

# Asians Matter: Asian American Entrepreneurs in the Silicon Valley High Technology Industry

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by Edward Jang-Woo Park\*

Among the diverse topics concerning Asian Pacific Americans, one that has received systematic and sustained attention is immigrant entrepreneurship. This focus reflects the perception that entrepreneurship is the defining difference in the economic integration of many Asian Pacific Americans into the U.S. economy compared to other racial groups. This difference has profound economic, political, and social consequences.

While a high rate of entrepreneurship is widely acknowledged as the most important feature of Asian Pacific American economic participation, there remains a great deal of controversy regarding what immigrant entrepreneurship says about Asian Pacific Americans, or about the U.S. economy. This debate, from its inception, has taken on profoundly partisan tones: participants have often cited Asian immigrant entrepreneurship to support various political visions and sociological theories regarding race and the economy in contemporary American society. Today, as the nation reassesses immigration policy and reexamines economic contributions and the social status of various immigrant groups, the debate has become more important than ever.

This essay proceeds in three parts. The first critiques two common assessments of immigrant entrepreneurship and examines two relatively new contributions to the theoretical debate. The second examines the role of Asian Pacific Americans in the Silicon Valley high technology industry and provides a revealing look at the complexity of contemporary Asian immigrant entrepreneurship. That section also highlights some blind spots and limitations of the current debate. Finally, the third part outlines a number of issues derived from the case study to point out areas of further research and discussion that could lead to a more comprehensive understanding of Asian immigrant entrepreneurship.

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## Contemporary Debate Revisited

### Two Shores of the Debate

The historical discussion of Asian immigrant entrepreneurship stemmed from efforts to understand Asian Pacific American economic adaptation to an uninviting and hostile society (Lyman 1974; Modell 1977; Choy 1979). More recently, mainstream social scientists have approached ethnic entrepreneurship to describe why Asian Pacific Americans might fare much better than any other racial group in the changing economic environment of the United States.

Sowell (1983, 1994) and Wilson (1987) represent political opposites in policy debates surrounding racial inequality. They both rely heavily, however, on Asian immigrant entrepreneurship and its “elevating” impact on the overall socioeconomic status of Asian Pacific Americans to attack racially-based policies such as affirmative action to aid African Americans and Latinos. Instead, they support policies to aid small business growth to raise the socioeconomic status of the latter two communities. Because of the centrality of Asian immigrant entrepreneurship in the broad debates regarding race and economy, this topic has received close attention, marked by intense divisions. In the more specific debate surrounding Asian immigrant entrepreneurship, divisions arise from the radically different assessments over its impacts on the broader U.S. society and on the Asian Pacific American community itself, and how best theoretically to frame its formation.

Portes (1985), Waldinger (1985), Light (1993), and Zhou (1992) have argued that Asian immigrant entrepreneurship has benefited both the broader society and Asian Pacific American communities. According to them, Asian immigrant entrepreneurship begins as an economic response by professional and middle-class Asian immigrants who face limited economic options in the mainstream labor market due to barriers such as limited English proficiency and professional licensing. Unable to recreate their class status through the mainstream labor market, they engage in entrepreneurship to take advantage of a growing Asian Pacific American population that can serve simultaneously as a ready-made and untapped market for goods and services and as a source of readily-available and inexpensive labor.

In this analysis, Asian immigrant entrepreneurship is seen as a creative and successful economic adaptation to overcome barriers in the mainstream economy. Professional and middle-class Asian immigrants are able to retain

their class-status, while providing a robust labor market to their fellow co-ethnic, working-class immigrants, who might otherwise face even more profound barriers in the mainstream labor market. They point to generally low rates of unemployment in Asian Pacific American communities as an indication of the real benefit this “enclave economy” entrepreneurship brings.

In addition, Light (1993), Gold (1994), and Waldinger (1990) argue that Asian immigrant entrepreneurship, especially in ethnic enclave economies, has injected long-neglected inner-cities and sleepy suburban communities with much needed capital investment, neighborhood revitalization, and increased commercial activity. Readily identifiable Asian Pacific American commercial districts in California—such as Koreatown (Los Angeles), Little Saigon (Westminster), Little Taipei (Monterey Park), and Little Cambodia (Long Beach)—are seen as a new locus of urban growth and renewal. These sociologists point out that a substantial percentage of benefits, such as jobs creation, business services, linkages to international capital and markets, and generation of sales and property tax revenues, go beyond ethnic boundaries and enrich the broader public.

In contrast, other analysts such as Bonacich (1994), Ong (1993), Kwong (1987), and Nee (1994) argue that Asian immigrant entrepreneurship is detrimental to both the broader society and Asian Pacific American communities. In their analysis, Bonacich (1994) and Ong (1993) underscore the role of racial discrimination, in addition to other factors mentioned above, as one of the key reasons why Asian immigrants engage in entrepreneurship. They argue that discriminatory practices, such as barriers for promotions into management positions (“glass ceiling”) and cultural biases in licensing of professionals, push professional and middle-class Asian immigrants into entrepreneurship. With limited availability of capital, language skills, and business ties, however, these entrepreneurs face severely curtailed opportunities and are forced into those industries or neighborhoods that “native” entrepreneurs find undesirable. Asian immigrant entrepreneurship, they say, is limited to “backward” and “declining” industries that are characterized by informal organization and hyper-exploitive working conditions. In the case of retail services, enterprises are largely concentrated in poor, inner-city neighborhoods. These businesses require cheap, and even unpaid (for the entrepreneur and family members) labor, to stay in business. To be competitive they often side-step safeguards regulating work place health and safety.

Indeed, Kwong (1987) and Bonacich (1994) argue that Asian immigrant entrepreneurship is the primary vehicle for the economic exploita-

tion of the Asian Pacific American working class that benefits not only immigrant entrepreneurs but also the broader society in terms of providing inexpensive goods and services and exploiting undesirable markets.

In addition, Bonacich and Chang contend that Asian immigrant entrepreneurship contributes to the straining of urban race relations. These entrepreneurs exploit an increasingly racially diverse work force (for instance, Latinos represent the vast majority of workers in Korean American-owned garment factories), compete over urban space, and engage in exploitive retail trade (such as opening liquor stores in embattled inner-city communities).

In a different vein, Nee, Sanders, and Ong argue that Asian immigrant entrepreneurship levies a considerable "cost" to those who are integrated into the ethnic economy. Nee and Sanders (1987) find that immigrants working in the ethnic economy fare poorly since they receive fewer returns on their human capital than counterparts working in the mainstream economy. Similarly, Ong (1993) finds that Asian immigrant entrepreneurship creates few quality jobs, including for self-employment, that provide a living wage. While supporters of Asian immigrant entrepreneurship point to the low unemployment rates for Asian immigrants, opponents look at the high rate of "working poor." (Ong, 1993:16).

### **New Contributions**

While much of the debate on Asian immigrant entrepreneurship has focused on evaluating its economic and social consequences, two relatively recent contributions have raised more conceptual and theoretical issues. These debates reflect conceptual ambiguities about the definition of ethnic entrepreneurship and about why ethnic entrepreneurship has become such a prominent feature in the contemporary U.S. economic landscape.

In a recent article, Nee, Sanders, and Sernau (1994:850) point out that various analysts have defined ethnic enclave economy by casually using a combination of factors, such as locational clustering, vertical and horizontal integration of firms, ethnicity of employer and employees, and types of industries. In the process, the Asian Pacific American ethnic economy has been defined without any proven set criteria that can be used to formulate a reliable definition. In addition, these factors tend to overstate the economic and social isolation of Asian immigrant entrepreneurship by drawing tight geographic, industrial, or ethnic boundaries around enclave economies.

Nee, Sanders, and Sernau argue that these conceptual problems must be addressed *before* any substantive analysis should occur. They propose a new definition in which Asian ethnic economy is conceptualized as an “integrated” part of the metropolitan economy with “porous boundaries,” lying at an end of a continuum defined by high density of ethnic entrepreneurs and a relatively informal work environment for the employees (1994:851-4). This more flexible approach rejects the traditional approach that assumes fixed boundaries of geography (in ethnic residential districts) or ethnicity (of entrepreneurs and their “co-ethnic” workers) and treats Asian immigrant entrepreneurship as a set of relationships and conditions rather than as a fixed object. Most importantly, the argument that Asian immigrant entrepreneurship is enmeshed within the broader metropolitan economy, stresses the *integration* of Asian ethnic economy into, rather than its *isolation* from, broader economic and geographic surroundings. As the size and domain of Asian immigrant entrepreneurship expand, this reconceptualization paves a way to comprehend its increasing regional dispersion, industrial composition, work force diversity, and expanding markets for their products and services.

Similarly, Ong, Bonacich, and Cheng (1994) have recently offered a more theoretically rigorous discussion of contemporary Asian immigrant entrepreneurship. They argue that the tremendous growth in Asian immigrant entrepreneurship since the 1970s is a product of a global and national restructuring of capitalist development. In general terms, this restructuring has been defined by increasing capital and labor mobility at the global level and by the increasing organizational flexibility and the political power of capital in the U.S. economy. Under this framework, Asian immigrant entrepreneurship is a quintessential manifestation of these restructuring processes, because it (1) reconstitutes and reinvests capital (2) recruits and deploys politically marginal labor, and (3) increases the number of small firms crucial for more flexible modes of production and marketing (Ong, Bonacich, and Cheng 1994:14-29).

The linkage of Asian immigrant entrepreneurship to a broader theoretical debate on global and U.S. capitalism as well as to a set of structural processes such as capital and labor mobility is significant. By moving away from an approach which highlights only local factors, Ong, Bonacich, and Cheng have provided a broader understanding of contemporary Asian immigrant entrepreneurship—both as a general phenomena in contemporary global capitalism *and* a specific response to the conditions in U.S. urban economies.

## Limits of Asian Immigrant Entrepreneurship

Despite differences and divisions in the debate, most participants view the impact of Asian immigrant entrepreneurship in a severely limited fashion. Those who confide Asian immigrant entrepreneurship largely within an ethnic boundary see it as an ethnic matter with little significance to the broader economy. While they have stressed the impact of Asian immigrant entrepreneurship to a host of broader *political* and *social* issues—ranging from race relations to urban renewal—they have ignored its *economic* impact on mainstream society. These theorists view this entrepreneurship as an ethnic “growth machine” (see Logan and Molotch 1989) that fuels economic development within Asian Pacific American communities. They have little to say, however, about how the Asian immigrant entrepreneurship is enmeshed into the larger U.S. economy and what functions it serves in different industries. By in large, their broader interest lies in a comparative study of economic integration of racial groups, and, depending on the orientation of the theorist, Asian immigrant entrepreneurship is seen as either the foundation of their success or mechanism of their exploitation (Modell 1977; Light 1972; Kwong 1987; Bonacich 1994).

Even models that argue a more relatively expansive theoretical formulation still either relegate Asian immigrant entrepreneurship to those areas of the economy that lie on the margins or deflate its broader significance. For instance, Nee, Sanders, and Sernau (1994:859-861) assert that Asian immigrant entrepreneurship and its labor market are a transitory phenomena that will tend to diminish over time, as immigrants become more assimilated. In particular, they argue that immigrant entrepreneurs and workers alike reduce barriers to the mainstream economy by learning English and becoming familiar with the mainstream society. As a result, they will move out of the ethnic economy and into the mainstream labor market where they can earn better returns on their human capital.

In contrast, Ong, Bonacich, and Cheng (1994) view Asian immigrant entrepreneurship as a *structurally*—not *culturally*—based phenomena, as a feature of global and national economic restructuring that shows no sign of decline. They reject the assimilationist assumption in the previous model by underscoring the role of racial discrimination in the mainstream labor market in the formation of Asian immigrant entrepreneurship. According to them, Asian immigrant entrepreneurship is largely concentrated in marginal economic activities because of limited access to capital and because of institutional ties Asian immigrant entrepreneurs have. Indeed, they view

the major role of Asian immigrant entrepreneurship as keeping declining U.S. industries alive. These businesses serve marginal economic niches in the restructuring U.S. urban economies, with limited impact to the “core” sectors of the economy.

## **The Case of High Technology Industry in Silicon Valley**

### **Silicon Valley High Technology Industry and Asian Immigration**

The high technology industry in Silicon Valley serves as a useful case study to examine the economic possibilities of Asian immigrant entrepreneurship.<sup>1</sup> From the industry point of view, the high technology industry in Silicon Valley is unequivocally a core industry that represents a decisive economic sector for rebuilding the U.S. economic future. This economic and political significance was punctuated in 1992, when then Presidential candidate Bill Clinton made the support of CEO's of four of the largest high technology companies in Silicon Valley—Hewlett-Packard, Apple Computer, National Semiconductor, and Silicon Graphics—one of the keys to his political campaign (*Global Electronics* 1992:1). In addition, the inordinate amount of media and academic coverage the industry receives reaffirms daily the significance of the high technology industry in Silicon Valley.

From an economic point of view, why the high technology industry, in general, and the high technology industry in Silicon Valley, in particular, have achieved such a visible position is apparent. Nationwide, the high technology industry generated \$466.2 billion dollars in 1991. It was one of the few manufacturing industries actually to experience growth since 1972 (\$76 billion in 1991 dollars), growing at an astounding annual rate of 10.6 percent. In 1991, the high technology industry accounted for an astonishing 60 percent of the manufacturing employment in Silicon Valley, which translated to 9.7 percent of all high technology jobs in the country. In addition, nearly 800 high technology firms in Silicon Valley generated over \$80 billion, accounting for over 17 percent of the nation's total industrial output. From 1988 to 1991, the area's high technology industry actually *gained* both its national shares of jobs and economic activities. Given the prediction that the Valley's grip would be waning in the face of increasing costs, aging infrastructure, and competition from other regions seeking to attract high technology firms, this was a surprising fact. Indeed, as Saxenian (1994:2)

has demonstrated, Silicon Valley has recently *tightened* its grip on the high technology industry; by 1990, Silicon Valley accounted for one-third of the nation's electronics exports and claimed 39 of the 100 fastest growing electronics corporations. In 1992, the high technology industry in Silicon Valley posted record profits and number of initial public offerings, or creation of publicly-traded corporations. In that same year, the area's industry attracted a record \$900 million in venture capital, suggesting more growth to come (CCSCE 1993:C24).

This industry is also a well-suited case study from the Asian immigrant entrepreneurship point of view. Much of the industry's transformation into its contemporary form coincided with massive Asian Pacific immigration into the United States and California. In the mid-1970s, the high technology industry underwent a revolutionary change caused by the 1971 invention of the microprocessor, which dramatically reduced computer prices and opened up massive markets for high technology industry. The PC (personal computer) revolution was ushered in, creating enormous intermediary markets that utilize high technology products. From 1975 to 1980, the employment base for the Silicon Valley high technology industry tripled from 50,000 to nearly 150,000.

At the same time, changes initiated by the 1965 Immigration Act which eliminated racial-preference in U.S. immigration policy for the first time since 1882, began to take hold. From 1970 to 1984, the number of immigrants from Asia grew from 83,000 to 240,000 per year. In addition, from 1975 to 1984, 761,000 political refugees from Vietnam, Laos, and Cambodia were admitted.

For both immigrants and refugees, California was the primary destination: in 1990, 2.8 million of the 7 million Asian Pacific Americans nationally lived in the state. From 1970 to 1990 in Silicon Valley, the number of Asian Pacific Americans grew six-fold, from 43,000 to 261,000, increasing their share of the population from 4 percent to 17 percent, a rate surpassed in California only by the San Francisco metropolitan area.

### **A New Social Equation for Industrial Growth**

This parallel growth in high technology industry and Asian immigration in Silicon Valley has provided a unique economic environment in which to examine Asian immigrant economic integration. As an emerging industry whose growth came after the 1970s in the politically conservative north Santa Clara County, the high technology industry in the Valley had a strong pro-growth environment that actively catered to the economic and politi-



cal needs of the industry. As Trounstein and Christensen (1982) have demonstrated, local political leaders took what was then unprecedented steps to assure the industry's success: public bonds were issued to build private industrial infrastructure, and industrial leaders were appointed to commissions through which they could exercise direct control over important public policies affecting high technology growth.

Most importantly, without established institutions—especially labor unions—that could mount a challenge to its industrial organization, the high technology industry in Silicon Valley essentially invented its own “social equation” for economic growth and competitiveness. To this day, *none* of the high technology firms in Silicon Valley has been successfully unionized. This is startling given the size of the industry and its location in the San Francisco Bay Area, the traditional center of California's labor movement (Robinson and McIlwee 1989; Abate 1993). Without the presence of labor unions, the industry has built its manufacturing competitiveness on two crucial strategies that have been unprecedented for a “core” industry: the integration of a “non-traditional” manufacturing labor force (Hossfeld 1990) and the development of an extensive subcontracting system (Saxenian 1994).

Asian immigrants have played the prominent role in both of these strategies. In 1990, within the traditional “blue collar” segment of the industry, 9,000 Asian Pacific Americans (57 percent of them women) accounted for 47 percent of the 19,000 workers. Their representation has grown over the last decade (18 percent in 1980 and 44 percent in 1988). In Silicon Valley in 1990, the traditional blue collar work force of white and African American men accounted for less than 12 percent of the workforce, while APAs and Latinos accounted for 69 percent.

Among the 9,000 Asian Pacific American workers, well-over 70 percent work for large, mainstream firms where they generally receive higher wages and more benefits. Over the years, Vietnamese workers have dominated the ranks of manufacturing workers at Hewlett-Packard and Intel while Filipinos have integrated the work force at National Semiconductor and Advanced Micro Devices (Rogers and Larsen 1984). These large, mainstream firms also provide a sense of employment stability rarely found in subcontracting firms where nearly all Asian Pacific American firms are concentrated. In this economic reality, Asian Pacific American manufacturing workers, as with all workers in the industry, prefer mainstream firms over Asian Pacific American ones.

Along with providing nearly half of the area's manufacturing labor force, Asian immigrants have made another crucial contribution: as entrepreneurs they make possible the system of contracting that lies at the heart of Silicon Valley's industrial competitiveness.<sup>2</sup> In her comparative study of industrial competitiveness in California's Silicon Valley and Route 128 in Massachusetts, Saxenian (1994) argues that flexibility allowed Silicon Valley to outpace its larger and more established competitor during the mid-1970s and late-1980s as the country's premier high technology region. While large Silicon Valley firms could turn to subcontractors, large firms in Route 128 had to rely on "in-house" manufacturing facilities. As waves of innovations changed the manufacturing technologies, large Silicon Valley firms kept pace by changing subcontractors, and these subcontractors, in turn, absorbed the cost of new capital investments in manufacturing facilities. Large firms in Route 128, however, were left with out-dated manufacturing plants that consumed enormous financial and human resources.

Large firms in Silicon Valley also could rely on the subcontractors system to absorb the notoriously violent economic changes in the industry. Since subcontractors were responsible for maintaining the industry's work force and inventory, they were the ones who were responsible for costly tasks: laying off workers during recessions, recruiting workers during recovery, and selling off excess inventory at deep discounts when the market turned soft. In this way, the contracting system increased the economic flexibility of large firms, and allowed them to concentrate on technological innovation and marketing, the two central elements in high technology economic competitiveness. In addition, the subcontractors *collectively* possessed an enormous industrial capacity that allowed larger firms to reduce the time-to-market for their products, another critical factor in the high technology industry. Saxenian (1994:150-2) concludes that within high technology-led regional economies, the development of this subcontracting system in such a large scale and so early on has provided the decisive difference for Silicon Valley.

One way to gauge this system of subcontracting in the Silicon Valley high technology industry is to examine its industrial structure. In 1990, of the 500 "electronic components and accessories" firms in Silicon Valley, only 95 firms had 100 or more workers, while 254 had fewer than 20 workers. Similarly, of the 215 "computer and office equipment" firms, 119 of 215 firms had fewer than 20 workers (SIC Codes 367, 357; U.S. Census 1990).

A study by the Asian Pacific American Manufacturing Association found more than 500 Asian Pacific American-owned high technology firms in the San Francisco Bay Area, generating over \$1 billion in 1989 (Peterson 1989). Although this data is dated, especially given the pace of change in the high technology industry, it nonetheless offers a useful snapshot to assess the relative position of Asian Pacific American firms in the industry: while \$1 billion is an impressive figure, it represented only 1 percent of the high technology output in the region. The average firm output, in 1989, for all high technology firms in Silicon Valley was close to \$80 million, while the average firm size in the AAMA survey placed the figure for Asian Pacific American-owned firms at close to \$2 million. In a detailed analysis of Chinese American-owned high technology firms in Los Angeles County, the high technology industry is placed well ahead of all other industries for Asian Pacific American entrepreneurs (Tseng 1994:139).

In Silicon Valley itself, an estimated 300 of the 800 high technology firms in 1990—including over half of all start-ups—were headed by Asian Pacific American entrepreneurs (Pollack 1992). The data suggest that the vast majority of Asian Pacific American-owned firms are small firms, integrated into the industry as subcontractors.

In their function, subcontracting firms in the high technology industry resemble their more extensively-researched garment industry counter-parts. Like garment industry subcontractors, high technology subcontractors work for larger firms—referred to in the industry as “original equipment manufacturers” (OEMs)—in the production of component parts ranging from printed circuit boards to graphics cards. More recently, an increasing number of software subcontractors who write component codes for large software companies have appeared. For a vast majority of subcontractors, their main “customers” consists of one or two OEMs or large software companies that provide almost all of a subcontractor’s business under short-term renewable contracts.

As in the garment industry, high technology contractors are in a sense employees of the manufacturers—but without any of the economic or legal protections enjoyed by conventional employees. In Silicon Valley, individual contracts can last less than one month. Plus, more often than not, these “contracts” are based on informal understandings between production managers of the OEMs and owners of subcontracting firms, making the relationship even more flexible and unequal. Under this arrangement, subcontractors and their employees are wholly dependent on larger companies who exercise great control over their economic survival, and subcon-

tractors effectively function as a manufacturing facility or a software division of the larger firms.

Despite these conditions, some Asian immigrant subcontractors have become very successful. For instance, Solectron Corporation (CEO, Winston Chen, 1977-1994) subcontracts circuit boards for some of the major OMEs in Silicon Valley, including Hewlett-Packard, IBM, and Apple, and generated \$1.5 billion in sales in 1994. Other notable successes include DataExpert Corp (founder and CEO Bruce Yen, systems board and peripheral cards), Diamond Multimedia (founder and CEO Chong Moon Lee, graphics accelerator and digital video cards), and Fora Addonics (founder and CEO Victor Wu, component card and motherboard), firms that all generated sales of \$130 million or higher in 1993.

While Asian Pacific American subcontractors in both the high technology and the garment industries serve similar functions, the monetary scale is quite different. Examples of spectacular success continue to fuel the already intense entrepreneurial environment in Silicon Valley for Asian immigrants and encourage them to take the subcontractor risk.

### **Paths to Entrepreneurship**

Two important factors have emerged in the discussion about why Asian immigrants have chosen to enter entrepreneurship in the first place: glass ceiling problems and the availability of venture capital from Asian countries.

*The glass ceiling.* Like their white counterparts, Asian immigrant entrepreneurs in the high technology industry come primarily from the ranks of engineers or low-level managers. In their shift into entrepreneurship, however, immigrant entrepreneurs cite racial discrimination in their promotion to middle- and upper-level management—the so-called “glass ceiling”—as one of the primary reasons for leaving mainstream careers.

The most well known figure on this issue is David Lam, who left Hewlett-Packard in 1979 after repeatedly being passed over for promotion. He is credited with a series of successful start-ups and helped to organize other Asian Pacific Americans in the industry by starting the Asian Pacific American Manufacturers Association (Matsumoto 1994; Pollack 1992). Lam has become one of the strongest critics of the industry’s glass ceiling and is often cited in the popular media.

Aggregate data tend to support the presence of the glass ceiling for Asian Pacific Americans in the industry. The 1990 ratio for white “professionals” to “officers and managers” was 0.54 (36,747 to 19,902), almost

twice as high as the ratio for Asian Pacific Americans at 0.28 (3,084 to 11,066). While the number of Asian Pacific American executives and managers grew from 1988 to 1990 (from 2,766 to 3,084), the ratio did not. The absolute and relative difference in the Asian and white ratios has actually *increased* since 1988, when the ratios were 0.46 and 0.24, respectively. Aside from Ray Ocampo (vice president, Oracle), there are no high-profile Asian Pacific American executives in high technology firms in Silicon Valley (Viloria and Lai 1995).

*Venture capital from abroad.* While the prevailing image of glass ceiling has pushed some Asian immigrant entrepreneurs to start their own businesses, venture capital firms from Asian countries have provided some of the necessary capital to facilitate and even encourage start-ups. From 1985 to 1990, Eckhouse (1990) estimates that close to 60 Asian venture capital firms invested a staggering \$1.7 billion to high technology start-ups. To place this figure in context, in 1992, all high technology firms in Silicon Valley attracted a record \$900 million in venture capital.

In addition to earning a good return on their investment, most of these Asian venture capital firms invest with “secondary” hopes of accessing technology for their firms in Asia and as a way developing a “presence” in the Valley (Yoshihara 1990). In nearly all studies that have examined Asian venture capital firms, observers have underscored how these firms “target” Asian immigrant start-ups, hoping that their ethnically-based ties can facilitate their goals (Eckhouse 1990; Tseng 1994; Burkett 1994). In a detailed study of venture capital firms from Taiwan, Liu found that nearly *all* of the Taiwan venture capital firms that invested in the United States high technology industry invested in Chinese American-owned firms. Similarly, Tseng observes that Taiwanese venture capitalist, largely drawn from the ranks of scientists and engineers, target Taiwanese start-ups since they “mainly rely on existing human networks such as former colleges, classmates, and friends” (Tseng 1994:118).

Pollack (1992), in particular, argues that this access to capital has helped Asian immigrant entrepreneurs launch new start-ups even during the early 1990s, when a domestic credit crunch discouraged others from establishing new firms. This involvement of Asian venture capital firms in the formation of Asian immigrant entrepreneurship has renewed the “start-up fever” in Silicon Valley—this time, for Asian immigrants.

### **Organizing Asian Immigrant Entrepreneurs**

In the Silicon Valley high technology industry, Asian Pacific American entrepreneurs have organized politically for two reasons: (1) to take advan-

tage of the unique economic status of high technology industry, and (2) to advocate for racial equality in the promotion of Asian Pacific American professionals into executive and managerial positions in mainstream firms. While a number of ethnic specific organizations have been founded, including the Chinese Software Professionals Association and the Silicon Valley Indian Professionals Associations, the Asian American Manufacturers Association (AAMA) has been the most influential organization representing Asian Pacific American entrepreneurs.

Founded in 1980 and currently headed by Thinh Tran (chairman of Sigma Design), the association has urged federal and state governments to strengthen economic ties with Asian economies. Asian immigrant entrepreneurs feel that they can exploit their ethnic-based ties and open new markets in Asia (Rajendran 1994). The group played a prominent role in several fronts on this issue, including organizing numerous trade shows to bring together Asian and Asian Pacific American high technology firms and lobbying the federal government to relax regulations on high technology exports.

In addition to advancing its members' business interests, the association has also lobbied for racial equality in the promotion of Asian Pacific American professionals into management. When the organization was founded, this was their main role in Silicon Valley.

A striking political accomplishment of AAMA has been its ability to develop and support Asian Pacific American political leadership in the Valley. Co-founder David Lam<sup>3</sup> was one of the first to benefit from the group's political visibility: he received a coveted appointment to the Presidential Commission on Minority Business Development during the Bush Administration. Since then, AAMA has been credited with providing support for various Asian Pacific American community leaders, including a number of appointments to the Valley's educational districts and public commissions (Matsumoto 1994). In their efforts as an industrial association and as an advocate for Asian Pacific American political interests, AAMA's membership to the economically important and politically visible high technology industry has allowed it to achieve a measure of political success that would have been far more difficult in other industries.

# **Asian Pacific American Entrepreneurship Reconsidered**

## **From Sunset to Sunrise**

As this case study of the high technology industry in Silicon Valley demonstrates, Asian immigrant entrepreneurship can have a defining impact on the core industries in the U.S. economy. Asian immigrant entrepreneurs in the Valley have played an instrumental role in developing a highly capitalized and technologically sophisticated subcontracting system—one that lies at the heart of industry's economic competitiveness and industrial organization. The high technology industry in Silicon Valley is not alone in this regard. Within the industry, other regions with high concentration of high technology firms have seen increasing integration of Asian Pacific Americans into the industry as both manufacturing workers and as entrepreneurs. Such regions include Research Triangle, North Carolina; Fairfax County, Virginia; and Austin, Texas. Economic opportunities in these areas have actually triggered large-scale Asian Pacific American migration into these communities for the first time.

Similar processes have unfolded in other core industries as well, with notable examples in the biotechnology industry of San Francisco Bay Area and Boston, the multimedia industry in the "Multimedia Gulch" of San Francisco and Los Angeles, and the medical devices industry in Southern California. These examples from newly-emerging "sunrise" industries collectively signal a need to rethink the relationship between Asian immigrant entrepreneurship and core industries. Much of the previous debate has assumed that Asian immigrant entrepreneurship is largely limited to marginal or declining industries. Some have even argued that the very presence of Asian immigrant entrepreneurship indicates the decline of a "sunset" industry. Examples raised here, however, refute this position.

### **"Opting Out" of the Mainstream Labor Market**

Another central assumption in the existing debate about immigrant entrepreneurs views the entry of Asian Pacific Americans into the mainstream labor market as a path out of the ethnic economy, including ethnic entrepreneurship, once and for all (Nee, Sanders, and Sernau 1994, Light, Light and Bonacich, Ong). Given their serious misgivings about Asian immigrant entrepreneurship and its economic and social costs, it is not surprising that some researchers have difficulty imagining an Asian Pacific

American who has entered the mainstream labor market only then to leave and enter ethnically-based entrepreneurship. Yet this is exactly the process that is taking place, however, in the high technology industry in Silicon Valley: ever-increasing large numbers of Asian Pacific Americans are leaving relatively well-paid engineer and middle-level manager jobs in mainstream firms to start their own subcontracting companies.

This “reverse flow” of Asian Pacific Americans suggests that the gate between Asian immigrant enterprises and the mainstream labor market is open both ways. This calls for a serious revision of the theoretical conceptualization Asian immigrant entrepreneurship. First, this “reverse flow” challenges the prevailing assumption that Asian immigrant entrepreneurship is a temporary phenomena that marks a transitory stage between the entry of Asian immigrants into a new economy and their eventual economic assimilation into the mainstream labor market. In the case of the Silicon Valley high technology industry, Asian immigrants have shown that they can “opt out” of the mainstream labor market and “go back” to ethnic entrepreneurship, suggesting that Asian immigrant entrepreneurship might be more durable than previously believed.

Second, the case study demonstrates that the entry of Asian Pacific Americans into the mainstream labor market does not make them immune from economic and social pressures to move “back” into ethnic entrepreneurship. In the narratives of Asian Pacific Americans who make this decision, the glass ceiling is cited as one of the most important factors.

Measuring the impact of racial discrimination in the formation of Asian immigrant entrepreneurship is difficult. Recognizing, however, that racial barriers to management is a real-world frustration for Asian immigrants in the mainstream labor market is essential. Regardless of social and educational backgrounds such as foreign-birth and limited-English status that might statistically explain away their relative disadvantage in obtaining promotion into management (Ong and Blumenberg 1994:181-182), discrimination is perceived as a major factor.<sup>4</sup> One frustrated Asian immigrant engineer who became an entrepreneur posed a basic question:

If Asian immigrant engineers did not have the capability of becoming managers, why do all these Asian-owned firms in Silicon Valley exist in the first place? If Asian immigrants aren't good enough to be trusted to manage a several hundred thousand dollar operations in white firms, how come they are good enough to run their own multi-million dollar businesses? (Park 1992:144-145).



## From Family and Community to Transnational Ties

As an important core industry with a coveted technological base and economic future, the high technology industry in Silicon Valley has attracted the attention of Asian venture capital firms. In addition to seeking high returns for their investments, these firms also seek to facilitate technological transfers to Asia and to gain a foothold in the Valley's high technology industry. To facilitate these aims, they have invested in Asian immigrant enterprises hoping to take advantage of ethnic and national ties. The sheer number of these firms and their infusion of start-up capital in Silicon Valley have made it easier for Asian immigrant engineers and middle-level managers to "opt out" of the mainstream labor market. In the process, a new international relationship between Asian immigrant subcontractors and Asian venture capitalists has been built.

This dynamic is a departure from the previous theoretical understanding of Asian immigrant entrepreneurship that placed emphasis on family- and community-based resources behind its formation. In the Silicon Valley high technology industry, traditional sources for starting Asian immigrant entrepreneurship, such as family loans and rotating credit associations, are being supplemented—indeed overwhelmed—by Asian venture capital investments. In this context, Asian immigrant entrepreneurship has gone beyond an *ethnic* phenomena and has become an increasingly *transnational* one.

While the high technology industry clearly has economic characteristics that makes the industry an exceptionally attractive target for Asian investments, this phenomenon may be part of a greater trend. There has been a proliferation of Asian financial institutions, including venture capital firms and over-seas branches of Asian banks located in, and serving, predominantly their own ethnic communities. This development indicates that the financial basis of Asian immigrant entrepreneurship is shifting toward Asian financial institutions and away from traditional familial and ethnic networks. Within Asian Pacific American communities, this economic reality is most noticeable in their urban form which includes large shopping malls financed by Asian real estate syndicates.

## Conclusion

The case study of the Silicon Valley high technology industry suggests that Asian immigrant entrepreneurship is becoming increasingly complex. This complexity reflects profound economic and social changes in both the

U.S. economy and the formation of Asian immigrant entrepreneurship. Within the U.S. economy, the industrial organization between core and marginal or declining industries has been blurred. Many new core industries require technological and scientific knowledge, as well as relatively heavy capital investments. Yet they rely heavily on a system of smaller and unregulated subcontractors to carry out many of their industrial activities. This is a characteristic that has been traditionally associated with marginal or declining industries that depended on this practice for their tenuous economic survival.

In the Valley, however, the subcontractors system was created from the beginning of its industrial development and has become a major reason for its economic success. As other core industries follow suit, a structural place for subcontractors in core industries is evident. Subcontracting firms in core and marginal industries share striking similarities, such as heightened vulnerability to the economic cycles and organizational flexibility, but dramatic differences are apparent as well.

One important difference stems from the economic backgrounds of the ethnic entrepreneurs themselves. Asian immigrant entrepreneurs in core industries are highly educated—some in the U.S., and their training is usually in technical and scientific fields relevant to their industry. In addition, most have had long work experience within the industry's mainstream labor market. This educational background and work experience set them apart from other Asian immigrant entrepreneurs, who generally do not have as high a level of familiarity with mainstream U.S. institutional and economic life.

Along with the background of Asian immigrant entrepreneurs, their integration into a core industry with economic and political prestige allows them to access resources that their counterparts in other types of industries do not possess. This includes political visibility in the United States and attention from Asian venture capitalists eager to gain access to U.S. technologies and markets.

All of these factors bring Asian immigrant entrepreneurship to another level. Asian immigrant entrepreneurs can no longer be viewed monolithically as newly-arrived immigrants who face structural barriers to the mainstream labor market and only have family- and ethnic-based resources. Rather, a new group of Asian immigrant entrepreneurs, equipped with professional background and access to Asian investment capital, are changing the role of Asian immigrants in the U.S. economy.

These changing realities point out the need to reassess other key elements in the current social science debate on Asian immigrant entrepreneurship. The assumption that Asian immigrant entrepreneurship is a transitory stage for the eventual incorporation into the mainstream labor market must be reassessed. This case study shows that Asian immigrants can and do "opt out" when they discern limits to their mobility in the mainstream labor market. Ethnic entrepreneurship may be a viable way to expand their economic opportunities. In the high technology industry, where subcontracting system is encouraged and a strong infrastructure to support entrepreneurship has developed, this decision is more easily made. In this way, Asian immigrant entrepreneurship might prove to be far more durable than predicted.

## Notes

- 1 As with most studies, high technology industry is defined here as a combination of three industries: computers and peripherals, electronic components, and non-defense related instruments. Also, Silicon Valley is defined as Santa Clara County, California.
- 2 Editor's note: see also the survey of high-tech entrepreneurs by Melanie Erasmus contained in this volume.
- 3 See comment on p. 24 re Lam.
- 4 Ridell (1989) along with a host of other journalists have written countless articles, documenting the pervasive sentiment in the industry that Asian Pacific Americans make "good workers, not good leaders."

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