in Employment	% Change in Employment
Hood River	15,578	-3,734	-24.0%
Jefferson	8,964	-2,116	-23.6%
Malheur	18,344	-2,970	-16.2%
Marion	177,424	-36,574	-20.6%
Morrow	5,507	-2,020	-36.7%
Umatilla	39,848	-6,887	-17.3%
<b>OREGON</b>	<b>2,304,410</b>	<b>-173,537</b>	<b>-7.5%</b>

Source: BEA, 2006; Jaeger, 2008; author's calculation

**Table 4.8 Potential Total Long-Term Employment Losses in Six Oregon Counties, 2007**

County	Employment	Change in Employment	% Change in Employment
Hood River	15,578	-2,758	-17.7%
Jefferson	8,964	-1,563	-17.4%
Malheur	18,344	-2,193	-12.0%
Marion	177,424	-27,008	-15.2%
Morrow	5,507	-1,492	-27.1%
Umatilla	39,848	-5,085	-12.8%
<b>OREGON</b>	<b>2,304,410</b>	<b>-128,148</b>	<b>-5.6%</b>

Source: BEA, 2006; Jaeger, 2008; author's calculation

#### **Expected Revenue Losses and Potential Savings:**

If Oregon was to experience a 6.1% reduction in payroll and a 7.5% reduction in total employment, state income tax revenues would largely be affected. Business tax revenue would also decrease, since some businesses could not remain competitive with the increase in individual employee wages due to loss of lower-wage undocumented workers. In the long-term, the market could adjust to the loss of workers, but the net number of jobs will decrease while wages for remaining workers increase.

For the six Oregon counties, local revenue losses will likely be more sizeable. In Morrow County, with the loss of one-third of the payroll and three-eighths of the employment, education will see sizeable enrollment reductions. With less demand for housing, local property tax

revenue will reduce due to falling housing prices. Landlords will experience reduced rental income. The jobs vacated by undocumented workers will be low-skill and low-paying, making industries in the county less able to entice unemployed workers from less-affected counties. Cities in these counties will see reductions in local utility fees, permit fees and system development charges. County government will also see similarly reduced revenue. The other five counties will also see more dramatic effects than the state as a whole, but somewhat less pronounced than Morrow County.

From Chapter II, Oregon's undocumented population contributes up to \$90 million in revenue in property taxes, state income taxes and excise taxes, along with up to \$39 million in state unemployment insurance (OCPP [2008]). Property taxes and state income taxes contribute to several state services, including services used by undocumented people, including health services, public safety and education. With the loss of undocumented people from the state, Oregon would reduce overall costs for these services, providing a cost savings over current state expenditures. However, undocumented women have a hard time accessing social services for their family members, even if members of the family are documented US citizens. In general, immigrant women and their children only visit emergency rooms when necessary, but they feel unable to go for routine health check-ups and other regularly provided services (Chavez, 1997, p.104). Since undocumented family members feel unable to access health services due to their status, they likely contribute more to these services in taxes than they receive in services for routine care. However, there is no estimate at present of the cost of uncompensated emergency care provided to undocumented people in Oregon.

Regarding education, between 7.6% and 9.9% of the K-12 enrollment in 2008 in Oregon was children from undocumented families (Passel and Cohn [2009], p. 10). Of these children, 73% were US-born (p. 7). This suggests that roughly 2.1% to 2.7% of K-12 enrollment in Oregon was children who are either legal or undocumented immigrants. While there is a cost-savings by having less children to educate in Oregon with the loss of the undocumented people, Oregon would also lose US-born and legal immigrant students in undocumented families. Even with the costs of education, according to The Advocates for Human Rights report on Immigration and the Economy (2006), "Our society and economy receive countless long-term benefits by investing in education. ...Parents of undocumented children pay taxes that support the educational system and the community, just as other parents do." With an aging and declining population in some



rural Oregon counties, the presence of undocumented families could arguably allow some school districts to remain open. The younger working-age undocumented population also provides a labor force largely paying taxes, the revenue of which provides some of the services to older and retired populations.

With regard to state unemployment insurance, undocumented workers are unable to access this service when unemployed. Losing the undocumented labor force would remove this income source from the state's revenue. While there may be overall state savings in health, public safety and education, the contributions from undocumented workers maintain the existing level of service.

### **B. Implications of Undocumented Population Policies**

While the "No-Match" Immigration Policy and drivers' license identification restrictions are aimed at the undocumented population, they will also affect legal residents in Oregon and its counties. For one, while there may be an estimated 150,000 undocumented people in Oregon, there are many more people living in families with at least one undocumented member. Using Passel [2005] and Passel and Cohn [2009], the number of people in undocumented families is roughly 210,000, or nearly 40% more than the undocumented population. In 2008, according to Passel and Cohn [2009], "73% of children of unauthorized immigrants are U.S. citizens by birth" (p. ii). Households with undocumented members also have more people working when compared to US-born households (p. 16). US-citizen children are negatively impacted by reducing their family members' abilities to access work and maintain household income. Many of them already live in poor conditions, with around one-third of children from immigrant parents living in poverty (p. 17). By increasing restrictions, a select group of citizens are largely facing the consequences.

Secondly, by increasing identification requirements for drivers' licenses, fewer people are able to obtain them. Since the implementation of Senate Bill 1080 in July 2008, the Oregon Department of Motor Vehicles (DMV) has issued 1,400 less driver licenses and 1,900 less identification cards a month (Rosenkranz, 2009). Not only is the DMV losing revenue at \$54 per card, but Oregon has less registered and tested drivers each month. Since many undocumented workers have no

alternative to reach their place of employment if they choose to remain in Oregon, some are driving to work without a proper license. The number of people without a license will gradually increase over the next eight years, as prior issued licenses expire and are not renewed. Without a license, many are also not insuring their vehicles or properly registering them with the DMV. For registered and insured motorists, this could create less safe driving environments and higher insurance premiums, since less people can access insurance for fear of their car or existing license being confiscated (Rosenkranz).

Through informal conversations with workers in Northeastern Oregon, there are a handful of ways people are adapting to driver license identification requirements, including:

- Undocumented people are physically relocating to Idaho and particularly Washington, where driver licenses and state-issued identification are less restricted. Since Oregon driver licenses do not expire for up to eight years after issuance, some undocumented people will wait until expiration occurs before leaving Oregon.
- Undocumented people retain existing driver licenses from other governments. For people who have an existing license, whether it be from another state, country or an international driver license, they may choose to use a different piece of documentation.
- Undocumented people are changing their state of residence on paper. Given the proximity of Portland Metro and Morrow and Umatilla Counties to population centers in Southern Washington, people are using relatives' or friends' addresses to acquire a less-restricted Washington State license.
- Employment agencies are providing shuttle service. For employment agencies that contract out to various industries, they are independently transporting workers to various sites so they may continue to be employed. The effect of this is very high expenses on workers for transport costs, since there is no alternative form of transportation.
- Undocumented people are driving un-licensed. Outweighing the risks, some people find they have no alternative than to drive illegally. In many cases, they use a vehicle that will be impounded if it does get stopped since it is not properly registered.

At present, it is difficult to suggest whether more workers will leave the state or will choose to adapt to the increased restrictions. Nonetheless, by limiting the accessibility of the

undocumented workers, employers of undocumented workers have increased power over their working conditions, movement and ability to seek employment.

The third way legal residents of Oregon are affected is through profiling. Regardless of if someone is documented, the perception by a portion of the US-born population is that they are illegal migrant or farm laborers (Lee and Fiske, p. 754). Additionally, people who appear Hispanic are also racially profiled. For example, Lopez and Minushkin (2008) point out that, “nearly one-in-ten Hispanic adults—native-born U.S. citizens (8%) and immigrants (10%) alike—report that in the past year the police or other authorities have stopped them and asked them about their immigration status” (p. i). Furthermore, similar percentages had difficulty keeping a job or housing because they are Hispanic (p. i). Although state and US policies do not state that they single out an ethnic group, Hispanics are in practice targeted. What is also forgotten is that foreign-born Mexicans are the largest single source of legal immigrants, comprising 27.7% of the legal foreign-born residents in the US (Hanson, et al, p. 106).

Lastly, economic development in rural communities hinges on a reliable source of labor. In 1989, Morrow County had the highest unemployment rate in the state at 16.5% (Jacklet). With June 2009 unemployment in Oregon at 12.2%, Morrow County had 10.0% unemployment, the fifth lowest rate in the state (Oregon Employment Department, 2009). In late 2008, amidst the economic recession, there were two planned additions to the Port of Morrow: (1) an ethanol plant through Pacific Ethanol (*Portland Business Journal*, 2006) and an Amazon.com computer data center valued alone at \$1 billion (Mills, 2008; *Seattle Post-Intelligencer*, 2008). Effectively removing a sizeable portion of the labor pool from Morrow County could potentially eliminate the ability of the Port of Morrow from attracting new tenants. This would affect undocumented and legal workers and their households in the county.

## CHAPTER V

### LIMITATIONS

#### A. Limitations of the Study

Estimates for Oregon's undocumented population fall between 130,000 and 160,000, as of 2008. With this variability of estimates comes even more variability estimating the undocumented population in each Oregon county. Using foreign-born Mexicans to estimate the undocumented population will create some error, although they make up between 71% and 89% of Oregon's undocumented population. Using foreign-born Mexicans, it becomes more difficult to estimate the undocumented population, particularly in counties where Mexican-born are over 80% of the foreign-born population. Furthermore, data from the American Community Survey and Pew Hispanic Center is based upon sample data, in itself inherent to levels of variability. Additionally, Bean, et al (2007) note that there are ambiguous individuals whose documented status is unclear or in the process of changing. (p. 419) Nonetheless, this study provides a scenario, a way of viewing the loss of undocumented workers at a smaller geographical level than ever attempted previously. It illustrates how the effects of policies aimed at a specific population will impact certain localities more than others. In some cases, these impacts are proportionately greater by orders of magnitude.

Inherent in this study is the assumption that Jaeger's study and those conducted by the Pew Hispanic Center are valid. For Jaeger's study, Oregonians for Immigration Reform believe it is flawed by not providing estimates of the costs illegal immigrants bring to Oregon (Navas, 2008). Data from the Pew Hispanic Center are national in scope, which becomes hard to validate at the county level. When estimating the undocumented population, all other populations must be accounted for, leaving the remaining as the assumed undocumented. For any study, it tests ethical boundaries to ask whether someone is undocumented. Jaeger's study, however, did fill a

gap of information, providing value-added effects. Additionally, Leachman from the Oregon Center for Public Policy found his estimates to be in line with the national situation (Navas). Pew Hispanic Center data included, in 2007, profiles of the Hispanic population in each county of the United States, extending the scope of their studies to the local level. Pew Hispanic Center's estimates of the undocumented population in each state also remain the most reputable estimates available.

The federal "no-match" policy, if carried out, would effectively eliminate nearly all undocumented workers at one time, by removing the ability to use a falsified Social Security Number (except cases with identity theft, for example). With the "no-match" policy, however, every state would be affected, making the issue less between states.

Federal and state policies may also change in the short-term or long-term, making the situation better or worse for the current undocumented population in Oregon. In 2009, House Bill 2939 would provide many undocumented students the ability to pay in-state tuition rates at Oregon Universities. As of 2007, California, Washington and eight other states allowed in-state tuition rates for undocumented students (Russell, 2007, p. 3). As of July 31, 2009, the Oregon House had yet to vote on the bill (Oregon State Legislature, 2009). If similar bills continue to appear in the State Legislature, the situation for families with undocumented members could improve, making the situation more favorable to remain in Oregon. On the other hand, other policies may increase hardship of undocumented families. Comprehensive immigration reform remains an arguably heated issue on the national stage, with little development in recent years. Should immigration reform occur, the results of this study could remarkably change.

This study largely looks at the entire loss of Oregon's undocumented population. Since driver licenses expire after eight years in Oregon, the potential out-migration of undocumented workers will likely not occur over the short-term period. The long-term economy could provide better paying jobs to the remaining population. Prior arguments have stressed that the undocumented population takes away employment opportunities from segments of the legal population. However, there is little evidence to support that the legal population will occupy current undocumented positions, for several reasons. For one, the legal population group to consider would have less education, since 46% of the undocumented population does not hold a high school degree, compared to 18% of the legal foreign-born population and 21% of the US-

born population (Passel and Cohn [2009], p. 12). Additionally, the legal population to consider would typically be seeking low-skill positions, since undocumented workers are disproportionately represented in low-skill positions (p. 14). If the less-educated and low-skill undocumented left their positions, legal residents could only fill five-percent of the available jobs before full employment. Secondly, as Bean, Lowell and Taylor (1988) point out, “undocumented Mexican immigration does not exert a very large impact on the wages of other individuals in the labor market...and in some cases [may be] positive” (pp. 45-46; Bean, Telles and Lowell, 1987, p. 685). From a supply and demand framework, losing a quantity of labor should increase wages, but the presence of undocumented workers may actually increase wages for legal workers. Thirdly, as Winegarden and Kohr (1991) show, “results clearly do not support commonly-expressed fears that undocumented immigration has caused any substantial increases in unemployment among the presumably most vulnerable groups in the U.S. work force. [They] have found evidence, however, of a sizeable reverse effect” (p. 111). Lastly, as David Jaeger states, “Removing undocumented workers from the economy would not be a panacea for native unemployment” (p. 5). “Moreover, in certain high-immigration states, the contribution of undocumented workers is substantial, and their removal would have a large impact on the state’s economy. ...the United States may in fact need to expand [undocumented worker] numbers to keep pace with the demands of the economy” (p. 7).

Massey, Durand and Malone point out that, “immigrants are generally responding to a strong and persistent demand that is built into the structure of post-industrial economies. ...Labor markets in developed nations contain...poorly paid ‘bad’ jobs that native [workers] shun. ...Employers turn to immigrants, often initiating flows through direct recruitment. If there were no demand for their services, ...those without documents would not come” (p. 145). Additionally, according to Somers (2007), “illegal immigration may also support the competitiveness of US tradable goods [since there is evidence that] immigrants fill jobs that natives are unwilling or unable to take” (p. 87).

Increased border enforcement, aimed at reducing illegal immigration along with southern border, does not increase or decrease wages in the region (Hanson, et al, p. 47). Comparing only Mexican immigrants, legal workers earn over 40% more than illegal immigrants (Rivera-Batiz, 1999, p. 111), suggesting that legal workers do not occupy the same positions as illegal workers. Rivera-Batiz’s (1999) study also “strongly suggests the presence of systematic discrimination

against undocumented workers [in wage earnings]” (pp. 110-111). The same discrimination is not possible with US-born population attempting to occupy the same jobs.

This study does not quantitatively address expected revenue losses and potential savings from Chapter IV. It becomes difficult to estimate whether undocumented workers contribute more or less to state and local economies than they receive in services. Part of the difficulty stems from the inclusion of the services provided to US-born and legal immigrants living in undocumented families. Nonetheless, there are proportionally more working-age undocumented people than working-age US-born people, suggesting that undocumented workers may lower the overall tax rate for US-born populations in aging communities.

## B. Future Work

This study focused upon the undocumented population, employment and payroll. A more in-depth economic study, including a more quantitative approach to the effect on industrial output and state and local revenues, would provide a clearer picture of the contributions of the undocumented population in Oregon counties. Additionally, comparing the contributions of the undocumented population to Oregon’s tax-base to the economic burden on state services would give a clearer idea of the net effect the undocumented population have on Oregon’s economy.

With the release of 2010 US Census data, there is also potential to scrutinize this study. Furthermore, the release of more comprehensive and recent data would allow for less variability in estimates. It remains to be seen how race and ethnicity appear on the 2010 Census. López (2005) pointed out that Hispanics comprise various groups, including blacks and whites, with a Latino group in the middle that identifies as a race and an ethnicity at the same time (p. 46). It also opens the possibility studying the trends in the undocumented population, since the situation in this decade will differ remarkably from the change in the undocumented population in the 1990s.

This study also did not collect data systematically from undocumented populations. By focusing on a geographical region of Oregon, it would be possible to ask foreign-born workers what steps they will or have taken due to changing immigration policy. A more detailed study of this nature

would provide a better idea if undocumented immigrants plan to remain in Oregon, head to another state, or no longer immigrate to the US for employment opportunities. The study would also be able to test if there are social networks present within immigrant communities that foster higher concentrations of undocumented workers in certain localities.



## CHAPTER VI

### CONCLUSION

With the potential loss of undocumented population, workers and payroll in Oregon, certain counties will be more adversely impacted than others. With more than 31.3% of the undocumented population and just 12.5% of the state's population, Hood River, Jefferson, Malheur, Marion, Morrow and Umatilla Counties could experience at least double the proportion of population loss compared to the state if the undocumented population was forced to leave the state. Extending the loss to employment, key industries will be highly impacted.

With undocumented workers highly concentrated in industry sectors, including agriculture, construction, manufacturing and accommodation & food service, the six counties could lose up to half of their worker population in certain sectors. In Morrow County alone, more than one-fifth of the workforce is undocumented, with the undocumented comprising more than one-third of the workforce in agriculture (51%), construction (43%) and accommodation & food service (34%). Morrow County, from direct and indirect losses, may lose over 36% of its total employment and over 31% of its total payroll. While the situation is less pronounced in the other five counties, each county may expect to lose more than 16% of its employment and 13% of its payroll. The consequences of this loss include: decreased state revenue, local property tax revenue losses, reduced local fee revenues and decreased rent returns. Savings may occur in overall health, public safety and education expenditures, but many of these services are directed towards the US-born children of undocumented families. Furthermore, with aging populations, particularly in rural communities, the higher proportion of working-age undocumented workers may in fact be subsidizing services for other populations.

While the long-term effect of the undocumented population loss may be less severe, undocumented workers occupy specific segments of the workforce, generally not impacting legal

wages or positions. In fact, the presence of undocumented workers may actually increase wages and decrease unemployment for legal workers. Economically, industries would have a difficult time adjusting to the loss a specific employment source.

It is implausible that the entire undocumented population would leave the state of Oregon. However, since undocumented workers and families are less restricted in the neighboring states of Washington and Idaho, and have better access to higher education in California and Washington, Oregon would likely lose a segment of its undocumented labor force to nearby population centers in those three states. With the large difference between undocumented worker and legal worker wages, Oregon industries may lose their competitive edge over neighboring states, particularly with agricultural and manufactured products. Businesses may find it more economical to locate to a neighboring state, rather than face higher labor costs in Oregon.

This study provides a scenario of local economic effects, studying a population segment that is latent by nature. By using three methods to estimate the Mexican-born population, there is a level of variability. By using the average of these three estimates to calculate the undocumented population in each county, there is added variability. The estimates of each county's undocumented population are subject to multiple levels of error, but one message is clear: certain counties have much higher proportions of undocumented people. The economic impact to those counties could be substantial enough to force industries to relocate to neighboring states.

This study serves as a reminder to the local governments, local populations and Oregon as a whole: the undocumented population is an integral part of the state, occupying jobs and allowing for certain industries to remain competitive even at the international level; enacting policies that target this population will disproportionately impact specific localities in Oregon and affect more than just the undocumented population.

**APPENDIX A**

**CALCULATIONS OF UNDOCUMENTED POPULATION IN OREGON COUNTIES**

US FIPS Code	County FIPS Code	County	Foreign-Born Pop(2000)	Foreign-Born Pop(2006)	Foreign-Born Yearly Change (00-06)	Foreign-Born Pop (2007)	Foreign-Born: Mexico (2000)	% of Foreign-Born who are Mexican-Born (2000)	Foreign-Born: Mexico (2006)	Hispanic Population (2000)	Hispanic Population (2007)	% of Hispanics who are Mexican-Born (2000)	% of Foreign-Born who are Mexican-Born (2007)
05000US41001	41001	Baker	304	-	11.7%	368	95	31.3%	-	392	543	24.2%	34.1%
05000US41003	41003	Benton	5,959	7,071	185	7,256	1,199	20.1%	-	3,645	4,806	32.9%	22.0%
05000US41005	41005	Clackamas	24,100	29,569	912	30,481	6,749	28.0%	-	16,744	26,512	40.3%	30.6%
05000US41007	41007	Clatsop	1,509	1,708	33	1,741	732	48.5%	-	1,597	2,346	45.8%	53.0%
05000US41009	41009	Columbia	780	1,458	113	1,571	81	10.4%	-	1,093	1,831	7.4%	11.3%
05000US41011	41011	Coos	1,668	2,405	123	2,528	380	22.8%	-	2,133	2,864	17.8%	24.9%
05000US41013	41013	Crook	637	974	56	1,030	491	77.1%	-	1,082	1,598	45.4%	84.1%
05000US41015	41015	Curry	778	894	19	913	102	13.1%	-	761	962	13.4%	14.3%
05000US41017	41017	Deschutes	3,189	7,582	732	8,314	829	26.0%	-	4,304	9,133	19.3%	28.4%
05000US41019	41019	Douglas	2,068	2,839	129	2,968	387	18.7%	-	3,283	4,132	11.8%	20.4%
05000US41021	41021	Gilliam	32	-	1.2%	39	10	31.3%	-	35	47	28.6%	34.1%
05000US41023	41023	Grant	114	-	4.4%	138	47	41.2%	-	163	198	28.8%	45.0%
05000US41025	41025	Harney	156	-	6.0%	189	47	30.1%	-	316	301	14.9%	32.9%
05000US41027	41027	Hood River	3,355	3,418	11	3,429	2,844	84.8%	-	5,107	5,542	55.7%	92.5%
05000US41029	41029	Jackson	8,849	10,581	289	10,870	4,493	50.8%	-	12,126	17,416	37.1%	55.4%
05000US41031	41031	Jefferson	1,883	2,022	23	2,045	1,521	80.8%	-	3,372	4,149	45.1%	88.2%
05000US41033	41033	Josephine	2,346	3,018	112	3,130	520	22.2%	-	3,229	4,313	16.1%	24.2%
05000US41035	41035	Klamath	3,085	3,067	-3	3,064	1,739	56.4%	-	4,961	5,896	35.1%	61.5%
05000US41037	41037	Lake	250	-	9.6%	303	124	49.6%	-	404	526	30.7%	54.1%
05000US41039	41039	Lane	15,961	20,628	778	21,406	4,099	25.7%	-	14,874	20,992	27.6%	28.0%
05000US41041	41041	Lincoln	1,860	2,805	158	2,963	866	46.6%	-	2,119	3,272	40.9%	50.8%
05000US41043	41043	Linn	3,591	3,831	40	3,871	1,401	39.0%	-	4,514	6,748	31.0%	42.6%
05000US41045	41045	Malheur	2,599	3,022	71	3,093	2,164	83.3%	-	8,099	8,628	26.7%	90.9%
05000US41047	41047	Marion	35,969	45,689	1,620	47,309	23,683	65.8%	-	48,714	68,229	48.6%	71.9%
05000US41049	41049	Morrow	1,596	-	62.6%	1,931	1,407	88.2%	-	2,686	3,269	52.4%	96.2%
05000US41051	41051	Multnomah	83,965	94,415	1,742	96,157	20,144	24.0%	26,899	49,607	73,385	40.6%	26.2%
05000US41053	41053	Polk	4,024	4,764	123	4,887	2,281	56.7%	-	5,480	8,386	41.6%	61.9%
05000US41055	41055	Sherman	48	-	1.9%	58	33	68.8%	-	94	122	35.1%	75.1%
05000US41057	41057	Tillamook	1,009	1,447	73	1,520	554	54.9%	-	1,244	1,942	44.5%	59.9%
05000US41059	41059	Umatilla	5,930	7,007	180	7,187	4,796	80.9%	-	11,366	13,815	42.2%	88.3%
05000US41061	41061	Union	655	587	-11	576	162	24.7%	-	600	806	27.0%	27.0%
05000US41063	41063	Wallowa	61	-	2.4%	74	11	18.0%	-	125	173	8.8%	19.7%
05000US41065	41065	Wasco	1,467	1,657	32	1,689	1,013	69.1%	-	2,214	2,825	45.8%	75.4%
05000US41067	41067	Washington	63,438	85,777	3,723	89,500	23,503	37.0%	32,690	49,735	76,969	47.3%	40.4%
05000US41069	41069	Wheeler	32	-	1.2%	39	15	46.9%	-	79	89	19.0%	51.2%
05000US41071	41071	Yamhill	6,435	7,119	114	7,233	4,561	70.9%	-	9,017	13,375	50.6%	77.4%
OREGON			289,702	358,414	11,452	369,866	113,083	39.0%	152,731	275,314	396,140	41.1%	42.6%

Source: American Community Survey, 2005-2007; Jaeger, 2008; Massey and Bartley, 2005; Passel and Cohn, 2008, 2009; Pew Hispanic Center, 2007, 2008, 2009; US Census, 2000

County	% of State Total - Foreign-Born Mexicans (2000)	Foreign-Born: Mexico (2007) - Foreign-Born Proportion Method	Foreign-Born: Mexico (2007) - Hispanic Proportion Method	Foreign-Born: Mexico (2007) - State Proportion Method	Foreign-Born: Mexico (2007) - Composite Method	% of State Total - Foreign-Born Mexicans (2007)	Undocumented Mexican-Born (2000) - Low Estimate	Undocumented Mexican-Born (2000) - High Estimate	Undocumented Population (2000)	Undocumented Mexican-Born (2007) - Low Estimate	Undocumented Mexican-Born (2007) - High Estimate
Baker	0.08%	126	132	134	130	0.08%	67	82	92	90	109
Benton	1.06%	1,594	1,581	1,689	1,621	1.02%	851	1,038	1,166	1,116	1,361
Clackamas	5.97%	9,318	10,686	9,510	9,838	6.19%	4,792	5,843	6,565	6,774	8,259
Clatsop	0.65%	922	1,075	1,031	1,010	0.63%	520	634	712	695	848
Columbia	0.07%	178	136	114	143	0.09%	58	70	79	98	120
Coos	0.34%	629	510	535	558	0.35%	270	329	370	384	469
Crook	0.43%	867	725	692	761	0.48%	349	425	478	524	639
Curry	0.09%	131	129	144	134	0.08%	72	88	99	93	113
Deschutes	0.73%	2,359	1,759	1,168	1,762	1.11%	589	718	806	1,213	1,479
Douglas	0.34%	606	487	545	546	0.34%	275	335	376	376	459
Gilliam	0.01%	13	13	14	14	0.01%	7	9	10	9	11
Grant	0.04%	62	57	66	62	0.04%	33	41	46	43	52
Harney	0.04%	62	45	66	58	0.04%	33	41	46	40	48
Hood River	2.51%	3,173	3,086	4,007	3,422	2.15%	2,020	2,462	2,766	2,356	2,873
Jackson	3.97%	6,025	6,453	6,331	6,270	3.94%	3,190	3,890	4,371	4,317	5,263
Jefferson	1.35%	1,803	1,871	2,143	1,939	1.22%	1,080	1,317	1,480	1,335	1,628
Josephine	0.46%	757	695	733	728	0.46%	369	450	506	501	611
Klamath	1.54%	1,886	2,067	2,450	2,134	1.34%	1,235	1,506	1,692	1,470	1,792
Lake	0.11%	164	161	175	167	0.10%	88	107	121	115	140
Lane	3.62%	6,001	5,785	5,776	5,854	3.68%	2,911	3,549	3,987	4,031	4,914
Lincoln	0.77%	1,506	1,337	1,220	1,354	0.85%	615	750	842	933	1,137
Linn	1.24%	1,649	2,094	1,974	1,906	1.20%	995	1,213	1,363	1,312	1,600
Malheur	1.91%	2,811	2,305	3,049	2,722	1.71%	1,537	1,873	2,105	1,874	2,285
Marion	20.94%	34,005	33,170	33,370	33,515	21.08%	16,817	20,503	23,037	23,078	28,136
Morrow	1.24%	1,859	1,712	1,983	1,851	1.16%	999	1,218	1,369	1,275	1,554
Multnomah	17.81%	25,184	29,800	28,384	28,025	17.62%	14,304	17,439	19,595	19,297	23,527
Polk	2.02%	3,024	3,491	3,214	3,243	2.04%	1,620	1,975	2,219	2,233	2,722
Sherman	0.03%	44	43	46	44	0.03%	23	29	32	31	37
Tillamook	0.49%	911	865	781	852	0.54%	393	480	539	587	715
Umatilla	4.24%	6,345	5,829	6,758	6,311	3.97%	3,406	4,152	4,665	4,345	5,298
Union	0.14%	155	218	228	200	0.13%	115	140	158	138	168
Wallowa	0.01%	15	15	15	15	0.01%	8	10	11	10	13
Wasco	0.90%	1,273	1,293	1,427	1,331	0.84%	719	877	985	916	1,117
Washington	20.78%	36,199	36,373	33,117	34,221	21.52%	16,689	20,347	22,862	23,564	28,728
Wheeler	0.01%	20	17	21	19	0.01%	11	13	15	13	16
Yamhill	4.03%	5,597	6,765	6,427	6,263	3.94%	3,239	3,949	4,437	4,312	5,258
<b>OREGON</b>		<b>157,272</b>	<b>162,711</b>	<b>159,339</b>	<b>159,025</b>		<b>80,300</b>	<b>97,900</b>	<b>110,000</b>	<b>109,500</b>	<b>133,500</b>

Source: American Community Survey, 2005-2007; Jaeger, 2008; Massey and Bartley, 2005; Passel and Cohn, 2008, 2009; Pew Hispanic Center, 2007, 2008, 2009; US Census, 2000

County	Undocumented Population (2007) - Mid Estimate	Undocumented Population (2007) - Low Estimate	Undocumented Population (2007) - High Estimate	Undocumented Population - County Rank	Total Population - 2007	% of Total Population that is Undocumented (2007)	Undocumented Percentage - County Rank	% of Total Population that is Hispanic (2007)	Hispanic Percentage - County Rank
Baker	123	107	151	30	15,924	0.8%	30	3.4%	32
Benton	1,529	1,325	1,882	17	81,428	1.9%	21	5.9%	25
Clackamas	9,280	8,042	11,421	4	376,251	2.5%	19	7.0%	18
Clatsop	952	825	1,172	20	37,364	2.5%	18	6.3%	21
Columbia	135	117	166	28	48,996	0.3%	35	3.7%	31
Coos	526	456	648	24	63,505	0.8%	29	4.5%	27
Crook	718	622	884	22	22,906	3.1%	12	7.0%	19
Curry	127	110	156	29	21,767	0.6%	33	4.4%	29
Deschutes	1,662	1,441	2,046	16	154,028	1.1%	25	5.9%	24
Douglas	515	447	634	25	104,119	0.5%	34	4.0%	30
Gilliam	13	11	16	36	1,690	0.8%	31	2.8%	35
Grant	58	51	72	31	6,904	0.8%	27	2.9%	34
Harney	54	47	67	32	6,767	0.8%	26	4.4%	28
Hood River	3,228	2,798	3,973	9	21,296	15.2%	2	26.0%	3
Jackson	5,914	5,125	7,279	6	199,295	3.0%	15	8.7%	13
Jefferson	1,829	1,585	2,251	13	20,687	8.8%	4	20.1%	5
Josephine	687	595	845	23	81,056	0.8%	28	5.3%	26
Klamath	2,013	1,745	2,478	12	66,512	3.0%	14	8.9%	12
Lake	157	136	193	27	7,277	2.2%	20	7.2%	16
Lane	5,522	4,786	6,796	8	343,591	1.6%	22	6.1%	22
Lincoln	1,278	1,107	1,572	18	45,866	2.8%	16	7.1%	17
Linn	1,798	1,558	2,212	15	113,264	1.6%	23	6.0%	23
Malheur	2,567	2,225	3,160	11	31,135	8.2%	5	27.7%	2
Marion	31,613	27,398	38,909	2	311,449	10.2%	3	21.9%	4
Morrow	1,746	1,513	2,149	14	11,199	15.6%	1	29.2%	1
Multnomah	26,434	22,910	32,535	3	701,986	3.8%	11	10.5%	11
Polk	3,059	2,651	3,765	10	75,265	4.1%	10	11.1%	10
Sherman	42	36	51	33	1,677	2.5%	17	7.3%	15
Tillamook	804	697	989	21	25,038	3.2%	13	7.8%	14
Umatilla	5,953	5,159	7,326	5	73,491	8.1%	6	18.8%	6
Union	189	164	233	26	24,753	0.8%	32	3.3%	33
Wallowa	14	12	18	35	6,759	0.2%	36	2.6%	36
Wasco	1,255	1,088	1,545	19	23,762	5.3%	9	11.9%	9
Washington	32,279	27,975	39,728	1	522,514	6.2%	7	14.7%	7
Wheeler	18	16	22	34	1,361	1.3%	24	6.5%	20
Yamhill	5,907	5,120	7,271	7	96,573	6.1%	8	13.8%	8
OREGON	150,000	130,000	160,000		3,747,455	4.0%		10.6%	

Source: American Community Survey, 2005-2007; Jaeger, 2008; Massey and Bartley, 2005; Passel and Cohn, 2008, 2009; Pew Hispanic Center, 2007, 2008, 2009; US Census, 2000

**APPENDIX B**

**CALCULATIONS OF INDUSTRY SECTOR UNDOCUMENTED POPULATIONS**

	Total Employment	Undocumented Employment	% of Employment that is Undocumented	Farm Employment	% of Employment that is in Farm Employment	LN(Farm Emp compared to State)	Base Undoc Farm Employment	Undoc Farm Employment
Hood River	15,578	2,098	13.5%	1,743	11.2%	1.33	351	820
Jefferson	8,964	1,189	13.3%	785	8.8%	1.09	199	416
Malheur	18,344	1,669	9.1%	2,779	15.1%	1.64	280	737
Marion	177,424	20,549	11.6%	8,221	4.6%	0.45	3,442	4,993
Morrow	5,507	1,135	20.6%	1,076	19.5%	1.89	190	549
Umatilla	39,848	3,869	9.7%	3,175	8.0%	0.99	648	1,291
<b>Oregon</b>	<b>2,304,410</b>	<b>97,500</b>	<b>4.2%</b>	<b>68,056</b>	<b>3.0%</b>	<b>24%</b>	<b>16,333</b>	<b>16,333</b>
<i>Six County</i>	265,665	30,509	11.5%	17,779		16.8%	5,111	8,806

Source: Bureau of Economic Analysis, 2006; Jaeger, 2008

	Construction Employment	% of Employment that is in Construction Employment	LN(Const Emp compared to state)	Base Undoc Construction Employment	Undoc Construction Employment
Hood River	859	5.5%	(0.15)	445	378
Jefferson	301	3.4%	(0.65)	252	89
Malheur	526	2.9%	(0.80)	354	69
Marion	11,635	6.6%	0.02	4,359	4,458
Morrow	179	3.3%	(0.68)	241	77
Umatilla	1,677	4.2%	(0.42)	821	475
<b>Oregon</b>	<b>147,742</b>	<b>6.4%</b>	<b>14%</b>	<b>20,684</b>	<b>20,684</b>
<i>Six County</i>	15,177		21%	6,472	5,547

Source: Bureau of Economic Analysis, 2006; Jaeger, 2008



	Manufacturing Employment	% of Employment that is in Manufacturing	LN(Manu Emp compared to state)	Base Undoc Manu Employment	Undoc Manu Employment
Hood River	1,395	9.0%	(0.07)	221	206
Jefferson	1,740	19.4%	0.71	275	470
Malheur	1,138	6.2%	(0.43)	180	102
Marion	12,454	7.0%	(0.31)	1,970	1,361
Morrow	880	16.0%	0.51	139	211
Umatilla	3,716	9.3%	(0.03)	588	573
<b>Oregon</b>	<b>220,370</b>	<b>9.6%</b>	<b>7.0%</b>	<b>15,426</b>	<b>15,426</b>
<i>Six County</i>	21,323	8.0%	15.8%	3,374	2,923

Source: Bureau of Economic Analysis, 2006; Jaeger, 2008

	Accom/Food Service Employment	% of Employment that is in Accom/Food	LN(Accom/FdSvc compared to state)	Base Accom/Fd Svc Undoc Employment	Undoc Accom/Food Svc Employment	Undocumented Four Sector Total	Total Undoc Emp	% of Undocumented Employment in Four Sectors
Hood River	1,438	9.2%	0.31	402	528	1,931	2,098	92.1%
Jefferson	529	5.9%	(0.14)	228	197	1,172	1,189	98.6%
Malheur	1,100	6.0%	(0.12)	320	282	1,190	1,669	71.3%
Marion	10,489	5.9%	(0.13)	3,938	3,412	14,223	20,549	69.2%
Morrow	182	3.3%	(0.72)	218	62	899	1,135	79.2%
Umatilla	2,319	5.8%	(0.15)	742	631	2,971	3,869	76.8%
<b>Oregon</b>	<b>155,720</b>	<b>6.8%</b>	<b>12.0%</b>	<b>18,686</b>	<b>18,686</b>	<b>71,130</b>	<b>97,500</b>	<b>73.0%</b>
<i>Six County</i>	16,057	6.0%	19.2%	5,847	5,111	22,386	30,509	73.4%

Source: Bureau of Economic Analysis, 2006; Jaeger, 2008

## APPENDIX C

## LONG-TERM IMPACTS OF OREGON'S UNDOCUMENTED POPULATION

Table 5. Long Term Impacts of Eliminating Undocumented Workers from Oregon: Low Case\*

	Baseline model	Estimated change	Long term impacts	Percent change
Population (millions)	3,700,758	-150,000	3,550,758	-4.1%
Employment (no. of jobs)	2,264,537	-147,673	2,116,864	-6.5%
Industry output	292,351	-14,733	277,618	-5.0%
Employee compensation	86,579	-3,902	82,677	-4.5%
Proprietor income	10,482	-776	9,706	-7.4%
Other property income	41,030	-2,012	39,018	-4.9%
Indirect business tax	10,729	-521	10,208	-4.9%
Total value added	148,819	-7,211	141,608	-4.8%

\* Millions of \$US except where noted

Table 6. Long Term Impacts of Eliminating Undocumented Workers from Oregon: High Case\*

	Baseline model	Estimated change	Long term impacts	Percent change
Population (millions)	3,700,758	-150,000	3,550,758	-4.1%
Employment (no. of jobs)	2,264,537	-108,623	2,172,120	-4.1%
Industry output	292,351	-10,357	281,994	-3.5%
Employee compensation	86,579	-2,556	84,023	-3.0%
Proprietor income	10,482	-599	9,883	-5.7%
Other property income	41,030	-1,376	39,654	-3.4%
Indirect business tax	10,729	-328	10,401	-3.1%
Total value added	148,819	-4,860	143,959	-3.3%

\* Millions of \$US except where noted

Source: Jaeger, 2008

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