



ShakeOut Scenario Appendix H: Baseline Intra-Regional Labor and Earnings Flow Profiles

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USGS Open File Report 2008-1150, Appendix H
CGS Preliminary Report 25H

2008

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Suggested citation:

Sherrouse Benson C., and Hester David J., 2008, ShakeOut Scenario Appendix H; Baseline intra-regional labor and earnings flow profiles, Appendix H of Jones, L.M., and others, The ShakeOut Scenario: U.S. Geological Survey Open-File Report 2008-1150, and California Geological Survey Preliminary Report 25H, 12 p. [http://pubs.usgs.gov/of/2008/1150/appendixes/of2008-1150_appendix_h.pdf].

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ShakeOut Scenario

Appendix H. Baseline Intra-Regional Labor and Earnings Flow Profiles

by Benson C. Sherrouse and David J. Hester, USGS

Introduction

This analysis summarizes the county-level flow of workers (labor) and their earnings (wages) from employment by industry sector within the 8-county Southern California region. It is based on data reported in the U.S. Census Bureau's Decennial 2000 Special Tabulation Product (STP) 86 which tabulates by industry sector the flow of workers between counties as well as their mean earnings. The intent of the analysis is to characterize each county within the region by industry sector as to whether it is a net contributor of workers to the region, a net contributor of employment and earnings to the region, or both.

Research results reveal some of the interdependencies in the regional labor market that would be impacted by the ShakeOut Scenario earthquake. For instance, Los Angeles County is a net provider of jobs and income to the region for all industrial sectors (except private households). In comparison, Riverside and San Bernardino Counties are net providers of employees to the region. Whereas, Orange and San Diego counties are a net source of jobs and income for some sectors and a net provider of employees for other industry sectors.

Data Source and Disclaimers

The STP 86 data product reports the estimated flow of workers between their county of residence and their county of workplace. It also includes the mean earnings per worker for each county-to-county flow. These earnings data are for the calendar year 1999. These data, however, are only reported for flows that include at least 3 workers per industry sector. Additionally, some worker flows do not include enough earnings data from which to calculate mean earnings. In these cases, only the number of workers is reported. The loss of mean earnings data is minimal for the 8-county Southern California region, as it impacts only about 0.2 percent of the total workers reported. The data are reported by industry sector according to the Bureau of Economic Analysis (BEA) industry classification codes. While some industry sectors identified by the BEA coding system are directly relatable to corresponding sectors in the North American Industry Classification System (NAICS) developed by the U.S. Economic Classification Policy Committee, not all sectors are directly comparable. The values for individual flows were also subject to Census Bureau rounding which could compound errors in estimates when the data are aggregated.

Methodology

Two separate subsets of data records were selected from the full STP 86 data product. One included all records for which the residence county was one of the 8 counties of the Southern California region. The second included all records for which the workplace county was one of these 8 counties. The data records were then identified as representing flows within the same county, flows between counties within the 8-county region, or flows external to the 8-county region. This analysis focuses on the records representing flows between counties within the 8-county region, and excluded inter-regional flow analysis because these flows are insignificant for the ShakeOut scenario analysis (see Table 6.6 in Strategic Consulting & Research, 2006).

Because earnings were reported as mean values, the earnings in each flow were multiplied by the workers in each flow to calculate an estimate of total earnings in each flow. Workers and earnings were then totaled by county for each BEA industry sector. This step was repeated for each of the two data subsets resulting in total workers and earnings by county of residence and total workers and earnings by county of workplace.

To calculate the net amount of worker flow, the county of residence data was subtracted from the county of workplace data. This results in positive values of workers when more workers are coming into the county to work in an industry than are leaving the county to work in the industry elsewhere in the region (the county is a net source of jobs). Negative values indicate that more workers are leaving the county to work elsewhere than are coming to the county to work in that specific industry sector (the county is a net source of workers).

To calculate the net amount of earnings flow, the county of workplace data was subtracted from the county of residence data. This results in positive values of earnings when workers who reside in the county earn more from jobs held in another county than do workers who hold jobs in that county but reside elsewhere (the county is a net recipient of earnings from the region for a given industry). Negative values indicate that workers who hold jobs in the county but reside in another county earn more than workers who reside in that county and hold jobs elsewhere (the county is a net source of earnings for the region for a given industry).

Results

Southern California counties within the ShakeOut study area exhibit different characteristics in terms of worker and earnings flow analysis. For instance, Los Angeles County's net positive flow of workers (Figure H-3a) indicates that the county is a net source of jobs (employment) in the region across all industry sectors (except private households). The corresponding net negative flow of earnings further supports the county's characterization as a net wage source as earnings from jobs held by workers commuting into Los Angeles County flow out into rest of the region (Figure H-3b).

Conversely, except for a small net positive flow for the Riverside County agricultural industry sector, Riverside and San Bernardino Counties demonstrate a net negative flow of workers (labor) to jobs elsewhere in the region across industry sectors (Figures H-5a and H-6a). The workers commuting outside these counties bring in more earnings (wages) to the counties across all industry sectors (except for the San Bernardino County private households sector) than what is earned by workers residing elsewhere in the region who commute to Riverside and San Bernardino Counties for employment (Figures H-5b and H-6b).

Orange and San Diego Counties exhibit a mixed pattern of net worker and earnings flows. For BEA industry services and manufacturing sectors, Orange County is a net source of jobs (employment)

while it is a net source of workers (labor) for the transportation, warehousing, and utilities sector (Figure H-4a). The county is a source of earnings (wages) for the rest of the region for construction and information and finance sectors and a net recipient of earnings from the region in the manufacturing and wholesale and retail trade sectors (Figure H-4b). Interestingly, in the cases of manufacturing and wholesale and retail trade, Orange County is both a net source of jobs as well as a net recipient of earnings. This pattern suggests higher average earnings per worker for Orange County residents working elsewhere in the region than workers commuting into Orange County for employment in those same industry sectors.

Reference

Strategic Consulting & Research 2006, State of the Commute Report,
http://www.scag.ca.gov/publications/pdf/2007/2006_StateoftheCommute_Report.pdf,
Accessed: June 1, 2008.

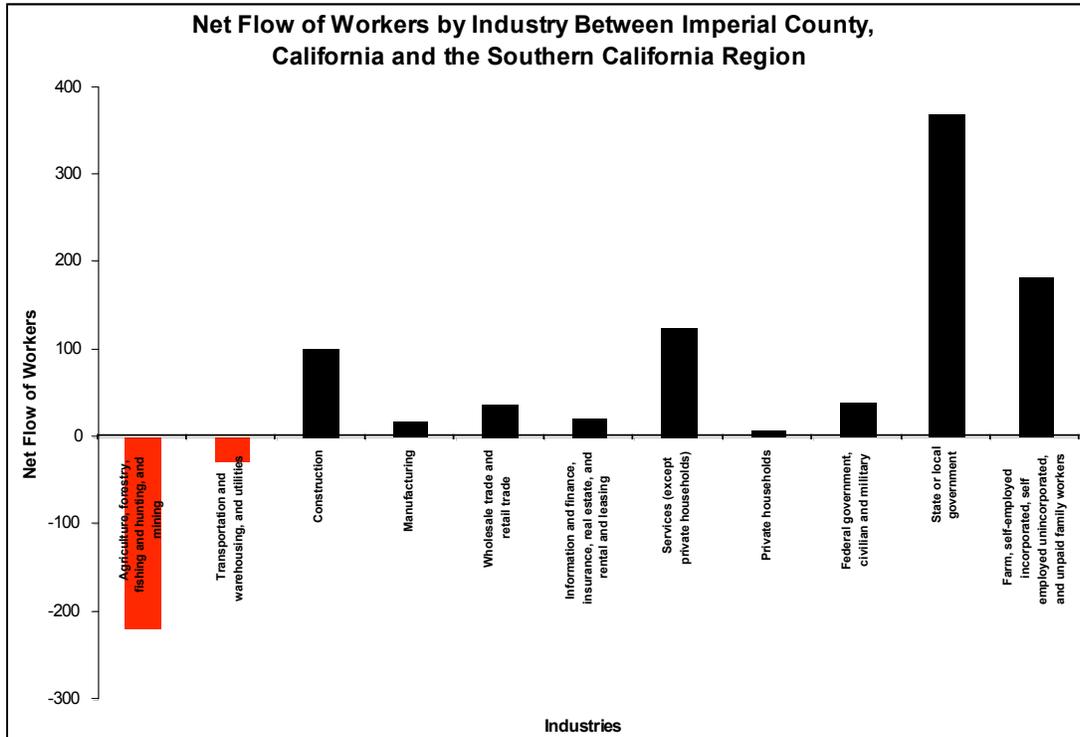


Figure H-1a. For most sectors, more regional workers commute to Imperial County than leave the county to work elsewhere.

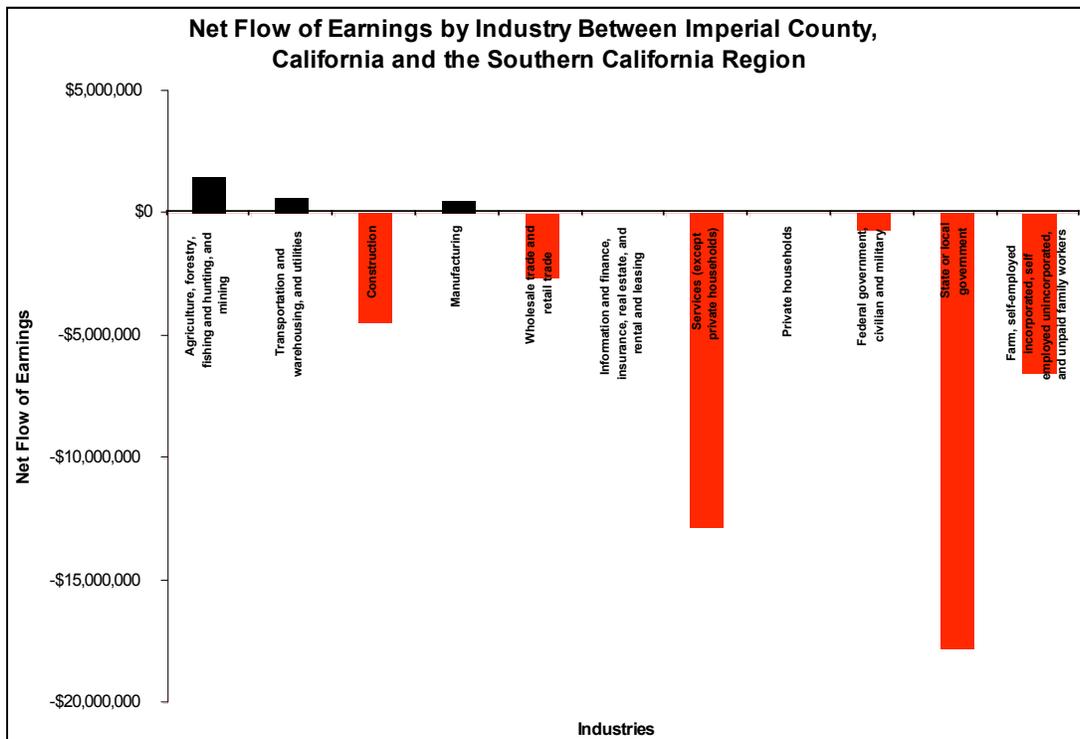


Figure H-1b. For most sectors, Imperial County is a net source of earnings for workers in the region.

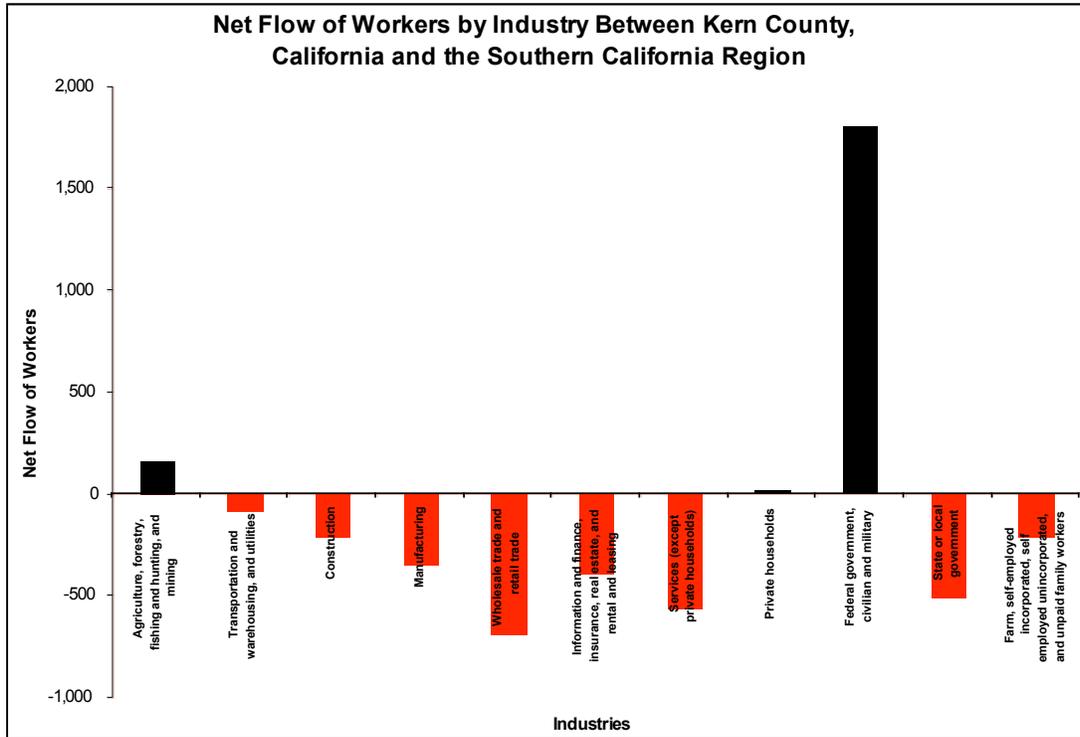


Figure H-2a. For most sectors, fewer regional workers commute to Kern County than leave the county to work elsewhere.

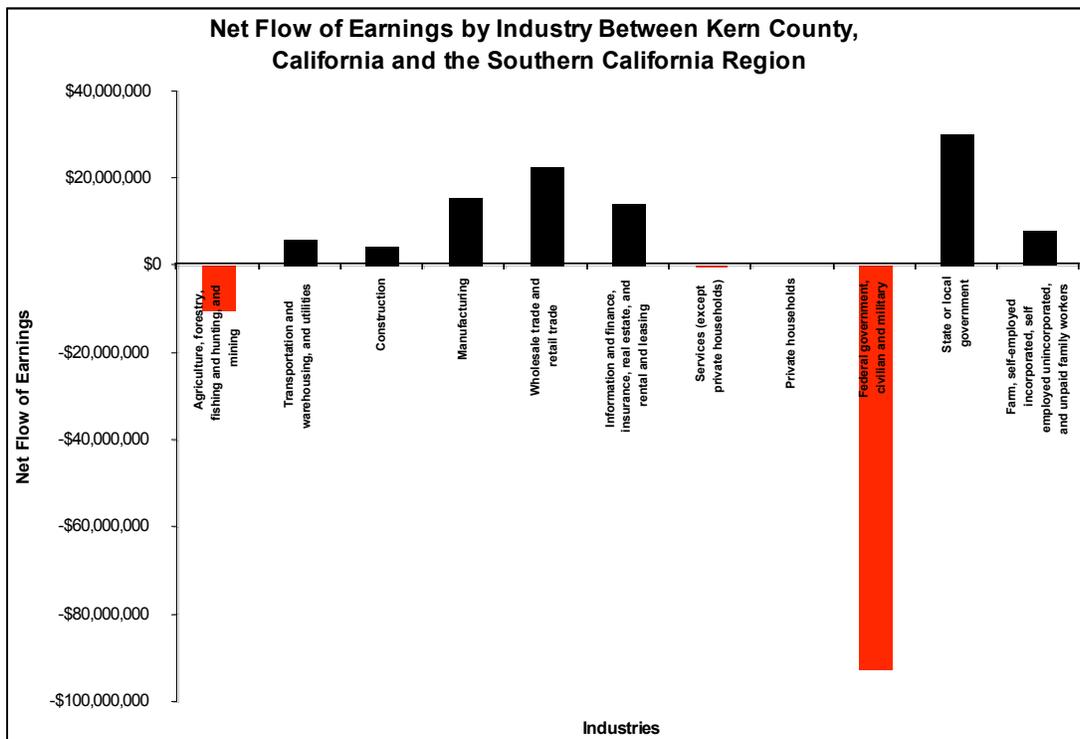


Figure H-2b. For most sectors, Kern County is a net recipient of earnings for workers. The Federal Government sector is a significant exception.

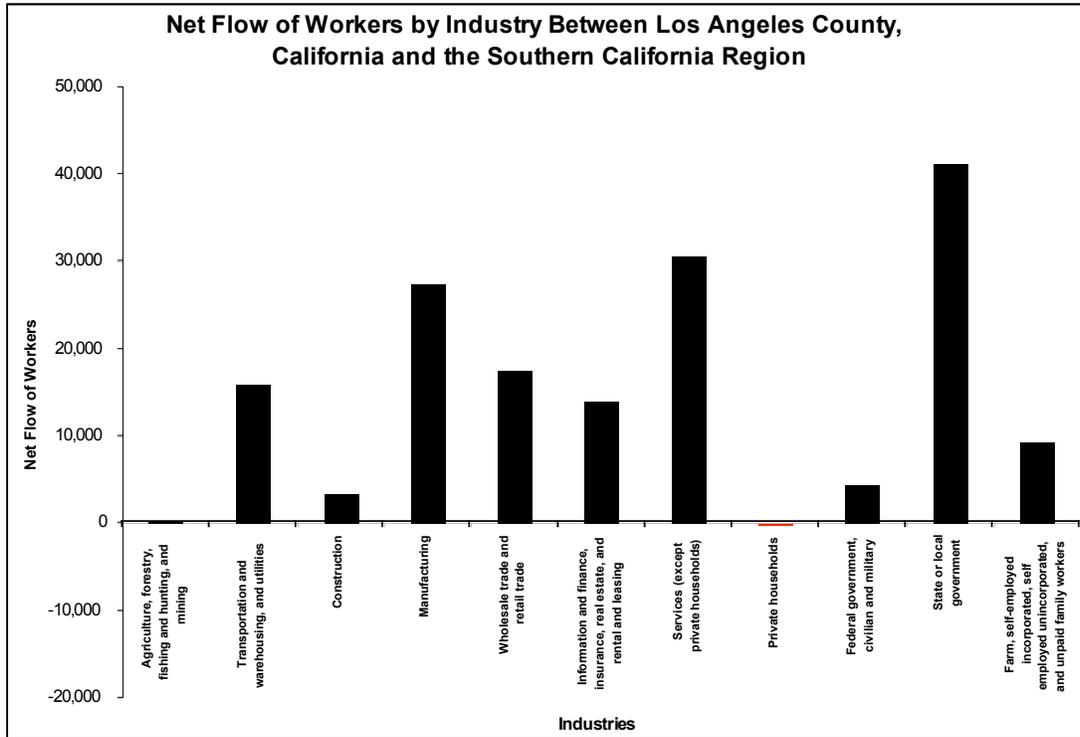


Figure H-3a. For most sectors, more regional workers commute to Los Angeles County than leave the county to work elsewhere.

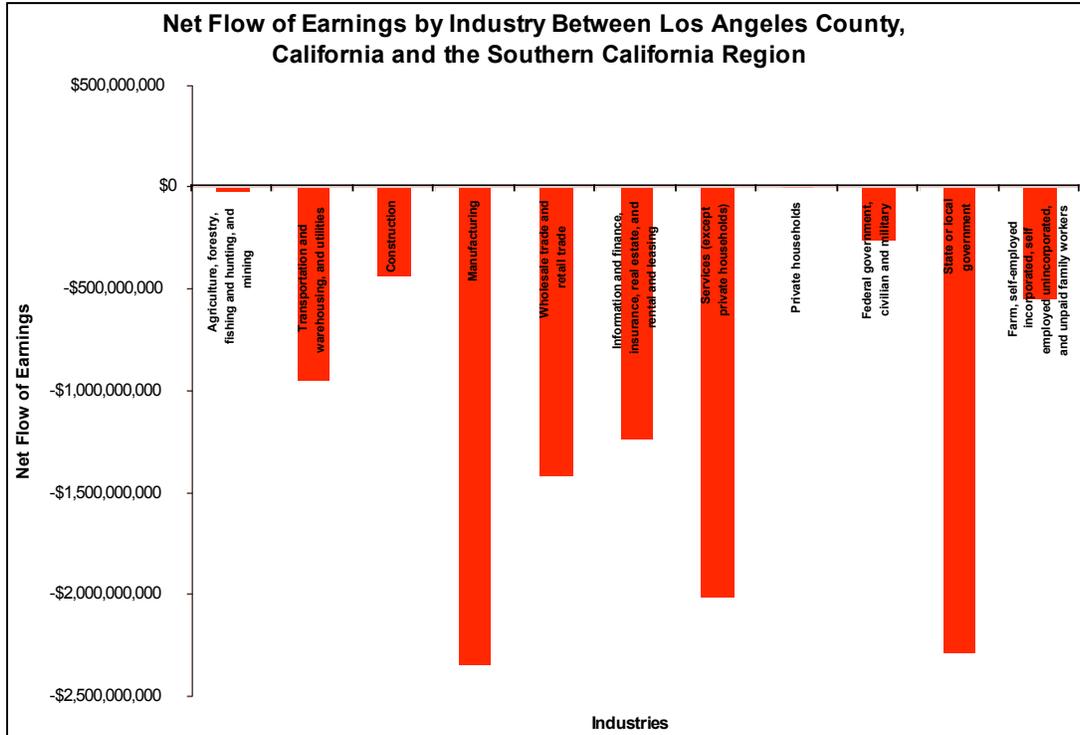


Figure H-3b. For most sectors, Los Angeles County is a net source of earnings for workers in the region.

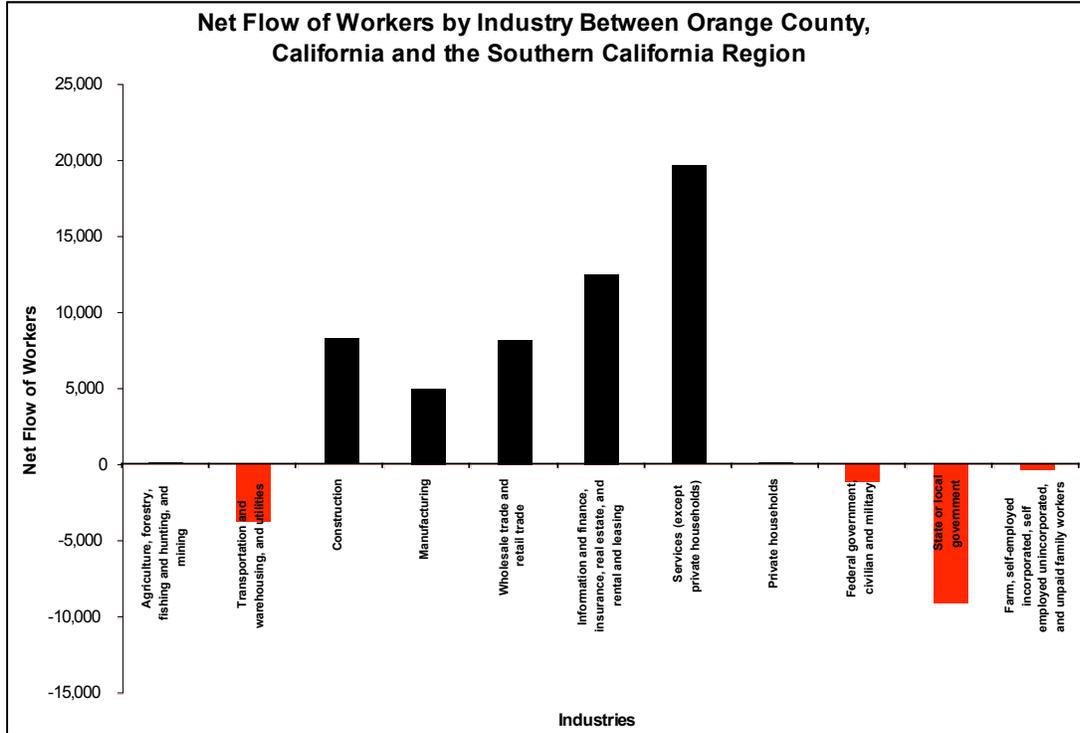


Figure H-4a. Mixed results across sectors: Orange County is a net source of jobs and workers for the region.

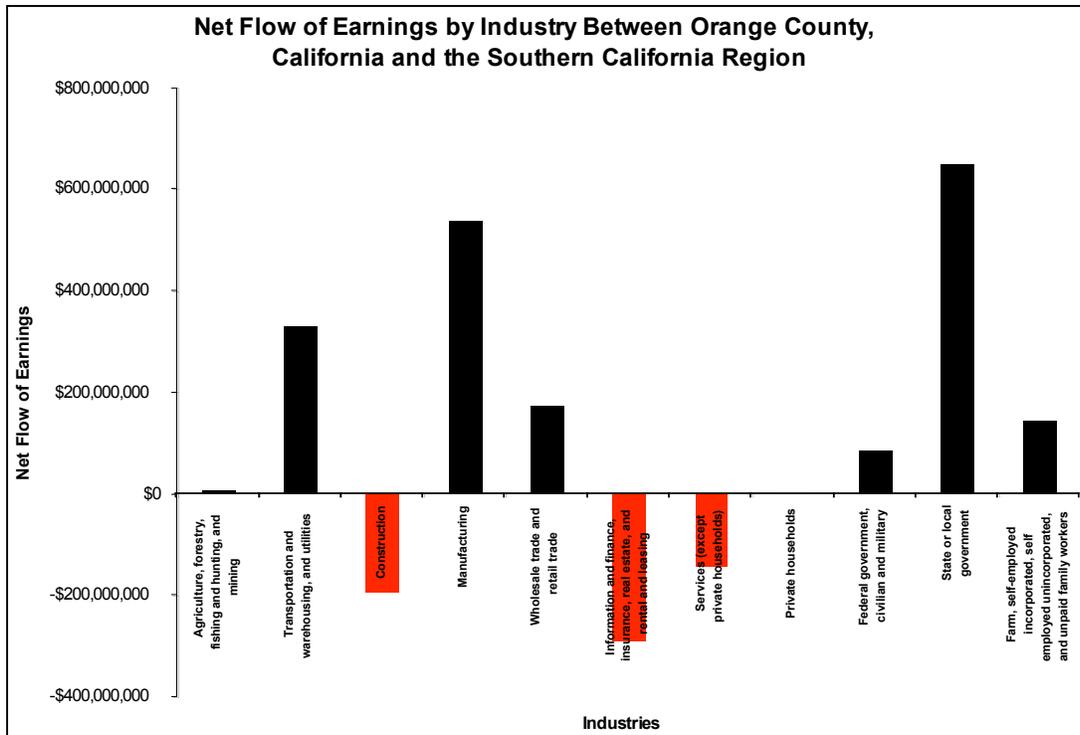


Figure H-4b. Mixed results across sectors: Orange County is a net source and net recipient of earnings for workers in the region.

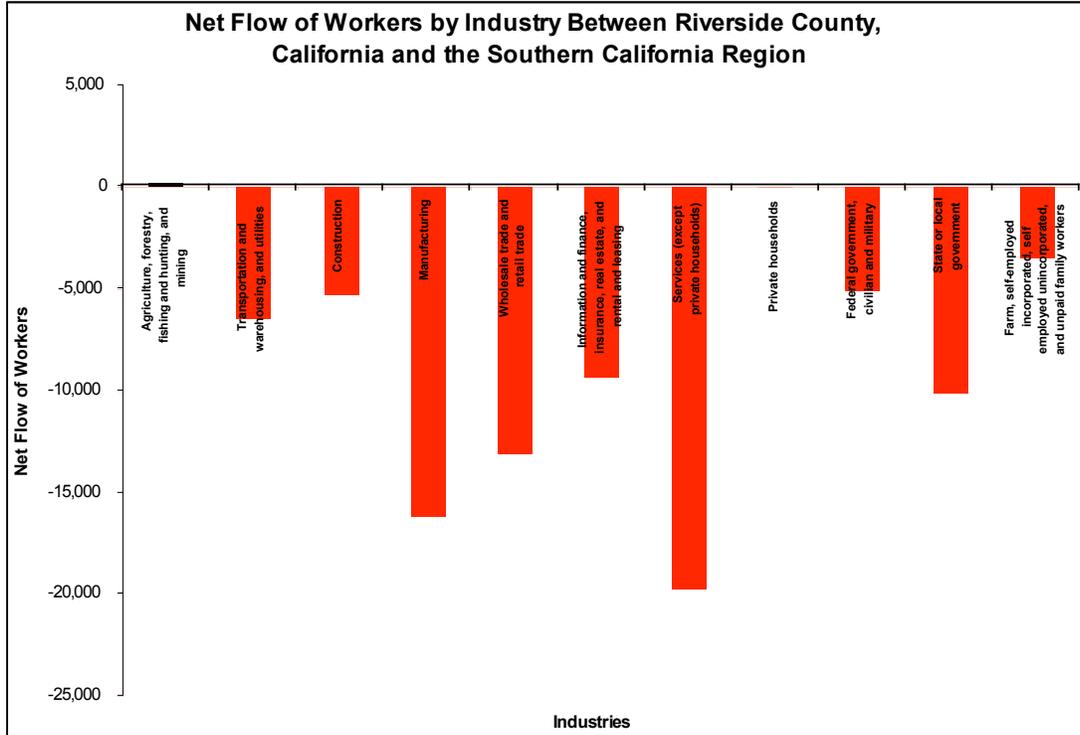


Figure H-5a. For most sectors, fewer regional workers commute to Riverside County than leave the county to work elsewhere.

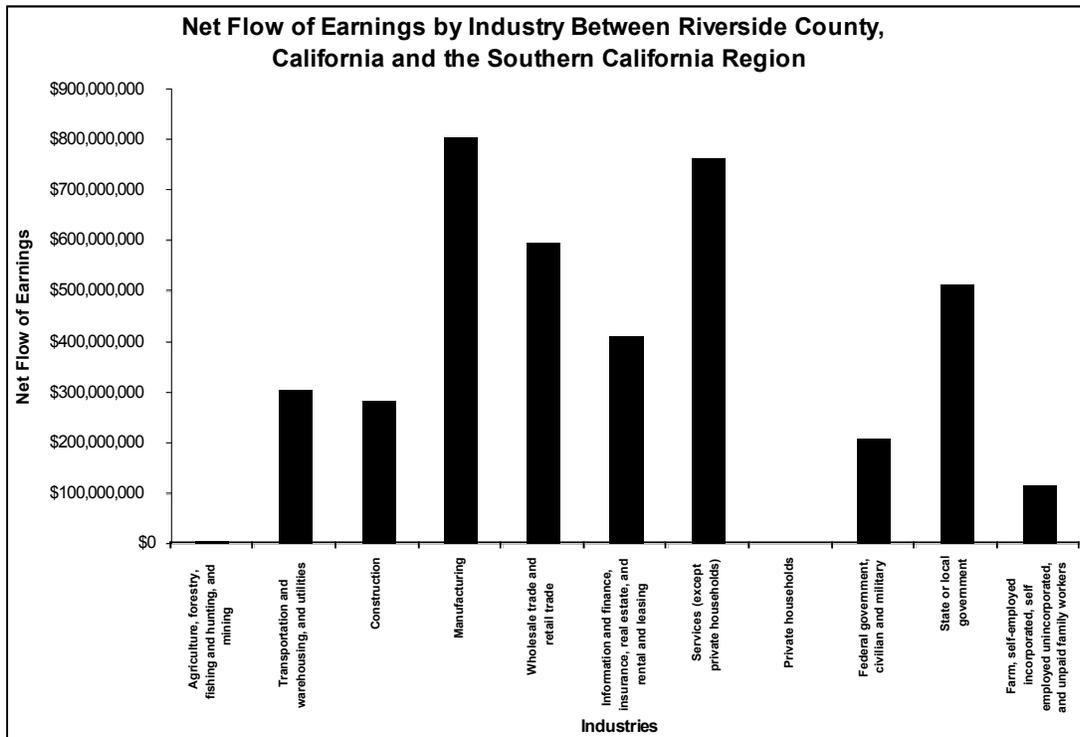


Figure H-5b. For all sectors, Riverside County is a net recipient of earnings for workers in the region.

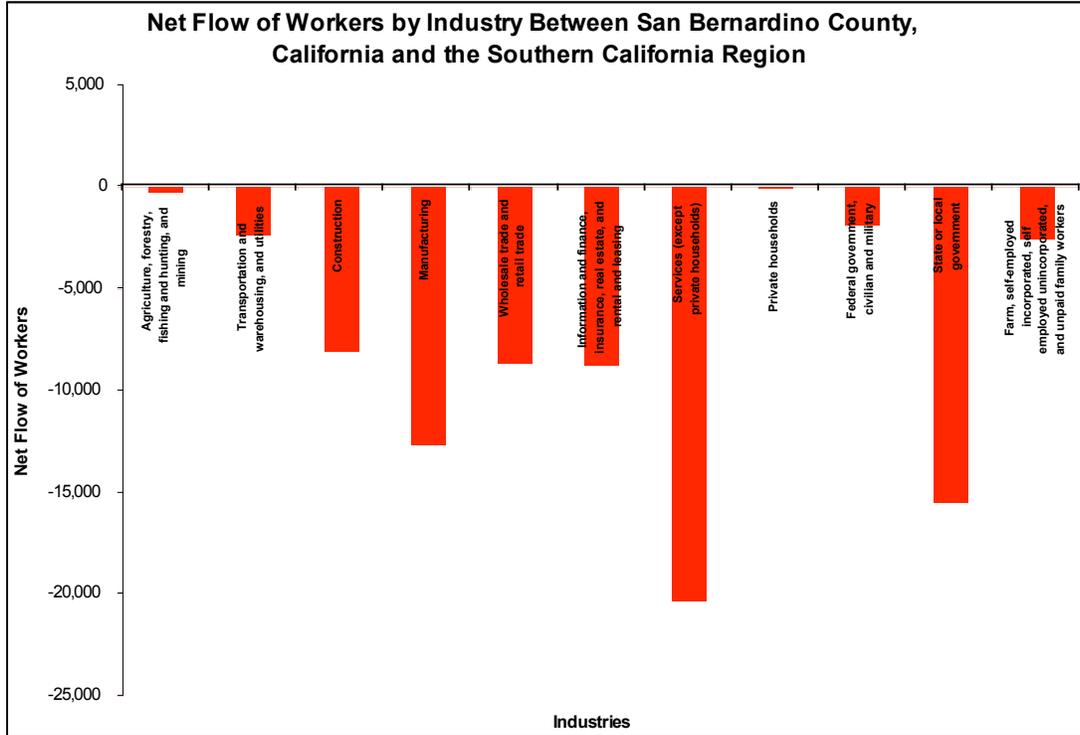


Figure H-6a. For all sectors, fewer regional workers commute to San Bernardino County than leave the county to work elsewhere.

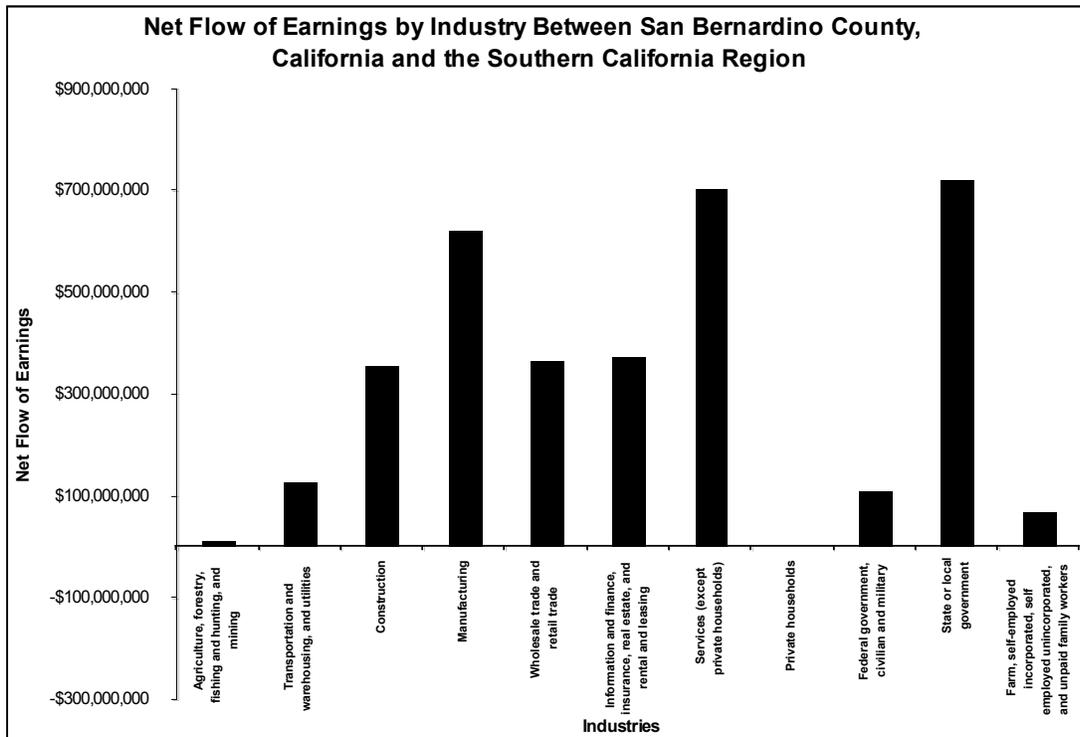


Figure H-6b. For most sectors, San Bernardino County is a net recipient of earnings for workers in the region.

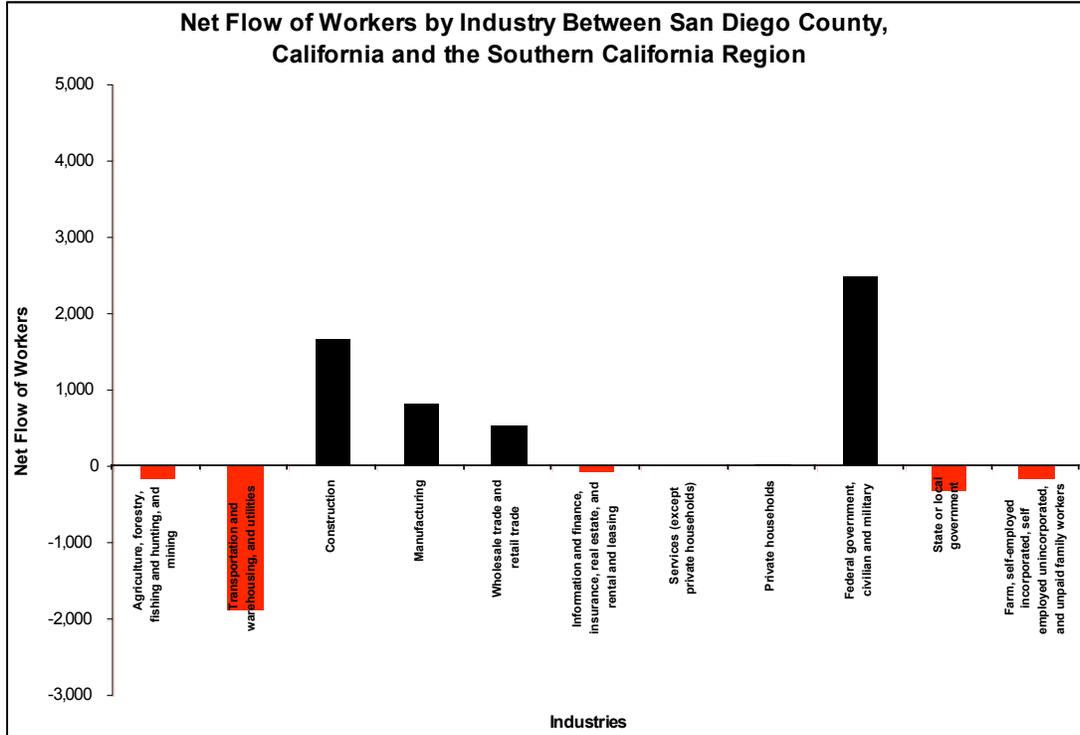


Figure H-7a. Mixed results across sectors: San Diego County is a net source of jobs and workers for the region.

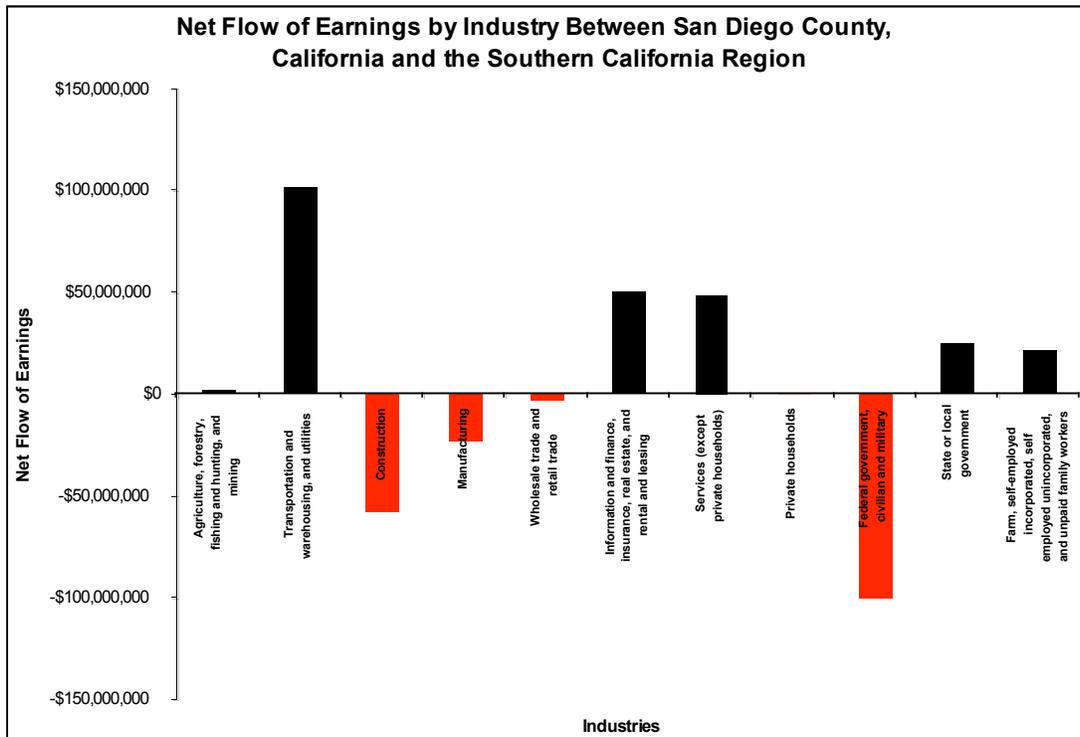


Figure H-7b. Mixed results across sectors: San Diego County is a net source and recipient of earnings for workers in the region.

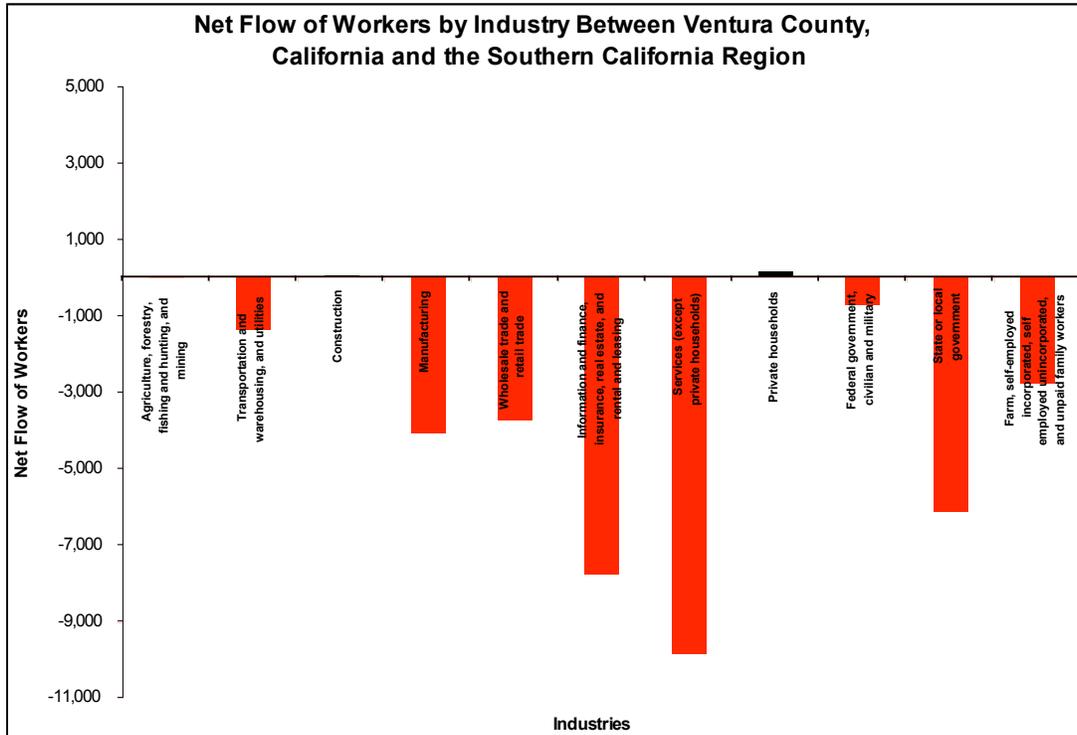


Figure H-8a. For most sectors, fewer regional workers commute to Ventura County than leave the county to work elsewhere.

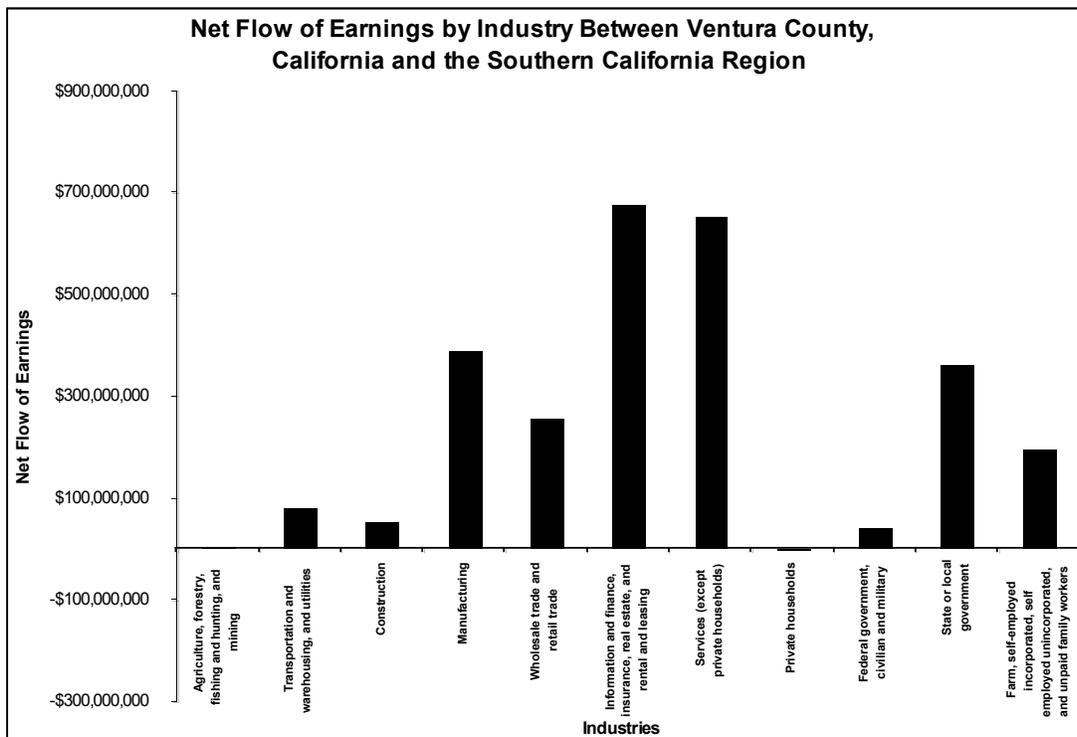


Figure H-8b. For most sectors, Ventura County is a net recipient of earnings for workers in the region.

INTRA-REGIONAL NET WORKER (2000) AND TOTAL EARNINGS (1999) FLOWS BY COUNTY OF RESIDENCE AND INDUSTRY								
INDUSTRY	Imperial		Kem		Los Angeles		Orange	
	Workers	Total Earnings (1999)	Workers	Total Earnings (1999)	Workers	Total Earnings (1999)	Workers	Total Earnings (1999)
Agriculture, forestry, fishing and hunting, and mining	-219	\$1,459,810	160	-\$10,214,845	164	-\$22,027,500	130	\$5,384,285
Transportation and warehousing, and utilities	-28	\$584,520	-85	\$5,734,490	15,849	-\$946,589,145	-3,654	\$329,619,305
Construction	100	-\$4,516,735	-210	\$4,397,835	3,350	-\$437,432,175	8,385	-\$194,433,295
Manufacturing	17	\$498,600	-346	\$15,451,375	27,385	-\$2,345,777,480	5,040	\$537,601,280
Wholesale trade and retail trade	37	-\$2,651,040	-691	\$22,534,360	17,449	-\$1,411,836,740	8,180	\$175,369,035
Information and finance, insurance, real estate, and rental and leasing	20	\$0	-390	\$14,395,745	13,800	-\$1,232,003,455	12,565	-\$289,293,920
Services (except private households)	125	-\$12,870,400	-564	-\$659,915	30,620	-\$2,011,088,060	19,725	-\$143,494,540
Private households	6	\$0	14	\$0	-246	\$1,177,835	201	-\$759,010
Federal government, civilian and military	38	-\$728,560	1,805	-\$92,731,300	4,426	-\$253,858,015	-1,065	\$86,804,405
State or local government	368	-\$17,828,670	-511	\$30,206,840	41,174	-\$2,286,076,955	-9,029	\$650,247,560
Farm, self-employed incorporated, self-employed unincorporated, and unpaid family workers	182	-\$6,570,200	-211	\$7,964,430	9,259	-\$546,510,065	-276	\$143,650,310
COUNTY TOTAL	646	-\$42,622,675	-1,029	-\$2,920,985	163,230	-\$11,492,021,755	40,202	\$1,300,695,415

INTRA-REGIONAL NET WORKER (2000) AND TOTAL EARNINGS (1999) FLOWS BY COUNTY OF RESIDENCE AND INDUSTRY								
INDUSTRY	Riverside		San Bernardino		San Diego		Ventura	
	Workers	Total Earnings (1999)	Workers	Total Earnings (1999)	Workers	Total Earnings (1999)	Workers	Total Earnings (1999)
Agriculture, forestry, fishing and hunting, and mining	120	\$5,432,995	-235	\$13,175,380	-140	\$1,954,490	20	\$4,835,385
Transportation and warehousing, and utilities	-6,492	\$303,346,775	-2,355	\$127,165,210	-1,886	\$101,847,620	-1,349	\$78,291,225
Construction	-5,280	\$282,550,985	-8,080	\$354,271,350	1,660	-\$57,497,065	75	\$52,659,100
Manufacturing	-16,166	\$802,850,575	-12,656	\$622,867,265	816	-\$22,857,815	-4,090	\$389,366,200
Wholesale trade and retail trade	-13,125	\$595,629,780	-8,665	\$365,728,660	535	-\$3,141,295	-3,720	\$258,367,240
Information and finance, insurance, real estate, and rental and leasing	-9,384	\$411,128,950	-8,815	\$371,350,645	-50	\$50,082,590	-7,746	\$674,339,445
Services (except private households)	-19,781	\$763,601,215	-20,315	\$702,228,450	10	\$48,993,690	-9,820	\$653,289,560
Private households	-34	\$853,695	-130	-\$155,760	24	-\$76,765	165	-\$1,039,995
Federal government, civilian and military	-5,080	\$209,095,095	-1,905	\$109,724,705	2,475	-\$99,988,980	-694	\$41,682,650
State or local government	-10,100	\$514,824,205	-15,476	\$720,012,425	-311	\$25,261,605	-6,115	\$363,352,990
Farm, self-employed incorporated, self-employed unincorporated, and unpaid family workers	-3,484	\$114,420,285	-2,550	\$70,173,520	-150	\$21,866,605	-2,770	\$195,005,115
COUNTY TOTAL	-88,806	\$4,003,734,555	-81,182	\$3,456,541,850	2,983	\$66,444,680	-36,044	\$2,710,148,915

Table H-1. Net worker and total earnings flows by county of residence and industry.