

November 2020

Labor Market Analysis

Accounting and Bookkeeping



California
Community
Colleges



Prepared by the Central Valley/Mother Lode Center of Excellence

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COVID-19 Statement: This report includes employment projection data by EMSI. EMSI’s projections are modeled on recorded (historical) employment figures and incorporate several underlying assumptions, including the assumption that the economy during the projection period will be at approximately full employment or potential output. To the extent that a recession or labor shock, such as the economic effects of COVID-19, can cause long-term structural change, they may impact the projections. At this time, it is not possible to quantify the impact of COVID-19 on projections of industry and occupational employment. Other measures such as unemployment rates and monthly industry employment estimates will reflect the most recent information on employment and jobs in the state and, in combination with input from local employers, may help validate current and future employment needs as depicted here.

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Summary

Please note the COVID-19 statement on page 2 when considering this report's findings.

This study conducted by the Central Valley/Mother Lode Center of Excellence examines labor market demand, wages, skills, and postsecondary supply for accounting. Seven occupations related to accounting were identified for Bakersfield College:

- 43-3031, Bookkeeping, Accounting, and Auditing Clerks
- 13-2081, Tax Examiners and Collectors, and Revenue Agents
- 43-3051, Payroll and Timekeeping Clerks
- 13-2098, Financial and Investment Analysts, Financial Risk Specialists, and Financial Specialists, All Other
- 13-2082, Tax Preparers
- 13-2031, Budget Analysts
- 43-4011, Brokerage Clerks

Key findings:

- **Occupational demand** — Nearly 16,200 workers were employed in jobs related to accounting in 2019 in the South Central Valley/Southern Mother Lode (SCV/SML) subregion. The largest occupation is bookkeeping, accounting, and auditing clerks with 10,727 workers in 2019, a projected growth rate of 1% over the next five years, and 1,292 annual openings.
- **Wages** — Budget analysts earn the highest entry-level wages, \$29.25/hour in the subregion and \$28.64/hour in the region.
- **Employers** — Employers with the most job postings in the subregion are Intuit, Internal Revenue Service, and Certified Mobile Notary Service.
- **Occupational titles** — The most common occupational title in job postings in the subregion is bookkeeping, accounting, and auditing clerks. The most common job title is bookkeeper.
- **Skills and certifications** — The top baseline skill is communication, the top specialized skill is accounting, and the top software skill is Microsoft Excel. The most in-demand certification is Certified Public Accountant.
- **Education** — Three occupations typically require a high school education and moderate-term on-the-job training—payroll and timekeeping clerks, tax preparers, and brokerage clerks. Bookkeeping, accounting, and auditing clerks typically have completed some college, no degree.
- **Supply** — Analysis of postsecondary completions in the region shows that on average 289 awards were conferred in the Central Valley/Mother Lode region each year.

Based on a comparison of occupational demand and supply, there is an undersupply of 1,542 trained workers in the subregion and 2,372 workers in the region. The Center of Excellence recommends that Bakersfield College work with the Business and Entrepreneurship Regional Director, the college's advisory board, and local industry in the expansion of programs to address the shortage of accounting workers in the region.

Introduction

The Central Valley/Mother Lode Center of Excellence was asked by Bakersfield College to provide labor market information for accounting and bookkeeping (accounting). The geographical focus for this report is the South Central Valley/Southern Mother Lode (SCV/SML) subregion, but regional demand and supply data has been included for broader applicability and use. The average living wage for a single adult in the South Central Valley/Southern Mother Lode (SCV/SML) subregion is \$10.30/hour.¹ Analysis of the program and occupational data related to accounting resulted in the identification of applicable occupations. The Standard Occupational Classification (SOC) System codes and titles used in this report are:

- 43-3031, Bookkeeping, Accounting, and Auditing Clerks
- 13-2081, Tax Examiners and Collectors, and Revenue Agents
- 43-3051, Payroll and Timekeeping Clerks
- 13-2098, Financial and Investment Analysts, Financial Risk Specialists, and Financial Specialists, All Other
- 13-2082, Tax Preparers
- 13-2031, Budget Analysts
- 43-4011, Brokerage Clerks

The occupational titles, job descriptions, sample job titles, and knowledge and skills from the Bureau of Labor Statistics and O*NET OnLine are shown below. O*NET data was not available for financial and investment analysts, financial risk specialists, and financial specialists, all other.

Bookkeeping, Accounting, and Auditing Clerks

Job Description: Compute, classify, and record numerical data to keep financial records complete. Perform any combination of routine calculating, posting, and verifying duties to obtain primary financial data for use in maintaining accounting records. May also check the accuracy of figures, calculations, and postings pertaining to business transactions recorded by other workers.

Knowledge: Customer and Personal Service, Clerical, Mathematics, Economics and Accounting, English Language

Skills: Mathematics, Active Listening, Critical Thinking, Reading Comprehension, Speaking

Tax Examiners and Collectors, and Revenue Agents

Job Description: Determine tax liability or collect taxes from individuals or business firms according to prescribed laws and regulations.

Knowledge: Customer and Personal Service, Economics and Accounting, English Language, Law and Government, Clerical

Skills: Active Listening, Reading Comprehension, Critical Thinking, Speaking, Writing

Payroll and Timekeeping Clerks

Job Description: Compile and record employee time and payroll data. May compute employees' time worked, production, and commission. May compute and post wages and deductions, or prepare paychecks.

¹ The term "living wage" in Center of Excellence reports is calculated by averaging the self-sufficiency wages from the Insight Center's California Family Needs Calculator for each county in the subregion: <https://insightccd.org/tools-metrics/self-sufficiency-standard-tool-for-california/>.

Knowledge: Clerical, English Language, Mathematics, Customer and Personal Service, Personnel and Human Resources

Skills: Active Listening, Reading Comprehension, Speaking, Critical Thinking, Writing

Tax Preparers

Job Description: Prepare tax returns for individuals or small businesses.

Knowledge: Customer and Personal Service, Economics and Accounting, English Language, Computers and Electronics, Law and Government

Skills: Reading Comprehension, Active Listening, Critical Thinking, Speaking, Active Learning

Budget Analysts

Job Description: Examine budget estimates for completeness, accuracy, and conformance with procedures and regulations. Analyze budgeting and accounting reports.

Knowledge: Economics and Accounting, Mathematics, English Language, Administration and Management, Clerical

Skills: Active Listening, Reading Comprehension, Critical Thinking, Mathematics, Speaking

Brokerage Clerks

Job Description: Perform duties related to the purchase, sale or holding of securities. Duties include writing orders for stock purchases or sales, computing transfer taxes, verifying stock transactions, accepting and delivering securities, tracking stock price fluctuations, computing equity, distributing dividends, and keeping records of daily transactions and holdings.

Knowledge: English Language, Customer and Personal Service, Mathematics, Computers and Electronics, Economics and Accounting

Skills: Active Listening, Speaking, Reading Comprehension, Time Management, Critical Thinking

Occupational Demand

The South Central Valley/Southern Mother Lode subregion employed 16,162 workers in accounting occupations in 2019 (Exhibit 1). The largest occupation is bookkeeping, accounting, and auditing clerks with 10,727 workers in 2019. This occupation is projected to grow by 1% over the next five years and has the greatest number of projected annual openings, 1,292.

Exhibit 1. Accounting employment and occupational projections in the SCV/SML subregion

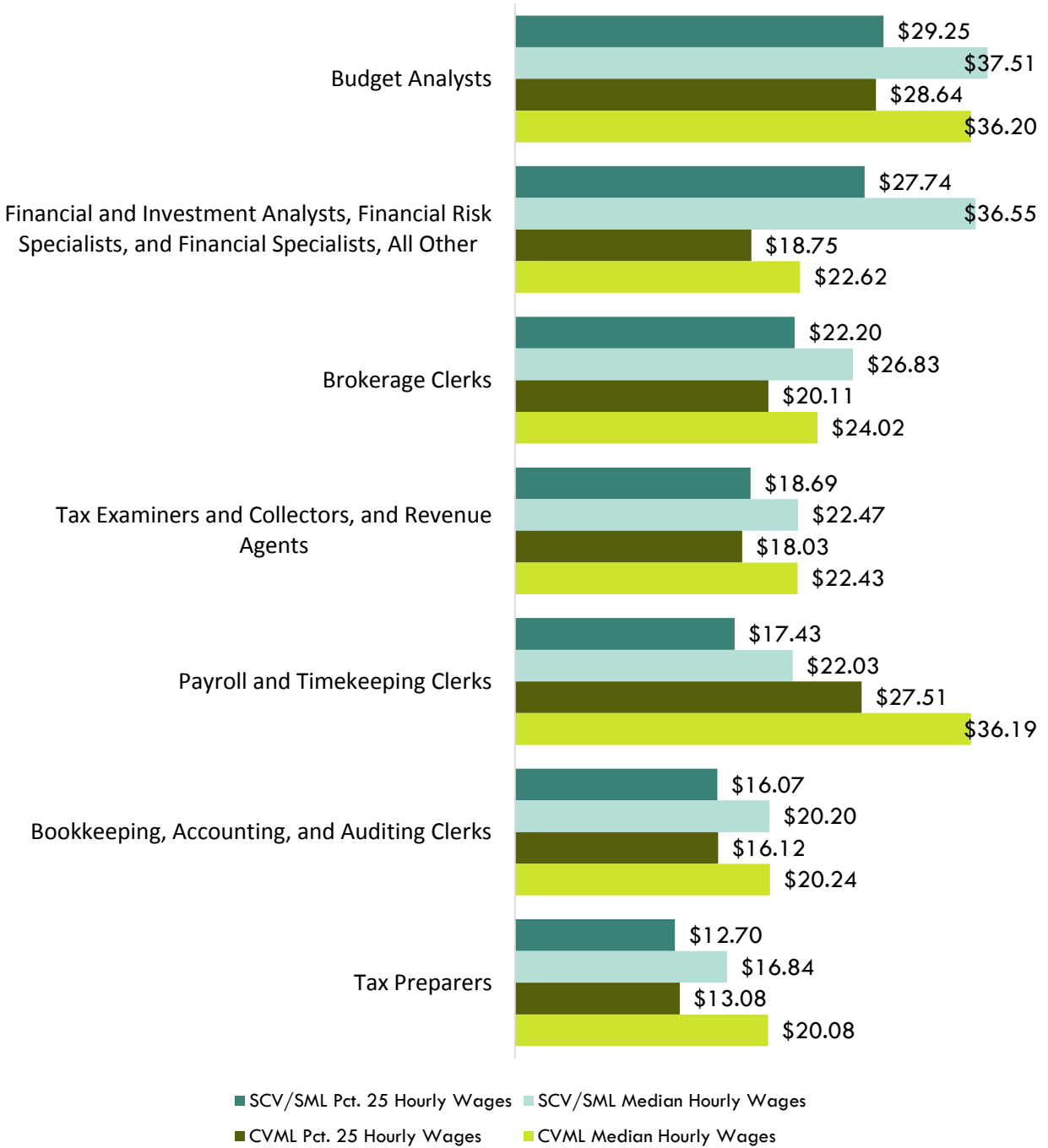
Occupation	2019 Jobs	2024 Jobs	5-Year Change	5-Year % Change	Annual Openings
Bookkeeping, Accounting, and Auditing Clerks	10,727	10,796	69	1%	1,292
Tax Examiners and Collectors, and Revenue Agents	1,812	1,826	14	1%	155
Payroll and Timekeeping Clerks	1,231	1,248	17	1%	142
Financial and Investment Analysts, Financial Risk Specialists, and Financial Specialists, All Other	1,350	1,420	70	5%	136
Tax Preparers	731	756	25	3%	90
Budget Analysts	251	265	14	6%	23
Brokerage Clerks	60	59	(1)	(2%)	6

TOTAL	16,162	16,370	208	1%	1,844
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Wages

Exhibit 2 compares the entry-level and experienced wages of the accounting occupations. Budget analysts earn the highest entry-level wages, \$29.25/hour in the subregion and \$28.64/hour in the region.

Exhibit 2. Entry-level and experienced wage comparison in the SCV/SML subregion and region



Job Postings

There were 1,811 job postings for the seven occupations in the SCV/SML subregion from May to October 2020.² The employers with the most job postings are listed in Exhibit 3.

Exhibit 3. Top employers of accounting occupations by number of job postings

Employer	Job Postings	% Job Postings
Intuit	152	13%
Internal Revenue Service	82	7%
Certified Mobile Notary Service	77	6%
Acca	41	3%
US Department of Treasury	27	2%
United States Department Treasury	19	2%
H&R Block	18	2%
Denham Corporation	14	1%
Bakersfield	12	1%
Anthem Blue Cross	10	1%

Exhibit 4 shows how job postings for the targeted occupations in the SCV/SML subregion are distributed across six O*NET OnLine occupations. The occupational title bookkeeping, accounting, and auditing clerks is listed in 1,132 job postings. Note how a higher proportion of job postings are for this occupational title. Common job titles in postings include bookkeeper in 184 job postings, accounting clerk in 104 job postings, and accounts payable clerk in 73 job postings.

Exhibit 4. Top occupational titles in job postings for accounting

Occupational Title	Job Postings	% of Job Postings
Bookkeeping, Accounting, and Auditing Clerks	1,132	63%
Tax Examiners and Collectors, and Revenue Agents	190	10%
Payroll and Timekeeping Clerks	167	9%
Financial Analysts	160	9%
Tax Preparers	139	8%
Budget Analysts	23	1%

Salaries

Exhibit 5 shows the “Market Salaries” for accounting occupations that are calculated by Burning Glass which uses a machine learning model built off of millions of job postings every year, and accounts for adjustments based on locations, industry, skills, experience, education requirements, among other variables.

² Other than occupation titles and job titles, the categories below can be counted one or multiple times per job posting, and across several areas in a single posting. For example, a skill can be counted in two different skill types, and an employer can indicate more than one education level.

Exhibit 5. Salaries for accounting

Market Salary Percentile	Salary Amount
10th Percentile	\$29,335
25th Percentile	\$31,917
50th Percentile	\$35,945
75th Percentile	\$43,884
90th Percentile	\$59,680

Education

Of the 1,811 job postings, 989 listed an education level preferred for the positions being filled. Among those, 56% requested a bachelor's degree, 46% requested high school or vocational training, and 22% requested an associate degree (Exhibit 6). A job posting can indicate more than one education level. Hence, the percentages shown in the chart below total more than 100%.

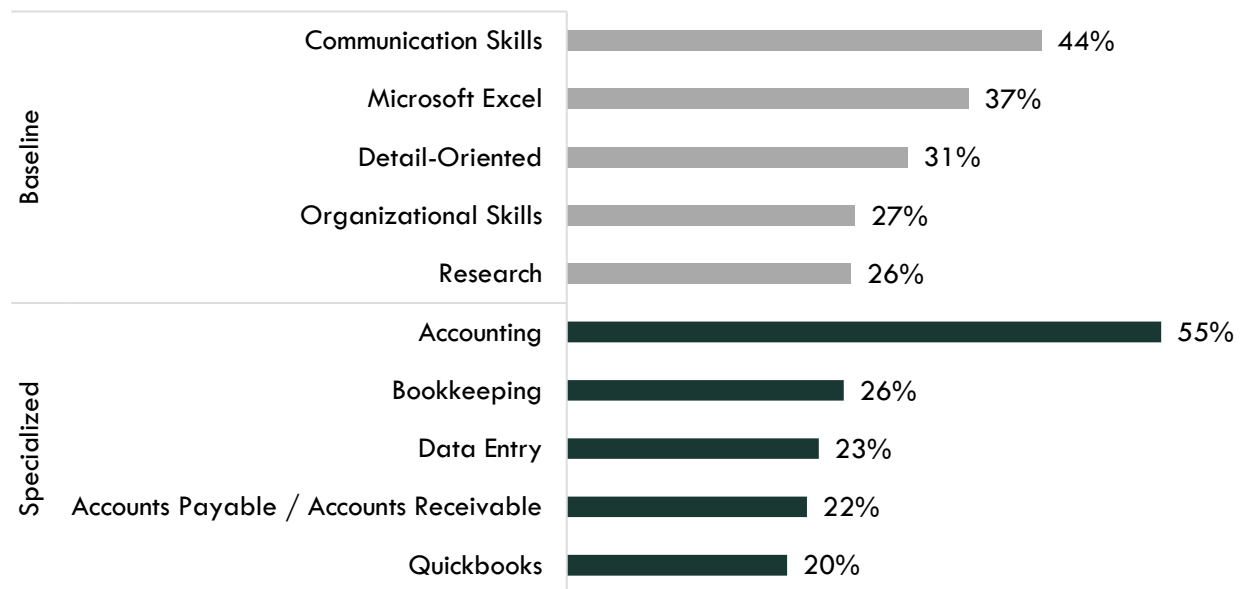
Exhibit 6. Education levels requested in job postings for accounting

Education level	Job Postings	% of Job Postings
Bachelor's degree	553	56%
High school or vocational training	459	46%
Associate degree	219	22%

Baseline and Specialized Skills

Exhibit 7 depicts the top baseline and specialized skills for the targeted occupations. The three most important baseline skills are communication, 44% of job postings, Microsoft Excel, 37%, and detail-oriented, 31%. The top three specialized skills are accounting, 55% of job postings, bookkeeping, 26%, and data entry, 23%.

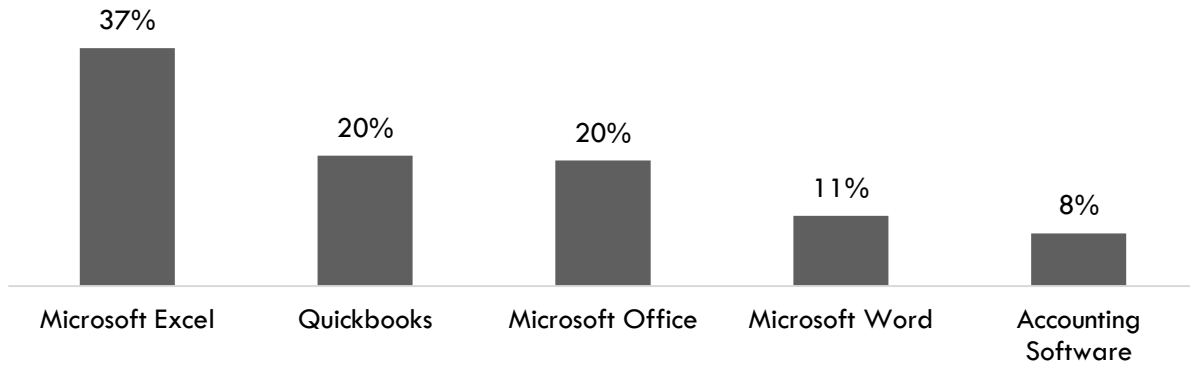
Exhibit 7. In-demand accounting baseline and specialized skills



Software Skills

Analysis also included the software skills most in demand by employers. Microsoft Excel and Quickbooks were the top two software skills identified in job postings (Exhibit 8).

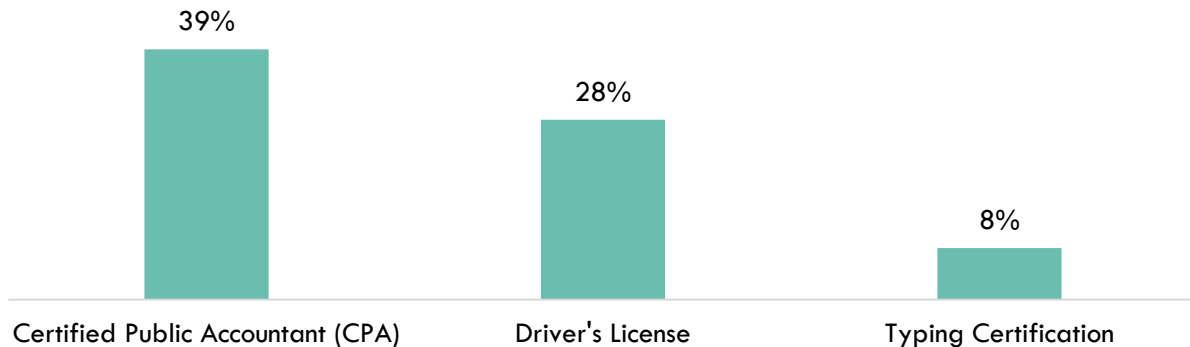
Exhibit 8. In-demand accounting software skills



Certifications

Of the 1,811 job postings, 310 contained certification data. Among those, 39% indicated a need for a Certified Public Accountant. The next top certifications are driver's license and typing certification (Exhibit 9). (Due to the low number of job postings with certifications listed, the chart below may not be representative of the full sample.)

Exhibit 9. Top accounting certifications requested in job postings



Education, Work Experience & Training

Three occupations typically require a high school education and moderate-term on-the-job training—payroll and timekeeping clerks, tax preparers, and brokerage clerks (Exhibit 10). Bookkeeping, accounting, and auditing clerks typically have completed some college, no degree, and moderate-term on-the-job training. A bachelor's degree is typically required for tax examiners and collectors, and revenue agents; financial and investment analysts, financial risk specialists, and financial specialists, all other; and budget analysts.

Exhibit 10. Education, work experience, training and Current Population Survey results for accounting occupations³

Occupation	Typical Entry-level Education	Work Experience Required	Typical On-The-Job Training
Bookkeeping, Accounting, and Auditing Clerks	Some college, no degree	None	Moderate-term
Tax Examiners and Collectors, and Revenue Agents	Bachelor's degree	None	Moderate-term
Payroll and Timekeeping Clerks	High school diploma or equivalent	None	Moderate-term
Financial and Investment Analysts, Financial Risk Specialists, and Financial Specialists, All Other	Bachelor's degree	None	Moderate-term
Tax Preparers	High school diploma or equivalent	None	Moderate-term
Budget Analysts	Bachelor's degree	None	None
Brokerage Clerks	High school diploma or equivalent	None	Moderate-term

Supply

Analysis of program data from the California Community Colleges Chancellor's Office Data Mart included the TOP codes: 050200 – Accounting and 050210 – Tax Studies. Analysis of the last three years of TOP code data shows that, on average, 289 awards were conferred in the Central Valley/Mother Lode region each year (Exhibit 11).

Exhibit 11. Postsecondary supply for accounting occupations in the region

TOP Code - Title	Colleges	Associate Degree	Certificate 12<18 units	Certificate 18<30 units	Certificate 30<60 units	Certificate 6<18 units	Subtotal
050200 - Accounting	Bakersfield	25			19		44
	Columbia	3	1	2	0		6
	Fresno City	9	23	1	11		44
	Merced	16			5		21
	Modesto	25	2	4		0	31
	Porterville			1	1	0	2
	Reedley College	6		7			13
	San Joaquin Delta	69		3	13		86
	Sequoias	12			3		15
	Taft	4		1			6
	West Hills Coalinga	2		4			6

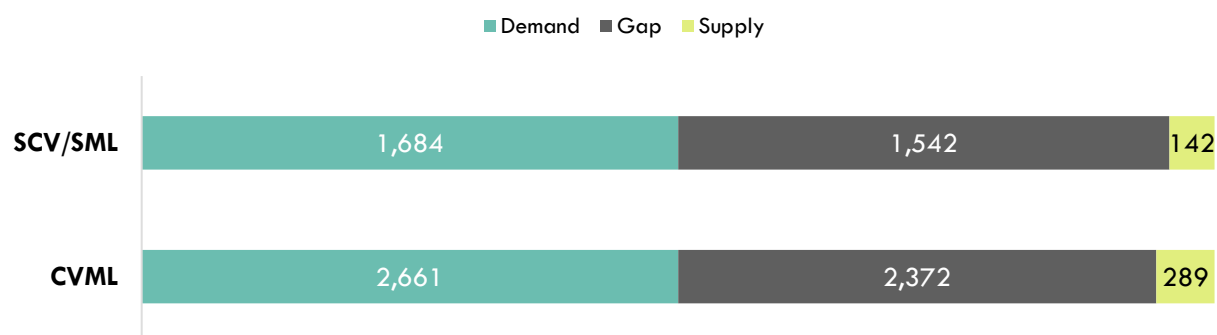
³ "Labor Force Statistics from the Current Population Survey," Bureau of Labor Statistics, <https://www.bls.gov/cps/>.

TOP Code - Title	Colleges	Associate Degree	Certificate 12<18 units	Certificate 18<30 units	Certificate 30<60 units	Certificate 6<18 units	Subtotal
	West Hills Lemoore	4		8			13
050210 – Tax Studies	Columbia		0	1			1
	San Joaquin Delta				3		3
TOTAL		177	26	31	54	1	289

Gap Analysis

There is an undersupply of 1,542 accounting workers in the SCV/SML subregion and 2,372 workers in the region (Exhibit 12).

Exhibit 12. Accounting workforce annual demand and supply in the SCV/SML subregion and region



Student Outcomes

Exhibit 13 summarizes employment and wage outcomes from the California Community College Chancellor’s Cal-PASS Plus LaunchBoard for the TOP code related to accounting. There were 145 accounting students who received a degree, certificate, or attained apprenticeship journey status, and 817 who transferred; 33% reported a median change in earnings, and 67% attained a living wage.

Exhibit 13. Regional metrics for the TOP code related to accounting

Metric	050200 - Accounting
Students Who Got a Degree or Certificate or Attained Apprenticeship Journey Status	145
Number of Students Who Transferred	817
Job Closely Related to Field of Study	72%
Median Change in Earnings	33%
Attained a Living Wage	67%
* denotes data not available.	

Conclusion

The entry-level wages of the seven occupations exceed the SCV/SML subregion's average living wage. There were 1,811 job postings in the past six months for occupations related to accounting in the subregion. Analysis of skills and certification requirements in job postings indicates:

- The top baseline skill is communication, and the top specialized skill is accounting.
- The top software skill is Microsoft Excel.
- The top certification is Certified Public Accountant.

There is an undersupply of trained workers, a shortage of 1,542 in the SCV/SML subregion and 2,372 in the region.

Recommendation

Based on these findings, it is recommended that Bakersfield College work with the Business and Entrepreneurship Regional Director, the college's advisory board, and local industry in the expansion of programs to address the shortage of accounting in the region.

Appendix A: Methodology & Data Sources

Data Sources

Labor market and educational supply data compiled in this report derive from a variety of sources. Data were drawn from external sources, including the Economic Modeling Specialists, Inc., the California Community Colleges Chancellor's Office Management Information Systems Data Mart and the National Center for Educational Statistics (NCES) Integrated Postsecondary Education Data System (IPEDS). Below is the summary of the data sources found in this study.

Data Type	Source
Labor Market Information/Population Estimates and Projections/Educational Attainment	Economic Modeling Specialists, Intl. (EMSI). EMSI occupational employment data are based on final EMSI industry data and final EMSI staffing patterns. Wage estimates are based on Occupational Employment Statistics (QCEW and Non-QCEW Employees classes of worker) and the American Community Survey (Self-Employed and Extended Proprietors). Occupational wage estimates also affected by county-level EMSI earnings by industry: economicmodeling.com .
Typical Education Level and On-the-job Training	Bureau of Labor Statistics (BLS) uses a system to assign categories for entry-level education and typical on-the-job training to each occupation for which BLS publishes projections data: https://www.bls.gov/emp/tables/educational-attainment.htm .
Labor Force, Employment and Unemployment Estimates	California Employment Development Department, Labor Market Information Division: labormarketinfo.edd.ca.gov .
Job Posting and Skills Data	Burning Glass: burning-glass.com/ .
Additional Education Requirements/ Employer Preferences	The O*NET Job Zone database includes over 900 occupations as well as information on skills, abilities, knowledge, work activities and interests associated with specific occupations: onetonline.org .

Key Terms and Concepts

Annual Job Openings: Annual openings are calculated by dividing the number of years in the projection period by total job openings.

Education Attainment Level: The highest education attainment level of workers age 25 years or older.

Employment Estimate: The total number of workers currently employed.

Employment Projections: Projections of employment are calculated by a proprietary Economic Modeling Specialists, Intl. (EMSI) formula that includes historical employment and economic indicators along with national, state and local trends.

Living Wage: The cost of living in a specific community or region for one adult and no children. The cost increases with the addition of children.

Occupation: An occupation is a grouping of job titles that have a similar set of activities or tasks that employees perform.

Percent Change: Rate of growth or decline in the occupation for the projected period; this does not factor in replacement openings.

Replacements: Estimate of job openings resulting from workers retiring or otherwise permanently leaving an occupation. Workers entering an occupation often need training. These replacement needs, added to job openings due to growth, may be used to assess the minimum number of workers who will need to be trained for an occupation.

Total Job Openings (New + Replacements): Sum of projected growth (new jobs) and replacement needs. When an occupation is expected to lose jobs, or retain the current employment level, number of openings will equal replacements.

Typical Education Requirement: represents the typical education level most workers need to enter an occupation.

Typical On-The-Job Training: indicates the typical on-the-job training needed to attain competency in the skills needed in the occupation.