

## **Ryan Fernandez – Writing Sample 2 - California Employment and Job Creation in a Knowledge Economy**

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The California economy is one of the most unique in the world, anchored in a diverse array of industries ranging from manufacturing, agriculture, and trade to aerospace, information technology, and biotechnology. Other major California industries include tourism, entertainment and services. On a whole, the state's economy is not overly reliant on one sector. California businesses, however, depend more than anywhere else in the world on intellectual property, as is evident in such industries as film and television, video games, commercial art, and mobile technology. As the economy continues to develop with businesses reliant on intellectual property, we could see the disappearance of opportunity and an overall increase in inequality amongst the California workforce. Given this possible future and its diverse economic nature, it is in the state's best interest to keep blue-collar jobs available for Californians, to complement the white-collar positions that benefit the most from business models based on intellectual property. With more and more firms becoming involved with such a model, the California of the future could be described as having a knowledge-based economy.

The makeup of this "knowledge economy" is described by USC Economics Professor Simon Wilke as a phenomenon he calls the "Creativity Paradox". Rents from an intellectual property-driven business model are high (an economic rent is the payment to a producer above and beyond its cost). By patenting a technology or idea, a company can create a monopoly on a product and collect rents from every sale of that product around the world. These rents are the new driver of the California economy (Wilke, 2011).

A rent-driven economy is very risky. Economic rents on the whole are more concentrated on exports, and a firm needs a "hit" to collect high rents. One prime example of this model is Apple, Inc.'s iPhone. Since Apple has a patent on the technology that drives the iPhone, the firm receives a portion (a rent) from every iPhone transaction made around the world. iPhones are manufactured in China and can be sold in Brazil, Germany, and other places outside the U.S., From every iPhone sale transaction, money is paid to Apple in Cupertino, California.

The same can be said about CDMA (code division multiple access) technology, which was developed and patented by Qualcomm, a company based in San Diego. Every time a phone using CDMA technology is sold, a payment is made to Qualcomm.

The paradox is that although this model can be lucrative for some, it increases inequality on a wider scale. In a knowledge-based economy, the best jobs available are those at the "high-end" – lucrative positions that benefit the most from intellectual property. The only other jobs that are available are at the businesses that serve these people. According to Simon Wilke, this is the

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direction the California economy has been going for the last 10 years or so, and this trend has not left good employment levels in traditional sectors (Wilke).

Economic data backs this claim. In a report published August 2011, The Los Angeles County Economic Development Corporation (an independent entity that provides data to the Los Angeles Chamber of Commerce) found that growth in Los Angeles County by number of lease expansions was highest in the entertainment, logistics & warehousing, and professional services sectors (Ritter and Sidhu, 2011, p. 4). This suggests that the Los Angeles area is experiencing growth in the service sector. The paper also mentions an uptick in employment in motion picture and television production, international trade, and temporary staffing services. This is good news to anyone advocating for a forward-moving knowledge economy. It can be said that California's economy of today is an "agglomeration economy", where there is a clustering of activity as different industries work in close proximity to one another.

In a state with a population of almost 40 million people, the problem of inequality has enormous implications to California's future socioeconomic environment. Therefore it is essential to take steps to counteract the development of inequalities in the state, and to keep California's economy diverse. We begin by taking a look at the business cycle to determine what is naturally occurring in this environment and use that as a backdrop upon which to make recommendations on how the state can mitigate the phenomenon of growing inequality in a knowledge economy.

A look at Gross Domestic Product (GDP) by state gives a "bare bones" look at the output of the California economy. According to the U.S. Bureau of Economic Analysis, California's GDP decreased 3.7% in 2009 but increased 1.8% in 2010, to roughly \$1.9 trillion. If we look only at these numbers, we note that 2009 was the only year the state's GDP had declined in the past 13 years. However, if we look at real GDP per capita, a measure of output per person in real terms, we see a sadder story. Real GDP per capita in California declined consecutively in years 2007, 2008 and 2009 and then showed a slight uptick in 2010 (U.S. Bureau of Economic Analysis). Whether this will truly be the end of the downward trend remains to be seen, but one thing that these numbers show is that Californians are producing less and making less money than before. On a whole, the state's citizens have become poorer.

This downward trend that has accompanied the worldwide financial crisis of the past five years has brought the attention of policy makers to job creation. Data from the State of California Employment Development Department show that the statewide unemployment rate has been steadily rising since 2006. Beginning that year, the California unemployment rate stood at a 10-year low at 4.9%. The state's unemployment rate grew to 5.3%, 7.2%, 11.3% and 12.4% in years 2007, 2008, 2009 and 2010, respectively (State of California Employment Development Department). This trend follows our proposition that California's socioeconomic landscape is becoming increasingly unequal.

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In order to keep California's economy diverse it is important that the state sustains and creates blue-collar jobs. Job creation in traditional sectors such as manufacturing, construction and agriculture are crucial. By number of employees, manufacturing jobs make up 9.7% of total jobs in California industries. Construction jobs make up 6.1%, and agriculture jobs 2.4% (State of California Employment Development Department). So, how are these sectors doing?

If we look at the data from the U.S. Bureau of Economic Analysis, we see that the downward trend in GDP for California's construction industry has actually been occurring since 2006, and the state has *not* seen the uptick in GDP in 2010 for the construction industry. By this data, it seems that the construction industry in California has contracted and may continue to do so in the years to come.

However, for the agriculture industry, the patterns in the data follow that of the GDP for all of California's industries as a whole, with a single-year downturn in 2009 and then a slight return to growth in 2010. In the manufacturing industry, as well, the GDP data for California show a decline in 2009 and then a short rise in 2010. For mining, another blue-collar industry, data for GDP also follows this trend (U.S. Bureau of Economic Analysis).

It is possible then that perhaps blue-collar industries are actually quite resilient in the state of California, and are perhaps tied to the health of the state itself, and the nation. A recent report from the Public Policy Institute of California (PPIC) found that the share of California employment compared to the rest of the country is in fact quite stable, and may even have risen recently (Kolko and Neumark, 2007, p. 10). The PPIC report also states that most firms to leave California in the year 2006 were in the financial and insurance industries. However, it was found that there was a weaker shift out of state for technology, and no such shift at all for manufacturing (Kolko et al., 2007, p. 11).

The Los Angeles County Economic Development Corporation report mentioned at the beginning of this paper claims that the manufacturing and trade sectors, major users of industrial space, were among the first industries in Southern California to recover from the recent economic downturn (Ritter et al., 2011, p. 3). This is more evidence that supports the notion that manufacturing can be resilient.

It could also be argued that blue-collar manufacturing and construction jobs are fixtures in the economy because these jobs have a multiplier effect. In most cases, construction and manufacturing projects create other jobs in the long term. If a road or a bridge is built, for example, the economic impact of the structure will affect other activities in the long term – people will use the road or bridge to get to work, to transport goods, and so on. In fact, both white collar and blue-collar jobs have a multiplier effect. In a knowledge economy, jobs that involve intellectual property can produce hardware or software products that make other people's jobs more effective. For

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example, the advent of tablets, smart phones and mobile computers has helped professionals conduct their work more efficiently in a broad range of industries.

For this reason and the reasons stated above, we move forward assuming that both white-collar and blue-collar jobs are integral to the California economy. In California's business environment, both of these types of jobs are linked to companies subject to the same corporate tax rate. It is known that this tax rate can be quite varied over time. The California State Board of Equalization shows that the corporate tax rate in California has fluctuated between 5.75% and 7.25% over the past ten years. Its current level is 6.25% (California State Board of Equalization).

The first major public policy suggestion of this paper involves keeping the California corporate tax rate as fixed as possible. If policy makers can keep the tax rate stable over the long term, it might put businesses in a better position to estimate and forecast their hiring needs. This would help to drive employment in all sectors within the future California economy.

In California (and any other U.S. state) it can be purported that there is a direct correlation between the workforce and the state's education system. The most obvious link between these two areas is the fact that the California student population will enter the workforce once they graduate.

Therefore, any long-term change in the workforce will have to begin in the form of education. This not only includes an assessment of physical educational facilities but also includes changing the way students enter the workforce. Certain steps in public policy related to education are then also needed to ensure that job growth remains strong in California throughout the long-term.

The issue of education is particularly important because the projections for an adequately educated workforce are not very encouraging. A recent report published by the Public Policy Institute of California projects that by 2025 there would be 1 million college degree jobs available in the state with no qualified Californian to fill them (Johnson, p.1). As "baby boomers" retire and leave the workforce, jobs that require a college education will be available. It is imperative that steps be taken to improve the outlook of education in California so that citizens stand a better chance of getting these jobs in their own state.

There are two aspects of the education system that warrant inspection within this discussion – training students for high-end jobs and preparing students for blue-collar careers. Let us first look at the current situation that exists in California schools. To prepare students for careers in high technology, it is worthwhile to look at the number of schools in California with computers and Internet access. The California Department of Education publishes a yearly report called the Fact Book that includes such statistics. Amongst California elementary, middle and junior high, and also high schools, the Department of Education report found that during the 2007-08 school year, there were between 3.35 and 4.41 students per computer in each school. Regarding high speed Internet

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connectivity, the report finds that in the 2007-08 school year, high speed Internet access could be found in 86% of California school districts (California Department of Education).

It is also useful to get an idea of how many California students currently receive vocational or Career Technical Education (CTE) training. An organization called Education Trust-West, based in Oakland, published a study in July 2011 which claimed that four out of ten California students in the K-12 age range did not receive college preparatory nor CTE training in their academic career. The study was based on 11,000 senior transcripts. The report goes on to say that only five out of ten individuals in California are “college-ready” or “career-ready” by the time they graduate high school. This is quite a dismal outlook indeed.

This paper proposes two kinds of policy recommendations regarding education. First, California public schools must be better equipped to train students for the high level jobs that come with intellectual property-driven businesses. There should be a solid technology infrastructure in schools that is dependable for students to use. Schools need computer equipment and mobile equipment at a ratio of one per child (not four children per device as is the current availability). Internet access should be available at 100% of public schools, and should be more ubiquitous - for example, instead of only having hard-wired computers, schools should have free wi-fi networks available to students. Perhaps high schools could benefit from having such things as invention labs, or “incubators”, a space for students to develop start-up company ideas. State government needs to work more closely and more directly with schools, to get the freshest ideas in the realms of hardware, software, and any other modern industry sector, so that the student is ready to act on new ideas right as they are hatched.

Secondly, it is essential to get students into vocational or CTE programs earlier in their academic career, to accommodate building the workforce for blue collar jobs. Opportunities to enroll in CTE programs should not only be universally available in all California public schools, but the ability to enroll needs to start earlier. I do not believe there is anything wrong with children taking a vocational career path at the age of 9 or 10. If a student decides to do so, there should be opportunity for them to be trained in certain trades.

We are living in a time of inflection in California, a time of change. Whereas the state’s history is anchored in industries of the past (the railroad, the Gold Rush), as we look to the future we must realize we are standing at the precipice of a new frontier of business, one driven by knowledge. This is not only shown in the data we have referenced in this paper but amongst testimonies by professionals as well. Silicon Valley patent attorney Dennis Fernandez states, “California is increasingly a knowledge-based economy, especially in Silicon Valley driven largely by innovation in computerized information and biotech services, particularly in semi-custom semiconductor design and related automated chip manufacturing, distributed software systems including wireless network transactions, as well as biomedical devices, biosensors and bioinformatic diagnostic systems.”

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When asked about the reasons for the transition of this economy, Mr. Fernandez states that “California’s knowledge-based economy leverages a sustainable convergence of leading university research along with strong patent protection, early-stage risk capital commitments from venture capital and angel investors, and various industry partnerships to enable global marketing, distribution and manufacturing” (Fernandez).

When an idea or technology is patented, an individual or organization can greatly benefit and become a driving force in the economy. This enacts forces that skew the best types of jobs towards the “high-end”, to specialized positions that are difficult to obtain. The majority of the workforce, as a result, becomes gradually poorer.

The problem, although dismal, is not an old problem. *Atlas Shrugged*, one of the foremost novels in American history, was written by renowned philosopher Ayn Rand in 1957, and is still referenced in social commentary today. Rand’s story takes place in a universe where society’s most innovative people have stopped working. Major companies begin to fail, and the population grows weary of important socioeconomic factors. Themes of moral code, the role of government, and most importantly the relevance of human talent persist throughout the novel (Rand). Given the book’s long-standing esteemed reputation in the world of literature, it can be seen that the issues discussed in this paper have been brought to the forefront before, on a national level.

Not only is inequality in the economy an old problem, but the same issues arise every time technology changes in major industries. Although the issues we have discussed are difficult to face, by making the appropriate policy changes in the areas of business and education, we can hope to make the future economy of California one that is driven by both knowledge-based and traditional sectors.

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