California's Overseas Trade Office Closures: Lessons for Washington State

EM017

SCHOOL OF ECONOMIC SCIENCES WASHINGTON STATE UNIVERSITY EXTENSION

Abstract

Estimating the impact of export-promoting overseas offices on state exports is difficult because it is not clear if the offices cause exports to increase or if exports cause the offices to exist. This distinction is critical because estimates of the impact of an overseas office will be biased in the office's favor if the latter is true. The 2003 California budget crisis provides a natural experiment that allows for an unbiased estimate of the impact of overseas trade offices on state exports. Due to economic cutbacks, California closed all 12 of its overseas offices on January 1, 2004. If the offices remained open, California's exports to those countries would have increased an estimated 2–5%. However, this is an imprecise estimate that does not distinguish the office impact on exports from random fluctuations. Because Washington also operates overseas offices (and to many of the same countries as California), the lessons learned from this experience may be used to design better export promotion policies here.

WASHINGTON STATE UNIVERSITY EXTENSION

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Acknowledgements
I thank Tom Holmes, Vicki McCracken, Richard Shumway, Doug Young, and Mykel Taylor for comments. I also thank Arzu Aysin Tekindor for research assistance.

Passages of this text are from "California's Exports and the 2004 Overseas Office Closures," Working Paper Series 2008-28, Washington State University, School of Economic Sciences, available at http://www.ses.wsu.edu/PDFFiles/WorkingPapers/Cassey/CalifExports_WP2008-28.pdf.

Introduction

Nearly all states in the United States fund export promotion programs such as overseas trade offices (hereafter referred to simply as "overseas offices"). Washington is no different. As of this writing, the state of Washington operates offices in six countries: Japan, Taiwan, Europe (physically in Germany but with responsibility for European Union countries), China, South Korea, and Mexico. Mexico is the newest office, opening in 2004. Since Washington exports more of its total value of shipments[1] than any other U.S. state, effective export promotion is particularly important to Washington's residents and workers.

State officials often justify using tax dollars to fund overseas offices by claiming the offices help small- and medium-sized firms increase or initiate exports to a new country. Such is the claim in Washington. Mark Calhoon, the senior managing director of Washington's Department of Community, Trade, and Economic Development, writes, "The primary function of our foreign reps is to assist [Washington] companies to increase exports…" (December 1, 2008, e-mail message)[2]. However, only if overseas offices increase the exports of Washington companies and the related aggregate state exports by a greater amount than the cost of operating the offices are they economically warranted.

Despite the general willingness of state governments to fund overseas offices—40 states had at least one in 2002—their effectiveness is unknown (see literature section below for more details). Measuring the success of an overseas office is difficult. The problem is one of causality: do these offices increase exports or do increasing exports generate the offices' performance? If states that are good exporters use overseas offices *because* they are good exporters already, then the standard method of determining the impact of the offices is biased in favor of the offices (falsely attributes exports to them).

Early 21st century California provides a solution to this bias. California operated 12 overseas offices at an annual cost of $6 million. It permanently closed all of these offices on January 1, 2004, primarily because of a 2003 state budgetary shortfall of $40 billion that forced cutbacks to many state programs. The budget of the entire economic development agency housing the overseas offices was eliminated. Furthermore, there was a perception that the overseas offices were ineffective after a May 2003 exposé in the *Orange County Register* (Kindy 2003a, 2003b) reported a lack of oversight and false claims by the offices. Though no official citations for wrongdoing were levied, this report damaged the public reputation of the offices.

The closure of California's 12 overseas offices provides an opportunity for a direct estimate of their impact on California's exports because the decision to close the offices was based on outside, or exogenous circumstances affecting the existence of the overseas offices that have nothing to do with the relationship between exports and the offices. Such an exogenous intervention as the 2003 California budget crisis can be used as a natural experiment because the resulting impact on state exports was likely the result of the intervention rather than the causality between exports and performance of the overseas trade offices. As a result, the difference in exports from countries with offices before and after the January 2004 closures can be compared to the difference in exports to countries that never had offices during the same time period to arrive at a quantitative measure of the office impact on exports. This methodology is known as differences-in-differences. Wooldridge (2002) describes the details of this methodology for a general case. Differences-in-differences is a standard methodology when there is an exogenous intervention in the data so that a change can be traced by not only considering before and after effects, but using control and treatment groups to account for other possible characteristics.

[1]The U.S. Census defines the value of shipments as "the [market] value of produced and shipped goods, the [dollar amount] of receipts, or the [trade] value of work done."

[2]As of August 2009, it is not clear how Washington's budget deficit will affect the funds allocated to overseas offices or export promotion more generally. The Department of Community, Trade, and Economic Development was renamed the Department of Commerce July 1, 2009. Recommendations for its structure and responsibilities are due November 2009. The fate of Washington's overseas offices is not certain.

Using differences-in-differences methodology on a sample of 44 countries, 12 with overseas export offices that closed and the remaining 32 never having any, suggests that had the existing offices remained open, California's exports to those countries would have been 2–5% larger. Though this estimate is positive, its precision is not great enough to statistically distinguish the estimate from a 0% impact. Therefore, there is no clear impact of overseas offices on California's exports to those countries where an overseas office was located.

Literature on the Effectiveness of Overseas Offices

During the 1980s and early 1990s, international business and marketing scholars studied the effectiveness of export promotion programs, including overseas offices.[3] The resulting literature is largely based on surveys and interviews with people and firms who worked for, were participants in, or were familiar with, specific export promotion programs. No consensus on the effectiveness of export promotion programs emerges from this work.

More recently, Wilkinson et al. (2005) studied data on total export promotion expenditures and manufacturing exports by state. They found a strong correlation between states with relatively large export promotion program expenditures and states with a relatively large number or dollar amount of exports. However, they did not control for individual state or country characteristics that could make states likely to have both active exports and large export promotion expenditures without the expenditures being directly involved with the exports. Cassey (2008) uses a different approach. He argues that the government's problem of choosing which countries to locate overseas export offices is similar to a large corporation's problem of choosing which cities to locate a sales office. He is able to estimate how state exports to a particular country affect the probability a state will choose to facilitate that relationship with an office. Furthermore, he estimates how much export money an office would have to generate to be profitable in the sense that the cost of the office (to build and operate) is more than made up for by an increase in state exports.

Nitsch (2005), Ries and Head (2007), and Cassey (2007) are methodologically closest to the analysis described here. All 3 use data on exports and trade missions—delegates to foreign countries led by a governor, prime minister, or other head of state in order to promote exports—over a number of years in order to see if there are changes to exports before and after a trade mission. Nitsch finds evidence for the positive impact of trade missions on exports, whereas Ries and Head and Cassey do not. But in all 3 of these papers, there is not enough data to control fully for individual state and country characteristics that affect where trade missions did go. Nitsch attempts to control for these details by accounting for the growth of exports rather than actual exports. However, his method is still less sound than the method used in this study because he does not have an exogenous intervention like that provided by California's 2003 budget deficit.

Despite past work, the question of how much an export promotion program increases state exports is still open. Given that Washington spends more than $2 million annually on operating overseas offices (State of Washington 2007), this is a relevant and important question, explored in the next section. Some of the details of the following analysis are found Appendix B. Interested readers may obtain the complete details by consulting Cassey (2009).

California's Overseas Offices and Comparison to Washington[4]

Services and operations

Much like Washington's, California's overseas offices were part of a trade advocacy program. Each office was physically located in a foreign

[3]See Wilkinson and Brouthers (2000) for a review of state export promotion programs and Lederman et al. (2007) for a review of national export promotion programs.

[4]Many of the details in this section are from newspaper articles and California State government documents with overlapping details. Rather than cite all sources for each point, a complete list of consulted sources is provided in Appendix A.

country and paid for with public monies. California operated a number of overseas offices beginning in the 1980s to promote exports, especially those from small- and medium-sized firms. The offices attempted to achieve this goal primarily by directly connecting the potential California exporter to foreign customers.

California's 12 overseas offices were located in Shanghai, Mexico City, Buenos Aires, London, Frankfurt, Jerusalem, Johannesburg, Seoul, Tokyo, Hong Kong, Taipei, and Singapore. In 2003, the annual budget for the 12 offices was $6 million.

Each office provided similar services. A California resident or business owner could have either contacted an overseas office directly or through an in-state office to receive export assistance. Suppose a firm in California wanted to sell merchandise in Mexico. The firm could call the Mexico City office and be provided with contacts for Mexican firms or markets likely interested in the good. These services were free of charge. Since the offices were not mandated to look for foreign direct investment opportunities, their benefits, if any, were due exclusively to increased exports.

Operations across the 12 offices varied. For example, state employees working abroad staffed 7 of the 12 offices, while California contracted foreign nationals in the other 5. In addition, the number of staff in each office and their operating budgets differed substantially. The Mexico City office had a staff of 8 and a $786,000 budget in 2003, about 60% more than the average.

Performance evaluation

California's overseas export offices, administered as part of the Technology, Trade, and Commerce Agency, were required by law to provide feedback on their performance. However, the methodology was not stipulated, and the results accordingly lacked credibility. Each office evaluated its own performance by asking every firm it serviced how much of their projected sales were to a foreign market, and essentially took credit for all of it. After a year, the office conducted a follow-up survey asking if they were helpful. Typically the office made little effort to distinguish how the office was helpful or even if projected exports were realized. Among other problems, such as export measurement error, the survey was not objective because it was designed by people whose jobs depended on the success of the office.

Closures

California experienced an economically and politically tumultuous summer in 2003. The dotcom bust dramatically reduced the state's tax revenue when it was still recovering from an electricity shortage in 2002. The governor, Gray Davis, faced the possibility of a recall election. In this environment, the state legislature made the decision to close all 12 overseas offices effective January 1, 2004.

Despite the *Orange County Register* articles asserting exaggerated success, Kress et al. (2005) find the reason the overseas offices closed was the budget crisis. Therefore, the relatively sudden closing of all overseas offices is an exogenous intervention. Supporting this claim is the fact that many states reduced their overseas office budgets during similar 2002–2004 financial crises.

California only closed its 12 publicly funded overseas trade offices. Although it has one that remained open in Armenia, it is essentially a private venture and operates very differently from the others, so was not considered in this study. Likewise, there are another 9 privately funded unofficial overseas trade offices that were not included.

Washington's overseas trade offices

The annual cost to taxpayers for Washington's 6 overseas trade offices was more than $2 million from 2007 to 2009. The first office opened in Japan in 1982, followed by Taiwan in 1989, Europe (Germany) in 1992, China in 1996, Korea in 1999, and Mexico in 2004. Washington State employees do not operate the offices; they are all contracted with consulting firms. The Mexico office provides services for another state as well as Washington. On occasion, Washington has changed office locations within a country. For example, the Japanese office relocated from Tokyo to Kobe.

Similar to California, Washington's goals are "to support the expansion and location of businesses [in the state]; provide international business assistance to [state] businesses to support their entry and successful participation in the international marketplace; promote [the state] and its businesses in the global and domestic marketplace; and facilitate and strengthen the state's international relationships" (State of Washington 2007). The offices aim to achieve these goals, in part, by exchanging information about Washington and foreign firms. Representatives assist about 80 Washington firms per year with increasing exports.

Washington's overseas trade offices are part of the International Trade and Economic Development (ITED) export promotion program and housed in the Department of Community, Trade, and Economic Development (CTED). According to 2007 statistics, the ITED had 10.5 full-time employees, while CTED had 315 employees and a budget of $434 million (State of Washington 2007).

The Gravity Equation, Data Description, and Summary Statistics

I estimate the impact from California's closure of 12 overseas trade offices on the state's exports to those markets by examining the relationship between the importing country's size, whether there is an overseas office in the country during a particular year, its distance from California, and the value of California exports received. This relationship is known as the gravity equation. Introduced by Tinbergen (1962), it is widely used as an empirical international trade tool because of its simplicity, the ease in fulfilling the data requirements, and its empirical success accounting for trade flows. Details of the gravity equation are in Appendix B.

The gravity equation requires data on California's exports to individual countries, the real gross domestic product (RGDP) of those countries, and the years and locations of the overseas offices. The sample period used here covers the years 2000–2007, which includes the 4 years preceding and following the offices' closure on January 1, 2004. The countries selected for the sample receive at least 0.13% of California's exports. This includes the12 countries hosting the overseas offices that closed, which are a subset of the 44 total countries that accounted for 97.4% of California's international exports. More details on the data are in Appendix C.

Section A of Table 1 presents the summary statistics for real manufacturing exports, RGDP, and distance between California to the destination country. To be consistent with the differences-in-differences methodology, the data is partitioned into control and treatment groups. The treatment group includes the 12 countries with an overseas trade office, while the control group contains 32 countries that did not have an overseas trade office during the 8-year study period. Regardless of group, there are 4 observations for each country before and after the offices closed. Therefore, the summary statistics are across countries and years (32 x 4 = 128; 12 x 4 = 48).

Table 1 shows the mean and median in exports increased slightly in the control group between the before and after periods. The mean in the treatment group decreased slightly, but the median did not. During the same time, the RGDP of both the control and treatment groups increased substantially in absolute terms. In relative terms, the control group grew 46%. This is much faster than the treatment group, which grew slightly less than 20%.

It is important to understand that the partition of countries into treatment and control groups is not random. California deliberately opened offices in those countries that make up the treatment group. Furthermore, the countries in the treatment group are much larger than those in the control group. Of the top 5 economies in the before period, California had an office in 4. The treatment countries are also the largest destinations for California's exports. Of California's top 10 export destinations during the sample period, only Canada (third) does not have an office.

Table 1B provides the summary statistics for the differences in exports for each group in the before and after periods. To construct these statistics, average exports in the before period

Table 1. Summary statistics for California's overseas exports and RGDP by group and period*

Variable	Group	Period	*N*	Mean	Median	Std. Dev.	Min	Max
SECTION A								
	Control	Before	128	723.32	234.88	1310.63	42.11	8779.07
Real Exports	Control	After	128	765.34	388.55	1295.05	71.38	8140.40
(Millions)	Treatment	Before	48	3443.32	2833.78	3169.49	61.05	11894.92
	Treatment	After	48	3422.19	2884.19	2945.78	105.16	11354.40
	Control	Before	128	207.43	130.05	236.97	8.16	1243.69
Real GDP	Control	After	128	303.72	186.70	327.21	9.36	1498.10
(Billions)	Treatment	Before	48	664.72	281.17	833.26	59.83	3276.34
	Treatment	After	48	784.26	337.34	873.80	72.05	3041.67
Distance	Control	–	128	6033.88	5858.50	1662.74	2365.00	8886.00
(Miles)	Treatment	–	48	6394.17	6186.00	2030.32	1656.00	10408.00
SECTION B								
Diff. Real Exports	Control	After-Before	32	42.01	49.09	182.18	-476.92	365.37
(Millions)	Treatment	After-Before	12	-21.12	-49.44	620.13	-1054.84	1491.65
Diff. RGDP	Control	After-Before	32	96.29	50.45	100.28	1.77	356.17
(Billions)	Treatment	After-Before	12	119.55	37.77	212.21	-170.12	5680.84
SECTION C								
Diff.-Diff. Real Exp. (Millions)	Control-Treatment	After-Before	–	63.14	–	353.86	–	–
Diff.-Diff. RGDP (Billions)	Control-Treatment	After-Before	–	-23.26	–	138.62	–	–

*The summary statistics in Section A are with respect to country–years. The summary statistics in Section B are with respect to countries only.

were subtracted from the average exports in the after period for each country in both the control and treatment groups. (This is why the number of observations matches the number of countries but not the number of country–years as in Section A of the table.) Notice the increase in average exports in the control group, whereas the average exports in the treatment group decreased. At the same time, the RGDP of the treatment group grew more than the control group in absolute, not relative terms.

Table 1C shows the difference of the means between the control and treatment groups between periods. The differences-in-differences in exports and RGDP are quite large at $63.14 and -23.26 million, respectively. Therefore, there is enough evidence that overseas offices affected exports to continue the analysis. In particular, I investigate how much the overseas offices closures account for this "diff" statistic.

Estimation and Results

If California's overseas trade offices had an effect on aggregate state manufacturing exports to those countries in which they resided, the data will either indicate decreased exports to the target country or no new exports. Both possibilities would be realized as a positive impact on exporting.

The first specification in Table 2 shows the differences-in-differences estimate obtained by using the ordinary least squares (OLS) procedure. R^2 and RMSE are standard statistical measures of the regression model goodness of fit with the data. The numbers in the OLS row represent the average percent change in California's exports given a 1% change in the RGDP or distance variables, respectively, keeping the other variables fixed. The coefficients for the office and group variables represent the

Table 2. Differences-in-differences estimates

Specification	R^2	RMSE	RGDP	Office	Distance	Group	Constant
OLS	.54	.97	.57	.05	-.66	1.18	13.86
s.e.			(.04)***	(.23)	(.15)***	(.17)***	(1.28)***
$RGDP_{ct}$ weights	.74	.68	.56	.02	-1.47	1.18	21.01
s.e.			(.04)***	(.15)	(.12)***	(.11)***	(1.07)***

All regressions are of the gravity equation. See Appendix B for details. N = 352. The constant and time binary estimates are not reported.

***, **, or * on a standard error indicates the associated coefficient is significant at the 1%, 5%, or 10% level, respectively.

percent change in exports after establishing an overseas trade office, keeping the other variables fixed. Because the office variable equals one in the before years for the treatment group and zero in the after years for both groups, it is the estimated percent change in exports if the offices had remained open. Parentheses indicate standard errors. Standard errors are useful for knowing how precise the estimate is. Large standard errors indicate that an estimate is not precise and therefore should not be taken with confidence. The estimate for offices indicates keeping the 12 open would have increased exports to each of those countries by roughly 5% on average. Though this may seem small, the vast size of many of the countries with overseas trade offices means the absolute level is quite large (about $2 billion per year). However, the large standard error means this estimate cannot be distinguished from an impact of zero (i.e., random events).

To make the office impact estimate more precise, I repeat the above analysis except with country size to weight observations. This forces the estimate to put more emphasis on the larger countries instead of considering each country equally. The results are in the second specification of Table 2, which indicates the office impact has decreased to 2%. The standard errors decreased also, but not enough to trust the new statistic. Therefore, though there is a significant decrease in California's exports to countries that had an overseas office after the offices closed compared to those countries that did not have an office, it cannot be attributed to the office closures.

Note that the evidence does not suggest that overseas trade offices are ineffective, only that the impact of overseas offices cannot be distinguished from random events. However, if the offices did have an impact, it was small enough to be swamped by random events. Figure 1 illustrates this point by showing the time series of imports from California for 7 countries. China, Japan, Mexico, and Great Britain had overseas offices from 2000 to 2003, whereas Brazil, Canada, and France did not. The vertical line indicates when the offices closed. Although there is movement along the time series for each country, there is no clear pattern before and after the offices closed.

Conclusion and Lessons for Washington State

A direct estimate of the impact of state export promotion programs on state exports is difficult to obtain if the existence of the overseas offices is due to a large value of exports rather than the other way around. The natural experiment of the 2003 California budget crisis allows for an unbiased estimate because it was the budget crisis rather than export relationships that caused the demise of all 12 offices. I therefore use California's experience as an opportunity to make a direct comparison of the change in exports for treatment countries before and after the offices closed to the change in exports for control countries over the same time period.

Though the differences-in-differences estimate is large, so are the standard errors. The evidence suggests the impact of California's overseas trade offices on exports is roughly at the level of the largest random fluctuations. This brings into doubt the effectiveness of such offices, and of state exports programs more generally, at least in California.

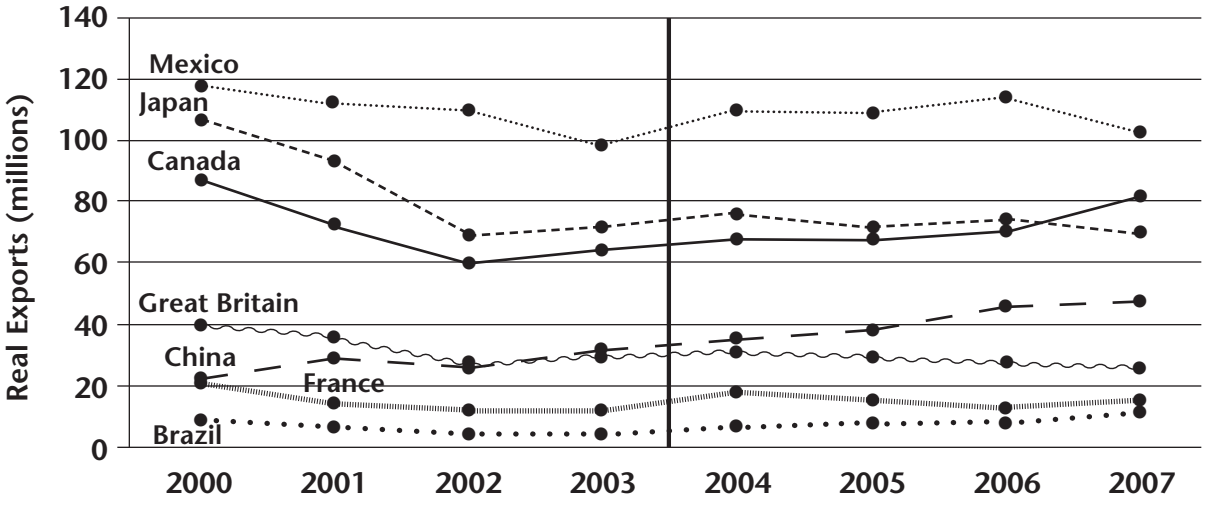

Figure 1. Real imports time series by select countries. China, Japan, Mexico, and Great Britain had overseas export offices from 2000 to 2003, whereas Brazil, Canada, and France did not. The vertical line marks the office closures.

Though there may be programmatic differences between the overseas trade offices that closed in California and the offices currently contracted by Washington, the findings presented here raise doubt that Washington's offices increase aggregate state exports to those countries where the offices operate. This, however, does not mean the offices are useless. The 5 Washington overseas trade offices operating in 2002 assisted 582 (State of Washington 2005) of the 467,290 (U.S. Bureau of the Census n.d.) firms in Washington that year. It is quite possible the trade offices substantially contributed to increased exports, yet the total increase in exports from these firms is dwarfed by the state's aggregate exports.

Although there is no evidence that public overseas trade offices impact state exports, private groups may offer similar services with more distinct success because they can be product-specific. Examples of private groups are agricultural co-ops and growers associations that market a good labeled "produced in Washington State." In these cases, the collective reputation of the state or region is at stake rather than any individual small- or medium-sized grower or farmer. Not every good, however, has an established association with a good reputation.

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Appendix B: The Gravity Equation

$$\log Xct = \alpha + \beta 1 \log Yct + \beta 2\, Oct + \beta 3 \log Dc + \gamma\, Gc + \sum_j \delta j\, Tj + \varepsilon ct$$

Denote real annual manufacturing export value from California to destination c in year t by Xct. Denote the real gross domestic product (RGDP) of the importing country c in year t by Yct. Because California is the source of the exports for all observations, its RGDP does not vary, and so it is dropped from the standard gravity equation. The treatment variable, Oct, takes the value of one if California has an overseas office in country c in year t, and zero otherwise. Denote the distance, in miles, between the 2000 population center of California and the capital of the destination country by Dc. The data contain countries that never had offices, the control group, and countries that had offices before 2004, the treatment group. The binary variable Gc indicates this partition by taking the value of zero if country c is in the control group or one if in the treatment group. This variable differs from Oct that depends on both the country and the year the treatment is given. The group indicator Gc is needed because the countries in the treatment group were selected by California non-randomly based on the characteristics of those countries. This gravity equation includes year dummies Tj to avoid as-

sumptions imposing no changes in intercept over time. The summation covers all years in the sample except the first (avoiding a technical problem). Taking logs of both sides linearizes the gravity equation. Linearity is essential for the forthcoming estimation.

According to the gravity equation, California's real exports to country c are a function of the market size of c, the distance from c, and the existence of an overseas office in c. The difficulty with estimating the equation is the potential simultaneity of the treatment variable Oct with exports, Xct. Simultaneity biases estimates meaning the treatment variable correlates with the error term ?ct. It occurs when the left hand variable, Xct, causes, at least partially, the right hand variable Oct rather than vice versa.

Appendix C: Data Description and Sources

Data on California's manufacturing exports are from the Origin of Movement data series collected by the U.S. Census and released through the World Institute for Strategic Economic Research (WISER). These data are recorded at the port of exit by collecting an export declaration form (or electronic equivalent) that includes the state of origin and destination of the shipment. Two issues potentially affect the quality of the data. The first is that the export value includes inland transportation and insurance costs. Because of this, the same exports have greater value from an inland state than a border state. The second issue is that exports that are consolidated at a port are entirely attributed to the port state rather than the state where the exports are produced. Thus, consolidation overestimates the value that port states export at the expense of interior states. In addition to a detailed description of this data, Cassey (2006) performs a variety of diagnostic tests. He finds consolidation is a severe problem for mining and agricultural exports, but not manufacturing exports. Therefore, only data on manufacturing exports is used since the evidence suggests California's manufacturing exports are actually from California.

The source of the office location data is a survey conducted by the Council of State Governors as reported by Whatley (2003). Additional information is available from California State Web sites, press releases, and newspaper articles listed in Cassey (2009). Finally, data on GDP is from the World Economic Outlook Database (International Monetary Fund 2008). I convert the current year values for exports and GDP into real values by applying the U.S. Producer Price Index (all commodities less fuel) from the U.S. Bureau of Labor Statistics.

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EM017